

**POSTGRADUATE THROUGHPUT AT
THE UNIVERSITY OF GHANA**

by

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DECEMBER 2013

DECLARATION

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I declare that this thesis entitled: POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

SIGNED:

CHRISTOPHER KWASI AMEHOE

DATE:

DECEMBER, 2013

DEDICATION

This work is dedicated to:

My Lord and Saviour Jesus Christ

My late Father, Michael

My late Mother, Rosina

My Wife, Beatrice

My Children

and all my mentors

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SUMMARY

Based on widespread perceptions and short-term reports that most research masters and doctoral students at the University of Ghana spend unusually long durations to complete their studies due to their inability to complete and submit their theses on time and unduly long waiting periods for thesis results, the researcher decided to investigate these phenomena to identify the root causes. The aim of the study therefore, was to establish empirical basis for this problem and to recommend ways of strengthening postgraduate study delivery at the University of Ghana, based on input from past students, faculty, and the University's external publics who have a stake in promoting postgraduate studies and research.

To achieve this aim, the researcher set out the framework within which the study should be conducted in Chapter One, and reviewed literature on the theories and concepts of throughput and student throughput in particular as well as global student throughput trends and postgraduate candidature models in Chapter Two. To fully appreciate the delivery of postgraduate studies and throughput trends at the study institution, Chapter Three was devoted to the review of the University of Ghana's postgraduate study delivery system, and its enrolment and output statistics compared with similar trends in other African Universities. The research design was explained in Chapter Four, and, guided to adopt the mixed methods approach because of its efficacy in rendering research findings credible and reliable, a number of past masters and doctoral students who extended their candidatures while at the University of Ghana provided data by completing questionnaires.

Thesis supervisors and examiners selected on the basis of experience also provided data by completing questionnaire, heads of departments, past deans and thesis schedule officers and the Ghana Education Trust Fund Secretariat provided information through interviews. To further unravel specific cases of the phenomenon, which might not be obtained by means of questionnaire and interviews, relevant information were extracted from selected case files that typify cases of delayed candidature and non-completions. In Chapter Five, Quantitative data were analyzed statistically, qualitative data were analyzed using the open coding method, and documentary data were analyzed using content analysis.

The findings and recommendations from the study were reported in Chapter Six. The findings confirmed the perceptions and reports and the major factors responsible for delayed completion and non-completion, including other unpopular factors were identified and discussed. Recommendations were made to address the findings, with particular reference to the role of each stakeholder in strengthening postgraduate study delivery to ensure high throughput at the University of Ghana. In the end, three models were developed for improving candidature durations for masters and doctoral candidates, and for ensuring timely examination of theses.

The researcher hopes that, if implemented, the recommendations would help to improve postgraduate study delivery and throughput at the University of Ghana.

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CHAPTER ONE

BACKGROUND AND ORIENTATION TO THE STUDY

1.1 INTRODUCTION

This chapter provides background and orientation to the subject of throughput in higher education and puts the study in the appropriate context. This is done by presenting an overview of throughput situations and trends as well as factors associated with completion and non-completion among postgraduate students. The structure of the study is then set out by explaining the research problem, aim and objectives, methods and techniques for collecting and analyzing data, issues of reliability and validity of research findings, and the planning of the study.

1.2 BACKGROUND TO THE STUDY

In presenting an overview of throughput trends, it is important to establish the fact that there has been a growing concern all over the world about throughput situations in higher education. This growing concern has led to attempts being made and made by individual and commissioned researchers to deal with such situations, and above all, lessons have been learned from such experiences. The discussions that follow would centre on these matters concerns to create awareness of the seriousness of the subject matter of throughput in higher education.

1.2.1 THROUGHPUT TRENDS IN HIGHER EDUCATION

The focus of this study is postgraduate throughput and for that matter postgraduate students. This is because there is a growing concern worldwide over the quality of post-graduate training, the length of time it takes postgraduate students to complete their studies, success rate of

postgraduate students, and the high percentage of postgraduate students who terminate their studies. In the early nineties, for instance, several institutions in Canada expressed concern about problems with postgraduate education, especially the long time it takes students to complete their research (Holdaway, Deblois, & Winchester (1995). In the United States of America, the Council of Graduate Schools reported in 1991 that time-to-degree and the changing research environment was of great concern to many stakeholders in higher education. Similarly, Lessing & Schultze (2002) noted that attrition rates and completion rates of postgraduate students were becoming statistics of vital concern to governments, and funding agencies as they tended to rely on a performance-driven model to make informed judgments about higher degree research.

Sayed, Kruss & Badat (1998) indicated that only 10 percent of masters students completed their dissertations in three years at the University of the Western Cape, South Africa, in 1998. These concerns point to a common phenomenon; that is, postgraduate students in both advanced and developing countries are experiencing problems which either delay their studies and prevent them from completing on time, or make them abandon their studies.

In view of the above realizations and similar trends across the world, studies on postgraduate durations and concerns about shortening the time taken to complete postgraduate studies have become of utmost interest not only to managers of higher education institutions but also to governments, funders of postgraduate studies and other stakeholders in higher education.

Some scholars in educational research (Hockey, 1994; Fraser & Mathews, 1999; Delamont, S., Atkinson, P., & Parry, O. (2000); Lessing & Schultze, 2001; Mouton, 2001; Grant, 2002) believe

that problems of low completion rates and inability of postgraduate research students to complete their studies on time are mainly due to poor supervision and they can therefore be solved by improving upon supervision offered to students and the student-supervisor relationship. Although the emphasis here is on the role of the supervisor, the significance of the student's role in the relationship towards achieving timely completions has also been recognized as a significant factor. Manathunga (2005), for instance, explored how experienced supervisors detect and deal with early warning signs which point to problems likely to be encountered by research students in order to improve postgraduate study completion rates. Her study also investigated the reasons why some students do not discuss their difficulties directly with their supervisors. The study further proposed that supervisors would be able to improve timely completions if they are aware of these reasons and if they could adopt a number of strategies to support students' learning.

Studies that support the view that institutional inadequacies are responsible for slow completions and non-completions rather than student-centred factors also support attempts that focus on enhancing the supervisory process, postgraduate supervisor development efforts, enhancing supervisors' understanding of their responsibilities in order to improve upon their relationships with students and co-supervisors (Dillon & Mallot, 1981; Helm, 1989; Binns & Porter, 1989; Deist, 1990; Hockey, 1994; Rademeyer, 1994; Van Schalkwyk, 1994; Johnston, 1996; Pearson, 1996; Nerad & Miller, 1997; Fraser & Mathews, 1999; Albertyn, Kapp & Bitzer, 2008; Lee, 2009). Hockey (1996) was concerned that the training of supervisors at postgraduate level is a "crucial factor" in students' successful completion of a PhD programme. Likewise, Moses (1984) attributed the delay in completing the degree to poor supervision, and Lussier (1995) to lack of adequate mentoring. What these studies have in common is that their investigations were

based on student perceptions and they all stressed the role of supervisors as an important factor in improving postgraduate education.

Contrary to the above position is another school of thought that believes that the problems of slow completion and non-completion are student-centred rather than deficient institutional arrangements including poor supervision. Mouton (2007) argued in this regard that too much attention was being given to managerial and administrative solutions to throughput problems in South African higher education instead of tackling the challenges posed by academically under-prepared postgraduate students. This implies that problems of low throughput may also result from poor academic preparation at the Bachelors level. Similarly, Ibarra (in Lovitts, 2001) in his comments on completion rates among ethnic minorities in the U.S. indicated that policies adopted to address the non-completion problem were based on the assumption that the problem lies within the student and not the system. In an article titled 'selective admissions myth' (cited in Lovitts, 2001), Bekins stated that strict admission procedures identify the most able students and that those who fail to complete their studies do so as a matter of choice. This implies that if the most qualified students are selected into a programme, they should be able to complete their programmes successfully irrespective of prevailing institutional arrangements and inadequacies, including supervision.

Lovitts (2001) however cautions against the student-centred view and advised universities not to consider tightening of selection procedures as a way of reacting to increasing non-completion rates and lengthy time-to-degree. By doing so, attention would rather be focused on student-centred issues rather than on institutional structures and research cultures. According to

Manathunga (2002), it is not advisable to recommend changes in student cohorts and characteristics as an approach to achieving timely completion rates.

Other studies support the view that a balanced approach must be adopted in addressing students' inability to complete their studies and research on time. Findings of the 1987 OECD Report cited by Manathunga (2005) and Lessing & Schulze (2002) point to both student-centred factors and institutional factors including research culture and quality of supervision. Lessing & Schulze (ibid) compared the views of both students and supervisors on postgraduate supervisory processes in the Faculty of Education at the University of South Africa and came to the conclusion that whereas supervisors on one hand found some aspects of the supervision process rewarding and desired the recruitment of higher potential students who would deliver better work, students on the other hand indicated issues related to the planning of the research, research methodology, contact with supervisors, feedback, response time and examination feedback as some of their unmet needs. Likewise, in a study by Lessing & Lessing (2004) on supervision of research for dissertations and theses involving academics from both local and international universities, it became known that while students needed much support and training in scientific formulation and writing, there was also a definite need for newer academic staff to be schooled in research supervision. This revelation gives a clear indication that the problems of non-completion and slow completion are neither completely student-centred nor due to institutional deficiencies alone. It ought to be looked at from both angles and on a case-by-case basis.

1.2.2 FACTORS ASSOCIATED WITH DELAYED COMPLETION AND NON-COMPLETION AMONG POSTGRADUATE STUDENTS

Extensive studies on factors associated with delayed completion and non-completion among postgraduate research students suggest three broad categories of factors influencing outcomes for students pursuing higher degree by research. These are institutional factors, supervisory arrangements and student personal factors (McCormack, 2005). Since research is a major component of postgraduate studies, there is a general recognition that students need some exposure to research methodology courses especially at the postgraduate level to prepare them for research. In spite of this recognition and practice, especially at the Master's level, many postgraduate students still experience difficulties which affect the timely completion of their studies. This is because there are factors other than those related to programme content that contribute to non-completion (McCormack, 2005; Ault, 1999; Golde, 2000; Lovitts, 2001; Lessing & Schultze, 2003; Manathunga, 2005). Some of the problems which delay postgraduate research relate to the research design, the collection and processing of information and the writing of the research report (Helm, 1989), and these problems are often caused by institutional factors, supervisory arrangements and student personal factors.

Educational researchers generally agree that both student-related factors and institutional factors are responsible for non-completion or slow completions for postgraduate research students. According to a 1987 OECD report cited by Manathunga (2005), the two sets of issues that affect completions are student factors including their characteristics and situation, and university factors including quality of both the research climate and supervision. A similar view has been expressed by Latona and Browne (2001) who developed a framework of three groups of

influences that predict or may indicate whether students are likely to complete their studies on time or not. These three categories of influences are:

- institutional or environmental factors including the research culture and institutional support
- quality of supervision, and
- student cohorts and characteristics.

The student cohorts and characteristics identified by Latona and Browne (2001) refer to disciplinary differences, gender, age, admission characteristics and prior qualifications, as well as physiological and behavioural characteristics. These and many other views expressed with regard to factors responsible for throughput situations would be revisited and reviewed extensively in Chapter Two. However, a discussion of the research postgraduate study experience at the University of Ghana would be helpful in appreciating the problem at the University of Ghana as well as provide contextual meaning to the study.

Postgraduate study experience at the University of Ghana involves three main stages namely, course work stage, research stage, and thesis or dissertation examination stage (for research masters degrees) and research, thesis writing and thesis examination stages (for doctoral degrees) which may or may not result in graduation and award of a degree. These three stages may be likened to a continuum, with progression from one stage to another. Whereas institutional factors and student personal factors may affect the three stages in postgraduate studies, the impact of supervisory arrangements may be directly felt at the research stage and on the quality of research. The interplay of these three stages and how each stage is influenced by institutional,

supervisory and student-centred factors determines the nature of experience a postgraduate student would encounter.

Rising student enrolments in the face of inadequate research and academic staff at the University of Ghana has been identified as being responsible for falling Student-Lecturer-Ratio, a situation which further affects research and thesis supervision. The University of Ghana Basic Statistics Handbook (2009) puts the 2009 student population at 33,039 including a postgraduate student population of 2,401. Of the total number of postgraduate students, there were 134 doctoral students and 2,267 Master's students. The University's staff capacity was 792 teaching and research staff, and 121 senior administrative and professional staff. Given that the number of programmes offered in departments within the University including postgraduate programmes also increased over the years, the University's teaching and research staff capacity has been described as woefully inadequate in relation to the student enrolment. This situation of mismatch accounted for high student-supervisor and student-academic adviser ratios at both undergraduate and postgraduate levels.

1.3 STATEMENT OF THE PROBLEM

The researcher's motivation to embark on this study was borne out of the need to identify the major factors responsible for delayed completions and non-completions among research postgraduate students at the University of Ghana and how they can be addressed to ensure high throughput or completion rates for the institution.

Certain situations point to the awareness of the problem stated above (the phenomenon of delayed completions and non-completions among research postgraduate students at the

University of Ghana). These pointers are discussed below to explain the problem statement, pose the right research questions, and set the appropriate aim and objectives of the study.

1.3.1 FORMULATION OF THE RESEARCH PROBLEM

As mentioned earlier, the major problems identified to affect postgraduate students' ability to complete their studies on time are inadequate supervisors for postgraduate research and poorly managed thesis examination process resulting in long examination durations. These situations were also identified by the 2007 External Visitation Panel of the University as major challenges of postgraduate programme delivery at the University of Ghana. On the basis of the report of the External Visitation Panel and wide consultative meetings with heads of departments running postgraduate programmes at the University of Ghana, Ntiamo-Baidu (2010) was of the opinion that between 2003 and 2007, little progress was made the School of Research and Graduate Studies towards the development of a university-wide research culture and the enhancement of research output by faculty, as mandated by the University. She was blunt by stating that, by 2008, "postgraduate programme delivery at the University was receiving bad publicity because of the long delays in completion of thesis research and examination."

Besides public perceptions and confirmation of those perceptions by the External Visitation Panel, some of the concerns that prompted the consultative meeting and which were based on unpleasant situations that the delivery of postgraduate studies was going through included: (1) the large number of students either taking long extended durations of candidature to complete and submit their theses for examination, and (2) the increasing trend of students who have had to wait for long periods of thesis examination after submitting their theses. In short, these

unsatisfactory situations were prolonging students' completion durations. There were also instances of students dropping out of their studies.

Sufficient empirical evidence in other parts of the world has proven that timely completion, extended completion or non-completion of research postgraduate degrees are influenced to a very large extent by the time spent at the research or thesis writing stage rather than at the course work stage (Kearns, Gardiner & Marshall, 2008; Jiranek, 2010). At the University of Ghana, there is the perception that both masters' and doctoral students encountered more difficulties at the research stage than at the course work stage, which sometimes result in non-completion and delayed completion. This perception was confirmed by some findings from a Research Supervision Workshop jointly organized in 2011 by the School of Graduate Studies and the Office of Research Innovation and Development (ORID) at the University of Ghana. The findings revealed that the difficulties encountered by research postgraduate students at the research stage included: (1) supervisors not devoting adequate time to supervision due to work overload in other areas, (2) students themselves not devoting much time to research or their supervisors because they engage in other activities such as working for income, (3) delays in approval of topic and supervisors for students, (4) inadequate funding for research, (5) inadequate resources and facilities for research, (6) delays in organizing oral examinations for students, and (7) delays in nomination of examiners and examination of theses. In the light of these revelations, it is important to investigate whether the delay in completing and submitting theses was from the students or arising from supervision challenges. It is equally important to investigate the real causes of delay in examining theses.

A fundamental phenomenon that can affect postgraduate completion durations is a situation where too many students are assigned to a supervisor normally resulting from poorly managed ratio of students admitted into programmes to the number of lecturers available to serve as supervisors. This case is relevant to this study because the University of Ghana witnessed a sharp rise in student numbers over a relatively short period.

Although the reasons alluded to in the above discussions provide good knowledge of the situation on the ground at the University of Ghana, they have not been scientifically proven through a full-scale research. It is also possible that there may be other unknown reasons for the low postgraduate throughput situation at the University of Ghana, hence the need for this study. This study is therefore based on the assumption that the causes of low postgraduate throughput at the University of Ghana are multifaceted and goes beyond supervision and delays in thesis examination.

1.3.2 THE RESEARCH QUESTION

Considering the background to the problem and the assumption made, the main research problem for this study is expressed in the research question: What is the postgraduate throughput situation at the University of Ghana, what are the reasons for such a situation, and what strategies can the University adopt to improve postgraduate throughput? Expressed in another way, the questions that remain unanswered within the University of Ghana are: (1) Do the University and its stakeholders know the throughput rates for its Masters and Doctoral students and how they compare with acceptable standards? (2) What are the reasons for delayed completion and non-completion among postgraduate students of the University of Ghana and how can these situations be resolved to ensure efficient postgraduate study delivery and high postgraduate

throughput for the University? To address the research problem, the following research questions were reformulated and broken down into the following seven sub-questions to be addressed by the study:

- i. What does student throughput entail in higher education and what factors affect student throughput generally?
- ii. What student throughput situations, trends and postgraduate candidature models exist in Africa and other parts of the world as useful lessons and best practices for achieving high postgraduate throughput?
- iii. How does the postgraduate programme delivery model and throughput trend at the University of Ghana compare with those of selected world class Universities?
- iv. What are the responsibilities of key stakeholders (for example the government and the School of Graduate Studies, heads of departments, supervisors, examiners and students) at the University of Ghana in ensuring high postgraduate throughput rates at the University?
- v. Are the key stakeholders aware of their responsibilities and how are they discharging such responsibilities towards ensuring high postgraduate throughput at the University of Ghana?
- vi. What factors account for delayed completion and non-completion among research postgraduate students at the University of Ghana?
- vii. What measures and strategies should be put in place to ensure timely completion and high throughput among research postgraduate students at the University of Ghana?

The study addresses sub-questions one to four through literature review, whilst sub-questions five to seven are addressed through empirical data.

1.3.3 AIM AND OBJECTIVES OF THE STUDY

The ultimate goal of any study on throughput is not only to contribute towards ensuring that students complete their programmes on time, but also to ensure that the number of students who complete at approved durations keeps rising steadily. Studies on throughput therefore seek to identify and understand the reasons for slow completion and non-completion (student drop out situations). Beyond identifying and understanding the reasons, throughput studies also seek to recommend solutions for ensuring that completion rates are improved and drop-out rates are kept very low as success rate is maintained or increased.

The aim of this study therefore is in keeping with the above principles. Essentially, it is to investigate the causes of delayed completion and non-completion among research postgraduate students at the University of Ghana and to recommend ways in which these situations can be improved. The aim and objectives of the study reflect how the research problem and sub-questions would be addressed in order to provide context and direction for the study. The aim of the study is broken down into the following objectives formulated in line with the research questions stated earlier:

- i. To discuss what student throughput entails in higher education touching on meaning, significance, models and factors that affect student throughput.

- ii. To discuss student throughput situations, trends in Africa and other parts of the world as well as models of postgraduate candidature durations in order to demonstrate useful lessons and best practices for achieving high postgraduate throughput.
- iii. To examine existing postgraduate programme delivery models and throughput trends at the University of Ghana in relation to those of selected world-class Universities.
- iv. To examine the responsibilities of key stakeholders, namely, government, the University of Ghana and its graduate school, heads of departments, supervisors, examiners and students towards ensuring high postgraduate throughput at the University.
- v. To provide information that would make key stakeholders' more aware of their responsibilities and the need for such responsibilities to be discharged efficiently towards ensuring high postgraduate throughput at the University of Ghana.
- vi. To determine the factors that account for delayed completion and non-completion among research postgraduate students at the University of Ghana.
- vii. To recommend measures, strategies and models based on best practices and findings from the study for ensuring timely completion and high throughput among research postgraduate students at the University of Ghana.

1.4 RESEARCH METHODOLOGY

The survey method of research would be adopted for this study because most studies on completion durations and effectiveness of supervision made use of the surveys. Another reason for adopting the survey method for this study is that the survey, also known as opinion poll, is the most formal type of fieldwork in which the investigator asks a sample population a series of carefully tested questions to find out what a cross-section of people think about something at a specific point in time (Bovee & Thill, 1986). Lessing & Lessing (2004), Lessing &Schultze

(2002), and Albertyn *et. al.* (2008) adopted questionnaires in their studies on postgraduate throughput and supervision. McCormack (2001) made use of the longitudinal approach in obtaining narratives of students' experiences over their time as postgraduate students from interviews held with them. Similarly, Manathunga also adopted the case study and focus group approaches of the survey method to investigate particular cues that supervisors recognized as indications of difficulties that may hamper a student's progress, using semi-structured interviews to collect data. These studies have been recognized internationally as quality works in the area of student throughput.

1.4.1 RESEARCH APPROACH

The mixed methods approach, which combines both quantitative and qualitative methods, would be adopted for the study to obtain relevant data that would address the research questions, aim and objectives and to also make the research more exhaustive (Henning, 2004). It enables the researcher to compare the outcomes of both survey questionnaire and interviews, thus making what may appear to be a complex study rather simplified (Cohen, Manion & Morrison, 2003). The researcher would also adopt content analysis approach in addition to using questionnaire and interviews. Typical extended completion case files and non-completion case files would be identified, selected and carefully reviewed to obtain information that is relevant to the objectives of the study. Content analysis or documentary analysis is unique and relevant to this study because of the need to understand the academic experience or progress record of victims of long delays in completion and non-completion cases to fully appreciate the issues and to make the findings of the study closely relevant to the study institution. Twumasi (2001) recommends the use of document analysis approach to complement data collection because, according to him, information from documentary sources such as personal records, letters, progress reports on

students, petitions and appeals throw more light on the problem, experiences and rationale underlying some individuals' thoughts. He was also of the opinion that such data tend to be free from response bias and are, therefore, reliable and valid materials needed to supplement other sources of data collection.

Another justification for the use of the mixed methods approach is that whereas the quantitative approach helps in gathering data on the entire scope of the study, the qualitative and content analysis approaches would serve as triangulation measures for validating the results of the study.

The research focuses on postgraduate throughput in the specific case of the University of Ghana. Given the scope of the study, it would appear that this is a case study since it does not permit the researcher to gather empirical data on the situation in the other public Universities in Ghana. Bearing this in mind, the researcher would focus on the phenomenon of extended candidatures and non-completions at the University of Ghana. This is supported by the view that the case study is the preferred strategy when the focus is on a contemporary phenomenon or a bounded subject or unit that is either very representative or extremely typical of many other cases (Osuala, 2001). The researcher, however, believes that the results could either reflect the situation in Ghanaian public universities due to similarities in their characteristics or provide insights into the situation in other Ghanaian public Universities.

1.4.2 POPULATION AND SAMPLING

1.4.2.1 Population

The population for this study consists of research postgraduates (Master of Philosophy and Doctor of Philosophy candidates) who extended their candidature before submitting their theses

between 2007 and 2010 and selected non-completion doctoral case files; thesis supervisors, internal examiners and external examiners, and past heads of department who served during the period under consideration; as well as past deans and senior administrators of the School of Graduate Studies at the University of Ghana. The target population of postgraduate students is the graduation class of 2006 to 2010 because this cohort of students belongs to the period prior to institutional interventions in 2010 towards improving postgraduate programme delivery at the University of Ghana. Statistics at the School of Graduate Studies indicate that about 1,767 Master of Philosophy candidates (referred to in this study as masters students) graduated within the five-year period (2006 to 2010) and in the case of Doctor of Philosophy candidates (referred to in this study as doctoral students), 101 graduated within the period. The target population from which samples would be drawn is 1,868 research postgraduate students.

1.4.2.2 Sampling for the quantitative phase

Purposive sampling techniques would be adopted for selecting the past postgraduate students sample (quantitative). To do this, only candidates among the graduating class who extended their candidature before completion. This would be done by generating a list of all candidates who extended their study durations during the period and matching the list with the graduation cohort being used for the study. The list generated would be ordered in terms of longest duration to shortest duration. From this list, about 250 past masters students would be selected based on length of extension taken. The same approach would be used to select about 50 past doctoral candidates from the list of 101 graduates.

Using a similar approach to that which would be used for the past postgraduate students sample, the researcher would make use of the database of supervisors and examiners at the School of

Graduate Studies to select eighty (80) theses supervisors and 80 internal examiners and 40 external examiners who supervised or examined research postgraduate work during the period under consideration based on length of service as supervisor or examiner. Put together, it is estimated that the total quantitative sample for the study would be about five hundred.

1.4.2.3 Sampling for the qualitative phase

The researcher would select four (4) past deans and four (4) former thesis schedule officers of the School of Graduate Studies for interviewing. The past deans interview would focus on their experiences with regard to postgraduate study delivery and their views on the roles of stakeholders, especially supervision and thesis examination matters since they were directly in charge of these issues during their deanship. Interview with thesis schedule officers would relate to thesis submission from heads of department and the thesis examination process.

Twenty (20) past heads of department would be selected on the basis of ten from the sciences and ten from humanities as well as experience. To identify the past heads of department, the advice of current departmental heads and older faculty would be sought. Three representatives from relevant government agencies, namely the National Council for Tertiary Education (NCTE), the Ghana Education Trust Fund (GETFund) and the Ghana Scholarships Secretariat would be contacted to provide information on contributions made by government to promote postgraduate studies and research, challenges and how government plans to deal with such challenges.

About 15 ‘worse case’ extended completion and non-completion case files would be selected for each group of masters extended candidatures, doctoral extended candidatures and doctoral drop-out cases, using data available in the thesis submission and examination database and student registration records at the School of Graduate Studies. It is estimated that in all 45 case files would be reviewed. Total sample proposed for the entire study would be 500 for questionnaire, 28 for interviews and 45 for content analysis.

1.4.3 INSTRUMENTATION AND DATA COLLECTION TECHNIQUES

1.4.3.1 Piloting of Instruments

Only questionnaire designed for data collection from past postgraduate students would be pilot tested since this represents the largest sample size for the study and also due to time constraints for extending the pilot survey to the qualitative sample. Observations from the pilot survey would be noted and used to revise the content of the questionnaire where necessary.

1.4.3.2 Questionnaire

The questionnaire would be constructed bearing in mind the need to address the research questions and objectives. The researcher would be careful not to load the questionnaire with so many items that would discourage respondents from completing them. In this regard, each set of questionnaires would contain about 30 items. Care would be taken to cover all the research sub-questions as much as possible. The structure of the questionnaire would reflect the research title, an introductory statement indicating the main objective of the research, response instruction, return instructions, and biographical information on the respondent. This would be followed by the main questions or items, and lastly a statement of gratitude. Through the review of literature,

the researcher found it appropriate to adapt his questionnaire from a set of instruments used by Lessing & Lessing (2004), Lessing and Schultze (2002), and Albertyn *et.al.* (2008) because the objectives set of these studies appear to be similar to this study.

Issues with regard to relevance, objectivity, clarity of meaning, simplicity, precision, and ease of analyzing responses, variety of items and response options such as “Yes” or “No” questions, multiple-choice questions, questions with Likert Scale responses, and checklist responses would be given serious attention in designing the questionnaire. There would be more structured items than unstructured items. The questionnaire would cover registration and orientation, approval of supervisors and thesis topics, research supervision arrangements, and financial support for their studies and research. The questionnaire would be pre-coded before administration to facilitate data organization and analysis.

(a) Administration of questionnaire

In all cases, respondents’ prior consent would be sought using the electronic mail addresses and telephone numbers generated from the student database and in some cases student files at the School of Graduate Studies. The questionnaires would be administered thereafter to the selected past masters and doctoral graduates through their electronic mail addresses. The respondents would be provided with multiple return options such as completing the questionnaires and returning them via electronic mail facility, or sending the completed questionnaire by fax or by post depending on whichever medium would be more convenient to the respondent.

In the case of supervisors and internal examiners, the questionnaire would be sent to them through their email addresses. Research assistants would help to distribute the questionnaire to the supervisors and internal examiners in their offices. A list of persons served with the

questionnaires would be used to remind them regularly to complete the questionnaire for collection. Areas for assessment in the supervisors' questionnaire would cover supervision arrangements and funds for postgraduate students' research work, and adequacy of time for supervision. Examiners' questionnaire would focus on the thesis examination process.

1.4.3.3 Interviews

Face-to-face interviews would be arranged with selected heads, thesis schedule officers and past deans. There would be no voice recording of responses to enable the respondents speak freely on the issues raised. Issues relating to confidentiality and accuracy of taking notes would be taken seriously. In the case of heads of department and deans, interview schedules would be designed as a back-up for instances where it is difficult for the respondents to make time for the interview. In that case, the completed interview schedules would be studied carefully, so that clarification would be sought from the respondents later either personally or by means of telephone.

1.4.3.4 Selection of case files

Once the case files are identified, the services of filing clerks would be sought to retrieve the selected student files for review from the archives of the School of Graduate Studies. Each file would be studied thoroughly in a separate room reserved for the exercise to maintain confidentiality. The types of information required would be identified on the basis of the research sub-questions and objectives and written into a table with wide columns for recording of such details for each case file. The information would include date of first registration, appointment of supervisors, thesis topics, date thesis was submitted, challenges, date thesis result

was determined, date corrected thesis was submitted, date oral examination or defense was held, date of graduation and other matters that would serve to provide data for the research.

1.5 DATA ANALYSIS AND INTERPRETATION

For quantitative data, the Statistical Package for the Social Sciences (SPSS) software would be used to derive frequencies, tables, charts and graphs to enable the researcher draw similarities and disparities which would be interpreted in simple statistical language using ratios and percentages. The different categories of respondents would be taken care of in the analysis. This implies that statistics would be generated separately for past masters respondents in the sciences and humanities areas, past doctoral respondents in the science and humanities areas, supervisors view on masters students (science and humanities), supervisors views on doctoral students (science and humanities). This would make it possible to present and discuss the results based on level of programme (masters and doctoral) as well as by discipline (science and humanities).

The structured interview schedules would be coded for all categories of interviewees for ease of identification and analysis in terms of counting frequency of ideas and themes so that patterns could be identified and organized into coherent themes based on the responses (Miles & Huberman, 1994). Notes taken from face-to-face interviews would be carefully edited and transcribed to bring out the central ideas in the conversations from which themes would be derived for discussion.

1.6 RELIABILITY AND VALIDITY OF RESEARCH

Reliability is assured when the same results would be obtained if the research were repeated, and we talk about validity when research measures what it is intended to measure (Bovee & Thill, 2001). Reliability is assured through the identification of errors at the pilot study stage.

According to Osuala (2001), the fact that the interview permits following through on misunderstood items and inadequate responses generally promotes validity. Osuala (2001) was also of the view that a crucial point in the validity of the interview is the possibility that the interviewer's very presence would affect the responses which he receives. The researcher plans to personally conduct interviews to derive the full benefits of data validity and reliability. Ensuring relevance of the questions in questionnaire and interviews and full coverage of the research questions and objectives is a sure way of ensuring that data collected is valid and reliable. The researcher is also mindful of the environment for conducting interviews, establishing good rapport with interviewees as well as the need to listen attentively and ask probing questions as a way of ensuring data validity and reliability.

1.7 PLANNING OF THE STUDY

The study is organized in six chapters with the first chapter introducing the study and providing orientation to the reader by giving the background to the study, stating the research problem, aim and objectives, research method, issues relating to validity and reliability of the study and organization of the thesis.

Chapter two is devoted to the review of literature on conceptual understanding of the study, focusing on a discussion of what student throughput entails in higher education, its significance, models underpinning the concept of throughput and factors that affect student throughput. Global student throughput trends in higher education institutions, stages in postgraduate candidature durations in some world class higher education institutions and their relevance to throughput considerations were also discussed to provide appropriate theoretical basis for the study.

In chapter three, the continuation literature review focuses on contextual issues to provide an understanding of systems and structures inherent in the study institution and candidature models as determinants of throughput situations. In doing so, the chapter discusses the existing postgraduate programme delivery models and throughput trends at the University of Ghana. The responsibilities expected of key stakeholders (Government, Management of the University, the Graduate School, Deans, Heads of department, Supervisors, Examiners and Postgraduate Students) towards ensuring high throughput at the University of Ghana were also reviewed. Through the review of candidature models of reputable Universities, other institutional arrangements for efficient postgraduate study delivery such as registration and orientation, course work preparation, research preparation, supervision, examination of theses through to publication of results and graduation were also discussed.

Chapter four explains the research design adopted for the study. The research approach, population, techniques adopted for sampling, data collection, data analysis and interpretation are covered in detail in this chapter. A description of how the pilot study was carried out and results was also reported in this chapter. Chapter five contains the analysis and interpretation of the data collected and covers profiling of respondents, summary of data collected, with the greater part of the chapter devoted to the discussion and interpretation of data collected. Chapter six presents the findings from the study starting from the literature and the empirical data analyzed. The chapter ends with recommended measures and strategies as well as suitable models of postgraduate study delivery for ensuring and sustaining timely completion and high throughput rates for research postgraduate students at the University of Ghana.

1.8 CONCLUSION

This chapter explained the background to the study, stated the research problem, questions, aims and objectives, discussed the research methodology, and the organization of the study. The next two chapters, the researcher reviews related literature to situate the study in appropriate theoretical frame work and context.

CHAPTER TWO

<p style="text-align: center;">STUDENT THROUGHPUT IN HIGHER EDUCATION: MEANING, SIGNIFICANCE, MODELS, DETERMINING FACTORS, GLOBAL TRENDS AND POSTGRADUATE CANDIDATURE DURATIONS</p>
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2.1 INTRODUCTION

This chapter looks at the concept of throughput and what throughput entails in higher education, its significance, models underpinning the concept of throughput and factors that affect student throughput. Global student throughput trends in higher education institutions with particular reference to the United States of America (USA), the United Kingdom (UK) and Australia, Canada, Europe and Africa were discussed to show the extent of work already done and global reports in the area of throughput studies. The chapter ended with a discussion of the stages in postgraduate candidature durations in some world class higher education institutions to explain what postgraduate students' academic experience and its relevance to throughput considerations. The objective of these discussions is to situate the study in the relevant theoretical context.

2.2 THE CONCEPT OF THROUGHPUT IN HIGHER EDUCATION

Researchers conceive the meaning of throughput depending on different situations and for this reason various terminologies have evolved over time to describe throughput situations. This section cites some definitions by some popular authors and researchers and meanings are drawn from them. Associated terminologies and contexts in which the term is used are also explained in this section with a view to conceptualizing the term and stating how it is used in this study.

2.2.1 DEFINITIONS AND MEANING OF THROUGHPUT

According to de Beer (2006), the use of the term *throughput* may be traced to attempts by quasi-academics and politicians to equate success rates or completion rates in higher education institutions to the input and output production concept in industry. This input and output production terminology, according to de Beer (2006), is synonymous to the conveyor belt syndrome of a factory, whose success rate is determined by the quantum of output released through a revolving door. In ordinary non-technical language, the dictionary defines throughput as "the amount of work, people, or things that a system deals with in a particular period" (Macmillan English Dictionary for Advanced Learners, 2007). This dictionary definition presents a more comprehensive definition as it goes beyond the input and output production concept in industry which appears to be limited to goods or products; it involves the number of people that a system deals with in a particular period.

On the basis of the original industry concept, and the non-technical dictionary definition, student throughput can be defined as the number of students an institution deals with, in a specified period. Furthermore, since throughput also has to do with output or product, the idea of completing something or finishing a task is an important consideration. Therefore, to render the term throughput more meaningful in the school set up, we can define student throughput as the number of students who successfully complete their studies in an institution or a country within a specified period. It is, however, agreed universally that universities are not factories and therefore cannot behave completely like factories because of differences in their objectives and products

A number of what can be referred to as technical definitions have been coined by researchers in student throughput studies, which has brought about slightly different perspectives on the application of the term to students at all levels including higher education institutions. Talking about technical definitions of throughput, the popular authors from the literature include Tinto (1975); Caincross (1999); Horne & Naude (2007) and Latief & Blignant (2008), whose diverse views reflect the different situations that determine the nature of throughput.

As far back as the 1970s, Tinto conceived the idea that the potential for students to complete or drop-out depends on the degree of academic and social integration students receive. Cain cross (1999) defined throughput as the number of students who completed their studies within the prescribed time. Horne & Naude (2007) talked about the aspect of passing an examination and not just completing the studies or passing through school. They defined throughput rate as the percentage of students who registered for a module or course and passed the prescribed examination. According to Latief & Blignant (2008), throughput is the number of years taken by a student to complete an undergraduate degree. This means that in a four-year undergraduate programme, for instance, throughput will be determined by the number of years it takes individual students to complete their registered programmes, recognizing that not all of the students may be able to complete within the four years.

From the above definitions and explanations, it is obvious that whereas some authors look at throughput in terms of time-to-degree (how long it takes a student to complete his or her academic programme), others explain it in terms of the number of students who have been successful or have passed examinations in a course of study or academic programme.

Throughput may also be determined by considering the academic progress of students in a particular course, programme, or year group over a period of time.

The term throughput is expressed as either high or low. If expressed as low, it means only few students out of a given number are either being able to complete or pass a certain subject or programme within a specified time frame. It is high when a large number of students out of a given number are able to complete or pass a course or programme. To express the term as high or low, it must be related to a given entity and expressed as a proportion or percentage of a class of students who registered for a particular course (e.g. mathematics) or as a class of students in a particular programme (e.g. students pursuing a bachelor's degree programme in special education), or a particular year group (e.g. first year B.Sc. Economics students), or students at a particular level of education (e.g. throughput among high school students, undergraduate students or postgraduate students).

Whatever definitions scholars give to the term throughput in educational institutions, the key issue is about ability to start and complete an academic programme successfully and on time, and what educational institutions must do to achieve and sustain satisfactory throughput situations in the educational system.

2.2.2 TERMINOLOGIES ASSOCIATED WITH THROUGHPUT

Literature on student throughput studies suggests that it is difficult to explain the concept of throughput fully without reference to related terminologies such as completion rate, graduation rate, success rate, pass rate, failure rate, drop-out rate, attrition, and their derivatives, all of which are very closely related to the term throughput. Additionally, since throughput is determined by

various factors within a given period, terminologies have evolved over time to explain the processes or events that determine throughput situations. It is important, therefore, to note that, the term throughput can best be defined or explained by defining and explaining its related terminologies.

2.2.2.1 Pass rate or success rate

Pass rate or success rate of students is defined as the percentage of students who were admitted to the examination and actually passed it (Horne & Naude, 2007). From this definition, failure rate can be defined as the percentage of students who were admitted to the examination but did not pass it, and drop-out or attrition rate can be defined as the percentage of students who could not complete the programmes for which they registered. In other words, the students could be said to have discontinued or abandoned their academic programmes.

2.2.2.2 Completion

According to the Higher Education Funding Council for England (HEFCE), (2005), completion means the period from first registration to the date when approval is given for the award of the degree. The date of award may vary depending on the type of qualification to be awarded (diploma, bachelors, masters, or doctorate degree). Some qualifications may take longer than the approved years to complete for various reasons and the rate at which students complete their programmes will determine whether throughput is high or low.

Caincross (1999) attempted a distinction between ‘throughput’ and ‘completion’ by defining the completion rate of a particular class as the number of students who completed their studies; and

‘throughput’ as the number of students who completed their studies within the prescribed time. Completion rate is also defined by Hauser & Koenig (2011) as “an indicator of the percentage of students in a given population who finished high school within the time allowed to complete”. Defining throughput in terms of completion within specified time frames appears to be gaining significance among educational managers and policy makers in higher education institutions because it takes into account the need for students to complete their studies or programmes within prescribed time frames because delayed completions have cost implications for stakeholders.

What Caincross (1999) seeks to bring out in his definition is that, whereas completion has to do with students’ ability to begin and finish their programmes successfully and, thus, become eligible for receiving a certificate with less attention to the duration, throughput emphasizes completion within the approved study period for the course or programme. The issue of time is, however, recognized in Hauser & Koenig’s definition of completion rate.

2.2.2.3 Throughput rate

Besides the use of absolute figures, some authors have expressed throughput in percentages and ratios to simplify its meaning, thus translating it statistically into a rate. For instance, Horne & Naude (2007) in distinguishing between the terms ‘pass rate’ and ‘throughput rate’ in the context of student enrolment defined ‘pass rate’ of students as the percentage of students who were admitted to the examination and who actually passed it, and ‘throughput rate’ as the percentage (or proportion) of all students who registered for a module (or programme) in relation to those who passed the examination (in that module or programme)”. To Horne and Naude, the emphasis is on passing the examinations or successful completion of studies as opposed to those

who failed. This means that pass rate and throughput rate may be derived from completers only, leaving out those who dropped out of studies.

Although definitions of throughput are similar in the literature, there appears to be some slight variations depending on the author's perspective and the context in which the definition is used. For instance, Horne & Naude (2007) define 'throughput rate' as the percentage of students who registered for a module (course) and passed the examination. Here, the definition of throughput focuses on success at the examination or passing the prescribed examination. However, some qualifications such as research masters and doctorates may require more than just passing prescribed examinations or may not require an examination at all for a student to be declared eligible for the award of the qualification registered. Horne & Naude's (2007) reference to passing examination seems applicable to programmes that involve taught courses only because where research forms part of the programme, there are usually other requirements to be satisfied by students such as making final corrections in the thesis or dissertation after examination and submitting them at a particular date before they become eligible for the award. In this regard, this definition does not seem to be comprehensive enough.

However, the views expressed by Horne & Naude (2007) are similar to that of Latief & Blignant (2008) in the sense that if more students pass the examinations and complete in a given year than in a previous year, throughput will be described as high for the year in which more students are able to complete, and as low for the year in which less students pass and complete. Both definitions therefore recognize 'time-to-degree' as their basis. Horne & Naude's (2007) definition also tells us that throughput can be expressed in terms of percentages, which may also

be described as high or low if the percentage of students who pass examinations and complete the course increases or decreases. A similar view is expressed in the definition of throughput rate by South Africa's Department of Education (2004) as the number of students who are enrolled for a module, course or subject in higher education (HE) compared to the number of students who successfully complete that same module, course or subject within a given semester, expressed as a percentage. This definition is expressed in the following mathematical formula:

$$\text{Throughput Rate} = \frac{\text{Students who pass}}{\text{Students who enroll}} \times 100$$

The above formula no doubt places emphasis on successful completion as it uses number of students who pass and not just number of students who completed but did not pass.

The question that Caincross' definition raises is: are there programmes without prescribed times for completion? The answer may be found in the fact that although programmes have specific completion durations, policies and regulations in most higher education institutions permit limited extensions of study period based on clearly spelt-out reasons. Therefore, students who extended their study periods should have completed their studies at the same time as those they started with, but had to do so at a later date. This position agrees with those of Horne & Naude (2007); and Latief & Blignant (2008) whose definitions recognize the fact that not all students who start a programme may complete at the same time.

2.2.2.4 Situating throughput in context

Evidence from literature (Engstrom and Tinto (2008); Human Sciences Research Council Policy Brief (2008); the U.S. Council of Graduate Schools Report on PhD Completion Rates (2008);

Report of the National Advisory Council on Innovation prepared by Centre for the Study of Higher Education, University of the Western Cape, December 2003; and McClure (2005) underscores the need to situate throughput and completion in specific contexts to enhance meaning. In this regard, the common specific contexts in which throughput and completion studies have been situated (with reference to the United States, South Africa, Asia, UK and Australia) include: level of education (basic, secondary or higher education), discipline (social sciences, natural sciences, mathematical and technical courses, research-based programmes), demographics of students (gender, age, student population, race and ethnicity), economic and social status of students (advanced economies versus developing economies; poor versus affluent communities), socio-political dimensions (minority groups versus elite groups, underprivileged versus the privileged) and other interesting dynamics.

From the foregoing discussion of definitions of throughput and its associated terminologies, the common factors in conceptualizing throughput and completion are that:

- i. They both involve a process of beginning and ending;
- ii. The product or outcome at the centre of the process in both concepts is students;
- iii. The students must have similar identity in terms of their academic pursuit (such as having started the process at the same time, belonging to the same class or studying in the same academic discipline);
- iv. 'Duration' and 'Numbers' are the basic yardsticks in determining the nature of both situations without which there can be no such interpretations as timely completion, slow completion, non-completion, high throughput or low throughput.

In the rest of the study, throughput would be premised on the commonalities outlined above, and conceptualized in terms of completion ability of research postgraduate students at the University

of Ghana, taking into consideration the principles of ‘time-to-degree’ and ‘successful completion’. These principles are expressed in completion durations (number of years taken to complete research Masters and Doctoral studies), and the number of such students who graduated from a given cohort within a specified period of time later in this study.

2.3 SIGNIFICANCE OF THROUGHPUT STUDIES IN HIGHER EDUCATION

A review of some literature on student throughput (Lessing & Schultze, 2002; Magura, 2010; Bisschoff, 2005; Visser & Hansio, 2005; Swedish National Agency for Higher Education Report, 2007; Kotze & Griessel, 2000; Bunting, 2004) revealed the significance of throughput studies in higher education in the following ways:

2.3.1 THROUGHPUT STUDIES HELP INSTITUTIONS TO REDUCE DROPOUT RATE AND INCREASE SUCCESS RATES TO ENHANCE THEIR SINKING IMAGES

Increasing success rates and reducing dropout rates are important institutional strategies that can correct negative consequences associated with low throughput rates in an institution. To educational managers, throughput studies reveal the underlying factors responsible for learners’ departure from school and therefore provide a basis for designing and implementing initiatives to enhance student throughput and success (Magura, 2010).

Outcomes of throughput studies provide scientific evidence that inform institutional managers, parents and other stakeholders about the strengths and weaknesses in policies regarding selection procedures for admission, teaching and learning facilities, students’ experiences, as well as

funding of higher education. This would enable governing councils of higher education institutions to adopt and implement corrective measures.

Low throughput rates result in ineffective time spent by lecturers on students not completing or passing courses, possible negative perceptions of the image of the institution, and on the part of the students, a loss of money and time, and lower self confidence (Bisschoff, 2005; Visser & Hansio, 2005). This means that the consequences of low throughput can permeate all departments within an institution leading to complete lack of goodwill and low reputation for the institution. Hence, throughput rates are an important indicator in institutional ranking, and sustained high throughput trends are a strong characteristic of world-class higher education institutions.

In his inaugural statement as incoming Vice-Chancellor of the University of Ghana, Professor Ernest Aryeetey envisioned among other issues to increase the proportion of the student population doing graduate work by stepping up graduate admissions and restructuring the University's graduate programmes. To him, "there was no reason why the number of graduate students completing their programmes should not rise from 1,267 as at the end of 2009 to more than 5,000 per year within the next five years" including about 500 PhD graduates. This statement was a demonstration of the Vice-Chancellor's commitment towards increasing postgraduate completion and success rates.

2.3.2 THROUGHPUT STUDIES GUIDE GOVERNMENTS TO FORMULATE GOOD EDUCATIONAL POLICIES

Governments rely on the recommendations emanating from studies on time-to-completion to inform policy decisions at all levels of education with regard to interventions needed to reduce drop-out in schools, and the provision of appropriate institutional infrastructure to improve upon the academic environment. The 1998 reform of postgraduate education in Sweden, for instance, was informed by the Swedish Government's realization that throughput on postgraduate programmes was too low, and also the fact that the previous 1969 reform of postgraduate education had not had full effect at all faculties (Swedish National Agency for Higher Education Report, 2007). Both the 1969 and 1998 reforms of postgraduate education in Sweden featured in the government's budget proposal which had as its objectives, increased throughput and increased graduation rate.

2.3.3 GOVERNMENTS RELY ON THROUGHPUT STUDIES TO ADDRESS NATIONAL HUMAN RESOURCE NEEDS

A 2001 report of the South Africa Ministry of Education cited in Kotze M., and Griessel, L (2000) revealed an endemic shortage of high level professionals and managerial skills in post-apartheid South Africa despite a huge increase in postgraduate enrolments at tertiary education institutions in the field of business and commerce. This shortage, according to the report, may be attributed partly to the significant fall in the graduation and retention rates in higher education, especially at the master's degree level where master's degree graduates expected to meet the nation's high level professionals and managerial human resource needs keeps falling as a result of high drop-out rates. To the extent that poor postgraduate throughput affects a nation's

critical human resource needs gives justification for governments to be concerned about throughput studies.

2.3.4 GOVERNMENTS RELY ON THROUGHPUT STUDIES TO JUSTIFY NATIONAL BUDGETARY ALLOCATION TO EACH LEVEL OF THE EDUCATION SECTOR AND TO ISSUE POLICY DIRECTIVES AT EACH LEVEL

Governments are also concerned about throughput trends because of the economic returns on investments in higher education if throughput is high, or the cost associated with poor throughput rates. For instance, it became known in 2001 that each year in South Africa, 20% of all postgraduates drop out of the higher education system. Similarly, Bunting (2004) also found out that each year, about 15% of the students registered in public higher education system in South Africa drop out before they graduate while only 14% complete their qualification, and that the cost of this drop-out rate in terms of government subsidies on a yearly basis for students who did not complete their study programmes was about 1.3 billion Rands. Concerned about this low graduation rate, the Ministry of Education directed that Higher Education Institutions that have been allocated postgraduate student places would have to improve their graduate outputs. Among the crucial remedial actions rolled out was the announcement in the 2001 National Plan for Higher Education that future funding would be linked to graduation rates instead of enrolment rates. This meant a loss of revenue for academic institutions with poor throughput rates.

Governments have embraced investment in higher education because they recognize that there is a close link between research and economic development, and are therefore interested in funding postgraduate programmes, especially doctoral students. Such funding takes the form of either

grants given to institutions or directly to students and are catered for in national annual budgets. Eggins (2008) reports that in Australia, Canada and the Nordic states, doctoral education has no fees, the fees are sponsored by a number of stakeholders in some other countries, and in Thailand and Japan, loans are available to students. Such stakeholders are, therefore, concerned about throughput and attrition trends.

2.3.5 THROUGHPUT STATISTICS ARE A RELIABLE INDICATOR OF SUCCESS IN HIGHER DEGREE RESEARCH TO DONORS AND FUNDING AGENCIES

According to Lessing & Schultze (2002), attrition rates and completion rates of postgraduate students are becoming statistics of vital concern to governments, and funding agencies as they tend to rely on a performance-driven model to make informed judgments about higher degree research. In Ghana, government bursaries and thesis grants are released to research degree students only during their approved study durations. This means that students who go beyond their approved study periods do not benefit from such grants. The same is true of Carnegie Foundation grants for research postgraduate students where grant beneficiaries are paid a portion of the amounts due to them and the remaining part is withheld until the student completes the research programme within the approved time-frame. These are strategies to ensure that students succeed in their research work so that value for their investments can be realized.

To sum up, throughput studies are the most evident way of demonstrating institutional performance to stakeholders. Outcomes of throughput studies also serve as important guide for institutional restructuring to ensure provision of appropriate student support structures.

In essence, they represent a way of matching student intake with student output, which is a factor of prime concern to all higher education institutions and stakeholders.

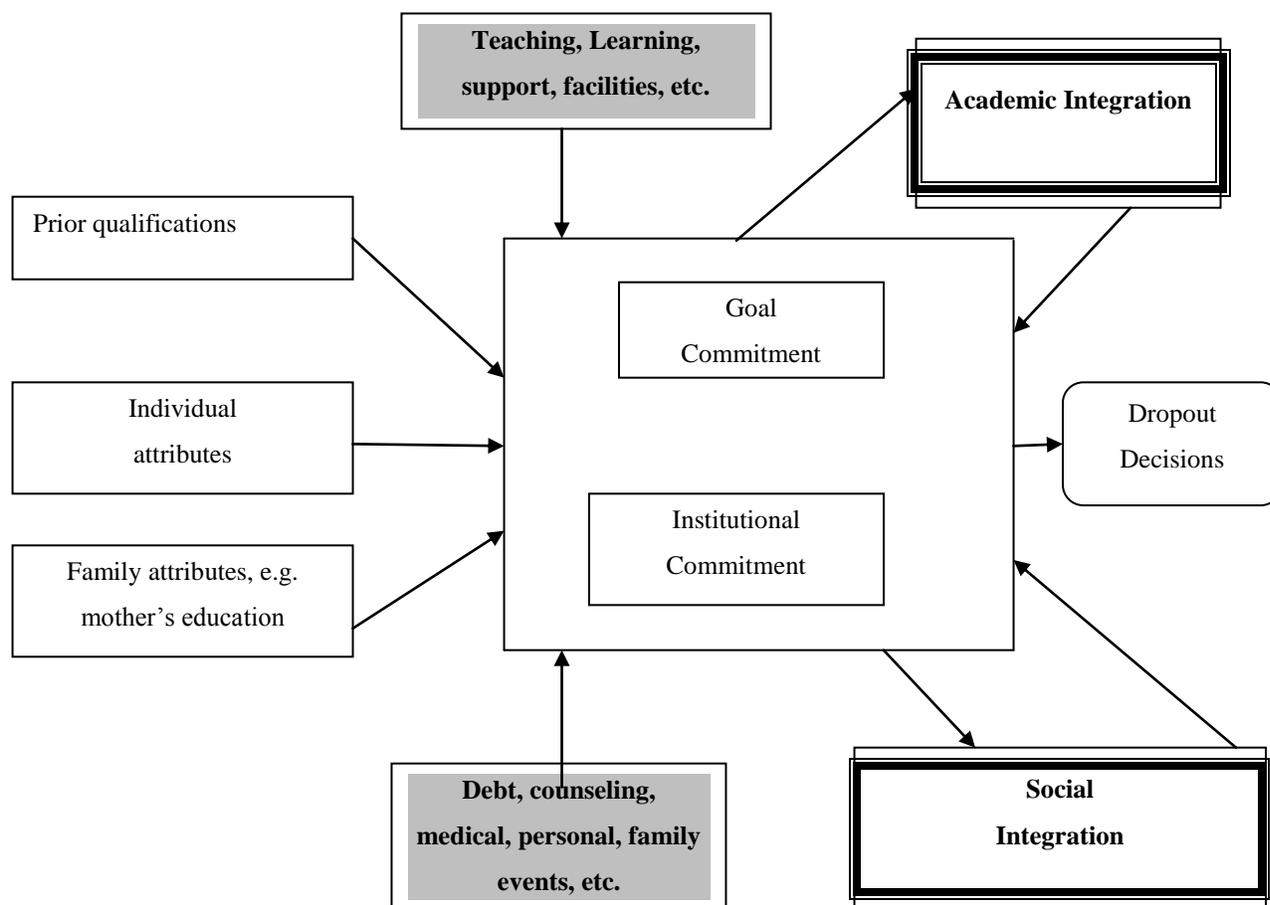
2.4 SOME USEFUL STUDENT THROUGHPUT MODELS

Throughput is all about making adequate provisions in the academic environment to help students complete their studies on schedule, improve their success rates in the various programmes, and avoid dropout situations. This involves strategies geared towards integrating students, retaining them and making their experience fulfilling on a sustainable basis. The concepts that underpin student integration, retention and departure have been illustrated by scholars in the following models.

2.4.1 VINCENT TINTO'S MODEL OF STUDENT RETENTION

The most commonly referred to model in the student retention or dropout literature is Tinto's 1975 model, which has as its central point, the notion of "integration".

Figure 2.1: Tinto's 1975 model of student retention (adapted by Steve Draper)



By this idea, Tinto claims that whether a student persists or drops out depends on the “degree of academic integration and social integration” as indicated in Figure 2.1 above which is an adapted version of Tinto’s model of student retention.

Issues that come up to be addressed in the area of academic integration include: whether the student feels that he or she is doing well academically or not; whether the student obtains personal development from what he or she is learning or not; whether the student is enjoying what he or she is learning or not; whether the subjects or courses he or she has chosen have any

promise for his or her career goals or not; whether or not studying the subject or course is the same as the student expected it to be; and whether the student identifies himself or herself with the academic norms and values of the institution or not.

With regard to social integration, the student is confronted with finding answers to the following issues: his or her ability to make friends or encounter colleagues who are friendly; social belongingness (whether he or she fits into any of the various groups in the institution); level of acceptability accorded the student by his or her academic staff or mentors and whether they make themselves approachable; whether the student is enjoying being a student of the institution or not; whether the student is enjoying the social activities other students engage in or not; whether the student feels comfortable around campus, the department, in lectures, during group discussions or not.

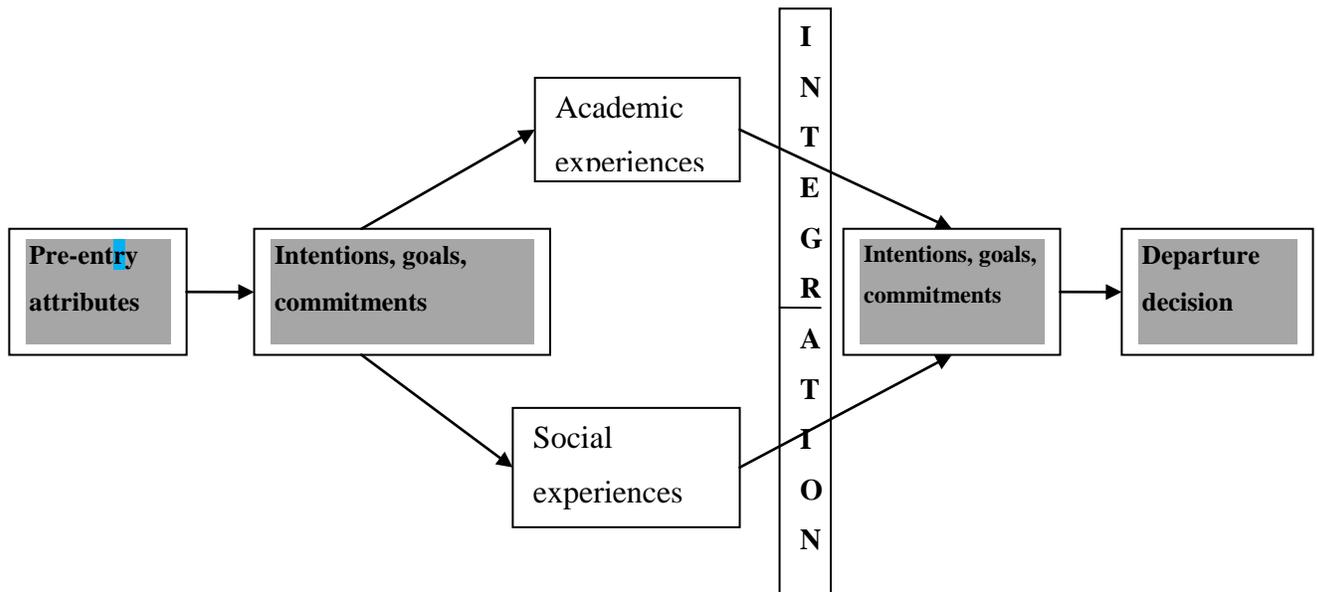
What this model teaches is that the degree of academic and social integration which influences a student's dropout or retention decision is to a large extent determined by (1) an aggregate of attributes that the student comes with into the institutions, namely, his or her previous qualifications (previous level of education attained and in which institution), his or her personal and family attributes (personal conceptions or misconceptions, family status, background of parents and family conditions), and (2) the institutional environmental conditions such as condition of teaching and learning support facilities, financial and funding matters, medical facilities, counseling services, sports facilities, and so many other institutional facilities needed to make life comfortable for academic progress).

2.4.2 VINCENT TINTO'S MODEL OF STUDENT DEPARTURE

Various dimensions of Tinto's original concept have evolved over time. As shown in Figure 2.2 below, Tinto's 1993 Model of Institutional Departure states that, "to persist, students need integration into formal and informal academic (faculty/staff interactions) academic systems; [as well as] formal (extracurricular activities) and informal (peer-group interactions) social systems".

These views which were later simplified and adapted by Mantz Yorke as presented in Figure 2.2, identifies three major sources of student departure, namely, academic difficulties, the inability of individuals to resolve their educational and occupational goals, and their failure to become or remain incorporated in the intellectual and social life of the institution.

Figure 2.2: Tinto's 1993 model of student departure (simplified and adapted by Mantz Yorke)



From the two models, it can be seen that what Mantz Yorke refers to as ‘academic experiences’ and ‘social experiences’ is not different from Peter Draper’s ‘academic integration’ and ‘social integration’ concepts. Both conditions influence student departure, drop-out or retention decisions.

Tinto (1993) also developed a set of action plans known as the Dimensions of Institutional Action’ to provide answers to the problems that often lead to either student departure or drop-out if not attended to, or those that result in retention when addressed. The action plan recommends the following three key actions and principles required by institutions to succeed in retaining students and preventing drop-out:

2.4.2.1 Defining dropping out from higher education

This requires institutions to understand that drop-out constitutes both an individual and institutional failure and not only a negative action on the part of the student and is sometimes a positive response to a situation by the student. Its significance lies in the fact that there is the need for institutions to take into consideration the personal goals and commitments of their students in determining their educational mission.

2.4.2.2 The principle of effective retention

By this principle, institutions are advised to put more premium on student welfare than institutional goals and let this reflect in their retention programmes which must aim at encouraging the development of an academic environment that is socially and intellectually accommodating to all students.

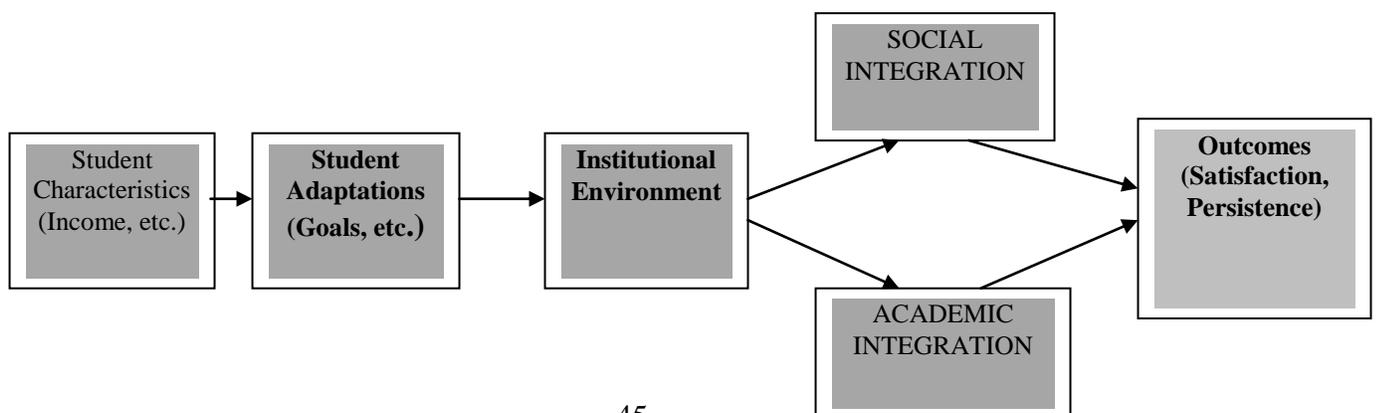
2.4.2.3 The principle of effective implementation

This relates to actions required of institutions if they wish to realize positive and sustained change. By this principle, effective implementation calls for ensuring the availability of resources and incentives for their teaching and non-teaching staff, recognizing and listening to their external publics in the institutional change process, giving attention to staff development and capacity building, and monitoring and evaluation of institutional policies. Tinto's (1993) Dimensions of Institutional Action also suggests stages of retention, institutional actions required to improve student retention, and effective student retention programmes, which serve as a guide in formulating policies for higher education institutions.

2.4.3 THE STUDENT DEVELOPMENT MODEL (ADAPTED FROM TINTO'S MODEL)

Another model derived from Tinto's original models of student retention is the Student Development Model. According to the UCSC's 1992 survey on the academic and social climate, the Student Development Model (SDM) shown in Figure 2.3 below is based on the assumption that student characteristics (e.g. income status) determines his or her educational aspirations or plans. Once in school, the student encounters the realities of the institutional environment based on his or her characteristics and aspirations.

Figure 2.3: Student development model



There is some level of self-evaluation as to whether the student's plans and aspirations are being met, given the elements (academic work, facilities, attention from lecturers and institution administrators) within the institutional environment as he or she begins to adjust or adapt to prevailing situations. These factors determine whether the student would become more academically integrated than socially integrated into the institution or vice-versa. The extent of integration (i.e. whether socially or academically) determines how satisfied the student would be with his or her academic experience which then informs whether the student would persist (stay on his or studies) or become dissatisfied with the institutional environment and drop out. This explanation does not deviate from the other models already discussed.

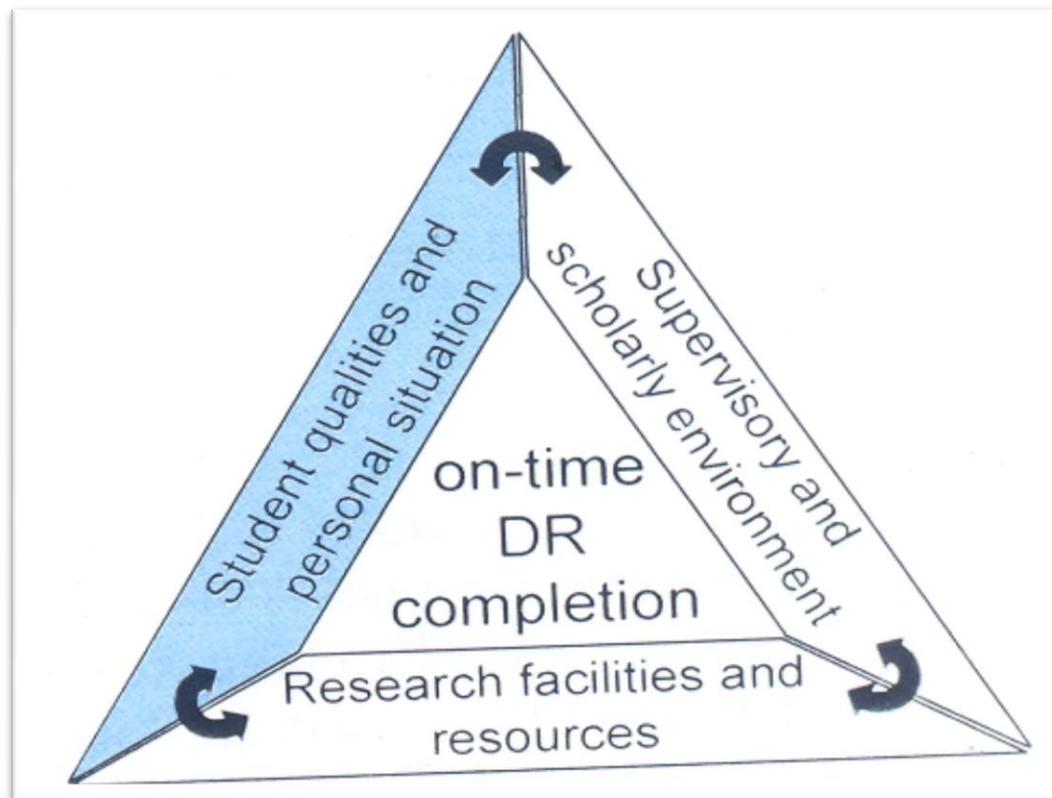
In conclusion, Tinto's theory and models basically point to the fact that when students are admitted into institutions of learning, they go through a process of integration to enable them adjust positively to the new environment in which they find themselves, and that the nature of the integration process may either lead to what he referred to as 'persistence' (the adoption of some strategies to survive in the system), or 'departure' (exiting the system because of difficulties). It means that when students are positively integrated, they will persist to the end of their programmes.

2.4.4 JIRANEK'S DISSERTATION RESEARCH (DR) COMPLETION TRIANGLE

Closely related to Tinto's Integration Models and adapted versions is Jiranek's Dissertation Completion Triangle shown in Figure 4 below. Although this model focuses on one key aspect of postgraduate studies - research, it was based on extensive studies to determine completion times, carried out in Australia and UK by Jiranek (2010); Kearns, Gardiner & Marshall (2008); Wright (2003); Wright & Cochrane (2000); Spear (1999) and Martin et al. (1999). The studies

revealed a number of factors that influence completion time or candidature duration for research Masters and Doctoral students. Among these factors are the students' field of study, attendance mode (part-time or full-time), scholarships held, and technical difficulties in the course of research. Jiranek (2010) sums up all the factors identified by these studies into three broad categories, without which the research project may not succeed. These are (1) *Student qualities and personal situation* (referring to academic ability, financial situation, language skills, interpersonal skills, and persistence versus self-sabotaging behaviors); (2) *the nature and quality of supervision* (referring to how often student meets with supervisors, and support received from other students and research colleagues); and (3) *resources and facilities available to the project* (referring to materials, equipment and expertise).

Fig. 2.4 Jiranek's Dissertation Research (DR) Completion Triangle



Source: *International Journal of Doctoral Studies*, Vol. 5, 2010

The extent of influence of these factors on the individual's ability to complete the research or otherwise depends on the individual student's setting or personal characteristics and the interplay of these factors on the individual (Wright, 2003). Figure 2.4 shows the three broad groups of factors which contribute to timely completion by higher degree research students, with the inter-relationship of these factors shown by the arrows.

From the foregoing discussion of throughput models, the main determinants of throughput can be classified as personal or student-related factors and institutional factors, though some models consider supervisory arrangements for the research postgraduate student to be so crucial in the throughput equation to merit special attention. The models show that the degree of students' academic or social integration, level of satisfaction or dropout/withdrawal decisions are determined by personal factors (students' prior qualifications, pre-entry requirements, individual attributes, family attributes and personal financial status, goals, intentions and expectations about the institution) and institutional factors (institutional teaching and learning support facilities, institutional environment including institutional supervision arrangements). Another observation about the models is the strong relationship among the various factors and how they impact upon the degree of students' integration into the academic environment and consequently the decision taken by the student to withdraw or persist.

2.5 FACTORS DETERMINING THROUGHPUT IN HIGHER EDUCATION

2.5.1 INTRODUCTION

From the discussion of throughput concepts and models, a number of reasons emerge as factors that determine completion time for students and throughput in higher education institutions in

different contexts. The literature on factors responsible for completion and non-completion in throughput studies is extensive (Jacks *et al.*, 1983; Rudd, 1985; Moses, 1994; Baker *et al.*, 1996; Seagram *et al.*, 1998; Myers, 1999; Lovitts, 2000; Wright & Cochrane, 2000; Ballantyne, 2001; Martin *et al.*, 2001; Newman, 2003; McCormack, 2005).

Since the 1970s, universities and governments have been concerned about how to ensure timely completion rates among research higher degree students and this has resulted in studies aimed at understanding the factors that make it possible to predict successful and timely completions (Manathunga, 2005). A number of these studies carried out in the UK, USA, Canada, Sweden, France, and The Netherlands focused on finding out the reasons why research students complete or do not complete their programmes and have resulted in the conclusion that the reasons are complex (OECD, 1987; Becher *et al.*, 1994).

Writing on students' perceptions of non-completion, McCormack (2005) summarized the factors that affect research students' time to completion into three main categories: *institutional factors, supervisory arrangements, and student (personal) factors*. This view does not depart from those expressed by Tinto, Yorke, Draper and Jiranek, already discussed in Figures 2.1 to 2.4. Institutional factors include the academic environment, disciplinary differences, admission criteria, and the quality of student support services. Supervisory arrangements include the quality of supervision arrangements, and student-supervisor relationship. Student factors or personal factors refer to personal or emotional problems, financial difficulties, combining work with study, lack of peer support, loss of interest, pre-entry qualification of student, and age at first registration.

Most authors share similar views on the above factors and generally agree that they do influence the ability of higher education students, especially research postgraduate students to complete their programmes within approved durations. A study by Mutala (2008) sums up the factors affecting postgraduate completion as: delays in approving the research topic, unnecessary delays in getting feedback (from supervisors), supervisors' unavailability, problems arising from balancing work/occupations and school, intimidations by supervisors, difficulties in finding relevant literature, and delays from external examiners. Yorke (2003) in his study on 'why students leave early in higher education in the UK' cited from his 1999 studies and that of Davies and Elias (2003) 'wrong choice of study', 'wrong choice of institution', 'academic difficulties', 'financial problems', 'personal problems', 'poor quality of the student experience', 'unhappiness with the social environment', 'dissatisfaction with institutional provision' as the reasons that influenced their departure. The factors determining student throughput are discussed under the three broad categories suggested by McCormack.

2.5.2 INSTITUTIONAL FACTORS

Institutional factors that can influence students' time-to-completion include the system of selection for admission into programmes, the academic environment, disciplinary differences, staff-student ratios, and student support services.

2.5.2.1 Pre-entry qualifications and selection criteria

The contemporary phenomenon of 'massification' in higher education institutions and the increasing evidence of ill-prepared students especially for postgraduate research requires that applicants be screened for specific strengths and weaknesses at the point of entry. Many

universities have sought to tighten their selection processes as a way of improving completion rates (Lovitts, 2001, in Manathunga, 2005).

Besides class of degree and inadequate research skills, some of these weaknesses include second-language problems, weak writing skills and poor analytical skills, which call for the administration of admission or entrance examinations, interviews, the presentation of a draft proposal indicating a research area or topic, a literature review, and the proposed research method for preliminary screening before they are admitted into postgraduate research programmes.

Moses (1994) indicated that admission criteria are a key variable in time to complete. Wright & Cochrane (2000) opined that students entering with a first or upper second class honours degree are more likely to finish (their PhDs) in four years than those with other (lower) entry qualifications.

Mode of programme delivery (i.e. full-time or part-time study) is another significant factor that can affect completion time. Although there is no significant difference between completion times for part-time students in full-time employment and for full-time students (Latona & Browne, 2001), and that part-time students were more likely to complete within [time] (Wright & Cochrane, 2000), evidence has been provided by Seagram et al.(1998); Martin, et al., 1999; US National Centre for Education Statistics, quoted in Latona & Browne, 2001) that shorter completion times were associated with full-time enrolments than part-time enrolments. With regard to age, Martin et al. (2001) noted that completion rates generally decline as age increases, and Robert Wamala's study on Completion Time Dynamics at Makerere University in April

2011 revealed that younger PhD candidates have better completion rates compared to their older Ugandan counterparts.

2.5.2.2 Academic environment

Any environment for learning must be one that seeks to integrate all learners. In other words, the learners must feel accepted by the environment if they are to be retained. Students at all levels of education need conducive academic environment that would make them feel integrated into their institutions as places of academic pursuit. According to Lovitts (2000), the more conducive the department's environment for integration, particularly academic integration, the lower the department's attrition rate. This means that when the academic environment of an institution is conducive and makes it possible for students to integrate, the conducive atmosphere permeates all departments of the institution where academic work takes place, thereby, enabling most students to complete their programmes on time. These ideas came out strongly in Tinto's models of institutional departure which states that, to persist, students need integration into formal (academic performance) and informal (faculty/staff interactions) academic systems and formal social systems (extra-curricula activities) and informal social systems (peer-group interactions). Such enabling environment must include adequate student support services such as libraries stocked with the relevant collections, online research databases, adequate funds, grants and fellowship to support research efforts especially at the postgraduate level, an academic staff who should be interested and committed to research, as well as the availability of adequate social amenities that would blend with academic work towards a fulfilling student experience.

Fallows (in Wisker & Brown, 2001), was of the opinion that "universities might need to improve significantly their levels of support and published guidance to supervisors" because a "damaging

situation arises when universities take the view that the possession of a personal research track record automatically enables an academic staff member to supervise the work of [postgraduate research] students.” The need to ensure that rules and regulations governing academic life are fairly implemented and the establishment of an agreed code of practice for research supervision and training (Lewis Elton, in Zuber-Skerritt & Ryan, 1994) are other key considerations for an enabling academic environment.

2.5.2.3 Disciplinary differences

The choice of discipline or field of study can also determine a student’s ability to complete his or her academic programme on time. This is because every discipline or field of study has its own characteristics that determine what is required to acquire the body of knowledge contained in it.

According to de Beer, students who find difficulty with risk courses such as Mathematics, Science and Technology should not be discriminated against when they are in difficulty, instead they should be counseled. Disciplinary differences also relate to whether the academic programme registered for is offered on full time, part time or by distance learning. For instance, Seagram et al., (1998), found out that shorter completion time is significantly associated with full-time enrolment and with enrolment in the natural sciences disciplines. It was also found out that the annual completion rate among full-time and part-time master’s students at the University of the Western Cape between 1995 and 1998 was 17% and 9% among full-time and part-time PhD students respectively. Wright & Cochrane (2000) also found out that students studying science, medicine or engineering are more likely to submit within (time) four years than those studying in the arts and humanities. Similarly, Martin et al. (2001) found out that completion

rates are higher in veterinary science and science and lower for arts, social science and legal studies and university specific factors explain a significant proportion in the variation of completion rates.

Students may also enroll on programmes through the distance learning mode involving intense interaction by electronic mail system. Horne & Naude (2007) investigated ways in which throughput for students learning computer programming could be improved and found out that throughput rate of such students at tertiary distance learning institutions was generally poor in comparison to residential universities. The mode in which an academic qualification is offered can therefore influence students' time to completion.

2.5.2.4 Staff-Student ratios

Mouton's paper on the State of doctoral training in sub-Saharan Africa reveals a general academic climate that is not conducive to the production of PhDs given the small number of doctorates being turned out in the Southern African Development Commission (SADC) region. However, there has been a steady growth in Masters and Doctoral enrolments in West and East Africa as well as the SADC region between 2000 and 2007 (SADC Study, 2009; Institute for American Universities (IAU) study, 2010; Academy of Science for South Africa (ASSAf) Study, 2009; FORD Study, 2010). The challenge has been how to manage the growth in Masters and Doctoral enrolments with a depleted knowledge infrastructure and strained academic (supervisory) capacity whilst ensuring high levels of quality.

In Tettey's (2009) study referred to earlier, he lamented the low staff-student ratio in African higher education institutions, saying academic staff growth lagged behind student enrolment

growth. He found out that staff-student ratios have gone up in all countries (Ghana: 1:39 in 2007; Nigeria: 1: 47 in 2007; and South Africa: 1:46 in 2006). Among the implications of this high student-staff ratio is the huge burden on staff at all levels, leading to the freezing of intake in some institutions such as the University of Ibadan as a coping strategy. At the postgraduate level, the real burden is felt in the limited number of supervisors, especially, given that a large proportion of academic staff (faculty) in most African Universities do not hold doctoral degrees, and that some teaching positions are being filled by staff with only a bachelor's degree (Tettey, 2009; Julius Okojie, in *This Day*, 2008; Akilagpa Sawyerr, Walsh, 2008). With the above situation in Africa, and elsewhere, faculty tend to be overburdened with too much supervision load, which may lead to less attention or commitment to postgraduate research students.

2.5.2.5 Student Support Services

The most important student support service for many students is finance. This is a major concern for many students because from the students' own perspective, if you do not have enough money to survive, then you cannot study. According to Bird and Crawley (in Haselgrove, 1994), "for mature students with families and resource commitments trying to complete a degree at an accelerated rate, financial problems are acute". By implication, financial problems could become acute for most postgraduate students who fall in the category described by Bird and Crawley, and more so, because of funding needs for their research work. It is therefore important for higher education institutions to make provision for financial aid and facilitate access to grants especially for minority students and for postgraduate research. Apart from financial support from parents, guardians and employers, other ways in which institutions can facilitate access to finance include educational loans, grants from industry for students in specific disciplines, provision of teaching assistantship opportunities for brilliant students,

payment for student services at the Library, Computer Laboratories, etc. Where these and many student financial support systems are either not available or inadequate, completion time for students with financial challenges may be prolonged and in severe circumstances, the situation can lead to high drop-outs.

Student accommodation is another important student support service which affects time-to-completion. “Until recently, student accommodation had been provided mainly by traditional universities as an integral part of their own development. The provision of accommodation was made possible in the late nineteenth century (in the developed countries) by benefactors and in the 1950s and 1960s by significant grant aid from government and was linked to the concept of the institution *in loco parentis*” (Blakey, in Haselgrove, 1994). Some good features of this arrangement as described by Blakey included quality rooms, students had no domestic responsibilities, quality tutorial and counseling services, strong sense of unity and social belongingness. The above scenario was not different in higher education institutions in developing countries. However, with the phenomenal increase in student enrolment in recent times, resulting in sophisticated profile of student population, and poor management of facilities, the residential accommodation system broke down over time. The current order is a proliferation of private student accommodation, normally located in the vicinity of institutions but very highly priced. This has brought about to parents and students additional financial cost. In the developing countries, a number of students have had to squeeze themselves in both campus and private accommodation and this situation does not present students with serene study environments.

“Students live and work within a fuzzy structure of regulations, obligations, customs, interests and rights. This fuzzy structure for regulating student life contains concepts such as contract, membership entitlements, natural justice, confidentiality, representation, and right to information” (Cawkwell and Pilkington, in Haselgrove, 1994). Another important dimension of student support service is the availability of a regulatory system in higher education institutions which deals with the concepts stated above in order to enhance student life in the institutions. According to Cawkwell and Pilkington (1994), “a university creates a range of duties upon students according to the services it provides. The student’s responsibilities include (as examples): payment of tuition and hall fees, of not ‘misbehaving in the halls, of not ‘misusing’ computers, repaying hardship loans, not plagiarizing others, of being examined, of not bringing the university into disrepute on a field course, informing her or his department when she or he is ill, etc. [Likewise], a university also has a number of obligations under the statutory instruments”. Students’ learning experience is enhanced if they are convinced that the institution is doing its best to meet its side of the obligations as they (students) also try to fulfill those expected of them. Where this is not the case, the situation results in lack of the right information and confusion among students about procedures, or what to do when they find themselves in difficulties. Such simple omissions such as not giving information about being sick at the appropriate time and to the appropriate unit within the institution and lack of information about timelines, and issues relating to student-tutor contact can seriously affect students’ academic progress and their completion.

Closely related to the issue of availability and knowledge of regulations, procedures, and meeting obligations is the issue of student representation and an appeals system within higher

education institutions as part of student support services. Representation provides the means for students' views to be heard on proposals and decisions being taken by the institution which affect their life and learning experiences. Rather than adopt a piecemeal approach to making regulations that define the relationship between an institution and its students, Farrington (in Haselgrove, 1994) suggested the adoption of a consistent and comprehensive statement of the rights and duties of both parties. It is a common thing to have student representation on committees and boards within the institution to address students' concerns rather than leave them to explode. Equally important is a credible appeals system to which students can address their grievances for hearing and intervention to assure them that they have not suddenly become objects of victimization in their new environment and to build confidence in them. According to Farrington (in Haselgrove, 1994), students have to be confident that systems of assessment and examination are fair and impartial, which includes questions of equality of opportunity, and that there are established quality control procedures in the assessments they undergo. At the research postgraduate level, where so much depends upon the judgment and commitment of the supervisor, procedures for ensuring regular contact between supervisor and student, there is regular review of these procedures, and the appointment of supervisors and examiners are fair and scrutinized at an appropriate senior level beyond heads of departments. When the confident level of students are high regarding these matters, they would see their way clear and make progress in their studies towards timely completion.

The final point worth mentioning under student support services that can affect time-to-completion relate to the availability of systems to deal with psychological aspects of students' learning experience. Common psychological challenges of postgraduate research students,

according to Phillips and Pugh (1994) include: diminishing initial enthusiasm, the feeling of isolation, work-intrinsic interest leading to over-independence (or neglect of one's supervisors), boredom, frustration, etc. An institution's student support system needs to be holistic to include academic and personal counseling services to make the desired positive impact on students' academic progress which is necessary for completion and high throughput rates.

2.5.3 SUPERVISORY ARRANGEMENTS

Supervision means "to direct or oversee the performance or operation", and a supervisor is defined as "a person who supervises; (in some British universities) a tutor supervising the work, especially research work, of a student" (Collins, 2003). A supervisor is described variously as follows: an authority on the particular topic being researched; a mentor (Zuber-Skerritt & Ryan, 1994); a guardian of standards (Cryer, 1997); a research role model (Wisker & Brown, 2001); a manager (Vilkinas, 2002); and a coach (Rochford, 2003). Issues that come to mind when talking about supervisory arrangements include institutional supervisory arrangements, responsibilities of the student and the supervisor or supervisors, student-supervisor relationship, supervisory styles or models, and staff-student ratios, all of which determine the quality of supervision that students receive.

2.5.3.1 Supervision Relationship

Supervision can work only if there is a relationship between the student and the supervisor. It is a unique relationship in which there is an unequal balance of expertise and power, as well as conflicts and tension (Stack, 2008). This relationship is considered by some supervisors as purely a working relationship or a contractual obligation, while others consider it as a personal

relationship (Grant & Graham, in Zuber-Skerritt & Ryan, 1994). According to the UK National Post-graduate Committee, “when a supervisor accepts a student, whatever the formal rules may be, both have entered into an implied moral contract which lasts until one of the three – supervisor, student or research undertaking – expires”. How this dual contractual relationship is managed under joint supervision can pose difficulties. The four key elements of postgraduate supervision are advice, quality control, support, and guidance (Mouton, 2001).

Both parties (students and supervisors) ought to perform their roles as expected of them to make the supervisory relationship work in order to ensure not only timely completion but also good quality research outcomes. A number of factors can influence the supervisory relationship either positively or negatively, depending on the supervisor’s understanding of his or her roles and duties, and the expectations of the student. The factors that lead to poor student-supervisor relationship and possibly non-completion include neglect and dereliction of duty on the part of supervisors (Rudd, 1985), and poor working relationship (on the part of the student) with adviser or supervisory committee (Jacks et al., 1983, cited by Myers, 1999).

There are specific roles that each party in the student-supervisor relationship must play to make the relationship achieve expected positive outcomes. Some of the essential responsibilities of the student which, to a large extent, should normally make the student-supervisor relationship work relate to the selection of research area or topic, ability to keep the same supervisor and the same dissertation topic throughout, developing a close relationship with the supervisor, meeting frequently with the supervisor, a fast turnaround time for material submitted to supervisors and collaborating with supervisor on papers (Seagram et al., 1998). On the part of the supervisor,

inability to plan and initiate regular supervisory meetings in student-supervisor relationships, insufficient guidance (especially at the initial stages of research) and attention from supervisor, adoption of unfamiliar approaches to study, and supervisors' inability to adjust to changes in students' perceptions of learning, among others, are some of the major weaknesses in supervision of postgraduate research students (McClure, 2005; Channell, 1990; Elsey, 1990; Aspland & O'Donoghue, 1994; Zuber-Skerrit, 1994; Spencer-Oatey, 1997).

Specific weaknesses identified by Aspland & O'Donoghue (1994) as bad supervisory practices include: "failure of supervisors to adequately guide students in the design of their study; lack of regular meetings between students and supervisors; and disorientation in students concerning their central research questions". Other concerns identified by Zuber-Skerrit (1994) in the Australian literature include: lack of understanding and communication in the student-supervisor relationship; emotional and psychological problems, students' inadequate knowledge of research methods, which is similar to what Channell (1990) refers to as a situation where students really do not know anything about researching, and where they expected the supervisors to give them 'essential reading lists' and not to 'ask students to go away and generally read up on the subject'.

2.5.3.2 Supervisory styles and models

Another aspect of supervision that requires proper management is the different approaches to supervision or supervision styles, which are primarily based on models. This is important for the success of supervisor-student relationships because supervision style depends on the type and background of student to be supervised and the discipline (e.g. the natural and social sciences).

The 1996 Harris Report on postgraduate education advocates joint supervision as a strategy for effective supervision. While joint supervision may sometimes make supervision effective, it has its own challenges that may arise from the number of people who constitute the joint supervision arrangement, the status of members of the team, knowledge and experiences which bring on board, assignment of responsibility to the student. The composition is largely determined by such factors as the research topic, the research methodology being used, and the stage which the research has reached. According to Phillips and Pugh (1994), although having more than one supervisor may be a good idea, there are negative aspects involved. To them, if the problems usually associated with joint supervision are known and carefully handled, this model of supervision can result in tremendous advantages. The problems to guard against in joint supervision as identified by Phillips and Pugh are: diffusion of responsibility knowing from the onset who will be doing what for clarity of roles expected of each supervisor), getting conflicting advice (arranging to meet all of your supervisors at the same time instead of separate meetings); playing one supervisor off against another (it is a good idea to assign a first (lead) supervisor, and a second supervisor who should lend support, but not two equals); lack of an overall academic view (none of the supervisors is willing to take an overall view of the thesis).

To avoid the afore-mentioned pitfalls, Phillips & Pugh (1994) expressed the view that joint supervision should not be considered as a first choice, but recommended the following ‘Golden Rules’ to make it work should it become inevitable: the student should “insist on a preliminary joint meeting where all supervisors discuss how the project should develop; ensure that her or his supervisors have telephone contact with each other at least once a term; try to arrange a three-way [joint] meeting once a year; send each supervisor a copy of [current write-ups]; and keep

each of the supervisors informed of what student is doing and [what each of them says about the work]'. Now that the use email facilitates communication irrespective of distance and time, joint supervisors have no excuse about communicating more often than has been suggested by Phillips & Pugh.

Pole (1998) opined that the traditional one supervisor model is common with the social sciences, unless there is a strong need for different specialties from different supervisors, whereas joint supervision is more common in the natural sciences, usually involving three but sometimes with as many as five supervisors. Mouton identifies two models of supervision. These are the traditional supervision which takes place on one-to-one basis with face-to-face meetings between students and supervisors and the blended supervision approach.

The process, according to Mouton (2001), involves students submitting written work which the supervisor marks with copious notes and comments which are then discussed between the student and the supervisor. The proceedings may be recorded or summarized by the supervisor, filed and made available to the student as a guide. Alternatively, where the discussions between the student and the supervisor are recorded on the spot rather than summaries prepared by the supervisor after the meeting the approach is referred to as blended learning. Derived from the blended learning, also known as the constructivist learning theory is the blended supervisory process which accommodates the learners' views. Where the blended learning supervision approach is adopted, the supervisor indicates the main sources of information for the student to access either through face-to-face interactions, via the internet or libraries, after which the supervisor evaluates what the student has gained from the materials.

Planning ahead is essential for the supervisor to be able to keep track of the student's progress through Socratic questioning (Merrits & Walker, 1999). In planning ahead, both the new postgraduate students and potential supervisors need to engage in discussions prior to the formalization of supervisor-student relationship. One of the several purposes of engaging both new postgraduate students and potential supervisors in discussions ahead of the formal student-supervisor relationship is to explore the expectations that each partner has of the other and of themselves and the anticipated nature of the relationship. This arrangement is modeled on the Freirean dialogical pedagogy, a framework or process which is based on the principle that when the postgraduate process is discussed and understood that each person in the relationship could learn from the other, it builds confidence in the student and transforms a dependent student into an independent one (Moriarty *et al.*, 2008). This arrangement also enables both the student and the supervisor to provide and accept constructive criticism during the supervision relationship.

In sharp contrast to the dialogical approach is the traditional master-apprentice supervision model identified by McCormack (2004) in which the “established ‘master’ inducts the new apprentice into the ‘mysteries’ of the craft, so that the academic ‘apprentice’ observes how the master does the research” (Yeatman, 1998).

2.5.3.3 Supervisors' Expectations of Students

Phillips & Pugh (1994) offer a series of strategies to research students, supervisors and institutional management for handling this all-important student-supervisor relationship by summarizing what supervisors expect of their doctoral students, which is applicable to all research postgraduate students, as follows: “supervisors expect their students to be independent;

produce written work that is not just a first draft; supervisors expect to have regular meetings with their research students; supervisors expect their research students to be honest when reporting on their progress; follow the advice that they give, be excited about their work, able to surprise them and fun to be with!”.

Their (Phillips & Pugh) specific advice to students for managing the student-supervisor relationship were the following: students must be aware that they must accept the responsibility for managing the relationship; try to fulfill the expectations that their supervisors have of them as their supervisees; educate their supervisors continually on the research topic; look for ways of reducing communication barrier between them and their supervisors; ensure that there is an agreement on issues discussed anytime they meet and on the date of next meeting; and helping their supervisors to offer better feedback by asking supplementary questions to be sure that they fully understand what the supervisor requires of them.

Mouton (2001) clustered into four categories what supervisors should expect of their students. These include: adherence at all times to the research contract between the student and supervisor in terms of following the agreed research objectives, design, methodology, and time-frame (this implies that students inform their supervisors whenever they find it necessary to move away from the agreed contract); students should initiate contact and request meetings with the supervisor; students should understand all institutional and formal requirements and rules relevant to their studies; students should maintain acceptable levels of interest and commitment to their studies throughout their studies.

2.5.3.4 Research postgraduate students' expectations of their supervisors

Research Postgraduate students' expectations of their supervisors as outlined by Phillips and Pugh (1994) include the following: "students expect to be supervised (they want to feel that they are being adequately supervised); they expect supervisors to read their work well in advance; they expect their supervisors to be available when needed; they expect their supervisors to be friendly, open and supportive; they expect their supervisors to be constructively critical; to have a good knowledge of their research area; to structure tutorials to be relatively easy to exchange ideas, to have sufficient interest in their research to put more information in the students' path; to be sufficiently involved in their success to help them get a good job at the end of it all".

Mouton (2001) further advised students on what they should realistically expect of their supervisors. Considering the supervisor as advisor, the student can expect the supervisor to: discuss with the student the relevant issues of research conduct and ethics, including consequences of misconduct (such as plagiarism), intellectual property, etc.; suggest ways in which you can make the most effective use of your time; make the necessary time available to you for close and regular contact and to structure meetings in the most effective way.

As an expert guide to the student, the supervisor should: assist the student in selecting a thesis topic, guide the student to the relevant literature (without providing a library service to the student), help the student to decide on a theoretical frame of reference for the study, advise the students on the overall goals, objectives and the scope of the project and the eventual development of a research proposal, train the student in the use of specific research methods or refer the student to courses in research methodology where necessary.

As a quality controller, the student expects the supervisor to: monitor the progress of the student's work in accordance with an agreed schedule and provide the student with constructive criticism, discuss the student's progress, or lack thereof, with the student at regular intervals, comment on the content and draft chapters of the student's thesis, indicating whether the draft manuscript is of adequate academic quality and endorse that it may be submitted for examination.

As a pastor, the student expects the supervisor to: be alert to her or his personal strengths as well as limitations and, in particular, to be able to identify situations in which the student may require additional help, be committed to her or his studies throughout the duration, and show interest at all times in what the student is doing and be supportive where necessary.

2.5.4 STUDENT (PERSONAL) FACTORS

Student (personal) related factors that can affect the completion include cultural background, emotional, psychological, financial challenges and other social responsibilities that may inhibit the research postgraduate student's progress.

2.5.4.1 Cultural Background

Culture plays an important role in students' adjustment in the supervisory relationship. Spencer-Oatey (1997) believes in the influence of cultural conceptions, described as either high power-distance society (Chinese) or low power-distance society (British) can affect the student-supervisor relationship either positively or negatively. This conception, according to Hofstede et al., (2002), underscores the point that in a high power-distance society like China, the

educational process tends to be teacher-centred with students following the intellectual path set by the teacher, whereas in a low power-distance society like Britain, the educational process tends to be more student-centred with the teacher encouraging students to question and critique the ideas being put forward. This situation results in what Elsey (1990) and Channell (1990) describe as cultural mismatch between students and tutors, which can affect the supervisory relationship either negatively or positively depending on the expectations of both parties. This is basically due to the fact that whereas a low power-distance orientation is likely to encourage the development of learner independence and initiative, a high power-distance orientation may not.

2.5.4.2 Personal factors

As indicated earlier, Phillips and Pugh (1994) identified diminishing initial enthusiasm, the feeling of isolation, work-intrinsic interest leading to over-independence (or neglect of one's supervisors), boredom, frustration, etc. as some of the common psychological factors that affect students' academic progress. Other personal factors identified by Jacks *et al.*, (1983) and cited by Myers (1999) include emotional problems similar to those of Phillips and Pugh, financial difficulties, receipt of an attractive job offer, interference of paid work, family demands, lack of peer support and loss of interest [in chosen programme or topic] can adversely affect a student's time-to-completion. This view has been supported by Ballantyne (2001) who argued that personal reasons such as finance, family commitments were the more important factors in decisions to discontinue (postgraduate) research; and by Baker *et al.*(1996) who also found out in their study that nearly half of the candidates who had experienced longer completion times cited personal problems. Abedi & Benkin (1987) stated that the most important variable in time to completion was source of financial support; and with respect to job related issues, Marsh (2002)

found out that 70 percent of the reasons given by withdrawn students related to personal or career decisions.

Key student personal factors that were identified from a colloquium held at the University of the Western Cape, South Africa, on a research on low-income students reveal that income level of parents and guardians imparts negatively or positively on students' academic preparation. Furthermore, income levels can also determine the amount and quality of academic resources available to students. This situation can lead to academically under-prepared or academically well-prepared students, which can affect throughput either negatively or positively (Engstrom & Tinto, 2008).

At the end of the research, a number of factors were identified as determinants of timely completions or delayed completions, which were summarized into three main themes: financial factors, academic factors, and socio-cultural factors. The financial factors relate to funding or lack of it for application, registration, tuition fees, accommodation, acquisition of books, food, equipment, travel, clothes and related material things needed to support the student's academic pursuit. Socio-cultural factors that affect completion include lack of role models to aspire to, inability to adjust or overcome feeling of isolation and alienation far from home in a new environment, and interference caused by bad news from home such as loss of bereavement of a close relation. Although this research was on undergraduate students, which is not the focus of this study, its findings may, to a large extent, be relevant to some postgraduate research students.

Writing on female participation in postgraduate studies in Nigerian Universities, Etejere (2006) reported that almost half (46.07%) of the 2,400 female postgraduate respondents sponsored themselves on their postgraduate programmes while a little over one-third (41.85%) were sponsored by either their parents or their husbands. She also found that those sponsored by their employers were very few (12.08%), and therefore concluded that most of the female postgraduate respondents were likely to face financial difficulties during their studentship. In her view, unemployed single ladies may find it difficult to bear the cost of postgraduate studies due to this heavy reliance on personal sources of funding postgraduate studies and heavy financial contributions by their parents and spouses.

The influence of student personal factors on academic performance and completion is therefore a global phenomenon that governments and educational policy makers need to pay attention to and devote adequate resources to deal with funding of postgraduate education. If the problem of lack of funding is seriously tackled, the rest of the personal challenges such as taking up employment while studying, psychological and emotional problems can be reduced to the barest minimum among postgraduate students.

2.6 STUDENT THROUGHPUT TRENDS IN HIGHER EDUCATION: GLOBAL REPORTS AND INSTITUTIONAL EXPERIENCES

2.6.1 INTRODUCTION

Available literature suggests that the factors that determine time-to-completion in educational institutions are twofold: those under the control of the student, and those outside the control or influence of the student. Having identified the factors that determine throughput, it is also necessary to consider global throughput trends based on institutional, regional, and country

studies to demonstrate throughput situations in African higher education institutions and what is happening in other parts of the world. In this regard, the ensuing discussion is limited to trends reported for the United States of America, Canada, the United Kingdom, Australia, European countries (Sweden and Norway), and Africa, for the purpose of this study.

Sweden and Norway were considered typical examples for postgraduate throughput trends in European higher education institutions because statistics available indicates that these two countries are ranked highly international in the area of postgraduate education and are among the leading European countries that produce research postgraduate students especially at the doctoral level. Further to this reason, a lot of research work has been undertaken by the Organization for Economic Corporation and Development (OECD), and the Norwegian National Education Statistics (Statistics Norway) in the area of postgraduate education. Swedish and Norwegian governments have also demonstrated strong interest and support in generating and collating higher education statistics which are easily accessible for this study. The choice of these two countries as European models would create a balance between throughput trends for countries without strong national reforms and those with strong national reforms as would be revealed in the discussions

But before delving into trends, it would be worth the while to understand certain concerns about the reliability of the trends reported by some studies. Although, there is a wide range of ongoing discourse about throughput figures and trends, only trends that have been statistically determined through research can be confidently reported. A lot of difficulties have been identified with reliability of the reports due to different starting points and end dates and for that matter different

durations for similar academic programmes. For instance, Eggins (2008) argued that “while some countries expect full-time postgraduate students to undertake their studies for twelve (12) months of the year, others, notably the US, allow the enrolment of their students to lapse for the summer and allow re-enrolment in the autumn”. The situation becomes more complex with doctoral enrolments. Whereas some countries expect potential candidates to enroll for and complete a master’s degree first before they proceed to enroll for the doctoral degree, others enroll for a masters degree first before they are allowed to proceed to doctorate, without completing the masters degree, depending on their academic performance and progress made in their chosen areas of research. These situations make it difficult to have a leveled playing ground for measuring time-to-completion.

Although, most researchers including Eggins, Hall, Nerad, Evans agree that the best measure of total time spent to complete a degree should be from first registration to completion, the questions that arise are how to determine the point of first registration (for instance in the case of a master’s student who upgrades to doctorate without first completing the master’s degree); and how to determine the point of completion (whether it should be the date of submitting the thesis for examination; the date of submitting the corrected version of the thesis; or when approval is given for the award of the doctorate degree). From the above discussion, it is clear that throughput considerations differ from one institution to another, from one country or region to another depending on the policies governing graduate studies in each place.

2.6.2 THROUGHPUT TRENDS IN AMERICAN HIGHER EDUCATION INSTITUTIONS

In order to situate the discussion in the proper context, let us consider what the American educational system entails. The American university system is largely a decentralized one where public universities are administered solely by the individual states. Colleges and universities in the US vary in terms of goals ranging from emphasis being placed on vocational, business, engineering, or technical curriculum while others may emphasize a liberal arts curriculum. Many combine some or all of the above. There are two-year colleges which offer associate's degree programmes, and four-year colleges which offer the bachelor's degree and are primarily undergraduate institutions. Universities in the US are research-oriented institutions which provide both undergraduate and graduate education, though, for historical reasons, some universities have retained the term "university". An ideal university in the US must offer master's degrees (though not sufficient) to be classified as a university.

According to the US Council of Graduate Schools (1991), time-to-degree and the changing research environment were of great concern to all. and Ibarra (in Lovitts, 2001) expressed concern about the adoption of policies to address the non-completion problem based on the assumption that the problem of poor completion rates among ethnic minorities in the US lies within the student and not the system. One would have thought that this assumption which appears skewed towards the student would change with time to focus on challenges posed by successive American government policies on education and other sectors. However, according to Lovitts (2001), Bekin's article on 'selective admissions myth' takes the student-centred position. In that article, Bekin made the point that in view of the adherence to strict admission procedures in identifying the most able and promising students, those who fail to complete their

studies do so as a matter of choice. This implies that if the most qualified students are selected into a programme, they should be able to complete their programmes successfully irrespective of prevailing institutional arrangements and inadequacies, including supervision.

According to the Shanghai Jiao Tong University's Academic Ranking of World Universities, more than 30 of the highest-ranked 45 institutions in the world are in the United States. The 2010 Webometrics Ranking of World Universities also places higher education in the United States much higher with 103 US Universities in the Top 200. A UNESCO report indicates that the US has the second largest number of higher education institutions in the world, with a total of 5,758, an average of more than 115 per state. The US Department of Education statistics showed 4,861 colleges and universities with 18,248,128 students in 2007. The US also has the highest number of higher education students in the world (universities only), estimated at 14,261,778, or roughly 4.75% of the total population.

In spite of the glowing and enviable statistics stated above, Carey (2004) indicated that "America's colleges and universities have a serious and deep-rooted problem: far too many students who enter our higher education system fail to get a degree". Statistics from the USA reported persistently high attrition rates and increasing time to completion (Carnegie Foundation, 2001) with the lowest attrition rates occurring in the Sciences (30%-50%) and the highest rates in the Humanities (50%-70%), and the Social Sciences occupying the middle with attrition rates of 40%-65% (Lovitts, 2000).

The 2006 American Community Survey conducted by the United States Census Bureau revealed that 19.5 per cent of the population attended college but had no degree, 7.4 per cent held an

associate's degree, 17.1 percent held a bachelor's degree, and 9.9 percent held a graduate or professional degree. The survey further indicated that despite increasing economic incentives for people to obtain college degrees, the percentage of people graduating from high school and college has been declining as of 2008.

Similar worrying statistics were provided by O'Shaughnessy (2011) who came up with a list of 25 state universities in the US with the best 4-year graduation rates, as well as another set of 25 state colleges and universities with poor graduation rates pulled from the federal education database, the IPEDS. Out of O'Shaughnessy's list of 25 state colleges and universities where students almost never graduate on time, 13 had zero percent graduation rate, one (1) had 1% graduation rate, two (2) had 2% graduation rate, seven (7) had 3% graduation rate, and only two (2) had 4% graduation rate. O'Shaughnessy lamented that the state of Texas alone had seven of its state universities on the list and concluded that Texas was "doing something wrong". Other state universities which found a place on the list were Alabama State University (Montgomery), Louisiana State University (Shreveport), University of Houston (Downtown), and Purdue University (North Central Campus, Westville). O'Shaughnessy further described these institutions as "failing universities" and attributed the cause of their failure or low graduation rates to low admission standards, inability to retain their fresh students, and combining work with school. The author of *The College Solution* however criticized the basis of this assessment saying that "since the federal government only tracks graduation rates of students who start as full-time freshmen, it is possible to have a zero percent rate if the school only attracts part-time students since they are not featured in the official graduation rates".

With regard to graduate education, the 2010 report of the Commission on the Future of Graduate Education in the United States indicates that “to fully comprehend the issues facing the future of the graduate education system in our country (U.S.), the factors that affect the inputs and outputs of the current system first must be understood. The factors that impact inputs to the system are: the potential applicant pool, numbers enrolling in graduate school and why they choose to go, and the changes in the graduate student population. The factors that impact the outputs of the system are: time to degree completion, the characteristics of degree recipients, attrition or completion rates, and employment opportunities”.

A report by the Council of Graduate Schools (CGS) indicates that since the mid-1980s, the number of women in graduate school has continued to exceed the number of men, with women currently accounting for 59 percent of graduate students; and that during the period 1998 – 2008, first-time enrollment grew at an average annual rate of 3.4% for men but 4.3% for women. The report further indicated that many more master’s degrees than doctoral degrees are awarded in the US and that in 2007, ten times the number of master’s degrees were awarded compared to doctoral degrees.

A research finding by Nevill & Chen (2007) singled out financial support as the main factor contributing to students’ ability to complete doctoral degrees and established that many graduate students in the US are able to balance work, family and educational responsibilities simultaneously. The reason most often given for dropping out of graduate degree programmes are: change in family status, followed by job or military commitments, dissatisfaction with programme or the need to work. Other factors identified to be responsible for dropping out of

graduate programme in the US include the type of enrollment – whether full-time or part-time, with the result that students who enroll on full-time are more likely to complete graduate school within ten years of receiving their bachelor’s degree. Thus, it has been established through research that providing adequate financial support is a crucial requirement to retain students in a graduate programme in the US. It is reported (the 2010 report of the Commission on the Future of Graduate Education in the United States) that President Obama’s proposal to increase the number of citizens with college degrees by 2020 has brought about increased focus to undergraduate completion rates and the need to bring on board some interventions such as training additional university faculty.

A significant recommendation of the 2010 report of the Commission on the Future of Graduate Education in the United States is that the U.S. must focus on increasing high school and undergraduate completion because it is these students who form the pool of graduate school applicants. Significant interventions at the graduate level include the PhD Completion Project at the Council for Graduate Studies, set up in response to increasing attrition and completion of doctoral programmes. Another recommendation was the need to encourage institutional self review and analysis of completion rates and benchmarking of completion data among institutions to provoke competition and sharing of ideas. Finally, it was also recommended that completion and attrition should be studied at the master’s level in view of the large number of graduate students pursuing master’s programmes and the expectation that the growth in PhDs should be fuelled by success at the master’s level in the US.

2.6.3 THROUGHPUT TRENDS IN THE U.K. AND AUSTRALIAN HIGHER EDUCATION INSTITUTIONS

According to Jinarek (2010), a person with a four-year or three-year undergraduate bachelor's degree may proceed to do a one-year research honours degree or enroll in a research Masters degree instead of an honours degree under the Australian model of higher education. Both the honours and the research Masters degrees comprise course work after which the student can enroll in a three to four year full-time PhD programme on successful completion. A Masters student may be upgraded to PhD status after successful completion of the first year based on academic performance, which is the preferred option to most Master's students.

According to McCormack (2005), concern over low submission and completion rates for PhD students in the UK has been evident in a number of government reports (Winfred, 1987), reports of funding agencies (AHRB, 2002) and in research papers (Rudd, 1985; Becher *et al.*, 1994; Booth & Satchell, 1996; Wright & Cochrane, 2000). As in many other parts of the world, performance indicators are of great importance to a wide range of stakeholders in determining completion rates and attrition rates in the UK higher education institutions. These performance indicators include: widening participation indicators, non-continuation rates, module completion rates, research output indicators, and employment of graduates. The Higher Education Statistics Agency (HESA) in the UK provides non-continuation rates for students in higher education institutions. Continuation rates may be determined in two ways: the first approach considers students who start in a particular year to look at whether they are still in higher education one year later (for full-time students) or two years (for part-time students). This statistical method provides information about where the students are in that year, whether they are continuing at the same institution on the same course or elsewhere in the institution, or transferred to another

institution, or absented from higher education completely. The second approach looks at projected outcomes over a longer period. HESA also adopts the Module Completion Rates to determine throughput, pass rate and completion rates. This statistical method is suitable for tracking part-time students' progress because progression rates of part-time students are not as straightforward to define as those of full-time students. If a part-time student completes a qualification, it implies that the student has completed a course. It is, however difficult to determine completion rates if a part-time student fails to complete a course and, perhaps, does not intend to finish it. Completion rates for part-time students can be determined by considering the number of modules passed by students (HESA Performance indicators in higher education downloaded from <http://www.hesa.ac.uk> -3/6/2011).

In both Australia and the UK, government research funding is contingent on on-time student completion (McCormack, 2004). The focus of government policy and funding in both Australia and the UK is on the products of research - the research training outcomes for students, and research output for the institution (on-time thesis completion). It is therefore not surprising that institutional priorities, plans, policies and programmes have focused their attention on factors that affect attrition rates, completion rates, time to completion and the quality of postgraduate supervision (Latona & Browne, 2001; Department of Education, Science and Training, 2002). Research is an integral part of postgraduate degree programmes in both Australia and the UK and its completion is based on time limits (McCormack (2004). This explains why policies emphasize start times, completion times, finishing the research in the prescribed time and completing stages of the research within approved enrolment timeframes. Cullen et al., (1994) cited in McCormack(2005) reports that “the average time to submit for PhD students was 52.6

months for science students to 56.8 months for arts, humanities and social science students; completion rates for science and engineering students were considerably higher than those for students from the arts, humanities and social sciences – an average of 77 percent of male students and 60 per cent of female students compared to an average of 48 per cent of male students and 41 per cent of female students”. It is interesting to know that the gender disparities here are not too high, compared to the situation in most African countries where the disparities are high in favour of men.

Martin, Maclachlan & Karmel (2001) expressed concerns about low throughput rates in the Australian Higher Education system, arguing that, postgraduate students under the age of 25 years registered higher completion rates in a cohort of postgraduate students in Australian universities between 1992 and 1999; female students were equally or even more likely to complete than males; completion rates were higher in science oriented programmes and full-time students had a higher completion rate than their part-time counterparts.

2.6.4 THROUGHPUT TRENDS IN CANADIAN HIGHER EDUCATION INSTITUTIONS

In the early 90s, several institutions in Canada expressed concern about problems with postgraduate education, especially the long time it takes students to complete their research (Holdaway, Deblois, & Winchester, 1995). This position is supported by the findings of a study on graduate students admitted to Canadian universities in 1992 that there were problems in certain institutions and with certain disciplines regarding both graduation rates and times to completion (Crago, 2002; Berkowitz, 2003). The results of the above-mentioned Canadian cohort study further revealed that only 46 percent of the master’s students in the humanities had

graduated over a ten-year period at one of the universities in the study. The same study revealed that as much as 91 percent of the master's students in the life sciences graduated over the same ten-year period at another university. The trend for the doctoral level students was similar with less students graduating in the humanities and more in the sciences over the same period, and the highest graduating rate in the life sciences. The above-mentioned findings confirm the view that graduation rates differ depending on institutional and disciplinary factors. A clear trend in the available postgraduate completion and graduation statistics is that more students are graduated in the sciences than in the liberal arts.

With regard to drop-out rates among master's and doctoral students in Canadian universities, it was reported that "at certain universities students left without a degree after 8 semesters (four years) of studies at the master's level and after 18 semesters (9 years) at the doctoral level", resulting in a situation where, in some cases, the time it took for students to leave a university were almost the same as the times to completion. The report also revealed two types of drop-outs, namely, free choice drop-outs and forced choice drop-outs, which agrees with Nerad and Miller's (1996) patterns of leavers – one group that decides to leave relatively early for good reasons (which may be described as belonging to the free choice category), and the other group who appears to run out of steam or money and leaves without a degree after as many as 8 or more years of studying (which may be described as belonging to the forced choice category).

According to a report of the Canadian Association for Graduate Studies compiled in October 2003 and titled 'The Completion of Graduate Studies in Canadian Universities', the need for an increased number of students to obtain postgraduate degrees stems from two major factors:

under its newly proposed federal innovation strategy, Canada requires as many as 50,000 highly qualified personnel by the year 2011 in order to increase its ranking in research and development from 14th in the world to 5th; and secondly, the Association for Universities and Colleges of Canada (AUCC) estimates that the country would require as many as 30,000 to 40,000 new professors in its Universities by the same year. These two predictions imply that the country would have to produce as many as 80,000 to 90,000 postgraduate qualification holders by the year 2011. With this situation, the need to pay more attention to how to enroll and graduate more masters and doctoral students becomes pressing.

Edgar (2003) was of the view that attrition of PhD students at an early stage in the programmes should not be considered worrisome because some students weigh their capabilities to continue with doctoral studies early enough. On the contrary, the all-but-dissertation (ABD) situation that occurs after students have spent years on the programme to meet all other requirements except dissertation should be problematic as this situation can be expensive to universities and affects the students future and career prospects. This ABD situation is most likely attributable to both institutional student personal factors such as inadequate supervision, wrong selection of thesis topics, funding difficulties, poor quality of dissertation (Association for Support of Graduate Students, 1993; National Research Council, 1995; Ramos, 1994; Tluczek, 1995). Although, the impact of demographic characteristics cannot be ruled out completely, Smith (2000) opined that in Canadian Universities, most of the affected ABDs were in their mid-30s or early 40s, married with children, employed, were unable to meet their supervisors regularly due to the distance from their residences to campus, could not make maximum use of campus services, had multiple

commitments and overall, were poor. The effect of all these situations was that the ADB students were highly at risk of feeling isolated and left behind (Ziolkowski, 1990).

2.6.5 THROUGHPUT TRENDS IN EUROPEAN HIGHER EDUCATION INSTITUTIONS

Higher education institutions in Sweden engage in two sets of educational activities: teaching and research. According to the Organization for Economic Corporation and Development (OECD), Swedish higher education ranks highly international in terms of funding, expansion in student enrollment, attractive disciplines and high literacy rate. Sweden devotes 1.7 percent of GDP to higher education and research, half of which goes towards research and doctoral programmes; and the number of students in higher education rose by about 50 percent over a ten-year period between 1995 and 2005. In 2010, there were 433,000 students enrolled in undergraduate and Master's programmes; Sweden awards a high number of doctorates (2.7 percent in relation to the size of a typical age cohort); Sweden awards a high proportion of qualifications in medicine and health sciences; and 30 percent of the Swedish population between 30 and 64 years has taken a minimum of 120 higher education credits, equivalent to two years of full-time study.

Although the statistics indicated above paints a somewhat enviable picture of the Swedish higher education, there had been policy reforms aimed at further improvement in higher education, notable among which were the 1969 and the 1998 reforms of postgraduate education. The two objectives of the 1998 reform of postgraduate education in Sweden were: increased throughput, and an increased graduation rate. Throughput of students in tertiary education is defined as the number of years from first time registration in a tertiary institution until graduation. The

background to the reform was that the Swedish Government considered the throughput on postgraduate programmes as too low, as a result of the failure of the 1969 reform of postgraduate education to have full impact at all faculties. An analysis of the two objectives indicates that the objectives were achieved as both throughput in postgraduate education and the graduation rate generally increased. The results specifically indicate that:

- *In terms of the total number of postgraduate students, throughput has increased since the 1998 reform. For a group of postgraduate students who began studies after the reform in 2000, 28 percent have been awarded a PhD within a period of 5 years. The degree quota for beginners in 1990, measured over the same 5 year period of time, was only 16 percent. Between these two cohorts of beginners, the improvement has been gradual.*
- *Throughput has improved in all subject areas except medicine, odontology and pharmacy. The comparison applies to postgraduate students who began just before and just after the reform. But in medical subjects as well, throughput has increased if the comparison is made between beginners after the reform and beginners from the earliest years of the 1990s.*
- *The scope of improvement in throughput has varied in different subject areas. Before the reform, throughput was highest in medicine. Medical students are still in the lead, but are now sharing it with postgraduate students in the natural sciences and mathematics, as well as in agricultural subjects.*
- *Despite an increased throughput in the humanities and social sciences, subjects in these areas have the lowest throughput of all. That was also the situation before the reform.*
- *Throughput has improved about equally for women and men.*
- *The number of postgraduate degrees awarded increased in the years immediately following the reform, from 1,801 PhDs in 1997 to 2,701 in 2003 (equivalent to a 50 percent increase). The increase leveled off after 2003, but so far (2004-2006) it remains at that year's high level.*
- *The share of professionally active people (25-64 years old) with a postgraduate qualification has increased after the reform, from 0.6*

percent in 1990 to 1 percent in 2005. And among researching and teaching staff in higher education, the share who have either a licentiate or a doctoral degree has grown slightly after the reform.

- *The Government's graduation rate objectives for postgraduate education have been increased over several three-year periods. So far, institutions have achieved the objectives at the total level, and the number of graduations has even exceeded objectives. For the 2009-2012 period, however, the Government has lowered the objectives somewhat compared with the preceding period (2005-2008). This is probably an adjustment to what is deemed a possible graduation rate at universities and university colleges. The lower numbers of beginners in recent years (2004-2006) also suggests lower graduation rates in future.*
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The Norwegian statistics on education went through a structural reform in the early 1970s and this resulted in a change from obtaining relevant statistics through a census to a National Education Database (NUDB) which is overseen by Statistics Norway. This change enables the production of different kinds of individual-based statistics, and reports each educational activity for each student based on student data collected from the administrative system of the various tertiary institutions. The purpose of this statistic is to document the throughput of students in tertiary education, and the first of its kind was published in 2004. Like the Swedish system, analyses of the throughput of students are based on cohort of new students in a given year and a description of their progress through the educational system. Alternatively, a top-down approach may be adopted by taking a cohort of graduates from a given year and tracing their path of progress backwards through the educational system.

According to Statistics Norway, throughput statistics may sometimes suffer from measurement and processing errors. Errors in the data collected can occur during registration at the tertiary institutions, or during the control and revision processes, and it is difficult to know the extent of

the errors made in the registers. For instance, a person may be wrongly registered as being a student which may lead to overestimation of student numbers, a common feature in universities where registration occurs with payment of registration fees rather than enrolment in subjects. In this case, it will be difficult to avoid over-registration of students.

The second error has to do with under-reporting of completed education. In the Norwegian higher education system, this problem is mainly with Cand. Mag. Degrees (Bachelor of Social Science) as they don't have a set curriculum, but are often registered as completed once the certificate is awarded rather than when the degree is actually completed. Due to the time difference, a student may be reported as having completed his or her degree in the year after they actually finished. Such students will therefore be reported in the throughput statistics as taking on year longer than they actually did to complete their degrees.

Changes to another programme during the study period can also become an issue. These changes, in the Norwegian system, are not taken into account; therefore, very few students who switch degrees originally registered for will be able to finish within the expected approved study period for the initial registration. Similarly, deferments and part-time studying are not taken into account in the throughput statistics of students.

An important similarity between the Swedish throughput statistics and that of Norway that is worthy of noting is that the throughput statistics for both systems resulted from reforms. In the Norwegian example, statistics on the throughput of students was published for the first time in 2004, following the implementation of a reform in 2003. The main effect of the 2003 reform

was to introduce Bachelor and Masters degrees, thereby reducing the duration of undergraduate degrees in Norway from four to three years, and postgraduate degrees from six to five years.

This situation poses yet another measurement problem because it will be difficult to compare throughput statistics during the period of transition to the new degree structure regime. To reduce the above-mentioned measurement and processing errors, the Norwegian Institute for Studies in Research and Higher Education (NIFU STEP) adjusts a number of statistics from Statistics Norway on throughput in tertiary education.

Four interesting points revealed by Education Statistics on throughput of students in tertiary education for the 2008/2009 study year were the following:

- i. The proportion of students who completed a degree within 10 years (between 1988 and 1998) was stable.

There were, however, some differences in completing higher education depending on parents' level of education. The report indicated specifically that for students who enrolled in 1998, and where one of the parents had higher education of more than four years, 73 percent had completed higher education after 10 years, and 42 percent completed a degree from programmes longer than 4 years. In comparison, where the students' parents had lower secondary education, 58 percent of the students had completed higher education, and 60 per cent of these completed a tertiary degree longer than four years. The corresponding figures for the 1988 cohort are approximately stable.

- ii. Throughput in tertiary education was stable.

Again, the report indicated that "among the 32,300 students who began their tertiary education in 1988, 66 percent had completed within 10 years. The corresponding share for students who

entered tertiary education 10 years later was 65 per cent. The proportion of women who completed a degree within 10 years in both the 1988 and 1998 cohort is stable at 70 per cent. Around 10 per cent more women than men who enrolled for the first time in 1998 completed a tertiary degree within 10 years.”

iii. Steady increase in number of women completing a tertiary degree.

The report indicated that “in the 1998 cohort, 23 per cent of the male students and 16 per cent of the female students had completed a tertiary degree from programmes longer than 4 years within 10 years. In comparison with the female students who entered 10 years earlier, the proportion that attained a graduate level rose by one percentage point in this period.”

iv. Most students complete in longer than normal study duration.

This finding was supported by the fact that “a selection of 10,800 completed undergraduate courses in the 2008/2009 study year showed that 6,800 were completed in longer than normal study duration.”

Statistics Norway’s findings on throughput of postgraduate courses by number of graduates in 2008/2009, and number of years since the student was first registered in tertiary education, indicated the following programmes as having the highest percentage of students graduating 11 years and over instead of 5 years: Masters degree in Transport, Communication, Safety Security (73%); Masters degree in Health, Welfare and Sport (57%); Masters degree in Teaching and pedagogy (49%); Master of Business Administration (29%); and Master of Humanities and Arts (28%). A similar trend was shown for gender distribution of throughput for male and female students who graduated in the same programmes. The trend for the four 6-year Masters degree

programmes covered by the survey was as follows: Psychology (26%), Theology (24%), Medicine (16%), and Veterinary Science (8%). With regard to PhD throughput rates, Fisher and Lohner (2001) reported that only 12 per cent of PhD students in The Netherlands complete within four years. The statistics did not reveal the reasons underlying low throughput and delayed completion for students who registered for these programmes, and whether the prolonged completion could be attributed to causes inherent in the programmes or the students is a matter for further research.

2.6.6 THROUGHPUT TRENDS IN AFRICAN HIGHER EDUCATION INSTITUTIONS

As is the case in many other parts of the world, the duration of a given postgraduate qualification varies from institution to institution in Africa. A full time master's degree may take between 9 to 12 months in the specific cases of UK and South Africa, or up to two years or more in Africa to complete. Depending on the institution, part time master's degrees may take four or even more years, and for a PhD, the duration ranges between two to six years with the average duration being four years (Mouton, 2007). Whereas master's degree programmes are normally taught qualifications, doctorate degrees are normally purely by research followed by an oral defence or a viva voce. Master of Philosophy degree programmes have both taught and research components, and there are taught doctorate degree programmes in some professionally oriented disciplines.

According to a report of the World Bank/UNESCO Task Force on Higher Education and Society on the state of higher education in developing countries throughout the world, the ever increasing trend in the demand for higher education has been fuelled by huge investments in primary and

secondary education over the years, Africa included. Graduation rates and drop-out rates for African universities vary widely between countries due to the absence of a regional agency that is specifically responsible for compiling systematic data on university drop-out rates across Africa. However, in the developed countries, drop-out rates are systematic because studies are carried out by designated bodies which provide reliable statistics on higher education. For instance, a 2006 study by William Bowen, president of the Andrew W. Mellon Foundation, reported that the United States had 46 per cent drop-out rate in that year; and BBC News Study in 1999 reported that Germany had 28 percent and France 45 percent.

According to student surveys and individual country studies, drop-out rates for mathematics were estimated at 85 percent in Madagascar, 95 per cent in the Central African Republic, 75 per cent in Niger, and 60 per cent in Uganda. The surveys further revealed that these figures may not be fully representative and some may result from students switching to less challenging fields.

The three largest contributors to tertiary student population in Sub-Sahara Africa are Nigeria, followed by South Africa and Ethiopia with one million, 500,000 and 150,000 tertiary students respectively. Based on student surveys, the drop-out rate for Nigeria was as low as 5 per cent in 2003; and as reported by a former South African Education Minister Naledi Pandor in 2006, the drop-out rate was 50 percent for South Africa. There is therefore lack of systematic data in or for all sub-Saharan African universities, a situation which makes it difficult to determine an exact tertiary drop-out rate for Africa as a whole.

Mutala (2009) discusses the challenges of postgraduate research from a global context with specific reference to universities in Africa. According to him, the challenges are many and include low throughput; decreasing government subsidies; inadequate research capacity; poor preparation of students for postgraduate programmes; inconsistent postgraduate research guidelines; stringent, statutory research permit requirements; bureaucracy in the admission process; slow thesis examination process; poor supervision, balancing occupations (jobs) and academic work; inadequate facilities; and heavy teaching loads. He reduced the challenges to three main ones, namely research capacity, research productivity and research utility.

Mutala (2009) also pointed out that the South African government and the public were dissatisfied with the quality of graduates from universities in terms of the nature and appropriateness of their qualifications, training, and competitiveness in some fields. A former South African Minister of Education, Naledi Pandor, was equally concerned that the drop-out and throughput rates of most universities in South Africa were bad (SA Ministry of Education, 2006). The statement by the Southern African Regional Universities Association (2008) that there was a 60 per cent university drop-out rate in South Africa lends credence to the above positions.

According to the South African Council for Higher Education and the Higher Education Quality Committee, the South African higher education system includes 23 public higher education institutions, consisting of 11 universities, 6 comprehensive universities, and 6 universities of technology. As of February 2011, there were also 87 registered and 27 provisionally registered private higher education institutions. In 2009, the public higher education institutions employed 43,446 academic staff and 117,797 staff in total. The total number of students enrolled in public

higher institutions was 837,779 made up of 684,419 undergraduate students and 128,747 postgraduate students. 144,852 qualifications were awarded at all levels in 2009, comprising 33,788 qualifications in business and commerce, 39,984 in science and technology, and 71,036 in the human and social sciences. At the postgraduate level, the public higher education institutions produced 8,112 master's degrees, and 1,380 doctoral degrees.

Access and throughput of students have been important considerations in South Africa, although it is believed that too much attention has been given to access than to throughput. The report on a project dubbed '*Higher education monitor: access and throughput in South African Higher Education*' which examined issues of access, retention and throughput at three very different universities in the South African Higher education landscape, and was completed in March 2010, provides some comparative information on student enrolments, resources and outputs of each institution to help position the three universities in relation to each other. A profile of postgraduate higher education and the academic research community in South Africa, prepared in December 2003 by the Centre for the Study of Higher Education (formerly the Education Policy Unit) of the University of the Western Cape, brought out some key findings with regard to enrolments, graduations and graduation rates in South Africa. The report indicated upward trends in postgraduate enrolments and graduation rates. The increase was more at the masters level than at the doctoral level. For instance, it was found out that between 1995 and 2001, significant increases occurred in university masters' enrolments (to 35 percent of the total) and to a lesser extent at the honours level (to 29 per cent). Doctoral enrolments increased modestly but only constituted 7 per cent.

According to the report of the Centre for the Study of Higher Education, “the Higher Education system produced about 25,000 graduates in 2001 mostly from the universities and most at the level of honours and below (73 per cent in 2001). Only about 800 doctorates were produced, while the number of masters and honours graduates increased considerably between 1995 and 2001, with over 80 per cent of doctorates and masters, and about 70 per cent of honours from the HAUs”. The report was emphatic that significant numbers of postgraduates were taking long periods to complete their degrees.

Over the last decade, student enrolment in African universities has grown by significant amounts due to an increasing demand for higher education and training. Participation rates are rising and there was a dramatic hike in student numbers in Sub-Saharan Africa in the six years to 2005: from 2.1 to 3.5 million. Mauritius has the highest gross enrolment ratio in the region, 17%, followed by South Africa, while Nigeria's tertiary student numbers nearly doubled to 1.3 million during the six-year period (MacGregor, 2008).

According to a comparative study on enrolment and academic staff growth in African Universities based on a sample of 15 universities and seven member countries of the Partnership for Higher Education in Africa (PHEA) conducted by Tettey (2009), enrolments at Stellenbosch University, for example, rose by 15% between 2000 and 2007; Makerere University recorded 22% rise during the same period, while student numbers at the University of Dar-es-Salaam (UDSM) grew by 73% between 2003 and 2007; by 54% at the University of Education Winneba, Ghana, between 2004 and 2008; and by 167% at the University of Ghana between 2000 and 2008. Only two institutions registered negative student growth: the University of Ibadan

experienced a decline of 21% in student enrolments between 2001 and 2006, due to a conscious decision to emphasize graduate over undergraduate training, and at Nelson Mandela Metropolitan University (NMMU) they declined by 2% between 2005 and 2006. Tetey (*op. cit.*) further reports similar trends indicating that Kenya's student enrolment expanded by 55% between 2001 and 2005, Uganda recorded 54% between 2000 and 2006, Mozambique 64% between 2000 and 2004, and Tanzania recorded the most alarming growth of 173% between 2002 and 2007.

Tetey's (*op. cit.*) study revealed that whereas some institutions were experiencing increases in postgraduate enrolments (University of Ibadan, Nigeria, from 18% in 2001 to 35% in 2006), others were registering declining rates (e.g. University of Ghana, from 14% in 2000 to 7% in 2008; University of Kwazulu-Natal, from 32% in 2000 to 26% in 2007; University of Makerere, Uganda, from 35% in 2002 to 27% in 2007). He concluded from the above that although enrolments in African Universities have increased over the years, the percentage of postgraduate students in general remains very small.

Masters and Doctoral graduates in the University of Ghana in absolute figures in 2006 were 29 PhDs made up of 11 males and 18 females, and 612 Masters students made up of 570 males and 32 females. Figures in the same year for the University of Ibadan in Nigeria were 212 PhDs made up of 182 males and 30 females, and 2,715 Masters students. For Nelson Mandela Metropolitan University in the same year, the enrolment figures were 25 male PhD students, and 291 Masters students. At Stellenbosch University, there were 102 male PhD students and 820

Masters students in 2006; and at the University of KwaZulu-Natal, there were 95 male PhD students and 695 Masters students in 2005.

With regard to postgraduate dropout and completion rates, Tetey (*op. cit.*) was of the view that given the declining enrolment figures, it is not surprising that relatively small numbers of postgraduate students are turned out in African Universities. Average postgraduate drop-out rates reported in the Faculty of Health Sciences at the University of KwaZulu-Natal between 2000 and 2006 were 56% for thesis-based Masters students and 35% for doctoral students. Average completion rates reported for the same University over the same period were 11% for thesis-based Masters students and 10% for doctoral students. Tetey (*op. cit.*) lamented that given this trend of high drop-out rates and low completion rates, there was a huge disconnect between intake and output which required immediate action towards ensuring a vibrant system of postgraduate training and viable strategies to support students for careers in academia.

Sayed, Kruss & Badat (1998) indicated that only ten percent (10%) of master's students completed their dissertations in three years at the University of the Western Cape, South Africa, in 1998. Another study by the University of Stellenbosch Centre for Interdisciplinary Studies (CENIS) on success rates and completion rates among postgraduate students revealed that the annual completion rates varied between 11 and 14 percent for doctoral students and between 21 and 24 percent for master's students. The same CENIS study revealed that the number of students who did not complete their studies increased from 1,968 in 1991 to 2,859 in 1999 recording an increase of 45 percent over a period of ten years (Mouton & Hunter, 2001, in Le Grange & Newmark, 2003).

2.6.7 CONCLUSION

Can it be concluded that the global throughput trend is negative or positive? The answer to this question is that it is characterized by both negative and positive trends, with more efforts being made towards recording positive trends.

On one hand, higher education enrolment and throughput trends in African Universities can be summarized in the following key points: the trends show a mixed picture; proportions of postgraduates to enrolments are generally low; doctoral enrolments as proportion of postgraduate enrolments are even lower; postgraduate enrolments are dominated by males; postgraduate drop-out rates are high; and completions rates are generally low. In spite of this worrying trend, Tetey (*op. cit.*) reported improvements in time-to-degree which resulted in increases in the number of master's and doctoral candidates in South Africa and Egypt. PHEA also referred to Egypt as Africa's largest factory for PhDs with an overwhelming enrolment of 35,000 students in 2010. What, then, are the consequences of the generally high drop-out and low completion rates at postgraduate level in Africa? Tetey (*op. cit.*) and Kigotho (2011) share the view that the consequences included low academic qualifications among University lecturers and researchers leading to a depletion of the next generation of academics in Africa.

On the other hand, throughput rates at the postgraduate level in the developed world show a different picture from the African situation. Kigotho (2011) reports that according to OECD statistics, doctorates handed out in member states between 1998 and 2006 grew by 40 per cent, while in the United States, the number of PhDs rose by 22 per cent during the same period. The report further indicated that significant production of doctorates was also recorded in Mexico,

Slovakia, Poland, China, Japan and India, among other countries globally. Kigotho (*op. cit.*) says that in those countries, production of PhDs has outstripped demand for University academics, citing the case of the United States, where figures of students graduating with doctorate degrees had almost reached 50,000 annually.

Eggs (2008) cited two interesting examples of policy initiatives that resulted in an improvement in time-to-completion for postgraduate students. The first was the Brazilian government initiative of improved time-to-degree for master's degree students which resulted in shorter completion durations of two years for Master's degrees and four years for doctoral degrees which used to spend 34 months (almost three years) and 53 months (more than four years) respectively. Other success stories reported in Eggs' keynote paper included countries such as Estonia, China, Korea, Singapore, Thailand, Mexico, and Finland where efforts were made to produce more doctorates as a matter of public policy. In Australia, the adoption of the outcomes model of funding research education led to marked increases in doctoral enrolment, quadrupling from 9,298 in 1990 to 37,685 in 2004 (about four times the 1990 enrolment over a fifteen year period). Remarkable improvements in throughput have also been reported in the US and in Swedish Universities. The situation is such that while the developed countries are grappling with what to do with the PhDs being produced each year, Sub-Saharan Africa is concerned about massive deficits in doctorates, says Kigotho.

Throughout the international perspectives of throughput trends discussed above, institutional and student personal factors were noted as causes of low or high throughput situations. While most of the findings pointed to institutional factors in the American, UK and Australia, European and

African experiences, only few situations of personal factors were reported especially in the American experience. These include issues of funding, personal finance, age, and employment at postgraduate level. However, McCormack's (2005) table of factors related to time to completion or non-completion of higher degree based on research students' perceptions of non-completion in Australia and the UK presents some examples of student personal factors which were reported internationally. As indicated earlier in Section 2.5.4.2, some of these factors include lack of financial support (Abedi & Benkin, 1987), personal or emotional problem, keeping an attractive job offer, interference of paid work, family demands, loss of interest in doctoral studies (Jacks *et al.*, 1983 cited in Myers, 1999), and entry qualification (Wright & Cochrane, 2000). According to Marsh (2002) seventy percent of the reasons given by withdrawn students related to personal or career decisions; and Baker *et al.*, (1990) found that nearly half of the candidates who had experienced longer completion times cited personal problems.

2.7 POSTGRADUATE CANDIDATURE DURATIONS AS A DETERMINANT OF THROUGHPUT

2.7.1 INTRODUCTION

From the earlier discussions, completion according to the Higher Education Funding Council for England (HEFCE, 2005) means the period from first registration to the date when approval is given for the award of the degree. It is also clear from the discussion of the factors that determine throughput that the academic and social experiences a student goes through during his or her candidature are important determinants of the time spent in completing programmes of study. Additionally, the policies and procedures put in place by an institution to regulate postgraduate study in general can also determine the completion time for students.

2.7.2 STAGES IN POSTGRADUATE CANDIDATURE DURATIONS

The stages involved in research postgraduate studies are normally pre-determined by institutional academic programme regulations that govern postgraduate studies as well as the approved institutional procedures. While some provisions in the regulations and procedures are similar in many institutions, there are also some distinct differences, resulting in slight variations in the progression of studies, the student's study duration and the overall academic experience.

However, literature on postgraduate study durations in many Universities, with particular reference to the University of Oxford, University of Manchester, Concordia University, National University of Singapore, University of Monash, University of New South Wales, University of Cape Town and the University of South Africa, revealed the following eight common stages in research postgraduate studies: (1) registration and orientation; (2) preparing for research; (3) conducting the research and supervision; (4) thesis writing and submission for examination; (5) extension of candidature; (6) examination of thesis; (7) oral examination; (8) submission of final copy, approval of results, and award of the degree.

2.7.2.1 Stage One: Registration and Orientation

The academic experience of a research postgraduate student at the University of Manchester (research master's degrees and doctoral degrees) begins with accepting an offer of admission. The student then goes through an enrolment process after arriving at the University, involving the following: finding or settling into residence, orientation within campus and city, socializing, budgeting, introduction to programme or level of study, meeting peers and more senior students, academic and administrative staff, introduction to IT facilities, and on-line registration. These

events form part of a systematic orientation programme referred to as ‘the University of Manchester’s Framework on Student Induction and Transitional Support’. According to this framework, “induction is taken to include all activities aimed at introducing the student to the University and its communities, and including all activities which are intended to support students in making key transitions throughout their programme of study and/or life at the University of Manchester”. A key objective of induction and transitional support for students, according to this framework, is “to enable students to engage with and develop understanding of the factors which contribute to academic success, including developing an awareness of their own strengths and weaknesses in terms of skills and knowledge”. This objective is important for throughput considerations especially for new postgraduate entrants, most of who have not engaged in academic research as part of their previous courses of study. Other important aspects of the induction and transition framework which the new entrant must go through within the first few weeks of arrival include: taking new entrants through skills audit, understanding how to handle problems affecting studies, understanding their rights and responsibilities or expectations and the demands of studying at University of Manchester.

In most higher education institutions, induction and orientation activities take place concurrently with actual registration for courses; while in some others such as Manchester, orientation precedes actual registration. Each of these two options may have its advantages and disadvantages. For instance, in the case of concurrent registration for courses and induction and orientation as practiced in the University of Ghana, time is saved for the rest of the semester’s activities, especially the number of weeks allocated for teaching, to take place. However, some new entrants may not understand all the necessary rules and procedures before they start

academic registration and are likely to make errors at that stage. In the case of registration succeeding induction and orientation, the error level for new entrants during academic registration may reduce because they would have a better understanding of the issues involved; however, if not properly planned, too much time may be spent at the beginning of the semester or academic year on just orientation and registration.

As part of the induction, orientation and registration process, deadlines are set for registration of courses as well as for adding on and dropping courses as the student becomes more informed through orientation and in accordance with the academic regulations. At the Norwegian University of Life Sciences, lessons can be cancelled if it is established that fewer students register for a course than stated in the course document approved for the department. Thus, orientation and registration period is very crucial for determining class sizes and whether it is economically viable to run a programme at a particular time.

In most Norwegian Universities, students are required to prepare individual educational plans in the course of their first semester. The plans can be revised and must be confirmed by the student each semester within deadlines set by the relevant committee of the university. The individual educational plan contains a general part which relates to the university's responsibilities and obligations towards the student and the student's responsibilities and obligations towards the university and colleague students, as well as the consequences of any violation of these provisions. The second part of the plan is the individual part which states the study programme to which the student has been admitted, the content of the entire programme, an indication of how the student's study programme will progress. This is an important guide or road map for the

postgraduate student, his supervisors and the department, although changes may be made to the plan in the course of the studies.

2.7.2.2 Stage Two: Preparing for the postgraduate research

Preparing for postgraduate research is an important stage in postgraduate studies because it is at this stage that the postgraduate student's capacity for the intended research is built for conducting a successful research. It normally involves taking some courses and attending workshops, training sessions and personally presenting seminars to enrich the postgraduate student with the necessary theories, principles, skills and tools for conducting research. These include identifying a research topic, writing an acceptable proposal for the intended research, and information on available research funding opportunities.

According to Eiggins (2008), efforts to ensure quality in doctoral studies at Estonian Universities starts at the admission or enrolment stage when the doctoral candidate is obliged to provide an individual study plan outlining the topic, the period of study, competencies and transferable skills to be developed in preparation for the study and the student-supervisor relationship and its responsibilities. This means that preparing for research involves planning, and must begin before or at the time of admission and registration on the programme when the student must have thought of a plan of studying at the chosen institution before applying to enroll. In more practical terms, the potential student visits institutional web sites to read about the programme, fee requirements, regulations and academic arrangements relating to courses, teaching, supervision, examinations as well as availability of facilities. Additionally, most postgraduate application forms require an indication of a research topic or area and a research proposal which are important aspects of a research masters or doctoral study plan.

Apart from the doctoral study plan, course work preparation is becoming a new phenomenon in doctoral studies as in the case of master's studies. This model of doctorate degree is used as a test of students' potential to complete a doctoral programme, thus differentiating a potential doctoral student from a terminal master's student at the early stages of the doctoral studies. In the UK, this model is referred to as the "New Route PhD" which was developed by a consortium of some 34 universities, essentially for the international market. To enable students who are adjudged as not having the potential for completing a doctoral degree to earn a master's qualification, the taught components of the "New Route PhD" are offered in the framework of related masters programmes, thus offering students the opportunity to either write a masters level thesis instead of a doctoral thesis after completing the required courses.

At Concordia University and many other universities, a research master's candidate must decide on a thesis topic which can be written in about 6 to 12 months after taking the required course work. Research master's degree students must complete a specified number of credits of course work including some core or compulsory and elective courses to become eligible to continue with the master's thesis or dissertation. Although doctoral degrees normally involve research work only, some doctoral degrees, as in the case of North American Universities, require course work and qualifying examinations including oral defense of the student's chosen discipline and research proposal.

Prior to these arrangements, most universities have a series of programmes to assist postgraduate students. For instance, the University of Manchester offers a system of preparing master's and

doctoral students for research through the Manchester ‘Postgraduate Research Skills Training Strategy’. This strategy is supported by the ‘Postgraduate Research Skills Training Policy’ and aims at identifying a coherent and consistent approach through which the University of Manchester is able to achieve five strategic goals, one of which is, “to improve the capacity of post graduate research students to understand what and how they are learning and to review, plan and take responsibility for their own learning, through personal development planning”. This is an important need of all postgraduate research students.

Another example of a well-planned programme for assisting research postgraduate students is that of the Research Division of the University of New South Wales (UNSW) which runs a series of training and development programmes for postgraduate students and faculty/researchers. Some of the training and development programmes include: Early Career Research at UNSW for early career researchers; Future Research Leaders Programme for faculty and researchers; Women in Research programme for mid-career women in research; Strategic Grant Information Sessions for grant programme applicants; Animal Ethics Training and Resources programme for research staff and candidates; Grant Compliance Information Sessions for grant applicants; Postgraduate Research Student Induction for all new research candidates; Playing by the research rules seminar series for research candidates, their supervisors and early career researchers; Annual Progress Review Seminars for research candidates; Thesis Submission Seminars for research candidates; Thesis Competition for research candidates; Supervisor Development Series for supervisors of higher degree research students including supervisors from external universities; Research Candidates Forum for research candidates; and other targeted research training offered by units outside the Research Division.

2.7.2.3 Stage Three: Conducting the Research and Supervision

Although conducting the research is seen as shared responsibility because the student researcher needs the assistance and guidance of the supervisors and the department, the main responsibility lies with the student. The research postgraduate student must bear in mind that the thesis that will result from the research work will bear his or her name as the author, and therefore, the student must feel committed to it and be prepared to defend it.

According to the National University of Singapore arrangements, once a candidate has decided on the thesis topic, he or she enters into a supervisory relationship with a supervisor right from the beginning of his or her studies. In the University of Oxford and many other Universities, supervisors are assigned to each candidate on the basis of the candidate's area or field of research, and the obligations or responsibilities of each party are clearly discussed or made known to each other, making it a contractual agreement (*appendix 1*). The importance of the supervisor-student relationship in determining the quality of a student's thesis is clearly outlined in the procedure manual on graduate programmes of the Memorial University of Newfoundland as follows: "The thesis supervisor strongly influences a student's academic and professional development. Through the choice of a supervisor, a student also chooses a work environment and often financial support as well. The value and success of the thesis depend to a very large degree on the quality of the relationship that develops between the supervisor and student".

Supervisors guide students to shape their topics and provide comments on material submitted by their students. Given the importance of this role in research postgraduate studies, the University of Oxford developed a set of guidelines which both the student and the supervisor must respond to and discuss the basic issues involved in the supervisory relationship to ensure effective

supervision. These rubrics are contained in the ‘Oxford Guidelines for Negotiating Supervision’, which is separate from the University’s regulations for research degrees. The guidelines covers issues such as an understanding of supervision, thesis, meetings between student and supervisor, nature of advice and support expected by the parties involved, managing the supervision process, resolving problems in the relationship, the examination of the thesis, departmental services and facilities to be put at the student researcher’s disposal, department’s expectations of students, and other important departmental issues. Depending on the reasons given, students may change supervisors or members of examining committees by submitting a written request to that effect for approval as is the case at the National University of Singapore and other universities.

At the University of Toronto, a student’s supervisory committee, whether master’s or doctorate, acting on behalf of OISE, gives formal approval of the thesis topic and proposal by signing a “Thesis Supervision Approval Form” (appendix 2); advises, guides and supervises the thesis work; receives progress reports and requests for necessary modifications. It arranges for seminar presentations where required, evaluates the final draft of the thesis, and recommends the readiness of a doctoral thesis for the final oral examination. The supervisory committee also assists the student to decide which research skills (writing or language skills, use of computers and statistical tools) will be appropriate for the research.

Oxford has since the 2008/2009 academic year launched a new online graduate supervision system which enables graduate supervision reports to be created, written and processed online as it captures information reported by both the student and supervisors. By availing only details relevant to each student to his or her supervisor, supervisors are able to view their students’ self-

assessment report, complete a report of supervision on the student in the course of the semester, and make the reports available to the student and other officers such as the dean, academic advisors and administrators. One advantage of the online graduate supervision system is that it provides an interactive supervision process between the student and supervisors which results in the production of term reports of supervision necessary for monitoring progress. The Oxford online graduate supervision system is similar to the Estonian system where a progress report referred to as an “Attestation Review” is required of each doctoral student, detailing the year’s research, courses followed and other tasks undertaken. The University of New South Wales (UNSW) Graduate School procedure manual for confirmation and review of progress of master’s and doctoral students is a good model for monitoring progress.

2.7.2.4 Stage Four: Thesis Writing and Submission

The issues considered under thesis writing and submission include thesis structure and style, thesis submission deadlines and giving intention to submit, documents to be submitted with the thesis, submitting thesis electronically, approval of thesis for submission, and conditions for early submission of thesis.

(a) Structure and style of thesis

Generally speaking, a thesis reports how an academic research work was carried out by a master’s or doctoral student and the findings of the research. The structure and style in which the thesis is written must conform to approved guidelines of the institution or department where the student is registered. Such institution specific guidelines are called house styles which students must follow when preparing a thesis. Important issues with regard to the form and style include how the thesis must be written from cover page to the last page with particular reference

to cover label, spine label, title page, preliminary pages, page numbering, chapter presentations, reference citations, footnote and endnote citations, thesis size requirements (number of pages), table and figure arrangements, and many other important features of a good academic thesis.

Whereas there are varied house styles, all of which cannot be presented in this discussion, it is important to indicate that a thesis that is completed and ready for submission must first of all be approved by the candidate's supervisors and head of department as having conformed to the approved structure and style before it can be accepted for examination. According to the Monash University Research Graduate School regulations, for a thesis to be accepted for examination, the thesis must be properly presented and deemed worthy of examination, the research and writing embodied in the thesis must be that of the candidate (except where reference to other authors' work used in the thesis is made in the text), and the candidate has not presented in, or in support of the thesis, work that the candidate or other candidates had already presented for an award at Monash University or elsewhere. It is also important that any assistance provided during the research phase, or any editorial assistance in the preparation of the thesis be appropriately described and acknowledged, and the thesis must demonstrate the candidate's capacity to carry out independent research.

With regard to the structure and content of a doctoral thesis, the University of Cape Town Doctoral Degrees Board states that "the cardinal requirement for a PhD thesis is that it be an original, coherent and consistent body of work which reflects the candidate's own efforts and not that of other persons (excepting in the case of items in relation to which the candidate's indebtedness is clearly acknowledged, and where these do not form a major part of the thesis and are included only for good contextual reasons)".

(b) Submission deadlines and giving intention to submit

The thesis must be submitted at approved submission dates of the School of Graduate Studies or the unit within the institution that is responsible for postgraduate matters. Setting approved submission dates and giving intention to submit allows for proper planning and monitoring of the students' completion dates and the thesis examination process. A doctoral candidate of the University of Cape Town is required to declare his or her intention to submit a thesis by completing a "Notice of Intention to Submit a PhD Thesis" Form (appendix 3) or by writing to the Doctoral Degrees Board office by the second week in January for June graduation ceremony, or by the third week of June for December graduation. Actual submission must be done by the second week in February for June graduation and by second week in August for December graduation. Submission dates for University of South Africa doctoral candidates are on or before 30th September for April/May graduation ceremony or 15th April for September graduation ceremony; while at the University of New South Wales, intention to submit thesis for examination must be given two months prior to the expected date of submission.

(c) Documents required to be submitted with the thesis

Apart from the submission intention form, other information, conditions and actions are required of students who intend to submit their theses for examination. At the University of Oxford, a research Master's student who has completed and passed the required course work is required to submit two copies of his or her thesis in either hard or soft covers. The student is expected to put each copy of the thesis into a padded envelope which must be sealed. Students must ensure that, except the examiners' addresses, each envelope bears the required inscriptions or information before it is posted to the appointed examiner. The candidate's name and the type of degree registered are important information that must not be omitted and the parcel should be marked

‘Thesis and Abstract’ in block capitals in the bottom left-hand corner. Candidate’s contact address must also be provided and enclosed with each copy of the thesis to enable the examiners to contact the candidate directly for arrangements for the oral examination. After the above requirements have been met, the thesis parcels are submitted to the Research Degrees Examinations Office for dispatch to the examiners after the relevant details about the parcel have been captured.

(d) Electronic thesis submission

According to statistics from early adopters of the e-thesis submission system, the advantages of e-thesis over hard copy thesis include its wide exposure to the local and international community and its high patronage by academia, government agencies and in industry. The 2009 M.Phil degrees examination policy of the University of Manchester requires all M.Phil candidates to submit thesis electronically in Portable Document Format (PDF) to the Manchester e-Scholar institutional electronic theses and dissertations repository through the student portal of the University website. This is in addition to the submission of two identical hard copies of the submitted electronic version, which must be bound in the prescribed format, to the appropriate school or faculty graduate office. It is the responsibility of the graduate office of the appropriate school or faculty to forward the thesis to the approved examiners for assessment soon after submission. The University of Southampton in the UK introduced in October 2008 an electronic thesis submission system. Submission of e-thesis has been in practice in many universities in Europe and North America, with Oxford, Glasgow, Edinburgh, and Imperial as some of the UK universities where e-thesis submission is compulsory. E-thesis submission is also common in Australian Universities, Monash University being one.

(e) Approval to submit a thesis

It is common practice and a requirement that before a thesis is submitted, it must be endorsed by the student's supervisors as worthy of submission for examination. At the University of New South Wales, supervisors complete a supervisor's certificate along with the student's thesis to the Head of Department.

Students may, in certain circumstances such as non-availability of supervisors or other reasons such as unwillingness to endorse a thesis, submit the thesis for examination without approval of the principal supervisor or supervisory committee members. This is a common phenomenon in many Universities. However, the students need the supervisors' assessment of the readiness of the work for examination before the thesis can be accepted for examination. At the University of Cape Town, although a candidate's supervisor is required to indicate approval of thesis for submission, such statement is meant for the record since the onus lies with the student to decide whether or not to submit the thesis for examination.

In the case of the National University of Singapore, once the thesis is approved by the supervisors and heads of departments, it may be submitted by the end of the maximum period of candidature unless otherwise advised by the supervisors or the university. Thesis students are allowed up to two weeks grace period for submission from the last date of submission without applying for extension. This must be recommended by the main supervisor before the student's candidature expires, otherwise, once the student's candidature has lapsed, nothing can be done unless the candidature is reinstated upon payment of the required fees.

In most universities, thesis completed for submission must be accompanied by a submission or presentation form, also referred to as ‘Thesis Completion Form’ as in the case of the American University, or a written ‘Intention to Submit’ as in the case of UNSW. This form must be completed and passed through clearance of fees owed to the University by the candidate. It must also be submitted to the Registrar’s Office, in the case of the American University, for clearance of any outstanding grades for courses taken if they are to be passed as a condition for the award of the degree. The Registrar’s Office cannot sign the form if a student has any grades yet to be passed. This means that the thesis cannot be submitted for examination if the student does not pass the required courses.

The procedure and policies at the Memorial University of Newfoundland (MUN) are similar to those of the American University. At MUN, heads of departments are expected to ensure that all theses being submitted on behalf of their students to the School of Graduate Studies are accompanied by a ‘Supervisory Committee Approval Form’ and an ‘Appointment of Examiners Form’ which must be endorsed by the head of department, dean or director of the appropriate academic unit. Before supervisors complete their portion of the Supervisory Committee Approval Form, the student must ensure that the required number of copies of the thesis is accompanied with a completed and signed ‘Thesis Deposit Form’, ‘Non Exclusive License to Reproduce’, and ‘Request to Include Copyright Material’ if required. Similar to the Oxford requirements, each copy of the thesis must be enclosed in a large envelope to which must be affixed a copy of the thesis title page and the other forms for submission to the MUN School of Graduate Studies.

(f) Submission of thesis earlier than the required study duration

It is also common practice to make provision for early submission of thesis by students who are able to complete their thesis before the approved candidature due date. Victoria University in Australia allows such high-flying students who complete their thesis twelve months before their candidature to complete an application for early submission to the Student Advice Officer of the relevant Faculty. The application must contain a copy of the thesis, completed Release of Thesis Form, a detailed letter from the student's research supervisor giving reasons for early submission and confirming that the thesis does not contain plagiarized material.

According to the University of Toronto Graduate Studies manual of regulations, "plagiarism is the academic offense of representing another person's work as one's own, and evidence of plagiarism is the inclusion of another's original ideas in your own work without properly identifying the material as derived from another's work and providing the appropriate citation." Once the application is approved, the thesis may be submitted for examination. Some universities make provision for early submission of doctoral theses, usually, within 24 months of registration on the programme.

2.7.2.5 Stage 5: Extension of candidature

What happens if a research postgraduate student is unable to complete the thesis by the approved period of study and therefore cannot submit it for examination? At the National University of Singapore, students who intend to submit their theses before the minimum time must submit a written request to the Registrar through their supervisors, head of department and vice-dean of Graduate Studies for approval before submission. However, those who are still not able to submit their theses after the two weeks grace period must consult their supervisors before

applying for extension of their candidature by completing an ‘Application Form for Extension of Candidature’. This procedure is the same in the University of South Africa, where specific deadlines are set bearing in mind the University’s dates for holding graduation ceremonies. Students who fail to meet the deadlines will have to wait for the next available opportunity and may have to re-register and pay the full tuition fees before the thesis can be accepted for examination. Such re-registration amounts to extension of study period as in the case of the National University of Singapore.

At the University of Toronto and other OISE institutions in Canada, a Master’s or doctoral student who is not able to complete all the requirements for the degree within the time limits may be considered for a one-year extension period on the recommendation of the thesis supervisor and the head of department. For the request to be approved, the student must have completed all coursework, full-time study requirements, comprehensive examinations, language requirements, and an accepted thesis proposal. The request must also indicate work completed, work remaining, a schedule for completion, and an assurance that the department will provide the facilities and resources needed to complete the work. Issues relating to employment demands and availability of time on the part of the student, as well as evidence of non-academic reasons such as sickness and personal obligations must be provided, if applicable. The underlying reason for approval in all cases should be strong evidence that the student can complete the outstanding work and other requirements of the degree within one year. If a student is unable to complete by the end of the extension, his or her candidature is declared lapsed and the student can no longer register at the University of Toronto. The last option may be a request for re-instatement for a maximum period of 12 months by completing a ‘Reinstatement to Complete Masters Degree

Form' in the case of Master's students or a 'Reinstatement for Final Oral Examination Form' in the case of doctoral students.

2.7.2.6 Stage 6: Appointment of examiners and examination of thesis

As already discussed, the practice in most universities is that once a student's thesis is ready to be submitted for examination, examiners are appointed by the department and their particulars submitted to the Graduate School or the designated office within the University for the process of examination can begin.

At the University of Manchester, the thesis is forwarded to the examiners with the following documents which must be submitted by the candidate together with the thesis: Pre-Oral Examination Report Form (to be completed by each examiner before the oral examination); Examiners' Report Form (to be completed jointly by both examiners after the oral examination); Examination of M.Phil degrees Policy; and Expenses claim form (for external examiners only). Together with a covering letter which outlines relevant instructions for completing and returning the attached forms, the thesis and the mentioned documents are sent to the examiners to assess and return with their pre-oral examination reports in no more than eight weeks.

At the National University of Singapore, once the thesis is accepted for examination, candidates are not permitted, under any circumstances, to communicate with any examiner on matters related to the thesis examination. Examiners for PhD thesis must be appointed by the 46th month (3 years 10 months) and 22nd month for master's thesis (1 year 10 months). Supervisors are required to initiate the nomination of examiners one month before submission of thesis for

examination for approval by the head of department and the vice-dean of graduate school. At Victoria University in Australia, it is the Principal Supervisor who identifies and nominates external examiners for the thesis for approval by the Faculty Postgraduate Research Committee. This arrangement departs from the practice in most universities where the appointment of thesis examiners is the responsibility of the head of department or the graduate studies committee of the relevant academic unit. As in the case of the Memorial University, two examiners are approved for Master's thesis (one internal, one external); and three for doctoral thesis (at least one to be external). The examiners must not have been involved in the research or in the preparation of the thesis, thus, prohibiting the student's supervisors or the supervisory committee and advisors from examining the thesis. In appointing examiners, the School of Graduate Studies requires profiles of each examiner, particularly, an up-to-date publication list to accompany the 'Appointment of Examiners Forms' (Appendix4). The decision to approve an examiner who has been recommended by a Head of Department, Dean of School or Faculty depends on the publication output and relevance of published works of the recommended examiner to the research work done by the student.

At the National University of Singapore, both Master's and doctoral theses are sent to internal examiners by the candidate's department, while those for external examiners are sent by the Registrar's Office to the external examiners. The examiners have seven weeks from the date of dispatch to complete assessment of the thesis and reminders are sent by the Registrar's Office. If a student has not been informed of the results of his or her thesis after two months (i.e. eight weeks) of submission, he can send an email to a dedicated address to check on the thesis results. At the Memorial University, the School of Graduate Studies is expected to dispatch theses

submitted for examination to examiners within five working days and the examiners are allowed three weeks after dispatch of Master's thesis to complete and return their theses assessment reports to the School of Graduate Studies. At Oxford, the Research Degrees Office will normally inform students of the result of their thesis assessment and copies of the thesis will be sent to the student's supervisors and college or school. At some other universities such as the Memorial University, the Research Degrees Office sees to it that the examined thesis and the reports including the results as determined by the School of Graduate Studies are normally sent to the student's Head of Department or academic unit to be made available to the student and his supervisors for revisions and corrections to be carried out.

2.7.2.7 Stage 7: Oral Examination or Defense of Thesis

According to the September 2009 Examination of Doctoral Degrees Policy of the University of Manchester, the purposes of an oral examination are:

- *To enable the examiners to assure themselves that the thesis and the research it reports are the candidate's own work.*
 - *To give the candidate an opportunity to defend the thesis, clarify any obscurities that the examiners have identified and discuss the subject of the thesis in its disciplinary and/or interdisciplinary context.*
 - *To enable the candidate to demonstrate a firm understanding of the field of research and thus give the examiners an opportunity to assess the candidate's broader knowledge of the field or discipline within which the thesis falls.*
-

At the National University of Singapore, doctoral candidates attend an oral examination after the theses have been examined. This is common practice in most universities. For instance at Manchester University, a pre-oral examination meeting must be arranged on return of thesis examination reports normally by the internal examiners of candidates with external examiners,

and where necessary, the candidates' supervisors, to confer with one another to discuss their individual reports and views on the thesis and agree on arrangements for the oral examination. The pre-oral examination meeting may be held by telephone discussion or other form of communication if it is not possible to meet physically, and may be held at any point before the oral examination is conducted.

The oral examination follows at an agreed date, and a provisional recommendation of the examiners is submitted on a Joint Examiners' Report Form within three working days to the appropriate School or Faculty postgraduate research degrees panel for approval. At Manchester, oral examinations may be conducted by video link for M.Phil and doctoral degree candidates. The request to conduct an oral examination by video link may be made on the appropriate form which must be endorsed by all the parties involved in the examination, namely, the candidate, supervisors, internal examiners and external examiners. The request may be granted if it is proven that is the only means by which the examination can be conducted. The examiners must ensure that the candidate's supervisor is available on the day of the oral examination in person or by telephone to answer any questions or concerns relating to the candidate's research. As is the case in all universities, candidates must bring a copy of the thesis for the oral examination.

The doctoral oral defense in Estonia, as in many European countries and in African Universities, is publicly carried out in the form of an academic debate, which ends in a secret ballot of the doctoral board of examiners. The doctorate candidate must get a majority of the votes from members and in some cases, not just a majority vote but a consensus to become eligible for the award of the doctorate degree. Some universities do not require research master's degrees

candidates to do an oral examination. Similarly, doctoral candidates in some universities do not require an oral defense to qualify for graduation except in extremely rare cases.

2.7.2.8 Stage 8: Submission of final copy of thesis and award of degree

The Manchester arrangements with regard to thesis revision after examination and approval of the final copy are quite detailed and explicit. After the approval of the oral report, the candidate must submit a written request to be given access to the examiners' reports, for re-submission with or without taking another oral examination as may be recommended by the Faculty or School postgraduate research degrees panel. If the candidate's thesis is passed with minor corrections, he or she is allowed no more than four weeks from the date of receipt of reports and list of corrections from the appropriate School of Faculty Office to return the corrected and approved thesis. Candidates can only be permitted to go beyond the four weeks on permission initiated by their supervisors or be subjected to payment of a late submission fee. A candidate's thesis may be referred for further corrections and re-submission for re-examination within a period of either six months or one year depending on the extent of correction required. Theses may also be rejected where the examiners are not satisfied that the results and oral examination have met the standards required and have not found evidence that the thesis could be redeemed. Once the recommendation to pass a thesis has been approved, and the candidate receives the approved recommendation, the candidate must submit within ten working days an electronic PDF copy to the Manchester e-Scholar thesis and dissertations repository and two hard-bound copies of the final or corrected thesis for publication of the result (completion of the candidate's record on the student system) for graduation and the release of the degree certificate.

2.7.3 THE ROTHWELL MODEL OF DOING A PHD

Fig. 2.5 The Rothwell Model of doing a PhD, developed into a pyramid of candidature progression for masters' and doctoral candidates

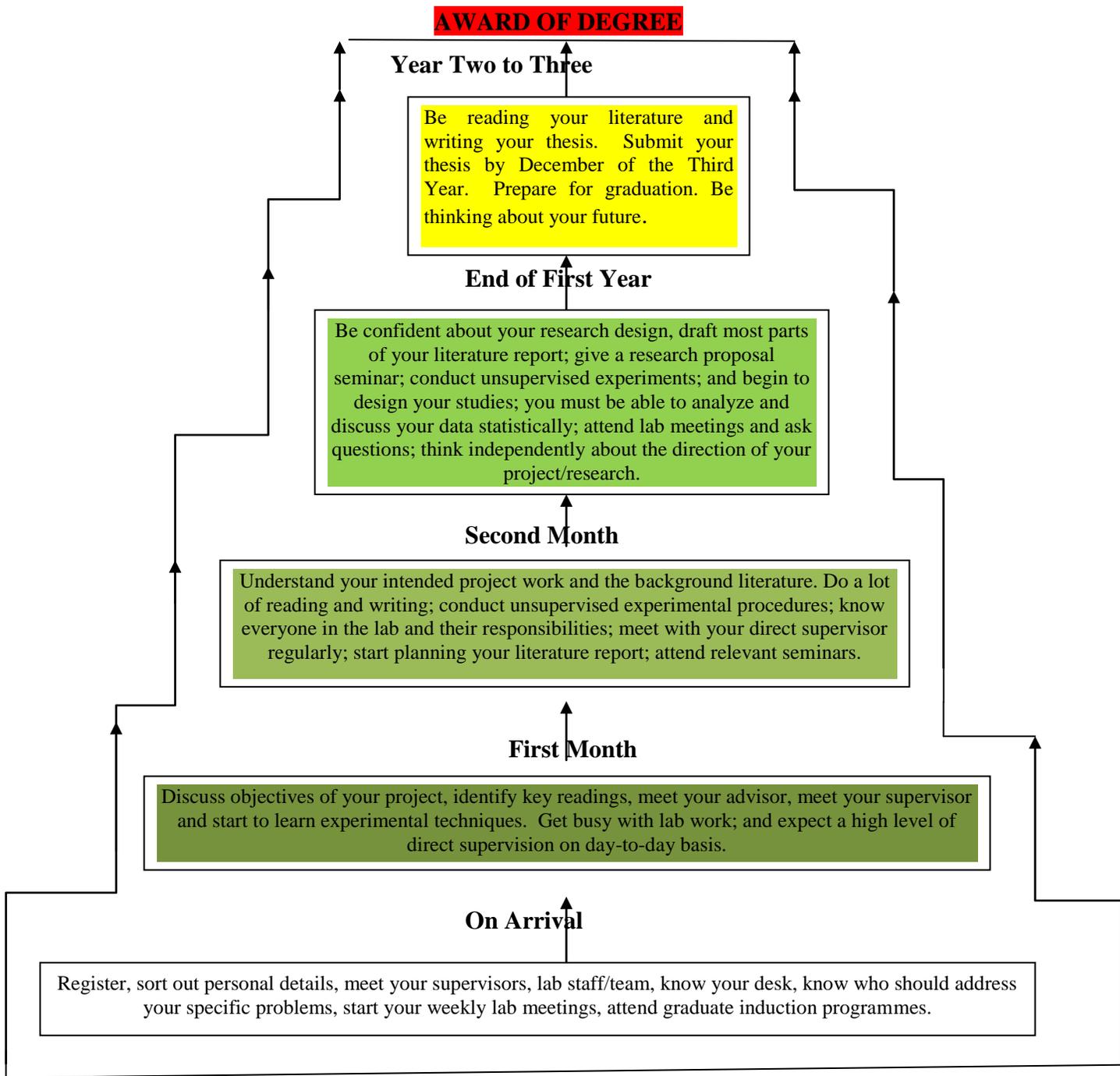


Figure 2.5 illustrates the Rothwell model for new postgraduate research students and depicts what is expected of PhD students on arrival, in the first and second months, at the end of the first year and from the second to the third (final) year. The colour scheme used depicts greenness (freshness) of the PhD/Masters candidate on arrival in the first year, then the student begins to become ripe up to the end of the first year as he/she goes through orientation and understands how to go about the research project, becomes confident about the research as he/she completes the proposal stage and is clear about the research design, writes and submits the thesis and gets graduated. The yellow shows full stage of maturity and the orange depicts graduation and award of the degree.

2.8 CONCLUSION

This chapter looked at the meaning of throughput in higher education, significance of throughput studies in higher education, global throughput trends in higher education and the main factors affecting throughput in higher education based on literature review. Also discussed were some models developed to explain the concept of student throughput in higher education, and stages in research postgraduate (Masters and Doctoral) candidature durations to provide a more detailed explanation of time-to-completion for research postgraduate students.

In Chapter three, the origins of postgraduate studies at the University of Ghana are traced and also the structure of postgraduate programmes at the University explained. The chapter discusses the stages in postgraduate programme durations which determine programme completion durations at the University of Ghana as at 2010.

This is followed by a discussion of the responsibilities expected of key stakeholders towards the efficient delivery of postgraduate studies in order to achieve acceptable throughput levels. The chapter also features a compilation and discussion of secondary data on postgraduate enrolment and completion trends at the University of Ghana from 1961 to 2010. It concludes with a discussion of enrolment and output performance indicators for the University of Ghana in comparison with other African Universities.

CHAPTER THREE

POSTGRADUATE STUDY DELIVERY AND THROUGHPUT TRENDS AT THE UNIVERSITY OF GHANA AND SOME AFRICAN UNIVERSITIES

3.1 INTRODUCTION

In chapter two, the meaning of throughput in higher education, significance of throughput studies in higher education, global throughput trends in higher education and the main factors affecting throughput in higher education were discussed. Also discussed were some models underpinning the concept of student throughput in higher education. The chapter ended with a discussion of the stages involved in research postgraduate programme durations from enrolment to graduation in selected reputable international higher education institutions.

Having dealt with the conceptual and external environment, this chapter is limited to a discussion of the structures and systems at work in the environment of this study and a comparative analysis of the study institution with its peers. In furtherance of this aim, the chapter traces the origins of postgraduate studies at the University of Ghana and also explains the structure of postgraduate programmes at the University. It further discusses the responsibilities expected of major stakeholders in postgraduate study delivery. To facilitate further appreciation of completion among postgraduate students, the chapter reviews trends in postgraduate enrolment and output over five decades, attempted to derive throughput rates for the University based on institutional statistics made available for the study. The chapter ends with a discussion of how the University stands amidst its peers in terms of enrolment and output using some of the well-known recent studies in the selected institutions.

3.2 ORIGINS OF POSTGRADUATE STUDIES AT THE UNIVERSITY OF GHANA

This section looks at the early beginnings of postgraduate studies, evolution and expansion of programmes and the establishment of a School of Graduate Studies at the University of Ghana dating back to the establishment of the University.

3.2.1 INTRODUCTION OF POSTGRADUATE STUDIES

The earliest attempt to introduce postgraduate studies in Ghana started in 1952 at the University College of the Gold Coast, now known as the University of Ghana, fourteen years after it was founded in 1948 and after the successful introduction of a number of undergraduate programmes. By the 1963-1964 academic year, all existing departments, except the School of Administration, now known as the University of Ghana Business School, had either established two-year Master of Arts (MA) and Master of Science (M.Sc.) degree courses or had started compiling syllabuses for masters degree programmes (Agbodeka, 1998).

This initial effort received a further boost by 1970 when it became necessary to establish a nexus between postgraduate studies and research, with postgraduate studies as the driving force for the development of research in the University. A Postgraduate Studies Committee was constituted “to consider the whole question of postgraduate studies in the University and to make recommendations”. The committee recommended the introduction of Masters and Doctor of Philosophy degree programmes in all departments, taking into consideration the establishment of specialist libraries, equipment and teaching staff requirements. The need to co-ordinate postgraduate studies in order to avoid duplication of programmes and courses was also realized and this led to the establishment of a Joint Board of Postgraduate Studies, the appointment of the

first Dean of Graduate Studies, and the establishment of a secretariat for the dean. It was reported that from 1971, postgraduate work and research received appreciable attention, resulting in the publication of research findings in learned journals (Agbodeka, 1998).

3.2.2 DEVELOPMENT OF POSTGRADUATE STUDIES

Agbodeka (1998) reports that postgraduate studies began in most departments of the University especially in the Faculties of Arts and Social Studies, as postgraduate certificate or diploma programmes which were meant to produce professionals for the job market and also to prepare students for research masters programmes. However, not all academic departments started with postgraduate diploma programmes. The point needs to be made that masters programmes were approved straightaway for some departments without students first taking postgraduate certificate or diploma studies. Some of such early postgraduate certificate and diploma programmes were Communication Studies, Librarianship, Archives Administration, Social Administration and Sociology in the Faculty of Social Studies; Statistics in the Faculty of Science; Linguistics and Ghanaian Language Studies in the Faculty of Arts; Anaesthesia in the Medical School; and Agricultural Administration in the Faculty of Agriculture.

According to Agbodeka (1998), the first batch of masters programmes introduced by the University of Ghana were two-year Master of Science, Master of Arts and Master of Laws programmes comprising course work and thesis. About the same time, the regulations for running Doctor of Philosophy (Ph.D) programmes were also approved. The early postgraduate route for progression to the doctoral degree was either M.A. or M.Sc. or LL.M, after which one could register for Ph.D. In the case of masters programmes in the sciences, the duration

depended on the type of bachelors degree the applicant held since there were three-year and four-year bachelors degree programmes especially in the science disciplines. In this regard, Agbodeka (1998) further reported that persons with the three-year B.Sc. General degree did the Master of Science degree programme for two years, whereas those graduating with the four-year B.Sc. Special degree spent one year to obtain the M.Sc. degree. As time went on, the structure for proceeding to the doctoral degree (Ph.D) became M.A., or M.Sc., or LL.M, plus Master of Philosophy (M.Phil) degree, after which one could be considered for enrolment in the doctoral degree. With the introduction of M.Phil degrees, the durations for the existing two-year masters programmes and all other postgraduate degree programmes were reviewed with effect from the 1972-73 academic year. The revised structure as reported in the University of Ghana Minutes of the Second Meeting of the Board of Faculty of Law held on 14th November 1972, which was cited by Agbodeka (1988), was as follows:

A 12-month M.A. degree which comprised 3-hour written papers, Term Papers and a Dissertation of 15,000 words; a 2-year M.Phil (both Science and Humanities), the first year for passing the Part I written papers and the second year for a thesis, not exceeding 60,000 words; and Ph.D degree examined by thesis only, not exceeding 100,000 words.

With this new arrangement, the Master of Philosophy degree then became the minimum entry requirement for admission into any doctoral programme of the University.

3.2.3 ESTABLISHMENT OF A COORDINATING OFFICE FOR POSTGRADUATE STUDIES

Postgraduate programmes were initially under the supervision of the various academic departments offering the programmes. By the early 1970s, the Joint Board of Postgraduate Studies was established and a dean of postgraduate studies appointed with a small secretariat to coordinate postgraduate programmes in the various departments to avoid duplications.

By the 1991-92 academic year, most departments within the University of Ghana had already started offering programmes leading to the award of the degrees of Master of Arts, Master of Science, Master of Philosophy and Doctor of Philosophy, except the Faculty Law which had the LLM but did not offer programmes at the doctoral level (University of Ghana Handbook for Graduate Studies: Guide and Regulations, June 1991).

As the number of postgraduate programmes and enrolment began to increase over the years, a separate unit known as the Graduate Centre, headed by a dean, was established in 1992 to coordinate graduate programme delivery within the university under the supervision of a Board of Graduate Studies. This development was an improvement on the earlier system of a dean of postgraduate studies with a small secretariat and a Joint Board of Postgraduate Studies with much less influence on how postgraduate programmes were being run in the academic departments. The Graduate Centre was elevated to the status of a School in 1998 to strengthen the unit's capacity to carry out its mandate more efficiently. The School's mandate was expanded in 2003 to include research administration in furtherance of the realization in 1970 to create a closer link between graduate studies and research development, and the need to create synergies between research, training and extension. The expansion in mandate led to a change in the name of the school to School of Research and Graduate Studies to reflect its additional responsibility for research administration in the University.

In the 2009-2010 academic year, the School's research administration function was hived off and expanded to include research, innovation and development, resulting in another change in its name to the School of Graduate Studies. The hiving off of the research administration function

was to enable the School to co-ordinate and regulate the increasing number of postgraduate programmes approved for departments within the University in a more effective and efficient manner. In order to achieve this goal, some interventions and regulatory changes, which were discussed later in this chapter, were also approved by the University to improve upon graduate programme delivery in the University.

3.3 STRUCTURE OF POSTGRADUATE PROGRAMMES

According to the University of Ghana Handbook for Graduate Studies Volume One (2003) which contains the regulations governing graduate study and university examinations, the school of graduate studies is responsible for co-ordinating and supervising the delivery of the following postgraduate programmes of the University of Ghana: one-year (12 months) masters degree programmes, two-year (24 months) masters degree programmes, and doctoral degrees programmes of three years full-time duration or five years part-time duration. This programme structure was largely based on the 1972-73 duration and therefore reflects the decision of the university with regard to the duration of its postgraduate programmes. Another classification takes into account the research component of the programmes. In this regard, postgraduate programmes run at the University of Ghana may be classified as either non-research (non-thesis) postgraduate programmes or research postgraduate programmes. The non-research postgraduate programmes refer to taught or course work postgraduate programmes without full thesis component.

3.3.1 NON-RESEARCH POSTGRADUATE PROGRAMMES

At the University of Ghana, any postgraduate programme of less than one year research component falls under this category. Currently, these include mainly one-year (12 months) and some two-year (24 months) masters programmes without thesis component.

3.3.1.1 One-year masters programmes

Masters programmes in this category are made up of 24 to 36 course work credits and 3 credits of seminar presentation. Postgraduate qualifications under this category include Master of Arts (M.A), Master of Science (M.Sc), Master of Public Health (MPH), Master of Agriculture (M.Agric), and Master of Laws (LLM). After course work, students spend a month or two to complete either a project work of 6 credits or a dissertation of 12 credits. Students who choose the project work option normally take more courses work credits than those who choose dissertation option but in both cases, students are required to pass a minimum of 24 credits of course work and accumulate between 39 to 45 credits at the end of the programme to be eligible for the award of the degree. A new option of purely one year course work masters which permits students to take 'special topics' in lieu of project work or dissertation has been approved for departments at their request to enable professionals who do not want to undertake neither project work nor dissertation.

3.3.1.2 Two-year Non-Thesis Masters programmes

The two-year non-thesis masters programmes in Business Administration (MBA) and Public Administration (MPA) were introduced by the School of Administration, now known as the University of Ghana Business School, by the 1974-1975 academic year as professional

postgraduate programmes. Currently, programmes in this category are made up of 24 to 36 course work credits in each academic year leading to the accumulation of a minimum of 48 course work credits, with either Long Essay or Project Work of 6 credits over the two year period. Students are required to pass between 54 and 78 credits to be eligible for the award of the degree.

3.3.2 RESEARCH POSTGRADUATE PROGRAMMES

Any postgraduate programme requiring at least one year research component and a thesis falls under this category. These include Master of Philosophy and Doctor of Philosophy (PhD) programmes.

3.3.2.1 Two-year Master of Philosophy programmes with thesis

As stated earlier, the Master of Philosophy (MPhil) degree was introduced at the University of Ghana in 1972 as a research masters programme made up of one year of course work and a second year devoted to research and thesis writing. Its main objective was to train students for academic and research positions within the University and to better equip students to undertake doctoral research. Students admitted to these programmes take 24 to 36 credits of course work, 6 credits of seminar presentations, and write a thesis of 30 credits. Students are required to pass a minimum of 24 credits of course work and accumulate between 60 and 72 credits to be eligible for the award of the Master of Philosophy degree. Research masters students are selected on academic merit to serve as graduate assistants in the second year of their studies.

3.3.2.2 Doctoral programmes

Doctoral degree programmes of the University of Ghana are by research only. However, depending on an applicant's entry qualifications, students adjudged to be deficient in relevant areas were required to audit selected courses from relevant departments without attracting credit. Run on full-time for three years or part-time for five years, doctoral students were required to attend and present seminars at their departments on their research proposals and chapters of their thesis for criticism and input by faculty and colleagues as they make progress on their studies. As potential academics, all doctoral students are usually engaged as graduate assistants to assist assigned academic staff with teaching and tutorials as a mentoring process.

3.3.3 STAGES IN THE RESEARCH POSTGRADUATE PROGRAMMES

The duration of any programme is like a continuum comprising a chain of related activities that lead to an end and this applies to research postgraduate programmes at the University of Ghana.

3.3.3.1 Stage One: Enrolment and orientation

The first stage for every fresh student is enrolment. According to the University's manuals on registration for fresh students, enrolment in postgraduate programmes at the University of Ghana means being offered admission into a postgraduate programme, accepting the offer of admission, payment of required fees and registration for the programme and taking part in the mandatory orientation for fresh students. Upon receipt of a written offer of admission, the newly admitted student is expected to either accept the offer or reject it in writing to the Dean of the School of Graduate Studies. Having accepted the offer of admission, the student pays the required fees, register for the programmes to which they are admitted and take part in a mandatory orientation made up of a series of presentations and interactive sessions to inform and educate fresh students

about the academic and social journey ahead of them. Registration and orientation are done concurrently at the University of Ghana.

Registration as outlined in the University's manuals on registration involves online selection of hall of residence, acquisition of student identification card, registration with one's assigned hall of residence, and course registration. International students are further required to register with the University's International Programmes Office. Orientation at the University of Ghana covers the following topics: challenges of university life, regulations for junior members (students), campus security and fire prevention, regulations governing courses in the University of Ghana, students' advisory services, faculty requirements for graduation, specific matters pertaining to international students, students' health needs, sex and reproductive health issues, use of the University Library, issues of religion, counselling and placement services, gender relations on campus, university public affairs and sports, student financial aid services, and student leadership matters.

The School of Graduate Studies organizes a separate orientation session for postgraduate students mainly on course offerings, regulations governing courses and student welfare services. Once a student has registered for courses and examination, he or she is considered to have enrolled and automatically assumes studentship status. The student therefore qualifies to take part in the required academic programmes and examinations. The registration and orientation phase is the same for all postgraduate students and thus constitutes the first stage of programme duration for all postgraduate students. All registered students must be matriculated as a sign of having been formally admitted into the University. Both masters and doctoral students are required to go through the same process of enrolment.

3.3.3.2 Stage 2: Course work and/or proposal development

The second stage for masters students is course work phase while doctoral students continue to develop their research proposals. Masters students attend lectures, take all assignments and readings during the first semester and write the end of first semester examination in all prescribed courses. The course work part aims at providing the general theoretical background for research in the second year. At the end of the first semester, students must pass a minimum of 12 credits of course work including core and elective courses. Students are required to pass additional 12 credits minimum of course work in the second semester, making a total of 24 credits minimum, but not more than 36 credits at the end of the first year. The students must also present the first seminar on his or her research proposal before the proposal can be accepted by the department by the end of the second semester of the first year. The courses taken and seminar are meant to further strengthen students' theoretical background and to enhance their knowledge and research skills. A course in Research Methods is mandatory for all Masters of Philosophy students. All postgraduate students except doctoral students take examinations in both first and second semesters.

Unlike the research masters student, supervisors must be nominated for the doctoral student before the student is admitted. This enables the supervisors to work with the student right from the onset from proposal development stage. After enrolment, doctoral students normally start developing the research proposals submitted with their doctoral applications for admission. They also read and review literature relevant to their field of research. Where a doctoral student's supervisors deem it necessary for the student to take some courses to broaden his knowledge in the chosen research area, courses are prescribed on the advice of the supervisors. Research

proposal development and literature review goes alongside with selected course(s). The doctoral student must submit an acceptable research proposal to the supervisors not later than six months after registration. The student is also expected to make at least one presentation on the proposal to the supervisors and faculty for their inputs before it can be accepted normally by the end of the first year or earlier.

3.3.3.3 Stage 3: Completion of course work and preparing for research

Progression to the research year to begin thesis work is a very crucial stage in the academic pursuit of research masters students. According to the University of Ghana Handbook for Graduate Studies Volume One (2003 Edition), “if a candidate obtains the minimum number of 24 course work credits required at the end of part one (first year) examinations, but fails in not more than two core courses, the student can proceed to the second year, but must pass all such core courses before obtaining the degree.” This means that to be eligible for the award of the MPhil degree, a student must redeem failed core courses while undertaking research and writing thesis. Such students carry additional load and this has implications for time available for completion of thesis. This may sometimes be a reason for extending one’s approved programme duration beyond two years.

In the case of the doctoral student, once the research proposal has been approved by the supervisors, the student begins full research work. This may include laboratory and field work especially for those in the science and agricultural programmes. Students, especially those in the humanities and arts, normally concentrate on literature review.

3.3.3.4 Stage 4: Conducting research and writing thesis

The next stage for second year research masters students is the conduct of research and thesis writing. Before masters students begin research, their research topics, supervisors and examiners must be approved by the relevant Faculty or School Board and ultimately the Board of Graduate Studies at the beginning of the first semester of the second year (UG Graduate Handbook (2003), Section 21.2). At this stage, students work closely with their supervisors to decide on the appropriate research design, develop data collection instruments as well as collect and analyze data. The student is guided to adopt the appropriate research design to obtain valid results.

In the case of doctoral students, once the research proposal is accepted, the thesis topic and supervisors must be approved through the same procedure indicated for masters students not later than six months after the commencement of the programme (UG Graduate Handbook (2003), Section 21.3). The student obtains the relevant research materials such as laboratory chemicals and equipment in the case of science students, develops data collection instruments, runs a pilot test and refines the instruments if so advised by the supervisors, collects and analyzes data. The doctoral student also writes the introductory and literature review chapters.

3.3.3.5 Stage 5: Completion and submission of thesis for examination

The next stage is thesis completion and submission for examination. Research masters students work closely with their supervisors to write their theses in the appropriate and acceptable format for submission within 24 months and within 36 months in the case of doctoral students. For the masters student, this means that the thesis must be written within one year after course work. The doctoral student spends the rest of the time conducting in-depth research and writing thesis.

Supervisors prefer that students write their thesis chapter by chapter in an acceptable format taking into consideration institutional as well as departmental requirements. According to Section 33.2 (vii) of UG Graduate Handbook (2003), a masters thesis must not exceed 150 pages in the case of research masters thesis and 250 pages in the case of doctoral thesis. Permission may however be sought from the Board of Graduate Studies to exceed the recommended page limits.

Theses must be submitted by the deadlines announced by the School of Graduate Studies for various categories of research postgraduate students. Students must give notice of intention to submit thesis at least 30 days before the thesis is presented to their heads of departments (UG Graduate Handbook (2003), Section 34). A student who is unable to meet the deadline for submission may also under the regulations apply to be granted extension to complete and submit the thesis at a later date normally within 12 months maximum in the case of masters students and 24 months maximum in the case of doctoral students (UG Graduate Handbook (2003), Section 11.3).

3.3.3.6 Stage 6: Examination of thesis and determination of thesis result

The next stage is thesis examination and determination of thesis result. Once a thesis is submitted with all the necessary documents, the school of graduate studies assumes responsibility for examination of the thesis after the student's head of department has nominated both internal and external examiners and sought approval through Faculty and School Boards to examine the thesis. A thesis submitted for examination must be accompanied by the particulars of examiners recommended to assess the thesis.

Prior to the 2008-2009 academic year, examiners were required to complete examination of thesis and return the assessment reports to the school of graduate studies within six weeks from the date of dispatch. Documents accompanying the thesis comprised a letter requesting the examiner to assess the thesis indicating the assessment criteria, grading or scoring details, format for presenting the assessment report and a claim form for completion by examiners. A masters thesis was examined by two internal examiners and one external examiner, and all three examiners' assessment reports must be received by the School of Graduate Studies before the final results of the thesis could be determined. In the case of a doctoral thesis, assessment reports must be received from two internal examiners and two external examiners.

Records at the University of Ghana School of Graduate Studies indicate that masters and doctoral theses were graded A (70% or above), B+ (60%-69%), or B (50%-59%) as pass marks, C (40%-49%) as referral, D (30%-39%) and E (below 30%) as failed. This meant that any mark below 50 is not a pass mark. The thesis assessment criteria covered the following areas: theoretical foundation - where candidate is assessed based on clarity of problems being investigated and candidate's knowledge of pertinent literature; design and relevance of methodology used; major findings from the research – where candidate was to be assessed based on the main results obtained from the analyses of data; relevance and importance of findings and original contribution to knowledge; clarity and justification of conclusions and recommendations; and general comments – where candidate was to be assessed based on format, standard of presentation, sectioning, typing, and mechanical accuracy of language used for the thesis. An examiner had the following decision options after grading the thesis: that the thesis should be Passed with the letter grades A, B+, or B (corrections not required); Passed with the letter grades A, B+, or B subject to correction of errors as may be recommended by the examiner

in an attached list; Referred with the letter grade C awarded and examiner's reasons or comments attached; and Failed with letter grades D or E awarded and examiner's reasons or comments attached.

In determining whether a thesis should be passed, referred or failed, the Board of Graduate Studies was guided by Section 31.2.5 of the *Handbook for Graduate Studies, Volume One* (2003) which stipulates that:

Where all three examiners pass the thesis, the Board of Graduate Studies shall normally decide to pass it; where one examiner fails a thesis, the Board shall review the nature of the failing grade and decide whether to pass, refer, or fail it; a Masters thesis failed (below 50 mark) by more than one examiner shall fail; and a doctoral thesis failed (below 50 mark) by more than two examiners shall fail.

Final determination of thesis results was the responsibility of the Board of Graduate Studies. The student's head of department or a representative must be in attendance during determination of thesis results by the Board. After determining the thesis result through a thorough review of examiners' assessment reports in accordance with the above criteria, the thesis was sent to the head of department with a letter indicating whether the student's thesis had been passed, referred, or failed. The examiners' assessment reports were sent together with copies of the examined thesis. The letter communicating the thesis result would also contain instructions for the student depending on the result and in accordance with the regulations. By the regulations, a student must carry out revisions as recommended by the examiners in their reports in consultation with and to the satisfaction of the student's supervisors. In the case of a thesis passed with minor revision, the head of department assumes overall responsibility for ensuring that the student carried out the recommended revisions and that the instructions of the Board of Graduate Studies

contained in the letter communicating the results were adhered to. The revised thesis must be certified by the supervisors and endorsed by the head of department before it can be submitted to be processed for publication. Revised theses must be submitted within three months in the case of masters students and six months in the case of doctoral students for publication of results.

However, a referred thesis must be reworked and resubmitted for re-examination within nine months in the case of masters thesis and twelve months in the case of doctoral thesis. According to Section 31.2.7 of the regulations governing graduate study and examinations, a candidate whose thesis was referred had to re-register to effect the necessary corrections and re-submit the corrected thesis for re-examination.

If the Board in its judgment decided that a thesis should fail on the basis of the examiners' reports, the candidate would not be eligible for the award of the degree.

3.3.3.7 Stage 7: Oral defense of thesis

Oral defense of thesis is the final examination taken by research postgraduate students. Prior to the 2008-2009 academic year, only doctoral candidates whose theses had been passed by at least three out of the four examiners were eligible to undertake a public oral defense of their theses.

The final result of a doctoral student was determined only after undertaking and passing an oral examination. A doctoral student who could not pass the oral defense was given a second chance within six months to repeat the oral examination, failing which the student was declared ineligible for the award of the doctoral degree. Doctoral oral examinations were conducted by the School of Graduate Studies at the student's department in collaboration with the head of

department as well as the student's thesis supervisors and examiners. The regulations governing graduate study (UG Graduate Handbook (2003), Section 31.3.1) provide that the panel of examiners for an oral defense must include at least one external examiner and one internal examiner of the student.

3.3.3.8 Stage 8 : Submission of final copies of thesis for graduation

Prior to the 2008/2009 academic year, only doctoral students were required to pass oral defense examinations before their results could be determined after which they could submit final copies if thesis was declared passed. Currently, masters students must also pass an oral examination before they can submit final copies of thesis for publication of final results and graduation. A research postgraduate student must submit a final corrected version of his or her thesis not only as evidence of the research carried out, but also as a bona-fide record of the University, copies of which must be kept at the School of Graduate Studies, the University Library and the student's department.

To submit final copies of thesis, the thesis must have been passed by the Board of Graduate Studies. Additionally, the final copies of the thesis must have been submitted to the Board of Graduate Studies within the stipulated deadline and in the case of masters students, an indication that the student has passed the required course work. The student must not be indebted to the university in respect of fees or any other property of the university. In the case of doctoral students, the same requirements except course work were applicable.

Four copies of the final thesis, bound in hard cover, labeled with appropriate relevant information on the cover and spine and endorsed by the student's supervisors must be submitted

by the student to the head of department for transmission to the School of Graduate Studies. The cover of the final thesis must also be in the appropriate colour (green for Master of Philosophy theses and blue for doctoral theses). The set of four theses must be accompanied with the abstract of the thesis loaded on a compact disk. The abstract may alternatively be sent through the official email of the School of Graduate Studies.

To ensure that masters students passed the required courses, course work result slips are generated for each student who has submitted final copies of thesis and if the student has met all the requirements, provisional results are published by the School of Graduate Studies. Copies of the provisional publication must be sent to the head of department and to the Academic Affairs Directorate which arranges for final approval by the Academic Board (Senate) of the university. Once students' results are approved by senate, the students are deemed eligible for the award of the degrees for which they registered at a congregation of the university.

3.3.4 SOME COMPLETION AND QUALITY ASSURANCE INTERVENTIONS

As stated earlier in Chapter One, some intervention measures were initiated in quick response to the challenges revealed by the Ntiamoa-Baidu Consultative Meeting with Heads of department in 2008. To overcome these challenges, the Academic Board of the University approved a proposal from the Board of Graduate Studies that reviewed some requirements and processes for postgraduate programme delivery in the University with effect from the 2008-2009 academic year, which were aimed at reducing completion time among research postgraduate students and enhancing academic quality (UG Executive Committee Retreat Report, 2009). The approval of the revised requirements led to the revision and publication of the 2010 Edition of the University of Ghana Graduate Handbook Volume One. An active thesis tracking system which made it

possible to vigorously remind examiners to submit thesis assessment reports was also introduced following the creation of a new postgraduate thesis database at the School of Graduate Studies.

The main changes included a reduction in the number of thesis examiners from three to two (one internal and one external) for a masters' thesis, and from four to three (two externals and one internal) for a doctoral thesis. Records at the School of Graduate Studies indicate that between 2003 and 2007, it took between 24 to 57 months on the average for all three masters or all four doctoral assessment reports to be returned to the School of Graduate Studies (Ntiamoah-Baidu, 2010). To deal with this challenge, the examination duration was extended to eight weeks as the earlier six week duration became increasingly unrealistic. Bonuses were introduced as incentive for early examination of thesis and return of assessment reports, fees for thesis examination of thesis were enhanced, more reliable courier service was obtained and thesis examiners' fees were processed and paid within relatively short time. All of these measures were aimed at motivating examiners to complete thesis assessment within the new submission duration.

Quality assurance measures introduced included a policy that principal supervisors should be of at least senior lecturer grade and must hold a degree that is higher than that for which the supervised student is enrolled unless the principal supervisor is of professorial rank (UG Graduate Handbook (2010) Section 12.6 iv.). Another requirement was that Principal thesis supervisors must not examine theses they supervised. The requirement about qualification, by extension, meant that an examiner could not examine a thesis of a higher level than his or her highest qualification, such that an M.Phil holder was not qualified to examine a doctoral thesis unless the examiner was of professorial rank (UG Graduate Handbook (2010) Section 23.2.2 ii.).

Additionally, the thesis grading system was revised, raising the pass mark to 60 percent for both masters and doctoral theses instead of 50 percent in the previous grading system.

To enhance quality of masters thesis, oral defense which used to be optional for masters students was made compulsory for all research masters. Students were required to pass an oral defense of their theses before the theses could be submitted for examination, while doctoral students continued to defend their theses after all the examiners reports had been received. The reason for requesting masters students to do oral examination before submitting their theses was mainly to test for plagiarism as there was increasing perception that some students were contracting unqualified persons to write thesis for them and that others were merely reproducing theses which had already been submitted for degrees.

3.4 RESPONSIBILITIES OF KEY STAKEHOLDERS IN POSTGRADUATE STUDY DELIVERY AT THE UNIVERSITY OF GHANA

3.4.1 INTRODUCTION

In order to ensure that research masters and doctoral students go through the above-mentioned stages within approved programme durations to ensure timely completion, stakeholders in the programme delivery process including the postgraduate student must perform the roles and responsibilities required of them effectively and efficiently.

The extent to which the responsibilities are carried out by the players in the programme delivery process affect the time spent by students to complete their academic programmes. For instance, in the case of research masters degree programmes which begin with course work and examinations to prepare the student for research, there is the need to enforce the regulations to

help students move from one stage to another. Progression to the thesis(research) stage normally depends on students' performance in course work, and in some cases, students have to repeat failed courses while undertaking their research to enable them to fulfill course work requirements for graduation. All these matters depend on how early lecturers release examination results, timely submission of results by heads of departments, as well as timely collation and updating of students' transcripts for determining who qualifies to progress to the research stage or who must repeat some courses. It also requires that departmental committees and faculty boards must meet to consider these matters on time for transmission to other actors within the university.

Research and development in any economy are driven by a strong postgraduate programme with a strong stakeholder involvement in policy making to attain expected results. Major stakeholders in postgraduate programme delivery at the University of Ghana include the government, managers of the institution, structures within the institution such as the graduate school, faculty boards, departmental heads, academics who serve as supervisors, examiners and academic advisors to students and the postgraduate student.

3.4.2 GOVERNMENT

3.4.2.1 Methods of funding of higher education institutions (Universities)

Governments ought to be concerned about the efficient management of universities so that its investments in higher education can yield expected returns. The level of seriousness government attaches to its role as a stakeholder is largely influenced by the extent to which it values research outcomes in its development agenda. The point has also long been made that the

issue about addressing the challenges of African Universities and sustaining the gains is not so much about lack of knowledge of the problems and what ought to be done. The problem is that African governments lack the political will and the ability to take bold but very painful decisions and steps (The Partnership for Capacity Building in Africa, 1997). Lessons can be learned from the system of funding and funding strategies adopted by some developed countries which have yielded some gains in the funding of Universities.

In the U.S. system and in many advanced economies, funding of tertiary education may be based on categorical funding or block funding strategies (Lunenburg and Ornstein, 2004). In the categorical funding strategy, funds are released according to specific student groups (such as women, the handicapped or for a specific discipline such as vocational, science and technology education) and designated purposes such as critical health sciences research or research development in general at the postgraduate level. It would seem that this strategy is based on need at the time or is meant for direct and immediate problem solving goals. A typical example of this type of grant is the Four Million Pounds awarded to Paul O'brien's research group in Manchester University for research in Materials Science, and Two Million Dollars a year for five years grant given to Steve Ward and Paul O'Neill's group at the Liverpool School of Tropical Medicine towards the development of new anti-malarial drugs (Addae-Mensah, 2013). These grants constitute huge financial commitments made to Universities from governmental initiatives towards addressing critical national needs. With the block grants strategy, funds are released to sub-sectors within the education sub-sector for general purposes without precise categories or for broadly defined purposes only, leaving the beneficiary institutions to determine how the funds

should be used. The categorical funding is normally driven by the national interest in terms of what the ruling government's educational policies are.

Another strategy which has become very popular is funding based on excellence, the need for achieving higher academic standards and performance. This strategy considers output rather than enrolment figures for allocation of funds. Examples of this strategy or model can be found in South African Universities especially in the area of masters and doctoral output (see paragraph 7 and 8 under Section 2.6.6 of Chapter 2).

Another positive example of the use of this strategy is the Swedish model, in which case, based on strict implementation of recommended reforms, the Swedish higher education was described internationally as ranking high in terms of funding support to its Universities. The strict implementation of the recommendations involved, among other things, the government's allocation of a relatively high percentage (1.7%) of its Gross Domestic Product (GDP) to recurrent expenditure for education, half of which goes towards research and doctoral programmes. Devoting half of the allocation for education to research and doctoral programmes is a clear demonstration of government's will and understanding of the relevance of research and doctoral training to its economic development. The results of such show of commitment led to high and sustained throughput and doctoral output (see paragraph 1 and 2, under Section 2.6.5 of Chapter 2). In a developing country such as Ghana whose GDP is already low, the government is only able to allocate between 0.3 and 0.4 percent of its GDP to research compared to the 1.7 in the Swedish initiative, and 2 to 5 percent in Singapore and other developed European countries,

not to talk about the African Union's recommended 1 percent of GDP for African countries (Addae-Mensah, 2013).

There are also direct forms of provision of subsidies and funds to Universities and targeted groups within a University such as postgraduate students in the form of government bursaries and scholarships from government. All over the world, the norm is that the administration of such funds and disbursement to beneficiaries should be a balance of equity-based and performance-based systems, with preference for more of equity-based system than performance-based system, as in the East African countries model (Court, 1999). This is because, performance-based system of disbursement favours the wealthy and middle-class citizens who by their economic backgrounds have the best of education and are likely to be the selected beneficiaries of a performance-based scheme.

According to Edgar (2000), the Washington University in the U.S. adopted a funding strategy for doctoral students which proved to be very successful and should be emulated by other Universities. This strategy was to link funding for new doctoral enrollments to the amount required to support continuing doctoral students to completion. The basic reasoning here is that if funds are not available to support continuing doctoral students, then there is no reason to take on new doctoral students who cannot be supported financially. In other words, admission into doctoral programmes should be linked to availability of funds to support the students up to completion and efforts must be made by both the institution and government to attract the required funding for more intake. The effect of this policy as reported by Thach (2000) is to improve doctoral student morale, reduce time-to-completion and encourage potential doctoral

applicants to enroll, all of which would lead to high doctoral output for the institution and the nation.

Edgar's (2000) made some recommendations for re-distribution of funds to improve Canadian doctoral funding and Canada's research capacity based on the Washington University strategy. By this redistribution approach, Edgar advised universities and government to work together to increase the number of awards to underfunded programmes, make eligibility criteria more flexible for student applicants, increase the level of awards based on changes in tuition and inflation, and provide funding to support all students based on satisfactory progress in their programmes from beginning to completion of research and thesis.

In spite of this call for improved commitment and political will on the part of governments to postgraduate level education, it is an undeniable fact that governments cannot single-handedly provide the needed funding. Its efforts must be complemented by other stakeholders in higher education especially postgraduate studies.

3.4.2.2 Challenges of inadequate government funding

According to Djangmah, Anyimadu and Ohene-Konadu (1997), the major constraint facing Ghanaian public universities for research and postgraduate training has been finance. Their study also identified funding as the lead constraint to research by academic staff of the public universities with 52 percent, literature as second with 33 percent and computing being the least constraint with 15 percent. The study also revealed meagre government scholarships for postgraduate training in Ghana's public universities resulting in longer durations being spent to

complete two year masters programmes as the students spent time working part-time to fill their funding gaps.

Under the government's policy objective of making tertiary education more cost-effective, trends in student enrolment and government spending between 1991/92 and 1997/98 revealed serious decline in funding levels caused by the inability of government to provide funding commensurate with the levels of increases in student numbers over the period. According to the report that evaluated the reforms, cost per student remained far below the rate of inflation during the same period. In real terms, it doubled because it was far lower than the change in prices over the same period. The report further indicated that with respect to the Universities, the average cost per student was \$2,360 in 1991/1992, \$1,081 in 1994/1995, and this further declined to \$918 in 1997/1998 (NCTE Technical Report Series, 1998). The situation was further compounded by the inability of Universities to attract funds from the private sector as envisaged by the government, resulting in high cost per student in public universities during the period.

According to Addae-Mensah (2000), the government resorted to regular budget cuts for Universities. Although this trend was becoming popular globally, Addae-Mensah's main concern was that whereas other countries had started adopting radical and painful alternative measures of funding tertiary education, the government of Ghana was being very careful in taking those steps in the face of dwindling budget allocations. Average subvention per student therefore continued to fall while emoluments rose more than three-fold between 1999 and 2000. Comparing cost per student with the inflation rate at the time, he concluded that "the Universities were receiving less and less in real terms to cater for more and more students".

3.4.2.3 Policy measures for addressing the funding challenges

A number of educational policy reforms have taken place in Ghana towards improving the quality of education at all levels. According to a report on the evaluation of the policy objectives of reforms to the tertiary education system of Ghana, the Government of Ghana White Paper on the Reforms to Tertiary Education System had eleven policy goals which were to be phased out gradually. The policy goals which relate to improvement in tertiary education with implications for undergraduate and postgraduate studies included: (1) making tertiary education more cost-effective and able to provide quality education for increasing numbers of students through efficiency in the utilization space, resources and personnel; (2) increasing funding for tertiary education by increasing the capacity of teaching institutions for income generation and encouraging greater financial support from the private sector; and (3) restructuring enrolment and output of tertiary institutions to achieve an appropriate balance in the provision of skills in science, technology, social sciences, humanities and the arts in relation to national needs (NCTE Technical Report Series, 1998).

3.4.2.4 Funding initiatives and efficiency in allocation of funds

In spite of the above-mentioned difficult times with regard to government funding for tertiary educational institutions, some serious attempts had been made by government to keep the institutions running. In the case of postgraduate studies, government's support had been through the Ministry of Education's agencies such as the Ghana Education Trust Fund (GETFund), National Council for Tertiary Education (NCTE), and the Scholarships Secretariat. The government had also demonstrated its support through the Ministry of Environment, Science and Technology through the allocation of funds to the Ministry to support postgraduate research in

Mathematics, Science, Technology and Engineering in response to the need for faculty and industrial human resource development.

(a) Reforms aimed at improving government funding

Policies such as subsidized tuition fees and provision of residential facilities for postgraduate students and the establishment of the Students Loan Trust Fund were some of the measures taken by government to provide educational loans at relatively low interest rates to students in order to support postgraduate programme delivery. Government also implemented the recommendation by the Technical Committee set up by the NCTE to review the state of tertiary institutions, and that students should bear a substantial part of the academic cost of education by paying realistic tuition and residential facility user fees. Government support for training of teaching, research and administrative staff of public universities in Ghana also constituted a demonstration of government's goodwill and support for postgraduate studies in the country.

Other earlier attempts by government towards improving upon tertiary and postgraduate studies in the public universities included the establishment of the Universities Research Fund Management Committee to administer the grant set up by government in 1993 as part of the Tertiary Education Project One to revive scholarship and professional advancement among academic staff, provision of physical facilities and equipment to all tertiary institutions. In this regard, the University of Ghana benefitted from the following teaching and learning facilities between 1994 and 1997: construction of common lecture theatre hall, construction and rehabilitation of offices and lecture rooms for the Departments of Mathematics and Statistics, construction and rehabilitation of selected facilities at the University of Ghana Medical School,

construction and rehabilitation works at students' hall of residence, and provision of three students' non-residential facilities (NCTE Technical Report Series, 1998).

(b) Some contributions through the GETFund towards postgraduate studies

The GETFund was established in 2000 and has, since its establishment, become the major source of funds for bursaries and scholarships to support postgraduate research in all public universities. For instance, all postgraduate students in the public universities received government bursary, and research postgraduate students received additional funding to support their research work. Research postgraduate students in the sciences received more funding than those in the other disciplines, a demonstration of government's policy shift towards the study of science and technology. Total amount of funds provided and disbursed to postgraduate students as bursary and research grant during the period 2005-2010 was 15.8 Million Ghana Cedis. The breakdown of yearly disbursements is indicated in Table 3.1. Yearly allocations which were normally based on number of applicants received from the University increased marginally from 2005 to 2007.

Table 3.1 Government of Ghana Bursary and Thesis Grant disbursed to UG Postgraduate Students (2005-2010)		
Year	Amount in Ghana Cedis	Estimated US Dollars Values
2005	¢900,000,000	US\$95,744
2006	¢920,740,000	US\$95,910
2007	GH¢100,000	US\$100,000
2008	GH¢4,556,982	US\$3,797,485
2009	GH¢5,246,721	US\$3,497,814
2010	GH¢5,774,132	US\$3,499,474

Source: Ghana Scholarships Secretariat

NB: ¢= old Ghana currency GH¢=New Ghana currency

It however shot up with a wide margin in 2008 due to a sharp increase in postgraduate enrolment and an upward adjustment in the value of bursary and thesis grant approved by government per student and remained fairly stable up to 2010. Amount of bursaries and thesis grants postgraduate received from the government between 2007 and 2012 were as follows: 230 Cedis as bursary to each masters and doctoral student, and thesis grant of 173 Cedis per masters student and 288 Cedis per doctoral student (2007 to 2010); 460 Cedis as bursary to each masters and doctoral student, and thesis grant of 258 Cedis per masters student and 450 Cedis per doctoral student (2010 to 2012).

The GETFund also contributed annually towards postgraduate research at the University of Ghana. The contribution was used to award Fellowships to high performing masters and doctoral students in their research year. Records available at the Office of Research Innovation and Development at the University of Ghana indicate that as at the 2007/2008 academic year, a humanities masters award winner received 5,000 Ghana Cedis, a science masters award winner received 6,000 Ghana Cedis, and a doctoral award winner received 15,000 Ghana Cedis, as the total of value of the Fellowship award for the entire candidature duration. Between 2008 to 2010, twenty-seven (27) masters students were awarded a total of 158,000 Ghana Cedis. Since 2008, Fellowship awards for doctoral students have shifted towards staff development aimed at assisting teaching and research academic staff to obtain doctoral degrees. By the year 2012, sixty-seven (67) teaching and research academic staff of the University had benefitted from the awards to the tune of 678,000 Ghana Cedis

(c) Cost-effectiveness in the allocation of funds

As a guide to ensure efficient resource allocation to Universities, the NCTE advised that the level of revenue that an institution must raise in order to maintain and improve quality must include Government grant, fees charged to students and internally generated income. Government further came up with a resource allocation formula for funds released to Universities to enable it monitor how the funds are used by the Universities to ensure that critical needs or areas in the operations of the institutions are given adequate attention. The seven cost centres and prescribed allocation formula include: (1) Direct Academic Cost (departmental cost) – 50 percent; (2) General Educational Expenditure – 10 percent; (3) Library – 5 percent; (4) Central Administration – 8 percent; (5) Staff/Student Facilities - 10 percent; (6) Municipal Services – 15 percent; and (7) Miscellaneous – 2 percent (NCTE Norms for Tertiary Education – Universities, 2012).

3.4.2.5 Conclusion

The above discussions imply that government has been very much aware of the problem of inadequate funding for higher education and has taken some measures including reforms and funding support to postgraduate students.

However, a lot more effort is required on the part of government to meet the cost of tertiary education especially in the Universities. The NCTE's allocation formula for Universities seems to be based on the block grant system, but with the modification of cost centres specified for the Universities, which to some extent still leaves the Universities to manage further allocation of

the funds within the cost centres. As it stands, the allocation formula does not seem to prioritize postgraduate studies and research.

3.4.3 INDUSTRY AND THE PRIVATE SECTOR

Industry and the private sector have been touted as the engine of growth in any economy. A symbiotic relationship has also been advocated between industry and the private sector on one hand and higher education institutions on the other so that as potential beneficiaries of research findings from higher education, industry and the private sector have an obligation to support research activities in higher education. The relationship should also be seen in the area of drawing on the expertise of faculty from the universities to undertake research on issues related to industrial development and the general development of the national economy. According to CHET's 2011 Report on Universities and Economic Development in Africa, this relationship led to industrial take-off and economic advancement in most developed and developing economies such as the United States, South Korea, Finland, South Africa Mauritius and Botswana.

The University of Ghana recognized the need for this relationship and established the University of Ghana Graduate Fellowship Programme which seeks funding for postgraduate fellowships from industry and the private sector as well as international donor agencies. Donors to the University of Ghana Graduate Fellowship Programme as at the 1993/94 academic year included the USAID, German Bromkamp Foundation, NUFU, Unilever Ghana Limited, Volta River Authority, Shell Ghana Limited, Ashanti Goldfields (now AngloGold Ashanti), and the Barclays Bank (University of Ghana Special Reporter, 1994).

A survey of the views of public and private sector managers about research and postgraduate training in Ghanaian universities conducted by Djangmah *et al.* (op. cit.) revealed that both the public and private sector appreciated the value of research and were willing to support research in the local public universities. The study further revealed that the private sector was however against total reliance on foreign expertise for research and advocated a combination of both local and foreign expertise. It further noted that they were willing to award contracts to the Universities and that a number of private and public sector organizations had also contracted out areas of their work requiring research to individual researchers, departments and institutes within the local public universities.

While this state of goodwill on the part of the private sector for industry-university partnership should give hope for the future sustenance of the University of Ghana Graduate Fellowship, funding from the private sector began to dwindle overtime and by the 2007/2008 academic year, most of the private sector donors had pulled out, leaving the GETFund as the single major source of funding for the Fellowship as already discussed in the previous section.

There is, therefore, sufficient evidence at the University of Ghana and in other parts of the world that students who received financial support were able to complete their postgraduate research on time. Therefore, funding from industry and the private sector needs to be revamped to complement government initiatives to support postgraduate studies to enable it play its role more effectively as key stakeholders in postgraduate study delivery in Ghana.

3.4.4 MANAGEMENT OF THE UNIVERSITY

The main responsibility of a university towards ensuring excellent postgraduate studies lies in its ability to make efficient use of all forms of support provided by government, other stakeholders and its own internally-generated funds to provide the needed academic and social facilities for its students as part of its core mandate. Management and the leadership of higher education institutions can only succeed in doing the above if they manage the limited resources efficiently and if they look at students as their main clients and *raison-d'être*.

Efficient governance and leadership efforts should reflect in the provision of excellent teaching and learning facilities such as lecture rooms and laboratories that are equipped with state-of-the-art information technology, recruitment and motivation of qualified academic staff to teach, supervise, examine and lead research efforts at all levels especially postgraduate studies. The needful is that all facilities necessary to create an enabling academic and research culture within the institution should engage the attention of management. Management should equally be concerned about building competent and well-motivated administrative support staff without which academics alone cannot run a university. With a sound academic and research environment, the university stands in a position to achieve high success and completion rates.

At the University of Ghana, the institution of awards and scholarships for postgraduate students, arrangements with reputable universities for student exchange programmes to undertake part of their research work where departments lack the needed facilities and expertise, exchange arrangements for teaching and research staff to sharpen their skills and knowledge as they

collaborate with their counterparts in other universities have been some of the areas in which the University has demonstrated support for postgraduate studies.

Essentially, the primary focus of institutional managers must be how to find adequate resources for realizing their objectives in order to keep to their core mandate of the production and application of knowledge to address society's needs. To this end, Universities are permitted to undertake income generating activities to complement government's efforts, and as part of the 1998 Reforms, a recommendation was made that government should provide seed money to Universities to kick-start their income generating activities. The search for adequate resources required ability to generate more funds internally in addition to government subventions through prudent management of available resources, making rational investments, investing in human resources by training staff currently at post and recruitment of new ones to keep pace with the ever increasing student population. Areas of income generation for the University of Ghana include its bookshop, guesthouse, and agricultural ventures.

Student-Teacher Ratios (STR) of the Universities have for a very long time fallen short of the norms set by NCTE for various reasons including restrictions by government on the recruitment of new teaching and research staff due to economic hardships and the absence of qualified persons in some disciplines locally. For instance, the 2010/2011 academic year, STRs for the University of Ghana revealed ratios that were far above the norms in all areas except for Engineering Sciences as indicated in Table 3.2.

Disciplines	Enrolment	No. of Teachers	STR	Norm
Science	5,141	274	19:1	18:1
Medicine	2,390	135	18:1	12:1
Engineering	248	37	7:1	18:1
Humanities	29,478	399	74:1	27:1

Source: NCTE 2012 Statistics for 2010/2011 Academic Year

The high STR for the University of Ghana (and of course for the other public Universities) reflects in the University's staff recruitment challenges, particularly teaching and research staff, between 2006 and 2010 as indicated in Table 3.3.

Staff Type	2006	2007	2008	2009	2010
Lecturers	42	45	38	67	67
Research Fellows	7	5	5	4	3
TOTAL	49	50	43	71	70

Source: Human Resource Organization and Development Directorate, University of Ghana

The figures in Table 3.3 provide further evidence to the high STR situation for the University as at the 2010/2011 academic year as no increases were recorded in academic staff recruitment in 2006 and 2007, but rather a drop in the number recruited in 2008, amidst rising student enrolments especially in 2008. Although, recruitment efforts were stepped up in 2009 and 2010 by about 65 percent over the 2008 figure, the STRs still remained high in the humanities and medicine. Comparing the above staffing situation or the public Universities average STR of 41:1 with Manchester University's 5,600 academic and research staff for a student population of

about 40,000, one can only conclude that as a country and a University, there is the need to act quickly on improving the STR situation to attain efficiency in the delivery of programmes especially at the postgraduate level.

3.4.5 THE UNIVERSITY OF GHANA GRADUATE SCHOOL

3.4.5.1 Expected responsibilities

Graduate Schools exist as co-ordinating centres for all departments offering postgraduate programmes within a university, their main responsibility being to promote the efficient delivery of postgraduate programmes within the university. In most cases, they are responsible for admission, registration and orientation after which postgraduate students can settle in their respective departments for academic work. Graduate Schools also oversee matters related to postgraduate students' course offerings and student welfare matters.

The School of Graduate Studies at the University of Ghana, operating through its Board of Graduate Studies and committees made up of representatives of Colleges, Faculties, and Schools within the University, has responsibility for admitting qualified applicants into various programmes and providing administrative and academic support for the students to complete their programmes and receive their qualifications within approved durations.

Section 5.1 of the *Handbook for Graduate Studies Volume One* (2003) mandates the Board of Graduate Studies to “consider all the recommendations for admission and decide which candidates may be admitted”. The regulations further empower the School of Graduate Studies to oversee postgraduate student registration, ensure that students adhere to the approved study

durations, regulate the minimum and maximum course work loads of students as well as progression from one year to another and approve the preferred mode of study for admitted students. After admitting students, the School also has the responsibility of enhancing the knowledge and skills of students in the conduct of postgraduate research, attracting fellowships to support students and arranging for student exchange programmes that would expose them to modern global technologies and developments in academia.

It is also the responsibility of the School of Graduate Studies to ensure that the approved programme structures for academic units are followed, that students' thesis titles, supervisors and examiners are approved on time, that there is fairness in the assessment and grading of examinations, and that due attention is given to students disadvantaged through ill-health, poor academic performance and other social challenges. Other responsibilities include ensuring that theses are examined fairly and in a timely manner, oral defenses are conducted in line with the regulations and on time, students submit their final corrected theses on time for graduation, that results are published on time for graduation and that students' academic transcripts and certificates are without errors and are processed on time for graduating students.

All of the above-mentioned requirements impose huge responsibilities on the University of Ghana's graduate school to deliver postgraduate study more efficiently and to increase graduate output and scholarship in the University.

3.4.5.2 Challenges

Although there had not been any full-scale research into how well the graduate school had performed its role in the areas mentioned, findings reported by Ntiamoah-Baidu (2010)

concerning challenges with programme delivery and examination of thesis were sufficient enough to conclude that there were serious challenges with post graduate study delivery between 2000 and 2009. Records available at the graduate school further indicated that rates for supervision and examination which had been fixed since 2003 had lost value and had become a disincentive for supervisors and examiners to deliver thesis supervision and examination services on time. In the case of thesis examination, the records revealed that between 2003 and 2007 it took between 24 to 57 months on the average to complete assessment of a thesis.

On the issue of supervision, Addae-Menash's (2013) was of the view that apart from low remuneration being a disincentive, the already inadequate faculty members were heavily overloaded with teaching at the undergraduate level due to astronomical enrolment figures and were therefore not able to focus on research and postgraduate work.

These situations no doubt contributed to delayed completions. While the graduate school had the mandate to recommend relatively higher and satisfactory remunerations for thesis supervision and examination, it either failed to set the process in motion or it took too long for proposed new rates to be approved and implemented.

3.4.6 FACULTY AND SCHOOL BOARDS

Faculties and schools are made up of academic units of similar or related discipline within a University. As the coordinating points for academic departments, faculties and schools play a significant role in universities. They can be described as the nerves without which a University cannot exist and function. Every student is admitted into a department which is a vital constituent

member of a faculty or school within the university. Therefore, faculty and school boards serve as coordinating centres of academic work, and departments as the academic workstations within the university. The roles of faculty and school boards in respect of postgraduate programme delivery as prescribed in the *Statutes of the University of Ghana* include the following:

- Making arrangements for effective teaching and research activities in departments
- Ensuring timely approval of supervisors, thesis areas and titles and examiners for postgraduate students (for submission to the School of Graduate Studies)
- Attracting funding for postgraduate students and working out collaborative arrangements with external universities for student and staff exchanges
- Facilitating and encouraging mentorship for postgraduate students with faculty members
- Provision of activities and programmes to encourage participation of postgraduate students in seminars, workshops, and other academic events

The institutional arrangements of the University of Ghana require that academic requests from departments to the School of Graduate Studies receive prior approval of faculty and school boards. Alternatively, such prior approvals may be granted by Deans on behalf of the faculty and school boards for further consideration by the Board of Graduate Studies. Hence, in almost all matters concerning postgraduate students, the role of faculty and school boards becomes crucial before they can be given attention and action at the School of Graduate Studies.

3.4.7 HEADS OF DEPARTMENTS

Departments may be likened to “work-stations” in the industrial sense. As the driving force of academic departments, heads of departments are the first line of authority for students and their supervisors at the University of Ghana. The heads in consultation with departmental graduate

studies committees recommend supervisors for postgraduate students, students' research topics, and academic advisors. They also advise on the availability of qualified academic staff to supervise students' theses. The heads are also required to receive progress reports on each student from their supervisors for important decisions to be taken and for students to be offered appropriate advice to keep them on track to complete their studies successfully. Heads also provide academic advice to students apart from their assigned academic supervisors. Other important responsibilities of heads of departments include ensuring that students keep to deadlines set for presenting research seminars and for submission of their theses for examination and recommending change of supervisors for students, if necessary, to ensure that students receive appropriate guidance and complete their studies on time.

As required under Section 5.2.3 of the *Handbook for Graduate Studies Volume One* (2010), applications for extension of study duration or candidature duration must be supported by duly endorsed progress reports and a recommendation from the student's supervisor and head of department. The regulations also require heads of departments to make recommendations to either support or decline students' requests to interrupt their studies before the Board of Graduate Studies can consider approval of the request. The heads of departments are also enjoined by the regulations to arrange for oral examinations for postgraduate students in consultation with their supervisors, examiners and the School of Graduate Studies and, thereafter, ensure that students revise their examined thesis in conformity with all the requirements and submit the final copies at stipulated dates for graduation.

The extent to which heads of department perform the above-mentioned obligations determines students' ability to meet all the requirements for timely completion of their studies. For instance, if a head of department fails to see to the assignment of supervisors to students on time, or approval of students' thesis topics and examiners on time, or fails to ensure that students submit their theses on time, or fails to endorse thesis submission forms to accompany theses to be sent to the School of Graduate Studies for examination, or keeps students' theses in the department for a long time without recourse to submission dates of the School of Graduate Studies, or fails to arrange for the conduct of oral examinations for students, or delays in submitting the oral examination reports for determination of results, or fails to arrange for students to collect their examined theses and examiners' assessment reports on time to enable the students carry out the necessary corrections, then the affected students would certainly spend much longer time than expected to complete their studies. On the other hand, if heads of departments carry out the above responsibilities according to set time lines and in an efficient manner, their actions would go a long way to ensure timely completion.

3.4.8 SUPERVISORS

A thesis supervisor according to Section 12.1 of the University of Ghana *Handbook for Graduate Studies Volume One* (2010) is “an academic or research staff who must have taught or carried out research in a university or an equivalent institution for at least two years and have a record of research work and publications”. In order to ensure high quality of supervision, the regulations further require in Section 12.2 that all supervisors of masters and doctoral candidates should be accredited by the Board of Graduate Studies upon completion and submission of a

form for accreditation to be approved by the Board of Graduate Studies through the appropriate Faculty or School Board.

The University of Ghana, like other world-class universities recognize the pivotal role supervisors play in the academic pursuit of research postgraduate students. As such, Sections 12.3 through to 12.6 of the postgraduate regulations require that a supervisor should be assigned to every student undertaking thesis or dissertations in all faculties, schools, centres and institutes of the university. The key service required of supervisors to research postgraduate students is also provided in Section 12.5 of the regulations as “advising students on all thesis-related matters”. Supervisors are also required to meet their students at least twice in a semester and submit reports of such meetings to heads of departments (University of Ghana *Handbook for Graduate Studies Volume One*, 2010).

At a thesis writing workshop organized for research postgraduate students of the University of Ghana in 2011 with support from the Carnegie Next Generation of Academics for Africa Project, the point was made that graduate supervision in the University of Ghana requires team work and involves four key players to make it successful. These key players include the head of department, the departmental graduate studies committee, supervisors as well as the postgraduate student.

The main roles and responsibilities of supervisors towards students (derived from Mouton’s supervision model) which were identified and discussed at the workshop included: (1) advisory role (to advise the student as to how to manage the research project), (2) guidance role (to guide

the student through the research process), (3) quality control role (ensuring that the research and thesis are of good quality), (4) pastoral role (to provide emotional and psychological support to the student when needed), and (5) administrative role (to provide or ensure that administrative and logistical support required by the student is provided). The role of co-supervisors or other members of the supervisory committee was also identified as equally essential in assisting the student to complete a good quality research and thesis. These included strengthening methodology and statistical aspects, providing specific field knowledge or new experience to the work of the supervisory team, serving as a substitute in the absence of the supervisor to ensure continuity, and the fact that co-supervision serves as a way of mentoring younger faculty colleagues in research supervision.

At a separate workshop for faculty involved in thesis supervision jointly organized by the School of Graduate Studies and the Office of Research, Innovation and Development of the University of Ghana, held in June 2011, participants considered the following as qualities of a good supervisor: having deep knowledge or expertise in the students' research area; having sound knowledge in research methodology; being capable of guiding students on proposal writing, literature review, research design, and data analysis; commitment to the supervision assignment and making time for the student; reading students' work and offering advice on time; and adopting good working relationship with students.

When participants were asked to indicate what they would do personally to enhance graduate thesis supervision, the main issues that emerged relate closely to the above qualities, namely: to be very conversant with emerging issues in one's discipline and in research methodology aspects; guide students to access relevant material for the research; block regular supervision

time to be able to spend enough time with students; and to read and give feedback on students' drafts more promptly.

The third area was what participants expected the university to do to improve graduate thesis supervision. Key issues that emerged from participants' suggestions were: that supervisors should not be overburdened to supervise too many students (bluntly stated by other participants as "decreasing the number of students each lecturer supervises or recruit more lecturers to assist with supervision" and "reducing the teaching load of lecturers supervising thesis"); provision of funding for graduate research and other resources such as office space, computer laboratories with internet facility for both students and supervisors as well as accommodation to postgraduate students to enable them stay closer to their supervisors; institute enhance remuneration for supervision of thesis; developing skills of faculty and students through workshops and seminars; and institute an evaluation system to review the output of supervisors.

The above discussion therefore underscores the importance of supervisors in ensuring quality postgraduate programme outcomes at the University of Ghana. It also implied that the problem of supervision is two-sided and must be tackled as such – addressing the needs of both students and supervisors.

3.4.9 INTERNAL AND EXTERNAL THESIS EXAMINERS

Schedule G of the *Statutes of the University of Ghana* (University of Ghana Act 2010) states that "an internal examiner must be an academic staff of senior member status appointed by the Appointments Board of the University".

Although, the postgraduate regulations do not specifically define internal examiners of theses, it is implied from the provisions in Section 23.2.1 and 23.2.2 of the University of Ghana *Handbook for Graduate Studies Volume One* (2010) that an internal examiner of thesis is an academic staff or faculty member appointed by the Academic Board of the university on the recommendation of the Faculty or School Board and the Board of Graduate Studies to examine theses of students in the department or academic unit where the person so appointed has been engaged to teach, supervise, examine and conduct research, or where the appointed person's departments is recognized as being cognate to the student's department or in affiliation with the university. The internal examiner of a thesis also serves as a member of the panel of examiners for the oral examination of the student.

According to Schedule G, 2(1) of the *Statutes of the University of Ghana*, "an external examiner must be an experienced academic staff member of a recognized academic institution which is not part of the university". External examiners moderate examination questions as well as examination scripts to ensure that the test or examinations are of the standard expected of university students of the same level in other universities. They therefore play a benchmarking and quality assurance role which is very vital in academia. Apart from written examinations, external examiners also assess masters and doctoral theses of the University of Ghana in line with prescribed assessment criteria. At the University of Ghana, external examiners also serve as members of panel of examiners at doctoral oral examinations and it is a requirement that the panel for the doctoral oral examination should comprise at least one internal examiner and at least one external examiner.

The role of internal and external examiners in oral examinations is so crucial that the regulations governing graduate study in the University of Ghana recognizes their absence from the oral examination as a ground for the oral examination to be declared illegal and unacceptable. The idea has also been conceived, arguably though, that external examiners' comments are normally given more attention than those of other panel members. A survey of external examiners thesis assessment reports at the University of Ghana reveals that sometimes, external examiners demand and insist that the corrected versions of candidates' theses be sent to them to ensure that their comments have been addressed before the corrected thesis can be accepted either for re-examination or publication of results as the case may be. Such is the importance of the role of internal and external examiners in maintaining quality and standards not only at the postgraduate level but also in academia.

3.4.10 POSTGRADUATE STUDENTS

Before delving into the core areas of responsibility expected of postgraduate students, it is important to indicate that students have a role to play in complementing government's funding efforts. This position has long been indicated in the recommendations of the 1998 Evaluation Report considering that central government alone could no longer fund tertiary education. Specifically, the report recommended that students be made to bear not only residential facility user fees but also a greater proportion of academic cost. Their contribution may also be in the form of efficient use of utility services such as electricity and water which can run into huge cost for the University. This situation is particularly true of the University of Ghana where majority of the students stay in campus residential facilities. Addae-Mensah (2010) reports that as at 2010, Ghanaian students were paying the cedi equivalent of 42 dollars per annum as against

1200 dollars per annum being paid by their international counterparts. The amount being paid by Ghanaian students who far outnumbered the international students was heavily subsidized, although students' halls of residence remained the highest consumers of electricity and water on campus.

There have also been reports of student contributions in some Universities in the form of voluntary token contributions from grants received from government and awards won through students' participation in sponsored sporting activities which the institutions used to provide learning and recreational facilities for the students.

Mouton (2001) advises that students themselves ought to play a key role in supervision by adhering to the 'research contract' made with their supervisors, initiating the contract terms and requesting for meetings with the supervisor. The student must also understand requirements (procedures, deadlines, thesis content and format) of his or her university, faculty and department that are relevant to postgraduate studies, and also develop and maintain interest and commitment throughout the period of research and thesis writing. In most successful higher education institutions, academic supervision is considered and managed as a contract between the supervisor(s) and the supervised rather than a mere student-teacher relationship. This way, each party to the contract can be assigned specific responsibilities which he or she must fulfill to make the exercise successful. Concepts such as 'research contract', 'supervision contract', and 'student-supervisor relationship' have evolved to support this view.

According to Mouton (op. cit), the important elements of the research or supervision contract on the part of the student include: (1) keeping to the contract terms and time (accepting responsibility to conduct the research and write the thesis within the time set for completion); (2) communication (keeping the supervisor(s) informed about challenges affecting the progress of research and thesis writing); (3) initiative (avoiding having to always wait to be told what to do next, foreseeing challenges that may inhibit the progress of work and promptly bringing them to the attention of supervisor(s); (4) self editing (ensuring that drafts presented for review by the supervisor are checked for spelling, typographical errors, grammar and appropriate reference citation) to enable supervisors concentrate on major issues such as the research design. Other responsibilities include: (5) self organization (making sufficient time for the research and thesis writing; and (6) accepting ownership of research and the thesis (by accepting responsibility for producing the final copies of the thesis according to prescribed formats and being prepared to accept the thesis as your own). The student is also expected to keep a record of meetings held with supervisors and drafts submitted must be dated for record purposes.

To be successful in all the above requires self-discipline on the part of the postgraduate student; otherwise only very little or no progress would be made even if all other required resources are placed at the disposal of the postgraduate student.

3.5 POSTGRADUATE ENROLMENT AND OUTPUT TRENDS

3.5.1 INTRODUCTION

Throughput rates, the rate at which students are able to complete their programmes of study, are usually determined by analyzing output in close relation to enrolment in a particular year or

within a particular period. For instance, if fifteen postgraduate students enrolled for a two-year research masters programme in Environmental Studies in August 2000, they should all complete their studies by the end of July 2002 and receive their degrees soon thereafter.

Assuming that all the fifteen students were able to complete within the expected duration, throughput for the class would be said to be high. On the other hand, if only a small number out of the fifteen completed their studies on time and received their degrees (i.e. a large number of students could not complete on time or dropped out), throughput would be said to be low for that class. This statistics requires the use of a system that captures accurate data on student enrolment and is capable of tracing the progress of each student up to completion or drop out stage. In the case of the University of Ghana, a tracer system for students' progress from enrolment to graduation did not exist from the inception of the postgraduate studies.

To the ordinary person, a simple way to check if throughput or the rate of completion is falling or increasing is to generally take note of graduation figures on yearly basis to see if the number of graduates turned out is rising or falling in relation to enrolment figures over a certain period. This is the approach adopted in the ensuing sections to demonstrate throughput trend in postgraduate studies at the University of Ghana over a period of fifty years from 1961 to 2010. This approach requires a consistent and reliable tracer system. However, where a good tracer system does not exist, the challenges to be expected are overlaps from one class or year group to another due to interruptions in the study period of some students for various reasons, which may create difficulties in determining accurate throughput rates for cohorts. Reliable throughput statistics would, therefore, depend on an institution's ability to generate accurate enrolment and

output records on yearly basis and broken down into available programmes and gender of students.

For this study, enrolment and graduation figures were extracted from the University's *Basic Statistics* data set and compiled in a meaningful format for analysis. Therefore, the accuracy of statistics compiled and the depth of discussions would depend to a large extent on the form and volume of data set provided in the University's Basic Statistics.

3.5.2 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (1952 – 1961)

The earliest postgraduate programmes offered by the University College as it was then known were postgraduate certificate and postgraduate diploma programmes in Education. As pioneer postgraduate programmes, initial intakes were generally low. According to the *University of Ghana Alumni Directory* (1951-1980), which was compiled from the university's matriculation records, only one student had enrolled in the postgraduate certificate programme in Education in 1952. The number increased to four (4) in 1953, and remained unstable, recording three (3) in 1954, eight (8) in 1955, five (5) in 1956, fourteen (14) in 1957, eleven (11) in 1958, twelve (12) in 1959, eleven (11) in 1960 and the last batch of thirteen (13) in 1961. Although output figures were not available for this early batch of postgraduate students, it would be assumed that output would commensurate enrolment figures since these were small specialist groups of graduates needed to fill critical vacancies within the public sector of the country. *The University of Ghana Basic Statistics (1961-1991)* reports that there were six (6) postgraduate students in the 1961-62 academic year, thirty-one (31) in 1962-63, 131 in 1963-64, and 130 in 1964-65.

Records in the *University of Ghana Alumni Directory (1951-1980)* further indicated that other postgraduate diploma programmes were introduced in the early 1960s and beyond and these included the postgraduate diploma in Archaeology, Population Studies, Journalism and Communication Studies, Applied Statistics, Library Studies, Linguistics, French, Accounting, and Computing. The directory also indicated that the postgraduate diploma programme in Archaeology was phased out and later upgraded to a masters degree programme and the Department of Archaeology produced its first masters graduate in 1971. It was also noted from the directory that postgraduate diploma programmes in Population Studies, Journalism and Communication Studies, Applied Statistics, and Library Studies were offered over a fairly long period before they were revised and upgraded to masters programmes. Others such as Archaeology, Linguistics, French, Accounting, and Computing were offered for a relatively shorter period and were either scrapped or upgraded to masters degree programmes. The records also revealed that although most postgraduate programmes started as certificate and diploma qualifications, some departments started postgraduate studies straightaway with masters programmes without first starting with either certificate or diploma programmes.

3.5.3 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (1961-1971)

Table 3.4 Postgraduate Enrolment and Output (1961 - 1971)							
YEAR	HUMANITIES		SCIENCES		TOTAL		
Academic Year	A ENROL. (M&D)	B OUTPUT (M)	C ENROL. (M&D)	D OUTPUT (M)	E PH.D OUTPUT	F (A+C) TOTAL ENROL	G (B+D+E) TOTAL OUTPUT
1961-62	-	0	-	0	0	6	0
1962-63	-	0	-	0	0	31	0
1963-64	-	4	-	2	0	131	6
1964-65	-	15	-	9	0	130	24
1965-66	-	9	-	3	0	107	12
1966-67	-	11	-	7	0	54	18
1967-68	-	6	-	5	0	65	11
1968-69	-	9	-	10	0	156	19
1969-70	-	4	-	17	0	106	21
1970-71	-	3	-	6	2	155	11
TOTAL		61		49	2	941 (*52 PhDs)	122

Source of data: U G Basic Statistics (1961-1991), published: 23rd March, 1991 (pages 5 & 11)

Key statistics from Table 3.1

*Total PhD Enrollment of 52 as reported on page 9 of UG Basic Statistics (1961-1991).

Total Enrolment (M) = 889; Total Output (M&D) = 122

Total Masters Output as percentage of Total Masters Enrolment = 12.3%

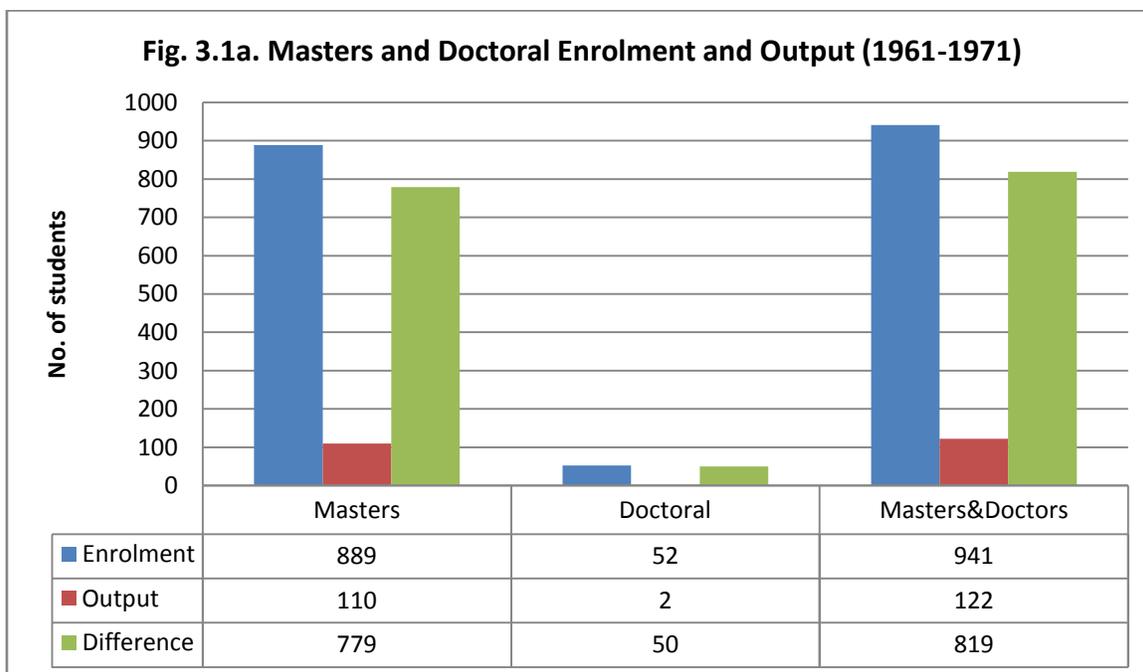
Total Output (M&D) as percentage of Total Enrolment (M&D) = 12.9%.

The records in the University's Basic Statistics indicate that the University enrolled its first batch of masters students in the 1961-62 academic year, who were expected to graduate in the 1963-64 academic year. Table 3.4 shows the enrolment and output figures for the period 1961-1971. The period experienced low levels of enrolment and graduation in masters and doctoral programmes.

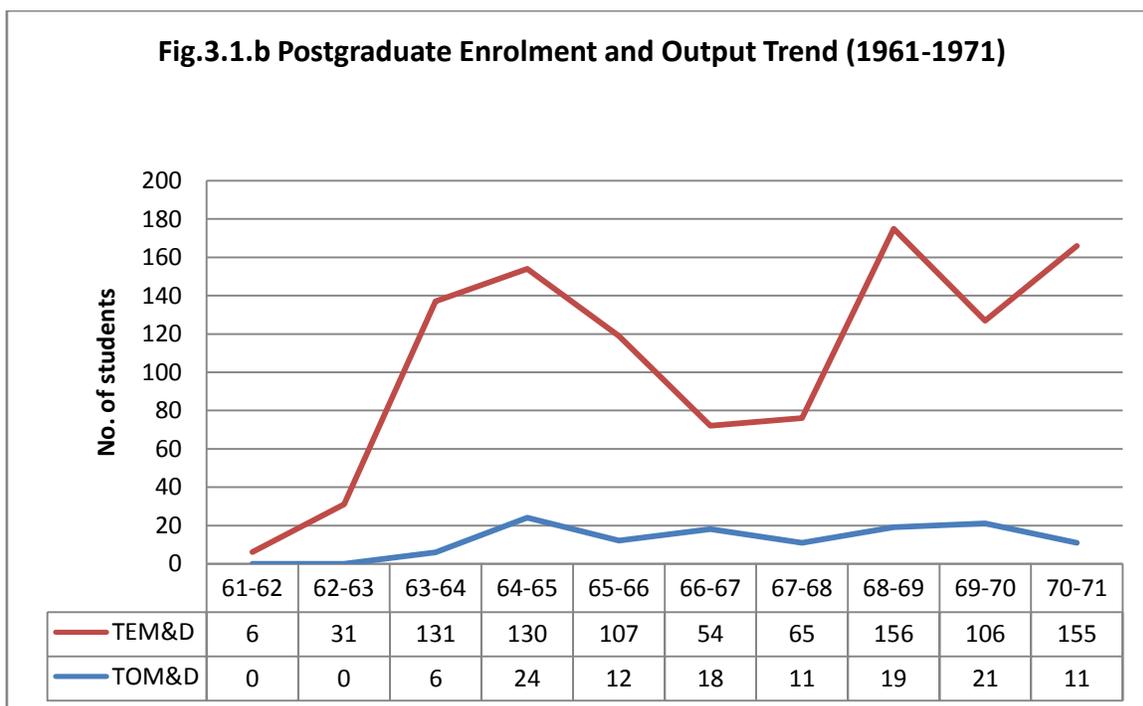
This may be attributed to the fact that only a few departments were offering or had the capacity to run postgraduate programmes (Agbodeka, 1998). Although data on postgraduate enrolment were available in the *University of Ghana Basic Statistics* handbooks, there was no indication of

the proportion of masters or doctoral candidates enrolled. However, figures for total enrolment in masters and doctors were provided. Separate figures were also not provided for masters and doctoral enrolments in the sciences and humanities disciplines.

Based on figures reported in the University of Ghana Basic Statistics, graduation or output figures for masters candidates for the first ten-year period were 61 for humanities and 49 for sciences. The statistics also indicated that doctoral enrolment in sciences and humanities was 52 during the period 1961-1971. If there were 52 doctoral candidates during the ten year period, it would be assumed that total enrolment in masters programmes alone during the period was 889 (total masters and doctors enrolment of 941 less 52 doctoral candidates). Using the formula - output over enrolment multiplied by hundred, completion rate for masters programmes in percentages for the first ten-year duration was 12.3 per cent. Using the same formula, completion rate in percentages for doctoral programmes was 3.8 percent. Postgraduate completion rate was 12.9 percent using total enrolment and output figures for masters and doctoral programmes for the entire period.



Source of data: University of Ghana Basic Statistics (1961-1991)



Source of data: University of Ghana Basic Statistics (1961-1991)

TEM&D = Total Enrolment (Masters and Doctors)

TOM&D = Total Output (Masters and Doctors)

The completion rates indicate that, generally, more masters candidates were completing their programmes than doctoral candidates since masters completion rate of 12.3 percent is higher than doctoral completion rate of 3.8 percent. Figures 3.1(a) and 3.1(b) show the relationship between total enrolment and total output for postgraduate programmes (masters and doctors) during the period 1961-1971.

3.5.4 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (1971-1981)

During the second ten-year period of 1971-1981, although separate enrolment figures were not indicated for masters and doctors for each academic year, the University's Basic Statistics reported doctoral enrolment for the entire second ten-year period as 316, an increase of 264 students over 52 students in the previous decade, representing 83.5 percent increment.

YEAR	HUMANITIES		SCIENCES		ALL PROGRAMMES		
	A ENROL. (M&D)	B OUTPUT (M)	C ENROL. (M&D)	D OUTPUT (M)	E PH.D OUTPUT	F (A+C) TOTAL ENROL.	G (B+D+E) TOTAL OUTPUT
1971-72	-	4	-	14	1	191	19
1972-73	-	5	-	4	1	233	10
1973-74	-	14	-	13	5	320	32
1974-75	319	15	56	15	5	375	35
1975-76	337	8	80	9	2	417	19
1976-77	541	10	88	12	0	629	22
1977-78	335	25	80	15	0	415	40
1978-79	330	18	86	10	3	416	31
1979-80	229	18	28	7	9	257	34
1980-81	316	28	45	7	2	361	37
TOTAL	2407	145	463	106	28	*3614	279

Source of data: University of Ghana Basic Statistics (1961-1991), published on 23rd March, 1991.

Key statistics from Table 3.2:

* Includes 316 PhD reported in UG Basic Statistics (1961-1991).

PhD Output (Humanities & Sciences) =28; Total Enrolment (Masters and Doctors) =3614;

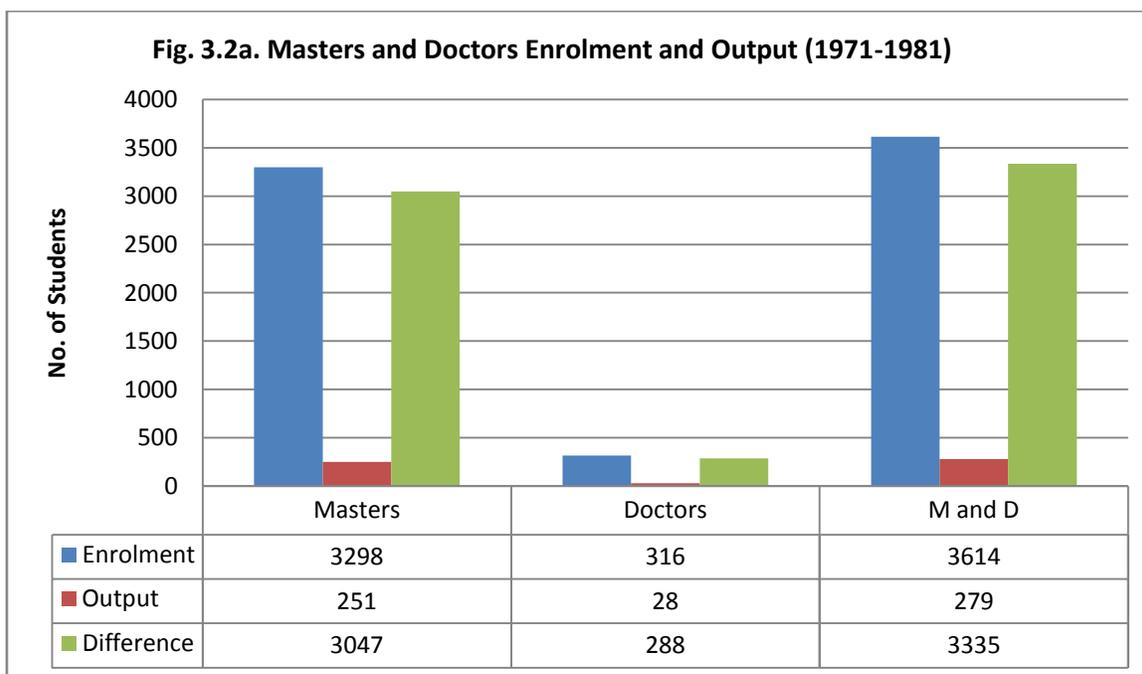
*Total Enrolment (Masters) = 3298 (3614 less 316); Total Output (Masters and Doctors) = 279;
Total Masters Output as percentage of Total Masters Enrolment = 7.8%;
Total Output as percentage of Total Enrolment = 7.7%*

As shown in Table 3.5, if the total enrolment figure for both masters and doctors was 3614, then total enrolment for masters alone was 3298 students (i.e. 3614 less 316). This further means that masters enrolment rose from 889 in the first ten-year period to 3298 by the end of the second ten-year period (i.e. 1970-71 to 1980-81).

The increases in enrolment of 2409 students representing 73 percent in masters enrolments and 83.5 percent in doctoral enrolments, though quite high, represent an expansion in graduate enrolment at the University of Ghana over the period 1971-1981. As was the case in the period 1861-1971, separate enrolment figures were not available in the University's Basic Statistics records for masters or doctoral candidates. Total enrolment in masters and doctors by the end of the second ten-year period was 2407 for humanities and 463 for the sciences. Output figures for humanities masters candidates rose from 61 students in the first ten-year period to 145 students in the second ten-year period, and from 49 students to 106 students in sciences masters programmes. There were relative increases of 57.9 percent in humanities students output and 53.7 percent science students output. Doctoral output increased from two (2) students during the previous period to 28 students by the end of 1971-1981, representing 92.8 percent increase over the output figure for the previous period.

Enrolment in masters and doctoral programmes in both humanities and sciences also saw a rise from 941 students during the first ten-year period to 3614 students by the end of the period, representing 73.9 percent increase over the figure for the previous period. Output for masters

and doctoral programmes recorded an increase from 122 students in the previous period to 279 students in the period 1971-1981, resulting in 56.2 percent increase.

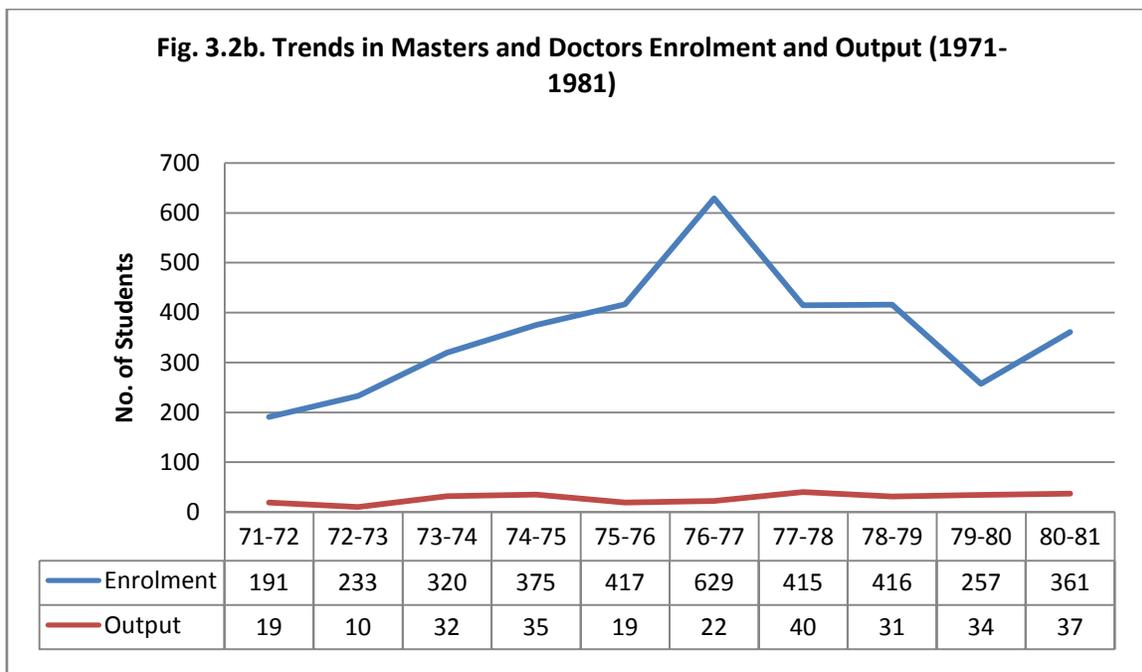


Source of data: University of Ghana Basic Statistics (1961-1991)

Completion rates for the period 1971-1980 for masters and doctoral programmes using the formula - output over enrolment multiplied by hundred, was 7.8 percent for masters students and 8.8 percent for doctoral students respectively.

Compared to the completion rates for the first ten-year period, doctoral completion rate increased from 3.8 percent to 8.8 percent, while masters completion rate decreased from 12.3 percent to 7.8 percent. This means that given the enrolment figures for the two successive periods, more masters students should have graduated in the period 1971-1981 than was recorded. In the case of doctoral candidates, although the completion rate was low in relation to enrolment, it doubled in the period 1971-1981. The completion rates should serve as a signal that, a little more of

doctoral candidates were completing their programmes than masters candidates during the second ten-year period.



Source of data: University of Ghana Basic Statistics (1961-1991)

Figures 3.2(a) and 3.2(b) show the relationship between total enrolment and total output for postgraduate programmes (masters and doctors) during the period 1961-1971. From figure 3.2(b), the period 1971-1977 could be described as a progressive in terms of postgraduate enrolment having recorded a steady rise. On the contrary, the period 1977-1980 could be described as regressive or a period of decline in postgraduate enrolment. The 1980-81 academic year, however, recorded a take-off in postgraduate enrolment. Postgraduate output remained very low, the highest output during the period being 40 students in the 1977-78 academic year.

3.5.5 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (1981 - 1991)

The period 1981-1990, the third ten-year period, recorded ups and downs in both enrolment and output. There was neither enrolment nor graduation in the 1983-1984 academic year in particular, due to a protracted student unrest that took over one year for public universities in Ghana to resume academic work.

YEAR	SCIENCES (MASTERS)		HUMANITIES (MASTERS)		DOCTORS (ALL PROGRAMMES)		TOTAL (ALL PROGRAMMES)	
	A ENROL.	B OUTPUT	C ENROL.	D OUTPUT	E ENROL.	F OUTPUT	G ENROL.	H OUTPUT
1981-82	27	17	57	48	43	4	127	69
1982-83	13	1	40	10	43	3	96	14
1983-84	-	-	-	-	-	-	-	-
1984-85	14	3	43	9	9	0	66	12
1985-86	11	10	113	53	21	2	145	65
1986-87	9	14	61	64	15	0	85	78
1987-88	7	17	107	31	10	0	124	48
1988-89	33	11	154	68	20	1	207	80
1989-90	30	22	184	108	17	3	231	133
1990-91	33	-	202	-	16	-	251	-
TOTAL	180	95	961	391	194	13	1335	499

Source of data: University of Ghana Basic Statistics (1961-1991)

Key Statistics from Table 3:

Total Masters Enrolment = 1141; Total Doctors Enrolment (Humanities & Sciences) = 194;

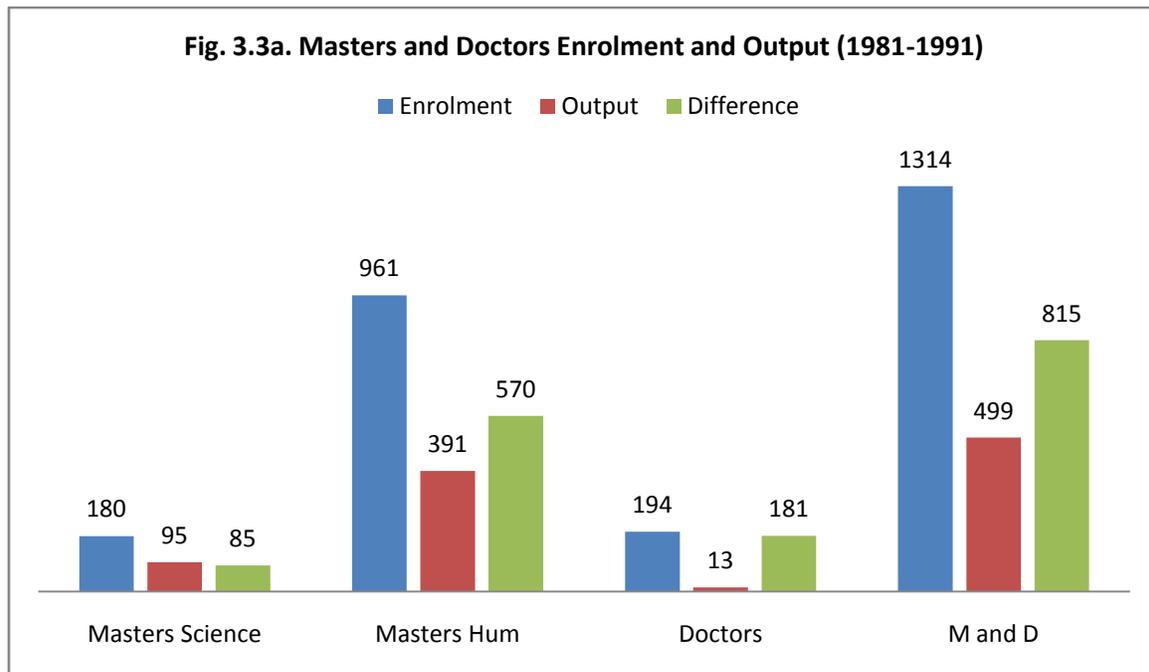
Total Masters Output=486; Total Doctors Output (Humanities & Sciences) =13;

Total Enrolment M&D =1335; Total Output (M&D) = 499; Total Masters Output as percentage of Total Masters Enrolment = 42.5%; Total Doctoral Output as percentage of Total Doctoral Enrolment = 6.7%; Total Postgraduate Output as percentage of Total Postgraduate Enrolment = 37.4%

Enrolment figures in masters programmes were 180 and 961 for sciences and humanities respectively over the third ten-year period, resulting in a total masters enrolment of 1141 students. Enrolment in doctoral programmes was 194. Output or graduation figures for masters programmes were 95 and 391 sciences and humanities students respectively, while that of doctoral programmes was 13 students. Therefore, total enrolment in masters and doctoral programmes was 1335 students, while total output for masters and doctoral programmes was 499 students.

Compared to the figures for the second ten-year period (1971-1981), total masters enrolment decreased drastically by 189 percent from 3298 students to 1141 students by the end of the third ten-year period (1981-1990). Enrolment in doctoral programmes decreased by 62.8 percent (from 316 students to 194 students) as shown in Table 3.6, and Figures 3.3a. and 3.3b.

Figure 3.3a further shows that total enrolment in both masters and doctoral programmes also decreased sharply by 175 percent from 3614 students to 1314 students, while total output for both masters and doctoral programmes recorded a rise of 78.8 percent from 279 to 499. In the case of doctoral output, there was a decrease of 115.3 percent over the previous ten-year period's figure (from 28 to 13) by the end of the period 1981-1990.

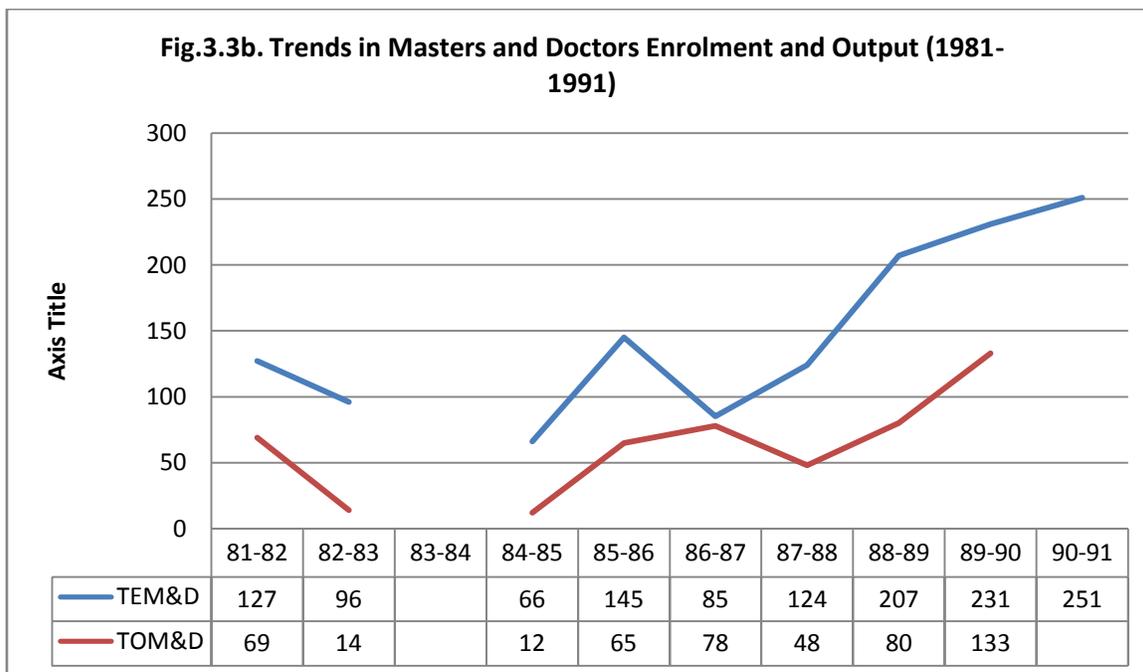


Source of data: University of Ghana Basic Statistics (1961-1991)

The huge gaps recorded between enrolment and output for the two decades are a confirmation of the perception that postgraduate throughput is generally low in the University of Ghana and therefore required serious attention from all stakeholders.

Figure 3.3b depicts the trend in postgraduate enrolment and output on yearly basis from 1981-82 to 1990-91 with no enrolment and output recorded in the 1983-84 academic year due to protracted student unrest. The enrolment trend depicts a nose dive in enrolment in the 1986-87 academic year but rose sharply from then on to the 1990-91 academic year. Similarly, from the turbulent years of 1981-1984, output took-off from 1984-85 academic year and remained rising up to the 1986-87 academic year. It declined sharply in the 1987-88 academic year but started rising again from the 1988-89 academic year onwards. Apart from the 1986-87 academic year

when output almost equaled enrolment, the output remained consistently far lower than enrolment during the period.



Source of data: University of Ghana Basic Statistics (1961-1991)

TEM&D = Total Enrolment in Masters and Doctors

TOM&D = Total Output in Masters and Doctors

Based on total masters and doctoral enrolments and output figures as at the end of 1981-1991, completion rates were 42.5 percent for masters programmes and 6.7 percent for doctoral programmes. Completion rate for both masters and doctoral programmes was 37.9 percent. There was an increase in masters completion rate from 7.8 percent in the previous duration to 42.5 percent in the third ten-year period. However, there was a decrease in doctoral completion rate from 8.8 percent in the period 1971-1980 to 6.7 percent in the period 1981-1990. This means that far more masters students completed their programmes than did doctoral students during the period 1981-1990. Similarly, completion rate was lower for among doctoral students

than in the immediate past ten-year period. Completion rate for masters and doctoral programmes during the third ten-year period was 37.9 percent, which represents a marked improvement upon the previous rate of 7.7 percent. The drastic reduction in enrolment during the period 1981-1990 resulted in an improvement in postgraduate completion rate. Other reasons for the improved completion rate may be as a result of reduced thesis supervision and examination load on the part of supervisors and examiners which might have resulted in early submission of results for graduation.

3.5.6 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (1991 - 2001)

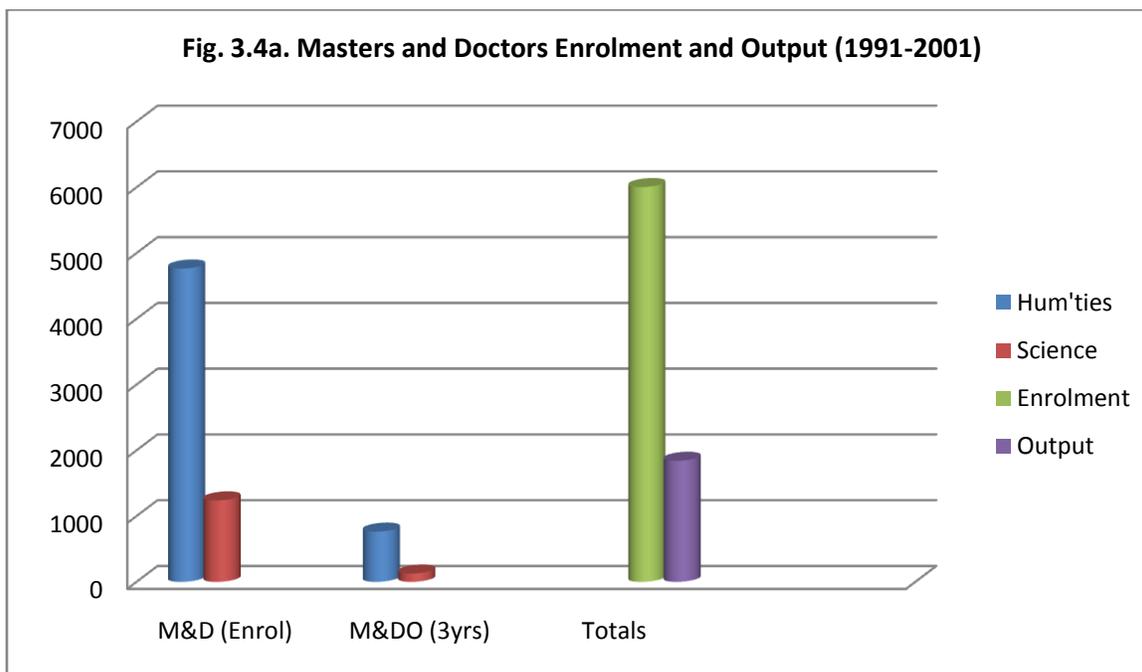
YEAR	HUMANITIES (M&D)		SCIENCES (M&D)		SCIENCES & HUM'TIES (M&D)	
	ENROLMENT	OUTPUT	ENROLMENT	OUTPUT	ENROLMENT	OUTPUT
1991-92	256	-	44	-	300	-
1992-93	-	-	-	-	-	-
1993-94	182	-	76	-	258	150
1994-95	272	-	118	-	390	257
1995-96	-	-	-	-	-	-
1996-97	313	-	84	-	397	323
1997-98	771	-	186	-	957	220
1998-99	780	175	269	48	1049	223
1999-00	1005	219	260	27	1265	246
2000-01	1187	371	202	52	1389	423
TOTAL	4766	765 (3 yrs)	1239	127 (3 yrs)	6005	1842

Source of data: University of Ghana Basic Statistics (1991-2001 series)

Key statistics from Table 3.4:

Total Enrolment (M&D) = 6005; Total Output (M&D) =1842; Total Output as % of Total Enrolment is approximately 30.6% (based on available figures).

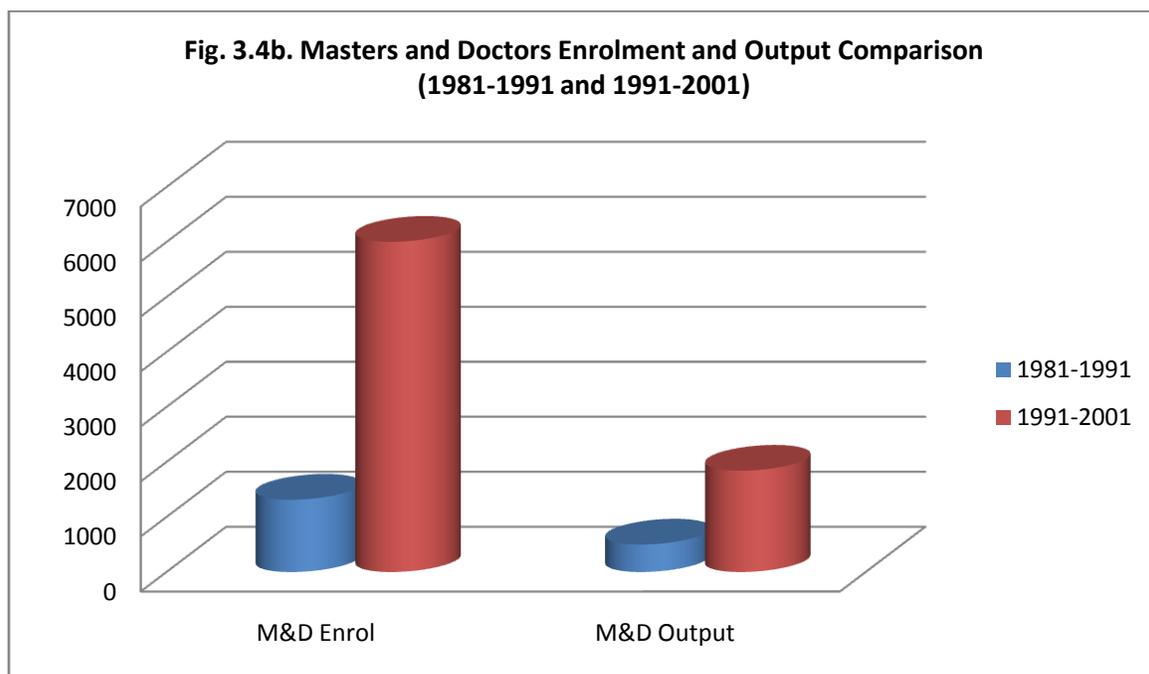
Table 3.7 displays figures compiled on postgraduate enrolment and output during the fourth ten-year period of 1991-2000) were not as detailed as those of the period 1981-1990 due to the absence of data set on all the academic years within the period. Due to absence of records, separate masters and doctoral output figures for the decade for sciences and humanities disciplines could not be determined. Another difficulty was the absence of data on masters and doctors output for the 1991-1992 academic year and on masters enrolment and output for the 1992-1993 and 1995-1996 academic years.



Source of data: University of Ghana Basic Statistics (1991-2001 Series)

As illustrated in Figure 3.4(a) above, enrolment in masters and doctoral programmes during the period was 4766 for humanities and 1239 for sciences, yielding a total enrolment of over 6005 during the period. Total output for the period, specifically from 1993-1994 to 2000-2001 academic years was 1842.

Compared to the period 1981-1991, an astronomical rise was recorded in masters and doctoral enrolment from 1314 in 1981-1991 to 6005 during the period 1991-2001, an increase of 357 percent. In other words, postgraduate enrolment almost quadrupled during 1991-2001. Although total output also rose from 499 during the previous ten-year period to 1842 during 1991-2000, representing about 270 percent, the effect of quadrupling in enrolment was more than the margin of output between the two ten-year periods as shown in Figure 3.4(b). This effect resulted in a reduction in the masters and doctoral completion rate in both humanities and sciences from 37.9 percent chalked during 1981-1991 to 30.6 percent by the end of the period 1991-2001.



Source of data: University of Ghana Basic Statistics (1961-1991) and (1991-2001)

3.5.7 TRENDS IN POSTGRADUATE ENROLMENT AND OUTPUT (2001-2010)

3.5.7.1 Trends in masters enrolment and output (2001-2010)

During the last decade, the enrolment trend in masters depicted a steady rise in both sciences and humanities.

The period recorded ups and downs in masters output in both sciences and humanities as shown in Table 3.8 and Figure 3.5 which illustrate the relationship between science and humanities enrolments within the last ten years for masters degrees at the University of Ghana.

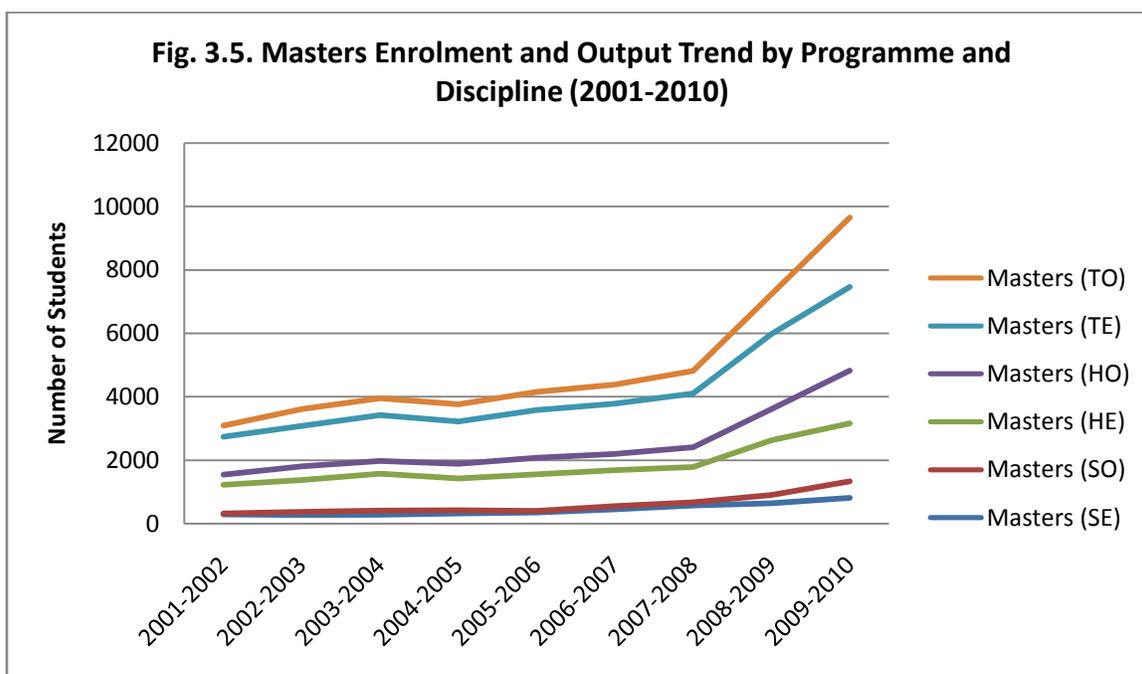
Academic Year	Masters (Science Enrolment)	Masters (Science Output)	Masters (Humanities Enrolment)	Masters (Humanities Output)	Total Masters Enrolment	Total Masters Output
2001-2002	286	40	903	319	1189	359
2002-2003	270	105	1002	434	1272	539
2003-2004	282	134	1161	404	1443	538
2004-2005	324	99	1011	450	1335	549
2005-2006	351	55	1152	521	1503	576
2006-2007	446	113	1134	504	1580	617
2007-2008	574	98	1118	618	1692	716
2008-2009	640	267	1724	985	2364	1252
2009-2010	813	524	1830	1659	2643	2183
TOTAL (2001-2010)	3986	1435	11035	5894	15021	7329

Source: University of Ghana Basic Statistics (2000 to 2010 Series)

Key statistics from Table 3.5:

Total Masters Enrolment = 15021; Total Masters Output = 7329

Total Masters Output as percentage of Total Masters Enrolment = 48.7%



Source of data: University of Ghana Basic Statistics (2001-2010 series)

TO=Total Output; TE= Total Enrolment; HO= Humanities Output; HE=Humanities Enrolment; SO=Science Output; SE= Science Enrolment

3.5.7.2 Trends in doctoral enrolment and output (2001-2010)

In Table 3.9 and Figure 3.6, enrolment in science doctoral programmes also showed a fluctuating trend in the first half of the period 2001-2010 (up to the 2006-2007 academic year) but picked up from that point steadily to the 2009-2010 academic year. Enrolment in humanities doctoral programmes recorded minimal fluctuations during the period, and doctoral output in both sciences and humanities showed a similar fluctuating trend. The period recorded very high increases in enrolment compared to the last two decades, but with relatively low output especially among doctoral students. From totals of 180 and 961 Masters enrolments in sciences and humanities respectively during the period 1991-2001, enrolments shot up to 3986 and 11035 in sciences and humanities respectively, recording more than ten times increment in the figures over the 20 years period. Total enrolment in both masters and doctoral programmes during

2001-2010 also increased from 6005 in 1991-2001 to 16076 by the end of the last nine-year period, representing about 168 percent increment. Total output (masters and doctoral graduates) also increased from 1842 in the previous decade to 7469 by the end of the last nine-year period, recording about 305 percent increment.

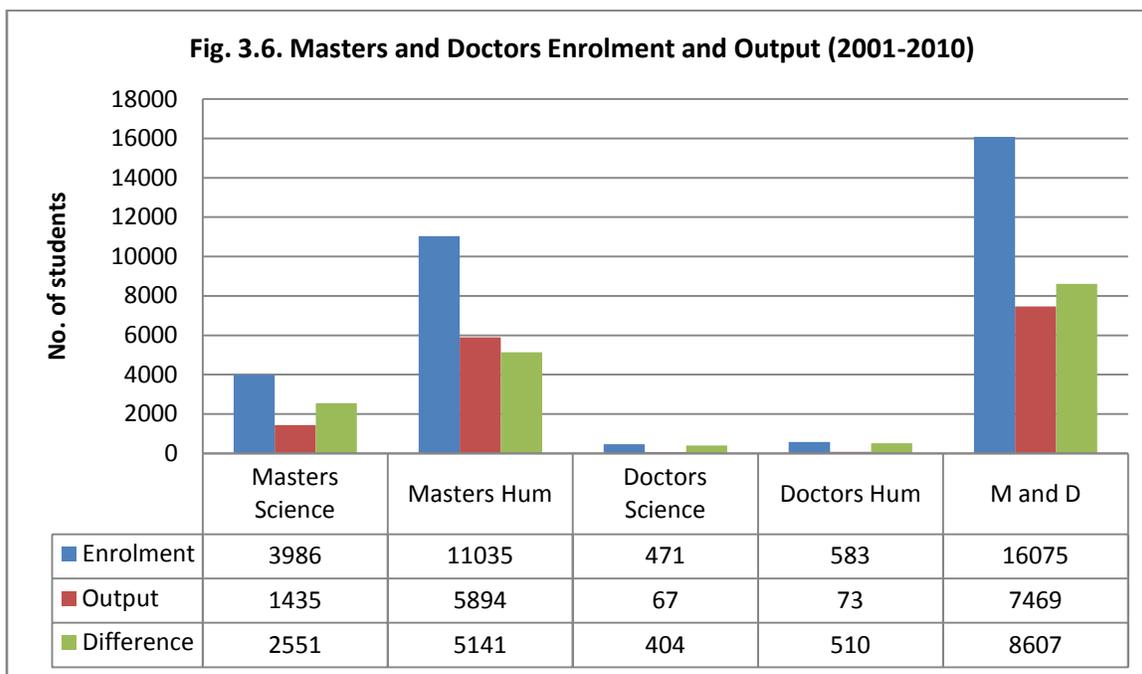
Table 3.9 Doctoral Enrolment and Output by Discipline (2001-2010)						
Academic Year	Doctors (Science Enrolment)	Doctors (Science Output)	Doctors (Hum. Enrolment)	Doctors (Hum. Output)	Doctors (Total Enrolment)	Doctors (Total Output)
2001-2002	41	0	51	0	92	0
2002-2003	28	4	51	3	79	7
2003-2004	46	7	66	5	112	12
2004-2005	31	9	63	11	94	20
2005-2006	39	8	71	3	110	11
2006-2007	37	11	65	6	102	17
2007-2008	48	10	67	6	115	16
2008-2009	68	6	66	11	134	17
2009-2010	133	12	96	28	229	40
TOTAL (2001-2010)	471	67	583	73	1054	140

Source: University of Ghana Basic Statistics (2001 to 2010 Editions)

Key statistics from Table 6:

Total Doctoral Enrolment (TDE)=1054; Total Doctoral Output (TDO) =140;

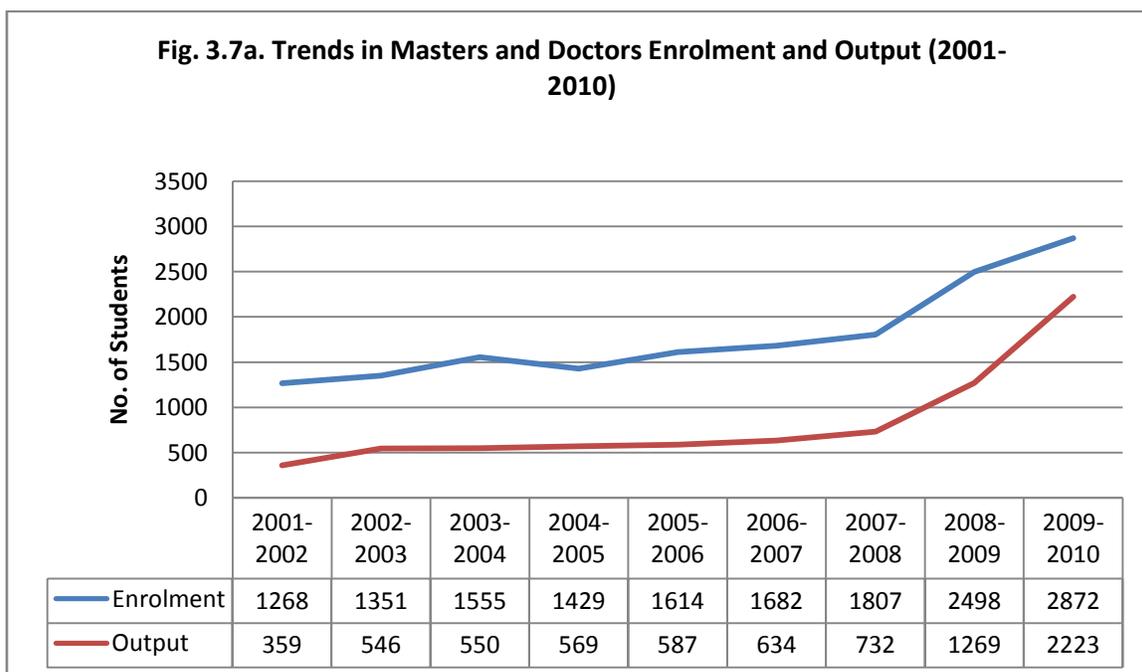
TDO as percentage of TDE =13.2%



Source of data: University of Ghana Basic Statistics (1991-2001 series)

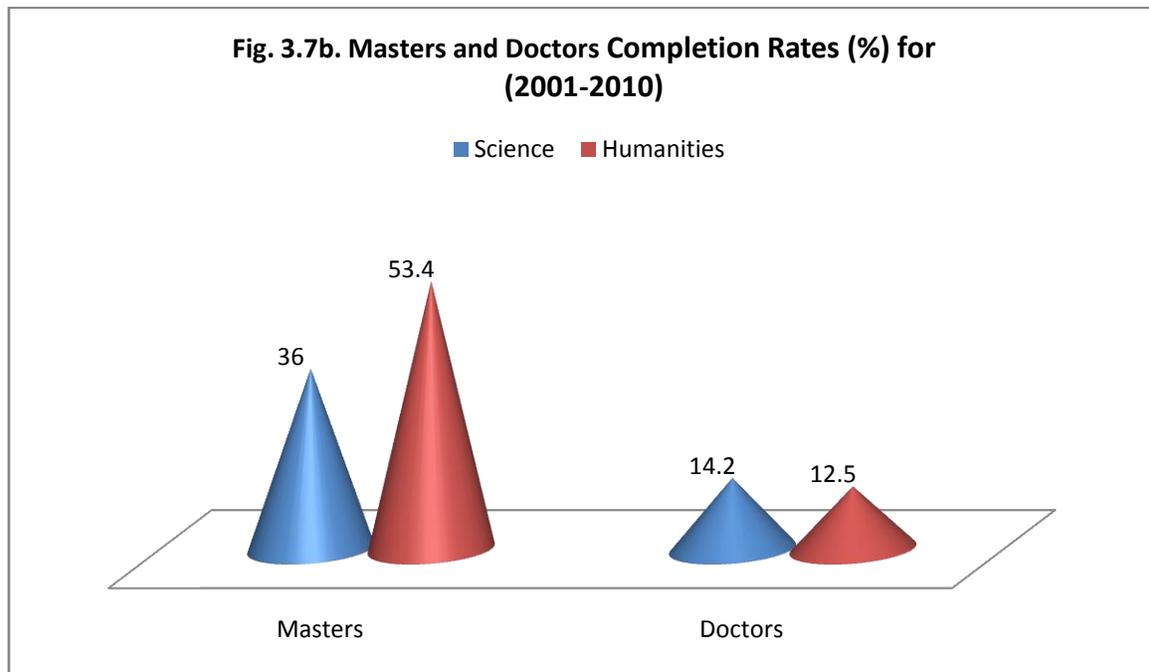
Key statistics in Fig.6:

Total Postgraduate Output as % of Total Postgraduate Enrolment = 46.4%



Source of data: University of Ghana Basic Statistics (1991-2001 series)

Figure 3.7(b) depicts completion rates in percentage for masters and doctors students in the sciences and humanities over the period 2001-2010.



Completion rates derived from data published in UG Basic Statistics (2001-2010)

Completion rate was calculated by dividing output by enrolment for each programme discipline multiplied by hundred. Completion rate for Masters science was 36 percent. For the rest of the programmes disciplines, the completion rates were 53.4 percent for humanities Masters, 14.2 percent for science doctoral students, and 12.5 percent for humanities doctoral students.

Completion rates were higher among masters students than among Doctoral students. The highest completion rate during the ten-year period was among humanities masters students. In the case of doctoral students, completion rate was slightly higher among science students than among humanities students.

Masters completion rate (sciences and humanities) during the period 2001-2002 to 2009-2010 was 48.7 percent, while that of doctors was 13.2 percent. Overall postgraduate completion rate (Masters and Doctors put together) for the period was 46.4 percent.

3.5.8 TRENDS IN POSTGRADUATE ENROLMENT, GRADUATION AND COMPLETION RATES AT TEN-YEAR INTERVALS (1961-2010)

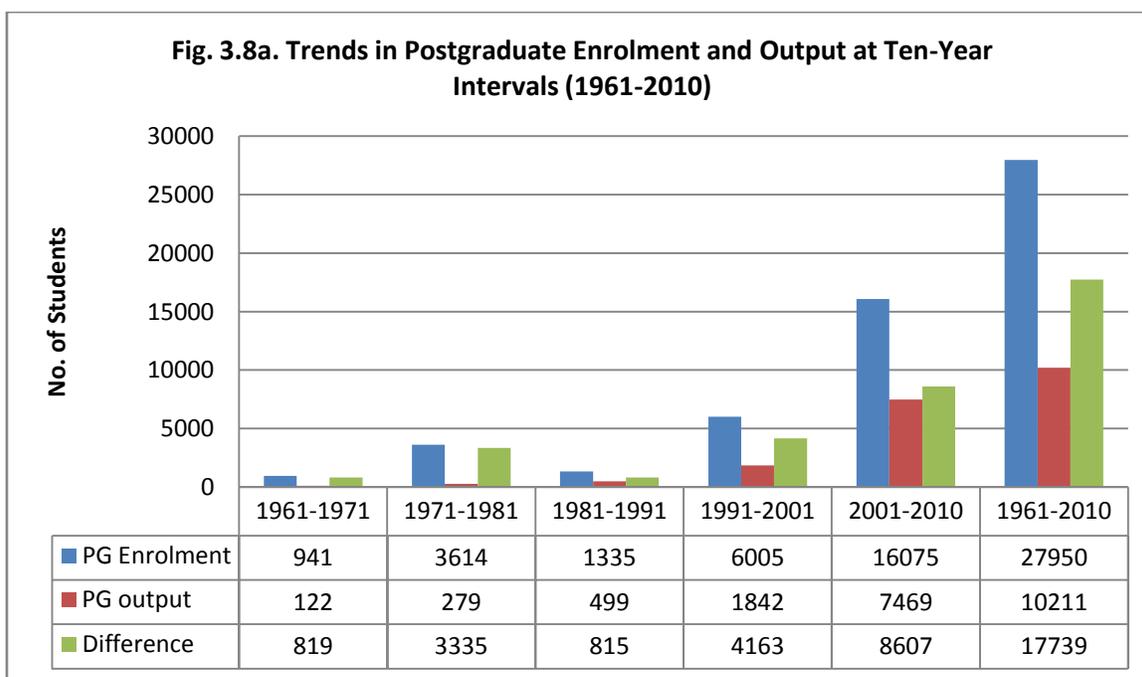
On the basis of the data presented and discussed, the following enrolment and output patterns have emerged over the period 1961-2010).

Period	Total enrolment	Change in enrolment (%)	Total Output	Change in output (%)	Masters completion Rate (%)	Doctoral completion Rate (%)	Overall PG Completion rate (%)
1961 – 71	941	0	122	0	12.3	3.8	12.9
1971 – 81	3614	284	279	128.6	7.8	8.8	7.7
1981 – 91	1335	(63.6)	499	78.8	42.5	6.7	37.9
1991 – 01	6005	357	1842	269.1	-	-	30.6
2001 - 10	16075	167.7	7469	305.4	48.7	13.2	46.4
TOTALS	27950		10211				27.1 (AVRG)

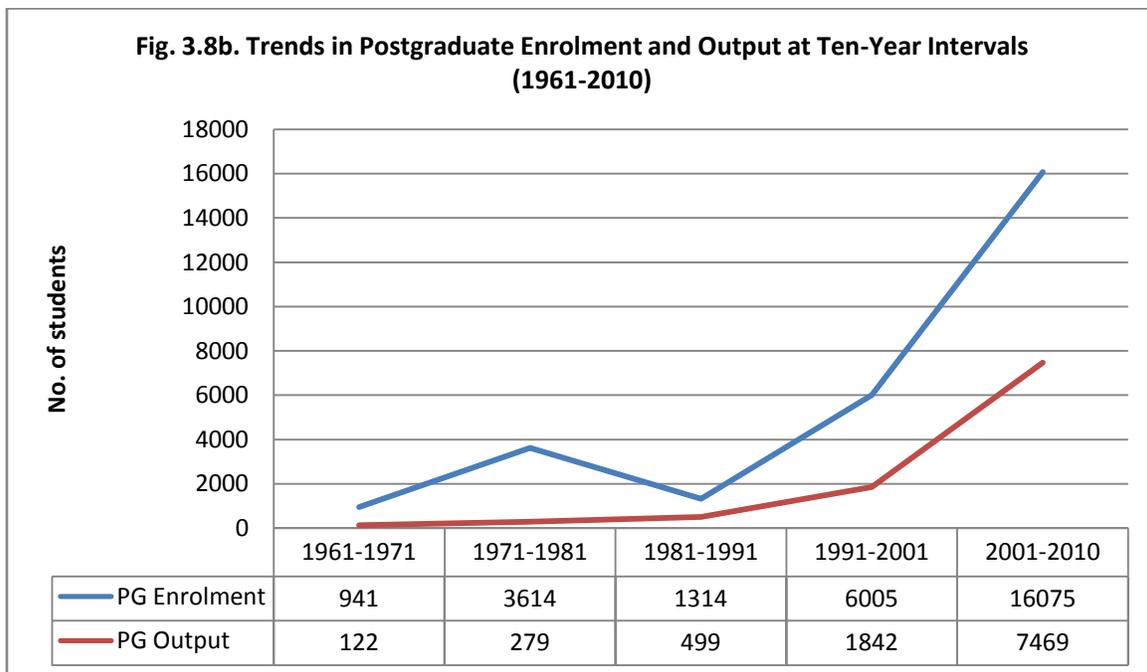
Source: University of Ghana Basic Statistics (1961-1991; 1992 to 2010 Series).

In Table 3.10, postgraduate enrolment increased consistently over the last fifty years, except during the period 1981-1991 which recorded a decrease from 284 percent (3614 students) in 1971-1981 to 63.6 percent (1335 students). The highest increases of 284 percent (from 941 to 3614 students) and 167.7 percent (from approximately 6005 to 16075 students) were recorded during the period 1971-1981 and 2001-2010 respectively.

Postgraduate output increased consistently but at varying margins over the last fifty years. The highest increases were recorded in the last two decades when increases of 269.1 percent (from 499 to 1842 students) and 305.4 percent (from 1842 to 7469 students) were recorded. The period 1981-1991 recorded the lowest percentage increase of 78.8 percent (from 279 to 499 students).



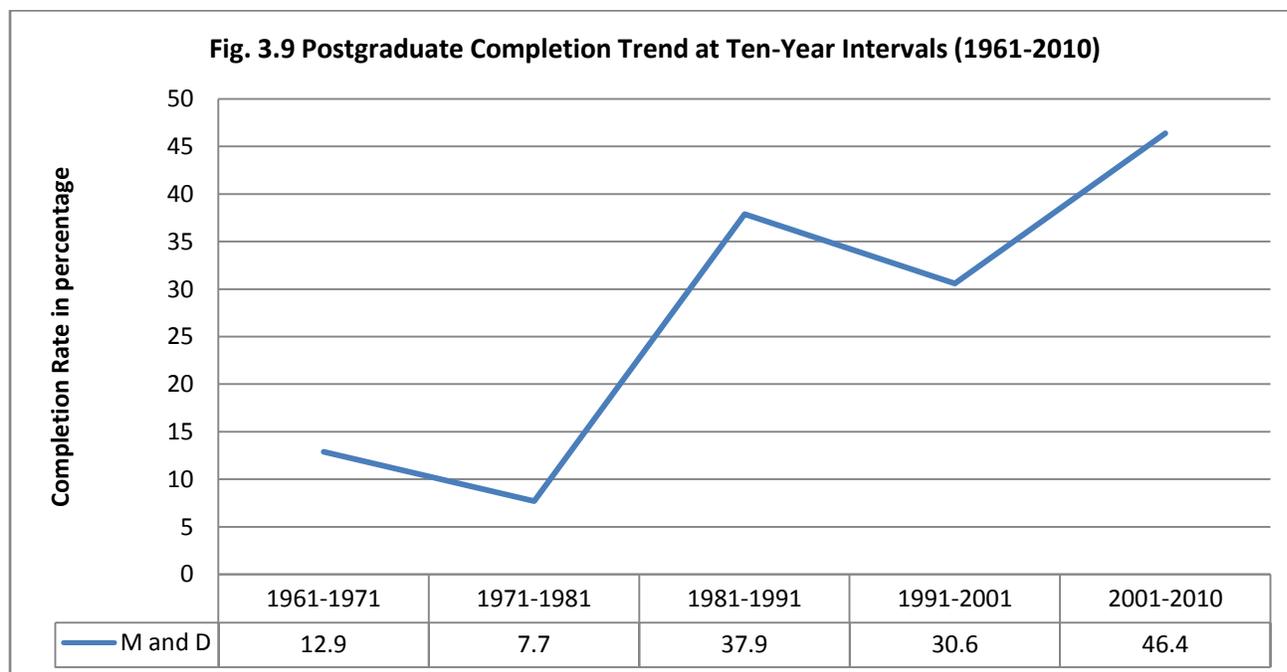
Source of data: University of Ghana Basic Statistics (1961-1991 and 2001-2010 Series)



Source of data: University of Ghana Basic Statistics (1961-1991 and 2001-2010 Series)

Figures 3.8(a) and 3.8(b) above, show the trends in postgraduate enrolment and output at ten-year intervals for the period 1961 to 2010.

The curve in Figure 3.9 shows the trend of postgraduate completion rates determined at ten-year intervals at the University of Ghana. The completion rate for all postgraduate students derives from masters and doctors completion rates recorded over the entire period. As shown in Figure 3.9, the highest masters completion rate of 48.7 percent was recorded during the period 2001-2010, which was a little higher than the completion rate for the period 1981-1991. It is also important to note that there was a huge rise in masters completion rate during the period 1981-1991 from 7.8 percent to 42.5 percent, and that this huge rise occurred in the same period within which enrolment decreased by 63.6 percent. The highest doctoral completion rate of 13.2 percent was also recorded during the period 2001-2010.



Postgraduate completion rate (Masters and Doctors completion rate) was 12.9 percent for the first decade, 7.7 percent in the second, 37.9 in the third, 30.6 in the fourth and the highest of 46.4 recorded during 2001-2010.

From the above statistics and analyses, postgraduate completion remains below 50 percent at the University of Ghana over the last fifty years. Although modest improvements have been recorded in masters completion within the period 2001-2010, doctoral completion rate still remains very low.

3.6 POSTGRADUATE ENROLMENT AND OUTPUT TRENDS: THE UNIVERSITY OF GHANA AND OTHER AFRICAN UNIVERSITIES

A number of studies have been carried out on enrolment and output situation in African higher education institutions. World Bank/UNESCO, Department of Education in South Africa, Association of African Universities, United States Partnership for Higher Education in Africa (PHEA), Centre for Higher Education and Transformation (CHET) are some of the popular organizations that have undertaken such studies. The Higher Education Research and Advocacy Network in Africa (HERANA), a project established by CHET on higher education and development has been keenly involved in knowing the state of postgraduate enrolment and output in African higher education institutions and the impact these are making on African economies.

This section therefore looks at the works of PHEA and CHET's HERANA on postgraduate enrolment and output trends in the University of Ghana as well as other African higher education institutions in an attempt to position the University of Ghana among its peers in Africa.

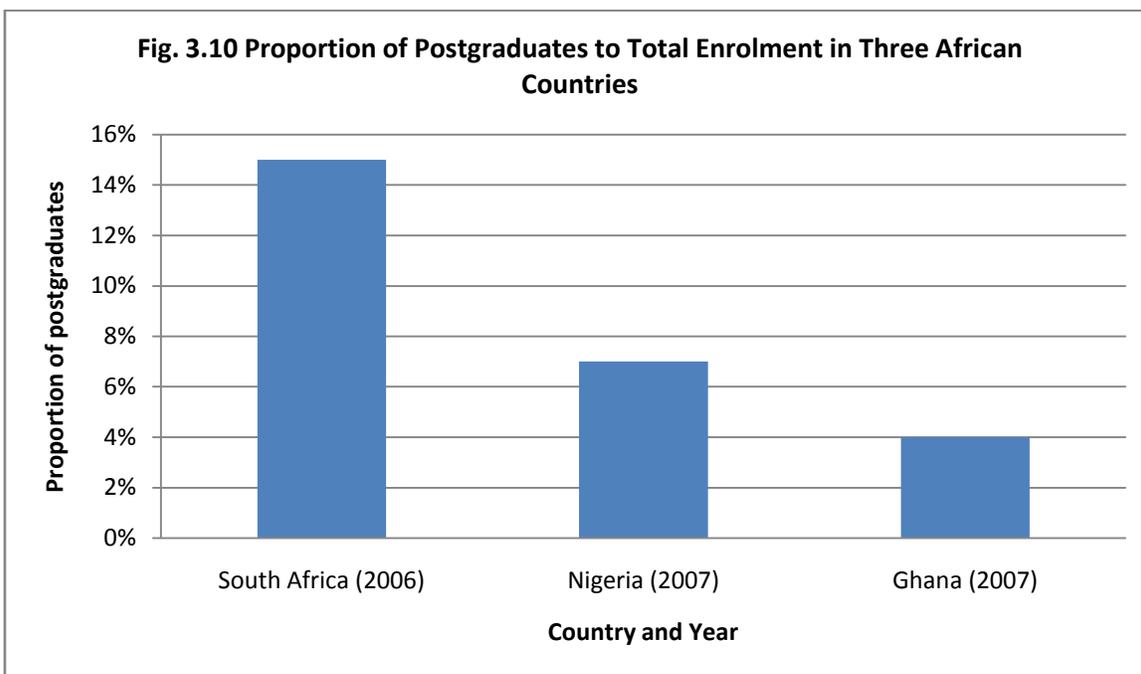
3.6.1 THE PHEA SPONSORED STUDY ON NEXT GENERATION OF ACADEMICS IN AFRICA

This study which was carried out by Tettey (2009), revealed some worrying increases in enrolment without commensurate academic staff strength for efficient academic work in some African universities, including the University of Ghana. Tettey's work revealed that although the enrolment ratio on the entire continent still remained significantly lower than those of other regions of the world (UNESCO, 2008), the high enrolment increases of 15 percent at Stellenbosch University from 2000 to 2007, 22 per cent at Makerere University in Uganda within

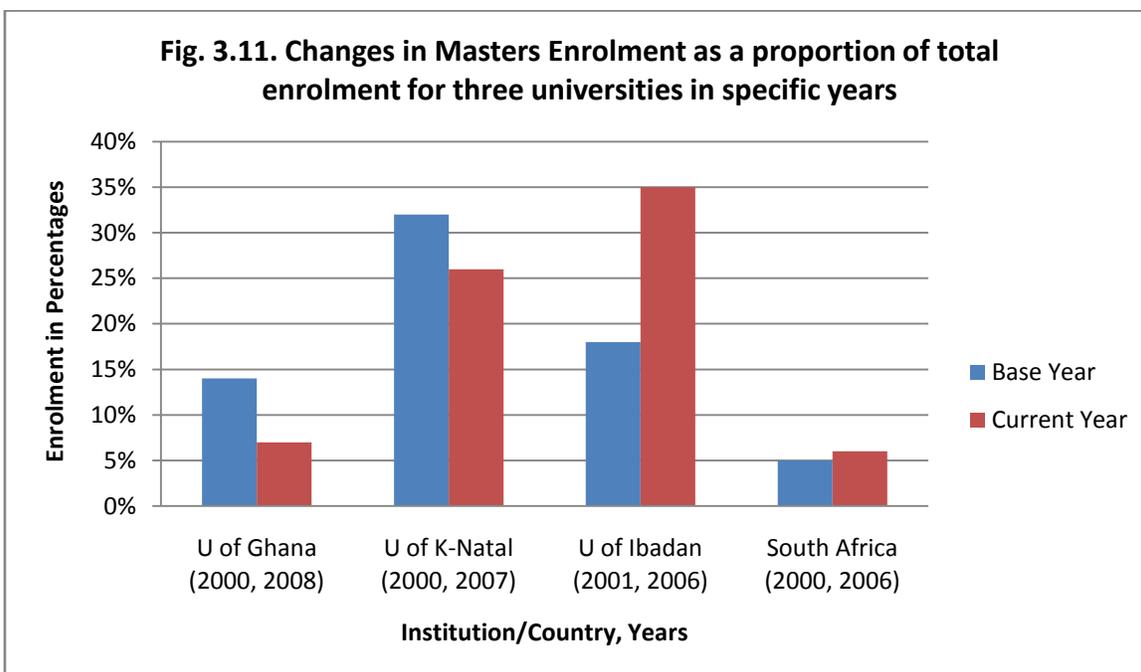
the same period, 73 per cent at University of Dar-es-Salaam in Tanzania between 2003 and 2007, 54 percent at the University of Education, Winneba in Ghana between 2004 and 2008 and 167 percent at the University of Ghana from 2000 to 2008 (Tettey, 2009) constituted a huge drain on the limited facilities in these institutions to enable them realize their missions and visions.

With regard to postgraduate enrolment, Tettey (2009) summarized the situation in three key points namely, (1) that the proportions of postgraduates were generally low, (2) doctoral enrolments as a proportion of postgraduate enrolments was even lower (meaning more of Africa's postgraduates were in Masters programmes), and (3) that there was male dominance in postgraduate enrolments.

Country statistics on the proportion of postgraduates in relation to total enrolments as reported by Tettey (2009) were 15 percent for South Africa in 2006, 7 percent for Nigeria in 2007, and 4 percent for Ghana in 2007 as shown in Figure 3.10 below.



Source: Adapted from Tettey (2009): Comparative Analysis of Next Generation of Academics Indicators



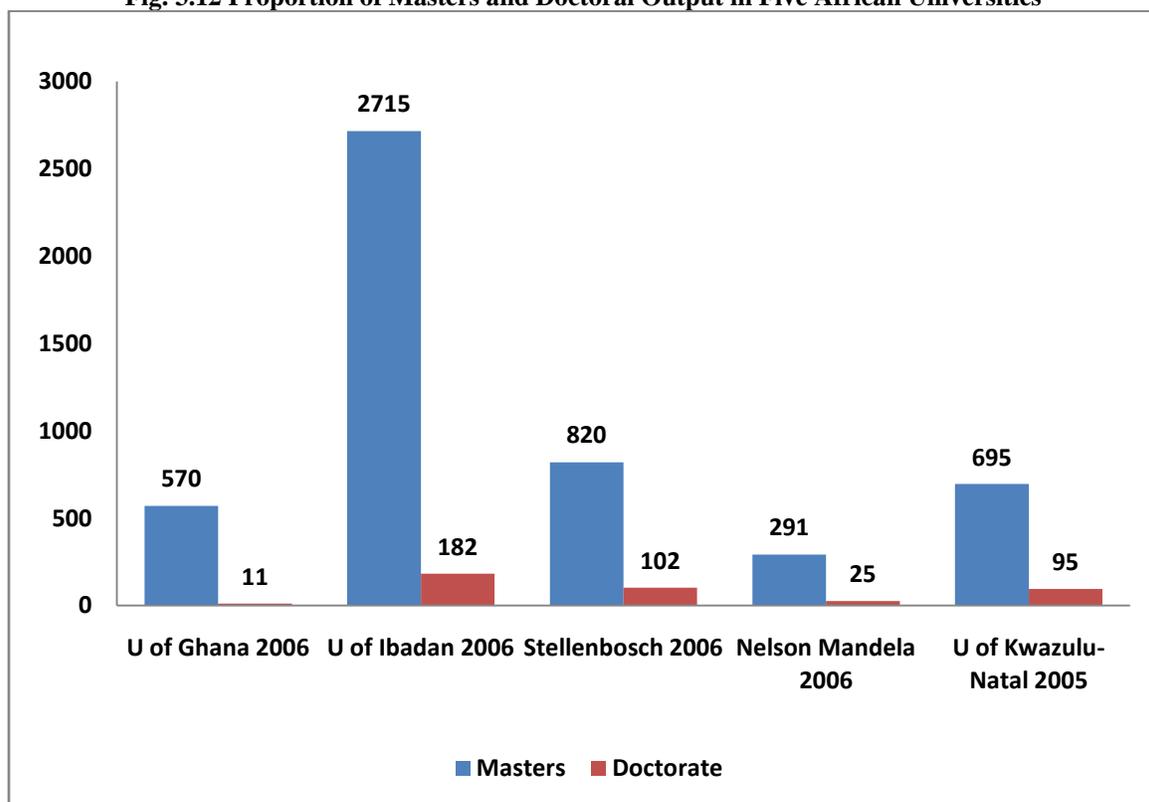
Source: Adapted from Tettey (2009): Comparative Analysis of Next Generation of Academics Indicators

Figure 3.11 illustrates percentage changes in masters enrolment over specific periods in three African universities and for the entire Higher Education Institutions in South Africa as reported by Tettey (2009). Masters enrolment in South Africa constituted 5 percent of total postgraduate enrolment in 2000 and rose slightly to 6 percent in 2006. The study further reported a decrease from 14 percent in 2000 to 7 percent in 2008 for the University of Ghana and 32 percent in 2000 to 26 percent in 2007 for the University of Kwazulu-Natal. The University of Ibadan in Nigeria however recorded an increase of 18 percent in 2001 to 35 percent in 2006 in its proportion of masters enrolment to total postgraduate enrolment in line with a decision to upscale its postgraduate intake.

Tettey's (2009) study also compared the proportion of postgraduate output constituting masters and doctoral students in five African universities as shown in Figure 3.12. The figures are indicative of generally low doctoral students output for the University of Ghana compared to the other four universities. In 2006, the University of Ghana graduated 570 masters and 11 doctors, University of Ibadan graduated 2,715 masters and 182 doctors, Nelson Mandela University graduated 291 masters and 25 doctors, Stellenbosch University graduated 820 masters and 102 doctors, and in 2005, the University of Kwazulu-Natal graduated 695 masters and 95 doctors. In absolute terms, Ibadan recorded the highest outputs for both masters and doctors. Looking at masters output alone, Stellenbosch recorded the second highest, followed by Kwazulu-Natal, Ghana and Nelson Mandela. In terms of doctors output, Stellenbosch again recorded the second highest, followed again by Kwazulu-Natal and Nelson Mandela with Ghana producing the least doctoral students.

If the proportions are rendered in percentages, the output figures translate to 98 percent masters and 2 percent doctors for the University of Ghana, 94 percent masters and 6 percent doctors for the University of Ibadan, 92 percent masters and 8 percent doctors for Nelson Mandela University, 89 percent masters and 11 percent doctors for Stellenbosch University, and 88 percent masters and 12 percent doctors for the University of Kwazulu-Natal.

Fig. 3.12 Proportion of Masters and Doctoral Output in Five African Universities



Source: Adapted from Tettey (2009): Comparative Analysis of Next Generation of Academics Indicators

The study also reported that in South Africa, doctoral graduates were 802 in 2001, rising to 1100 in 2006 (about one percent increase), and 6242 masters graduates in 2001, rising to 7879 in 2006 (about 25 percent increase). Similarly, doctoral enrolment in the year 2000 constituted only one percent of total enrolment and remained the same in 2006.

3.6.2 CHET-HERANA STUDY ON HIGHER EDUCATION AND DEVELOPMENT IN AFRICA: CROSS-NATIONAL PERFORMANCE INDICATORS AND INSTITUTIONAL CASES

More recent and comprehensive statistics have been provided by Cloette, Bailey and Pillay in a CHET-HERANA Project on performance indicators in eight African universities. In this project each of the eight African universities was considered as the flagship public university in each of the countries selected for the study covering the period 2001-2010. The flagship universities identified for the project were University of Botswana, University of Cape Town in South Africa, University of Dar-es-Salaam in Tanzania, Eduardo Mondlane University in Mozambique, University of Ghana, Makerere University in Uganda, University of Mauritius in Mauritius, and University of Nairobi in Kenya. An earlier CHET-HERANA cross-national performance indicator study which covered the period 2001 to 2007 focused on four African Universities, namely, the University of Ghana, University of Nairobi, University of the Free State and the University of Cape Town both in South Africa.

For the 2001-2010 study, performance indicators were derived from the “academic core” of each University. The academic core was defined as the “inputs available for the delivery of teaching and research, and the research and teaching outputs which the university produces on the basis of these inputs” whose indicators are: Science, engineering and technology (SET) enrolments and graduations, Postgraduate (masters and doctors) and undergraduate enrolments ratio, Teaching load or academic staff-student ratio, proportion of academic staff with doctoral degrees, research income per permanent academic member, and research publications.

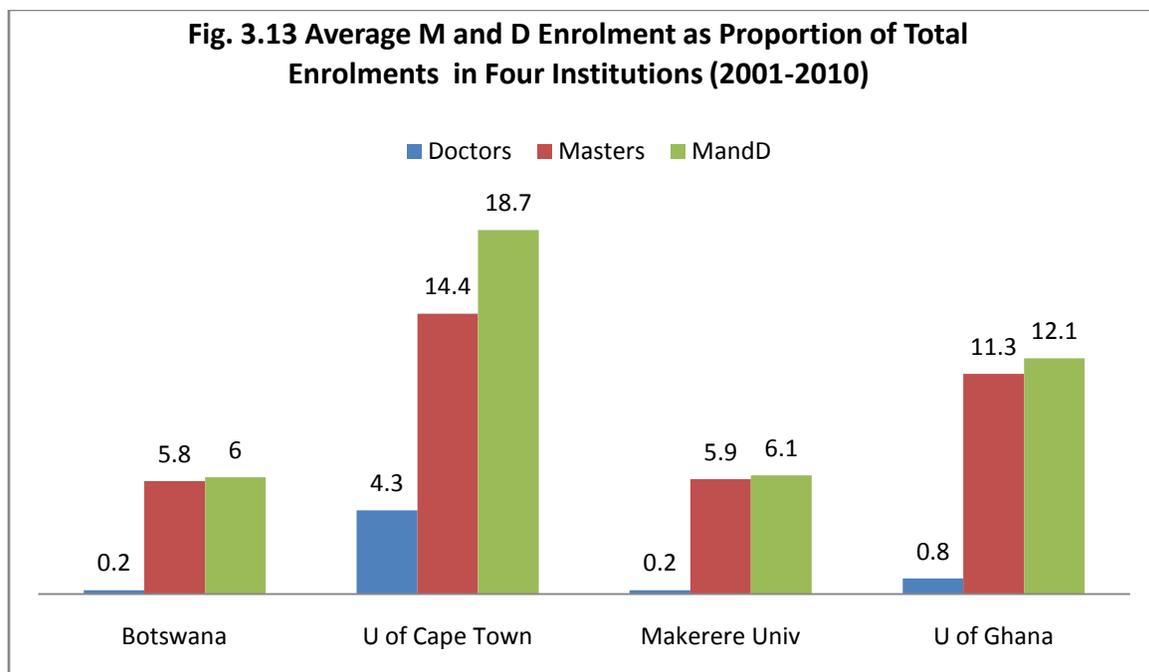
The academic core ratings for the 2001-2010 study were based on the ratings from the 2001-2007 study. According to the academic core ratings for the University of Ghana, SET students constituted 17 percent of total enrolments in 2007 with a completion rate of 60 percent. The ratings also revealed that the proportion of postgraduates to total enrolments fell from 12 percent in 2001 to 6 percent in 2007 and the ratio of masters to doctoral enrolments was high at 16:1. The 2001-2007 study analyzed postgraduate enrolment and output figures for each of the four institutions. In the case of the University of Ghana, the study found out that the graduation rate for masters graduates was good throughout the period and remained well above the targets set for South African universities. Doctoral enrolments were low according to the study and doctoral output even lower within the period.

The main focus of the CHET-HERANA studies was to find out what impact higher education was having on economic development in Africa using development models of some successful economies. The success stories of these economies were based on the recognition that masters and doctoral programmes were supposed to be central components of high level knowledge production. Classified into three as innovation-driven, efficiency-driven and factor-driven systems in the order of first, second and least development models, the study put Finland, South Korea, and North Carolina in the first category and described them as “countries which have agreed that knowledge and education are key productive factors in development”.

Based on key economic and higher education performance indicators, three out of the eight institutional cases, namely, Mauritius, South Africa and Botswana were found to be in the efficiency phase “meaning that improved efficiency and higher education and training were

increasingly playing an important role in economic development” in those countries, whereas four others – Ghana, Kenya, Tanzania and Uganda – were found to be “in the process of moving from ‘factor’ (natural resources and low skills base) towards efficiency (an increasing importance for education and training).

Given the above notion and background, benchmarks were set against which performances in other universities could be measured in terms of graduate productivity and efficiency. In this regard, HERANA’s benchmark for masters and doctoral students as a proportion of total enrolment was 15 percent of total enrolments in higher education institutions.

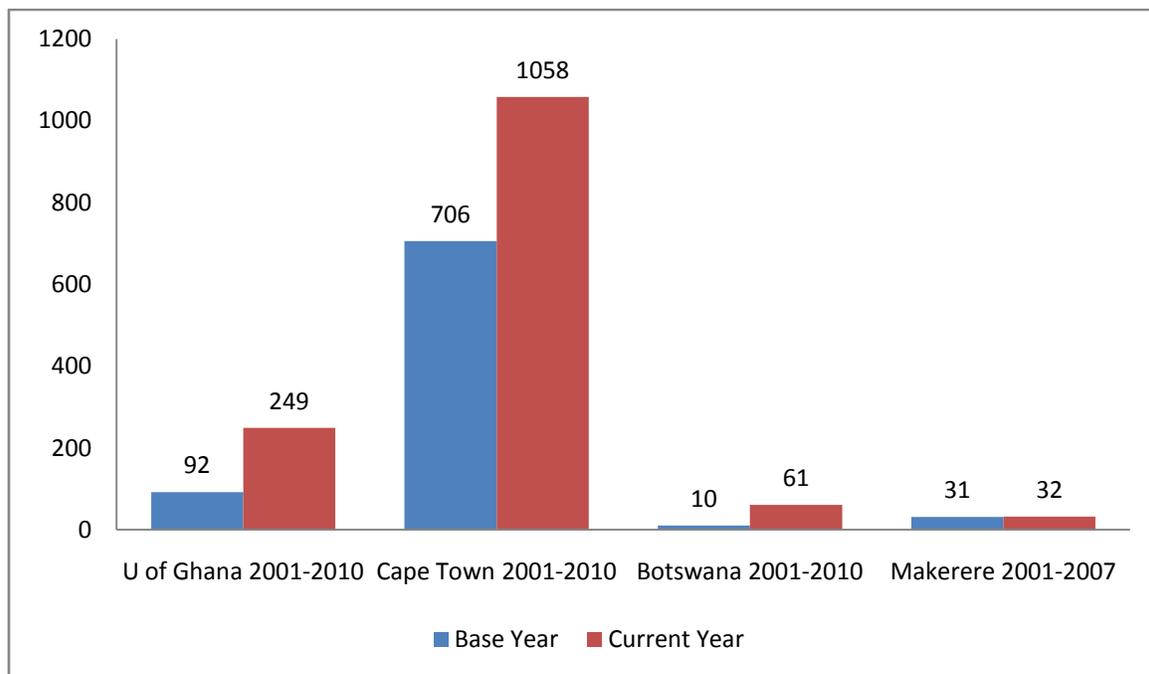


Source: Adapted from CHET-HERANA Cross-National Performance Indicators (2011)

Figure 3.13 shows averages for masters and doctoral enrolments as a proportion of total enrolment for four of the flagship institutions from 2001-2002 to 2009-2010.

The University of Cape Town recorded the highest average of 18.7 percent, which was above HERANA's target of 15 percent. The other three institutions recorded averages lower than the 15 percent target. University of Ghana came second with 12.1 percent average, followed by Makerere University and University of Botswana with 6.1 percent and 6.0 percent averages respectively.

Changes in masters and doctoral enrolments over the period 2001-2010 were also reported. Masters enrolments doubled between 2000-2001 and 2009-2010, recording an average annual rate of 7.7 per cent over the period while doctoral enrolments grew at a higher average annual rate of 15.3 per cent over the same period. In the case of doctoral students only, the report indicated that the University's of Ghana's doctoral student enrolment grew from 92 in 2001-2001 to 249 in 2009-2010, rating it second among the four institutions. Changes in doctoral enrolments within the period for the remaining three institutions were 706 to 1058 for Cape Town, 10 to 61 for University of Botswana, and a fluctuating trend of 31, 41, 54 and 32 for Makerere University (2001/2002; 2003/2004; 2005/2006; and 2006/2007 only). This trend of changes in doctoral enrolments for the four universities is illustrated in Figure 3.14 below.

Figure 3.14: Changes in Doctoral Enrolments in Four African Universities

Source: Adapted from CHET-HERANA Cross-National Performance Indicators (2011)

Another important HERANA benchmark in the Cross-National performance indicator report relates to use of the ratio of masters to doctoral enrolments as a measure of a University's involvement in research. According to the report, "a university with strong research programmes would normally have a ratio of 5 to 6 masters students per doctoral enrolment; and a university with a moderate involvement in research would normally have a ratio of about 10 masters per doctoral enrolment". The ratio of masters to doctoral enrolments for the University of Ghana was 20 masters students per doctoral enrolment in 2000-2001, dropping to about 12.5 in 2001-2002 and remaining within the range of 12.5 to 17.5 up to 2008-2009. It however dropped sharply again to about 11 in 2009-2010.

As masters and doctors students form a University's research output base, the report described this trend in terms of how strong or weak the University's research programmes were within the

ten-year period. The University of Ghana focused report put the average ratio of masters to doctoral enrolments for the period 2000-2001 to 2009-2010 at 15 masters students per doctoral enrolment, which it described as “high even though the ratio improved as doctoral enrolments grew” over the period.

The third HERANA benchmark was graduate output efficiency. The report indicated that for masters degrees, the ratio of graduate output to enrolments should be at least 35 percent (if there is to be an acceptable throughput rate), and at least 25 percent for doctoral degrees. This was to be determined by “dividing the graduate (output) data for each year by the corresponding enrolment data for that same year” and the ratios generated used as proxies for graduate throughput rates. Based on the calculations for the period 2000-2001 to 2009-2010, the report concluded that for the University of Ghana, “the ratios for masters degrees have been good and average 36 percent for the ten-year period. The ratios for doctoral graduates average only 12 percent for doctoral graduates which suggest that Ghana has experienced unsatisfactory graduate output rates from its doctoral programmes.

The above approach to determining throughput appears simple in that assuming in the 2000-2001 academic year 100 students enrolled in masters degrees and 100 graduated in masters degrees, throughput would be 100 percent (i.e. output divided number enrolled multiplied by hundred).

The main strengths of African universities in general, according to CHET-HERANA studies, has been in undergraduate education for which reason they were described as “very weak in

knowledge production” and therefore needed to “expand their role beyond teaching to research to become significant contributors to the knowledge society”.

The study recommended among other things the need to strengthen postgraduate training and research at African universities through incentivizing doctoral supervision and research programmes to “strengthen the academic core and make these flagship universities (including the University of Ghana) part of the global academic community.”

3.7 CONCLUSION

In this chapter, the researcher traced the origins of postgraduate studies at the University, dating as far back as 60 years ago in 1952, and the evolution of postgraduate studies starting with only one postgraduate certificate student and later expanding into postgraduate diploma programmes. The early years of postgraduate studies from 1952 to 1960 could be described as a period dominated by enrolments in postgraduate certificate and diploma programmes. Output records for the period were not readily available for this study and there were no reports of high dropout rates for the period.

The structure of postgraduate programmes has also been explained in this chapter as consisting of one-year masters programmes, two-year non-thesis masters programmes, two-year masters programmes with at least one year of thesis, and research doctoral programmes. The responsibilities of key stakeholders and their implications for maximizing postgraduate students academic fulfillment and completion have also been discussed in this chapter.

The entire span of postgraduate studies was broken down into five ten-year periods for ease of discussion and trends in postgraduate completion or throughput were determined by compiling

and analyzing enrolment and output data sets available at the University of Ghana for each period. The University of Ghana's postgraduate enrolment and output performance indicators were discussed in comparison with eight other African universities. The general completion trend that emerged from the periodic analysis of available postgraduate enrolments and output data do not deviate from the findings of the cross-national studies discussed in this chapter.

Having surveyed relevant literature, the next stage is to go beyond discussion of throughput trends based on secondary data to obtain empirical evidence from stakeholders in postgraduate programme delivery to establish which actions and inactions result in the prevailing completion and throughput trends at the University of Ghana. The ensuing chapter therefore takes care of how this additional empirical data was collected from the stakeholders.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter basically profiles the research methods and techniques to be employed in the process of data collection and analysis, namely, research design; sampling techniques; data collection procedures, data analysis and interpretation, as well as issues of validity and reliability in qualitative research.

Shaughnessy & Zechmeister (1997) look at research as a form of problem solving that begins with the selection of an appropriate method to answer a research question. This art of problem solving, according to them, continues through the process of critically analyzing strengths and weaknesses of the evidence obtained in order to elicit findings that can be applied to address other similar problems. Therefore, the method adopted for conducting any research or study is very crucial in ensuring the quality of the research and, in particular, the findings of the study.

4.2 THEORETICAL FRAMEWORK OF THE STUDY

Based on the objectives and sub-questions posed in this study, the study lends itself to the Systems Model of School Administration and the Getzel-Guba's Social System theory which sees the school as a Social System (Lunenburg and Ornstein, 2004). The systems theory views organizations (including the School) as consisting of five parts, namely, inputs, transformation

process, outputs, feedback and environment in which the organization operates. In the specific case of the school system, the inputs are personnel, finance, theory or knowledge (students, teachers, curriculum, tuition), regulations, remuneration which come to the institution from the external and internal environment; the transformation process which converts the inputs received from the environment into output and involves adding value to the inputs and processes (internal operation of the organization, departments, administrative structures, etc.); and output which is the result expected of the transformation process in terms of student achievements, teacher performance, growth levels of students and employees and student drop-out.

The second basic theory upon which this study thrives is the social system theory which views the institution as a social system where the activities and interactions of its members are pooled together for a common purpose. This principle is based on Getzel and Guba's view that the social system involves two independent and interactive sides, namely, the institution with certain roles and expectations that should fulfill the goals of the system, and the individuals who are expected to perform these roles each with certain unique personal needs, which make them behave in a certain way in the institution.

The methodology adopted for the study is founded on the deductive theory, which Bryman (2004) defines as an approach to research by which "the researcher, on the basis of what is known about in a particular domain and of theoretical considerations in relation to that domain, deduces a hypothesis that must then be subjected to empirical scrutiny". Bryman explains the process of deduction as beginning from theory, to hypothesis formulation, to data collection, to deriving findings, to confirmation or rejection of hypothesis, and sometimes revision of theory.

It emphasizes the link between theory and research. However, in some research, the sequence may not necessarily be followed, especially with regard to hypothesis formulation, confirmation or rejection and revision. The important thing is that the hypothesis deduced from existing theory should guide the process of data collection.

In terms of discipline, the study is situated in the context of educational management, which Monroe (n.d) refers to as “the dynamic side of education, concerned with both human and material resources”. The focus of this study fits very well into Graham Balfour’s (1903) straightforward definition of educational management in terms of its benefits to stakeholders. According to Balfour, educational management involves efforts and practices that “enable the right pupils to receive the right education from the right teachers, at a cost within the means of the state, which will enable the pupils to profit by their learning”. Similarly, this study is about improving upon systems and facilities required to enable research postgraduate students of the University of Ghana receive the best quality postgraduate education and to complete their studies within approved durations, thereby enabling the University to achieve its mandate of providing quality postgraduate education to its students.

The study therefore lies within a combination of aspects of educational management such as curriculum improvement and instructional service quality assurance in higher education institutions. In this regard, curriculum improvement relates to an overview of the entire postgraduate programme delivery structure to find out how it affects completion. Instructional service quality assurance relates to an overview of the roles of thesis supervisors and examiners as well as heads of academic departments and how they impact on completion. The study

essentially deals with the nexus between quality of academic facilities and throughput among research postgraduate students. The puzzle however is whether improvement in the quality of academic facilities would always lead to high throughput among postgraduate students.

4.3 RESEARCH DESIGN

4.3.1 THE SURVEYMETHOD

The survey method makes use of the views of a cross section of people from whom data are collected by means of questionnaire or structured interview usually on more than one case at a point in time to collect quantitative and qualitative data. If applied to more than one case, patterns of association can be drawn between the cases; however, it may be applied to a single case only and the emphasis here is usually on the use of both quantitative and qualitative methods of collecting data. In a more restrictive sense and considering that this study is based on a single case, the case study design, which entails detailed and intensive analysis of a single case, is more applicable. This study is more of a case study because it is more associated with a location (the University of Ghana) and its emphasis is on intensive examination of postgraduate study delivery within the same environment.

4.3.2 JUSTIFICATION FOR USING THE SURVEYMETHOD

The survey method of research was adopted for this study because most studies on completion durations and effectiveness of supervision made use of the surveys. Another reason for adopting the survey method for this study is that the survey, also known as opinion poll, is the most formal type of fieldwork in which the investigator asks a sample population a series of carefully tested questions to find out what a cross-section of people think about something at a specific point in time (Bovee & Thill, 1986).

Lessing & Lessing (2004), Lessing and Schultze (2002), and Albertyn et al (2008) made use of questionnaires in their studies on postgraduate throughput and supervision. McCormack (2001) made use of the longitudinal approach in obtaining narratives of students' experiences over their time as postgraduate students from interviews held with them. Similarly, Manathunga also adopted the case study and focused group approaches of the survey method to investigate particular cues that supervisors recognized as indications of difficulties that may hamper a student's progress, using semi-structured interviews to collect data. These studies have been recognized internationally as quality works in the area of student throughput.

4.3.3 RESEARCH APPROACH

4.3.3.1 The mixed methods approach

As indicated earlier in chapter one, the mixed methods approach was used to obtain relevant data which addressed the sub-questions, aim and objectives of this study. The content analysis approach revealed many useful characteristics in the review of masters and doctoral extended completion and doctoral non-completion cases. Use of the three research approaches was good for triangulation of results as similar results were obtained from the use of these approaches.

4.3.4 POPULATION AND SAMPLING

4.3.4.1 Population

The population for this study consisted of research masters and doctoral candidates who extended their candidature before submitting their theses between 2006 and 2010 and selected non-completion doctoral case files; thesis supervisors, internal examiners and external examiners during the period under consideration; and past deans and senior administrators of the School of

Graduate Studies, University of Ghana. The researcher decided to select the past postgraduate students' sample from the 2006 to 2010 graduation classes because this cohort of students belonged to the period prior to institutional interventions towards improving postgraduate programme delivery at the University of Ghana. The total number target population used for the study was 1,767 past masters extended candidature students and 101 past doctoral extended candidature students.

4.3.4.2 Sample selected for the quantitative phase

The sample for the quantitative phase of the study was selected using purposive sampling technique. Fifty past masters students who extended their candidatures before graduation were selected from each of the five graduating classes between 2006 and 2010 making a total of two 250 masters graduates. In the case of the doctoral graduates, 50 doctoral graduates who completed within extended candidature durations during the five-year period were selected.

Eighty theses supervisors and 80 internal examiners who supervised and examined research postgraduate work during the period under consideration were drawn from faculties and schools within the University. Forty (40) external examiners who assessed M.Phil and PhD theses during the same period were also selected. The supervisors and examiners were selected from the database of supervisors and examiners at the School of Graduate Studies based on experience and disciplinary representation. The total quantitative sample for the study was 500.

This purposive sampling technique was considered appropriate for the study because it helped the researcher to select the relevant samples with the potential to provide data to address the

research questions. Purposive sampling was also appropriate for this study because the study sought to investigate a phenomenon within a specific time frame (Twumasi, 2001).

4.3.4.3 Sample selected for the qualitative phase

Four (4) past deans and four (4) former thesis schedule officers of the University of Ghana's School of Graduate Studies were selected for interviewing. Unfortunately, the researcher was able to interview two because of limited time and unavailability of the other two. Twenty (20) past heads of department were also selected for interviewing to elicit their views on the study. In this case also, the researcher was able to interview 10, five from science and five from humanities again due to difficulty in getting the rest of the selected heads for interviewing. Three (3) representatives from relevant government agencies, namely the National Council for Tertiary Education (NCTE), the Ghana Education Trust Fund (GETFund) and the Ghana Scholarships Secretariat were also considered for interviewing on issues related to government's role in funding postgraduate studies at the University of Ghana. The researcher was able to contact the Administrator of the GETFund who provided ample relevant information on government's contribution and challenges. In the case of case files for content analysis, 38 case files made up of 15 delayed doctoral completions, 10 delayed masters completions and 13 doctoral drop-outs were selected and reviewed.

4.3.4.4 Distribution of quantitative and qualitative samples selected for the study

The sample distribution for the quantitative and quantitative phases of the study is presented in Table 4.1. Although purposive sampling as a non-probability sampling technique has been criticized as not being representative of the population because it does not make use of any systematic sampling design, the above sample sizes were selected bearing in mind the

importance of representation and the need to obtain reliable results which is the utmost objective of a good sampling method. The number of former deans and administrators stated were those available at the moment.

Table 4.1 Distribution of quantitative and qualitative samples	
QUANTITATIVE PHASE	
Sample Type	Number Selected
Past masters students	250
Past doctoral students	50
Supervisors	80
Internal Examiners	80
External Examiners	40
Total Quantitative Sample	500
QUALITATIVE PHASE	
Past Deans of UG SGS	4
Past Thesis Schedule Officers	4
Representative of relevant government agency	3
Past Heads of Department	20
Total Qualitative Sample	31
CASE FILE REVIEWS	
Extremely Delayed doctoral completions	15
Extremely delayed masters completions	10
Non-completion doctoral candidates	13
Total of Selected Case File Reviews	38

In other words, there were no more than the numbers indicated. It should also be noted that the Table 4.1 illustrates only the sample sizes selected eventually for the study which is different from the actual number of respondents in each category (presented in the next chapter).

4.3.5 INSTRUMENTATION AND DATA COLLECTION TECHNIQUES

4.3.5.1 Piloting of Instruments

Piloting of the instruments was done for questionnaire to test the relevance, clarity, reliability, and validity of the instruments. This helped to revise some of the items to solicit accurate information and rid the instruments of redundant items. The researcher encountered some

challenges during the pilot study, the main one being difficulty getting feedback from the past masters and doctoral respondents through the email system. This helped to adopt other techniques such as checking for the past students' telephone numbers in their files and using an on-line Google database facility to enable respondents complete and submit response on-line into the questionnaire into the database.

4.3.5.2 Questionnaire

Due to the large size of the MPhil and PhD graduates sample, the use of questionnaires was considered to be more appropriate. The questionnaires were adapted from a set of instruments used by Lessing & Lessing (2004), Lessing and Schultze (2002), and Albertyn et al (2008) because this study bears similarity with theirs. The set of questionnaires consisted of 30 items and its structure comprised the research title, an introduction stating the main objective of the research, response instruction, biographical information on the respondent, the questions or items, return instructions and a statement of gratitude. The items covered all the research sub-questions.

The items in the questionnaires were constructed taking into consideration the essential elements of relevance, objectivity, clarity of meaning, simplicity, precision, and ease of analyzing responses. These attributes were ensured by including variety of questions including multiple-choice questions, questions with Likert Scale responses, and checklist responses. The questionnaire comprised both structured and unstructured items. Structured questionnaires consisted of closed questions or items with alternative responses as already indicated so that the respondent could choose from the available alternatives. Unstructured questionnaires consisted

of questions or items with blank spaces provided for the respondent to freely supply spontaneous responses.

(a) Past masters and doctoral students' questionnaire

Respondents' prior consent was sought using the electronic mail addresses and telephone numbers generated from the student database and in some cases student files at the School of Graduate Studies. Thereafter, the questionnaires were administered to the MPhil and PhD graduate respondents through their electronic mail addresses. The respondents were given multiple return options, namely, either complete the questionnaires and return them via electronic mail facility, or send the completed questionnaire by fax or by post depending on whichever medium appeared more convenient to the respondent. In a few cases, the questionnaires were also administered to graduates belonging to the study period and fit into the characteristics (especially extended candidature) who came to either obtain transcripts, certificates or any other need that brought them back to the School of Graduate Studies.

(b) Thesis supervisors and examiners' questionnaire

In the case of supervisors, internal and external thesis examiners, questionnaire were sent through their email addresses and by fax in a few cases to solicit their views on the difficulties they faced with theses examination process that might lead to delays in the examination and return of thesis assessment reports. In some cases, research assistants assisted with distribution of hardcopies to internal thesis examiners who were asked to drop completed questionnaire at designated points for collection.

4.3.5.3 Interviews

Ten past heads of department offering masters and doctoral programmes were interviewed. Due to difficulty in meeting most of them, structured interview schedules were used with adequate space provided after each open ended item for ease of providing responses. Thereafter, the researcher made follow-ups to obtain further clarification to some of the responses offered. Face-to-face interviews were conducted with two (2) past deans, four (4) past thesis schedule officers and one agency of the Ministry of Education. The respondents were reminded on weekly basis by means of electronic mail, telephone calls and personal visits by research assistants to complete and return the interview schedules.

4.3.5.4 Selection of case files

The services of records officers were sought to retrieve specific files of past students selected for review from the archives of the School of Graduate Studies. Each file was thoroughly read from the first to the last document on it and relevant data relating to issues such as date of first registration, appointment of supervisors, thesis topics, date thesis was submitted, any documented challenges, date thesis result was determined, date corrected thesis was submitted, date oral examination or defense was held and date of graduation.

4.3.6 DATA ANALYSIS AND INTERPRETATION

In analyzing the quantitative data collected, responses to close-ended questionnaires were pre-coded for ease of analysis. The Statistical Package for the Social Sciences (SPSS) software was used for analyzing closed-ended questionnaire. Trends were analyzed and demonstrated by means of tables, charts and graphs to depict frequencies, similarities and deviations. Statistical

inferences were made using ratios and percentages. Trends were analyzed and interpreted for each category of graduates (i.e. separately for masters and doctoral) and in terms of science and humanities disciplines. For the supervisors and examiners category, their responses were analyzed separately for masters and doctoral respondents.

In the case of qualitative data, the structured interview schedules for both supervisors and internal examiners, as well as those for the external examiners were also pre-coded. By coding the items, it was possible to count frequency of responses in terms of ideas, themes and words. It also made it possible to categorize items, identify patterns, variables and synthesize various accounts into coherent evidence from the responses (Miles & Huberman, 1994). Written responses to some of the interview questions as well as responses to open ended questions in the questionnaire were analyzed qualitatively by keeping track of the responses given and teasing out the meaning of ideas expressed by the respondents into coherent themes. Coding of the structured interview and open-ended items also made it possible for the researcher to distinguish between dominant views and minority views as well as themes that emerged from the responses. To buttress specific characteristics that emerged from the accounts, some responses to the structured interviews were reproduced verbatim.

Through document analysis, very useful data were obtained from the selected case files. These records provided documentary evidence of the student respondents' experiences and a clearer understanding of the situations described by the respondents. Themes were then derived from the summarized data on each of the case files for analysis and discussion.

4.3.7 RELIABILITY AND VALIDITY OF RESEARCH

Reliability is assured when the same results would be obtained if the research were repeated, and we talk about validity when research measures what it is intended to measure (Bovee & Thill, 2001). As mentioned earlier, the data collection instruments were tested through a pilot survey to bring out weaknesses for modification of items where necessary to make them relevant to the research. The pilot study also helped in ensuring validity of the data collection instruments thereby reducing error margin in the instruments. According to Osuala (2001), the fact that the interview permits following through on misunderstood items and inadequate responses, generally promotes validity. Osuala (2001) was also of the view that a crucial point in the validity of the interview is the possibility that the interviewer's very presence will affect the responses which he receives. On the basis of the foregoing, all the interview schedules were self-administered and this offered the opportunity to pose follow up questions to the interviewees personally. Given that the researcher was a colleague academic staff, the interviewees were comfortable sharing their views with a colleague staff member of the university rather than research assistants whose identity they might not be sure of.

Another way of ensuring instrument reliability and validity was that the questionnaires and interview schedules were carefully constructed to ensure that each question is related to the research topic and that all aspects of the research topic were adequately covered by the questions. The use of questionnaires, interviews and document analysis for data collection ensured triangulation, which further underscores reliability of the research.

4.3.7.1 Informed consent

Patton (2002) proposed a simplified model of seeking consent of respondents and interviewees in both quantitative and qualitative surveys, suggesting that opening statements should be designed in a manner that would provide answers to such questions as: “What is the purpose of collecting the information? Who is the information for? How will it be used? What questions will be asked in the interview? How will responses be handled, including confidentiality?”

The consent of all potential respondents was sought by sending them prior informed consent letters through their email addresses. This was done to introduce the researcher and the reasons for seeking his/her views in the subject area so that the respondents would feel free to express their views having understood why they were being asked to do so. There was also a statement on the mail-out questionnaire to introduce the researcher, purpose of the research and an appeal to take the exercise seriously.

4.3.7.2 Anonymity and confidentiality

To disabuse respondents’ minds of any doubts about the research, the purpose of the research was indicated in the prior consent notices and on the questionnaire. Other measures taken by the researcher to ensure anonymity and confidentiality included avoiding asking for the respondents’ personal data such as names, family background and student identity numbers in the quantitative data collection phase. For the interviewing phase, the researcher avoided use of tape recorders, and the interviews were held without the presence of other people. The researcher also sought prior consent of interviewees in writing and by telephone calls and established good rapport before, during and after the interviews. Confidentiality was also ensured by re-assuring the

interviewee at the beginning of the interview about the need to handle responses strictly confidential and only for purposes of the research. The interviewees were also given the opportunity to ask questions to clarify any doubts in their minds about the research. Finally, the researcher avoided use of actual names and student numbers of the respondents in the analyzed data and in the discussion of the research findings. The use of structured interview schedules also afforded the interviewees the opportunity to freely indicate their views in the comfort of their homes or offices, before further contacts were made by the researcher.

4.3.7.3 Ethical measures and considerations

The need for seeking informed consent from respondents is to a large extent an ethical issue. Ethics help to define what is or is not legitimate to do, or what moral research procedure involves and because research findings are about society, social researchers have a moral and professional obligation to be ethical (Neuman, 2007). Researchers must, therefore, develop a strong personal moral code to fight unethical behavior. Some typical research conducts that are considered unethical include plagiarism, faking or inventing data that the researcher did not collect, failing to report as accurately as possible how the research was conducted, acts that cause unnecessary or irreversible harm to respondents, failing to secure prior voluntary consent from respondents, unnecessarily or intentionally humiliating respondents by making public classified information disclosed to the researcher, and acts that show disrespect to respondents. Research results tainted with the above unethical behaviour mislead society.

The researcher relied on official and reliable databases in the process of sampling. The data compiled on enrolment and graduation figures were published by authority. Acceptable

procedures were followed in the administration of questionnaire and interview. The interviewees were enthusiastic about the research and freely gave information to help in addressing challenges that they themselves were part of and well aware of. The researcher's familiarity with the processes and many of the interviewees who were academics and administrative staff of the University of Ghana helped in deepening his understanding of the views expressed by the interviewees. Quantitative data were analyzed professionally using the SPSS statistical analysis tool, interview responses were properly analyzed and the review of case files was thorough. The researcher placed high value on the need for the results of the study to help transform or improve upon postgraduate study delivery. In this regard, the researcher ensured that acceptable standards and ethical issues were observed.

4.4 CONCLUSION

In this chapter, the theoretical framework for the study has been stated as well as the research design. The population for the study, sampling, and instrumentation were also explained. The chapter also clarified data collection methods, analysis and interpretation. The chapter ends with measures put in place to ensure that the results of the study are valid, reliable, and based on contemporary scientific ways of conducting research.

In the next chapter, the data collected for the study was analyzed, interpreted and discussed to draw findings from the research.

CHAPTER FIVE

DATA PRESENTATION, ANALYSIS AND DISCUSSION

5.1 INTRODUCTION

This chapter begins with profiles of respondents as well as a summary of data collected for the study. The chapter is devoted mainly to interpreting and discussing the analyzed data in line with the research questions and objectives. The sources from which data were obtained for the study were summarized and the discussion of the analyzed data was done according to the objectives of the study. A summary of how the first four objectives of the study were addressed through literature review was presented. The discussion covered meaning of student throughput and its determining factors, selected models of student throughput situations, trends and postgraduate candidature durations, postgraduate study delivery and throughput trends at the University of Ghana compared with trends in selected higher education institutions and the responsibilities of key stakeholders towards ensuring efficient postgraduate study delivery and enhancing postgraduate throughput. An assessment of how key stakeholders discharged their expected responsibilities was discussed and the chapter ended with a summary of the main findings from the analysis and discussions, which would be presented with recommendations in chapter six.

5.2 PROFILES OF RESPONDENTS

5.2.1 PROFILE OF PAST MASTERS AND DOCTORAL STUDENTS

Profiles of the masters' and doctoral respondents featured in Tables 5.1 to 5.8. The profiles of the past student respondents were obtained from their bio-data and enrolment information provided by the respondents and these included nationality, type of enrolment, sex, age, employment status, marital status, and study leave status. Understanding the demographic characteristics of the respondents is important because the demographic features may influence students' ability to make progress and therefore serve as predictors of timely completion (McCormack, 2005).

5.2.1.1 Nationality of past masters and doctoral respondents

All of the masters respondents were Ghanaians. There was no past international masters student in the past masters students sample. Seventeen (17) of the 20 science respondents (85 percent) were Ghanaians while the remaining three (3) past students (15 percent) were international students. With regard to humanities doctoral respondents, 17 of the 18 past students (94.5 percent) were Ghanaians and one respondent did not indicate his or her nationality. Nationality has not been identified in the literature as a significant determinant of a student's ability to complete his or her programme on time. However, all things being equal, an international student is likely to work harder than a local student to complete his or her studies within the approved period because of the relatively high programme fees compared to local students, strict sponsorship conditions normally aimed at early completion and the desire on the part of the international student to complete and return home on time with a qualification.

5.2.1.2 Enrolment status of past masters and doctoral respondents

In Table 5.1, forty-eight (48) respondents representing approximately 92 percent of the 52 past science masters respondents studied as full time students. The table further shows that the remaining four respondents constituting about 7.7 percent of the 52 masters science respondents did not indicate whether they enrolled as full-time or part-time students.

Response Category	Masters respondents (frequency & percentage)		Doctoral respondents (frequency & percentage)	
	Science	Humanities	Science	Humanities
Full Time	48 (92.3)	92 (90.2)	13 (65.0)	10 (55.6)
Part Time	0	0	7 (35.0)	8 (44.4)
No response	4 (7.7)	10 (9.8)	0 (0)	0 (0)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)

In the case of humanities respondents, 92 past students representing 90.2 percent of the 102 respondents were full-time students, while 10 past students representing 9.8 percent of the respondents did not indicate their enrolment status. In both cases (science and humanities), there were no part-time masters students among the respondents.

In the science doctoral respondents category, 13 past students representing 65 percent of the 20 respondents studied on full-time and 7 past students representing 35 percent of the 20 respondents studied on part-time basis. This means that there were more full-time students than part-time students among the science doctoral respondents. In the humanities doctoral respondents category, there were ten (10) full-time (55.6 percent) and eight (8) part-time (44.4 percent) student respondents. There were no part-time graduates among the masters respondents. This situation is an indication that although part-time enrolment is permitted at both masters and

doctoral levels, it is preferred among doctoral students than among masters students at the University of Ghana.

Enrolment status is an important factor in postgraduate students' candidature duration and ability to complete because candidature durations differ for full-time and part-time students, with full-time students normally having shorter study durations than part-time students. At the University of Ghana, enrolment status may be an important factor in students' ability to complete their programmes of study on time because whereas a full-time student is eligible to apply for residence on campus, part-time students are not entitled to residential facility on campus. Blakey (in Haselgrove,1994) underscored the impact of enrolment status on academic experience by observing that whether a student is resident on campus or not has its peculiar challenges and that in the case of non-resident students, the challenges included difficulty in commuting from outside to campus for academic work, as well as domestic and family interferences. Blakey (op. cit.) was also of the view that such challenges or interferences (especially at the postgraduate level) can have a negative impact on non-resident students and this situation can consequently cause delays in study completion.

5.2.1.3 Gender distribution of past masters and doctoral students

Details of gender distribution of the past science and humanities masters respondents is presented in Table 5.2.

Gender	Masters (frequency & percentage)		Doctoral (frequency & percentage)	
	Science	Humanities	Science	Humanities
Male	41 (78.8)	58 (56.9)	18 (90.0)	13 (72.2)
Female	9 (17.3)	42 (41.2)	2 (10.0)	3 (16.7)
Total Male & Female	50 (96.1)	100 (98.0)	20 (100.0)	16 (88.9)
No Response	2 (3.9)	2 (2.0)	0 (0)	2 (11.1)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)

There were 41 males (approximately 79 percent) and 9 females (approximately 17 percent) among the 52 science masters respondents. In the case of the humanities masters respondents, there were 58 males (approximately 57 percent) and 42 females (approximately 41 percent) among the 102 respondents. This means that there were more male respondents than female respondents in both disciplines, although two respondents in both cases did not indicate their gender.

In the doctoral category, the gender disparity was more pronounced with only two females (10 percent) among the science respondents and three females (16.7 percent) among the humanities respondents. As in the case of the masters respondents, there were more males than females in both disciplines.

The female representation of more than one-third of the total humanities masters respondents (42 out of 102 respondents) is far more than the masters science female representation of approximately one-fifth (9 out of 52 respondents). This situation reflects the finding in the 2005 Report of the Ghana National Council on Tertiary Education (NCTE) that female enrolment in postgraduate studies, especially in the Science disciplines, still remains relatively low at the University of Ghana in spite of affirmative initiatives rolled out by the University over the years towards a gradual bridging of the gap. One cannot say with certainty whether gender is a significant factor in the completion of postgraduate studies or not since there is no evidence from literature in support of males or females being generally more likely to complete their studies much earlier than the other solely on account of gender difference.

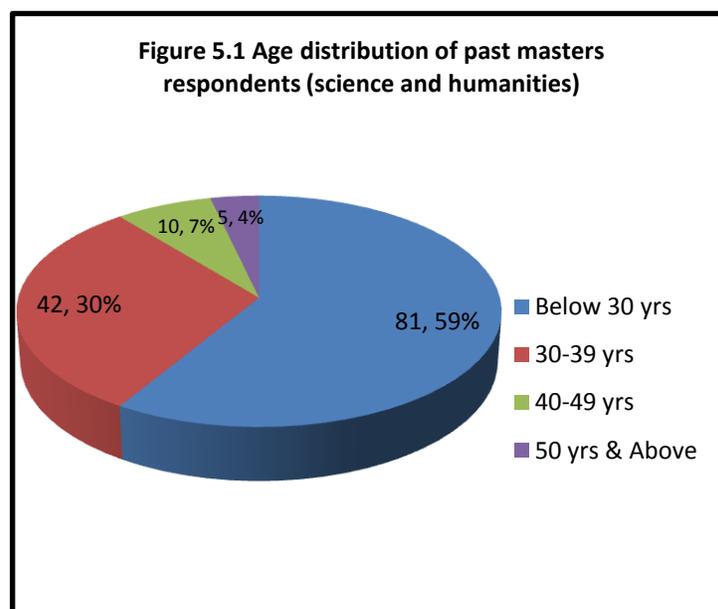
However, the general view that marital responsibilities and family commitments may affect the completion ability of females than males, especially where female students have to defer their studies due to maternity leave issues, might still be relevant in higher education institutions. This situation exists among postgraduate students at the University of Ghana. Therefore, gender can be a significant indicator of throughput among postgraduate students.

5.2.1.4. Age distribution of past masters and doctoral student respondents

The purpose of collecting data on age distribution was to determine the ages of the respondents at the time of enrolling in the masters and doctoral programmes at the University of Ghana and to determine whether there was any relationship between ageing and completion. In other words, the data collected was to help the researcher to find out whether age of respondents influenced their ability to complete their studies within approved durations. To explain this situation, the

ages given by the respondents were categorized into four tiers, namely, below 30 years, 30 to 39 years, 40 to 49 years and 50 years and above as indicated in Table 5.3.

Age Range	Masters (frequency & percentage)		Doctoral (frequency & percentage)	
	Science	Humanities	Science	Humanities
Below 30 yrs	34 (65.4)	47 (46.1)	1 (5.0)	2 (11.1)
30-39 yrs	10 (19.2)	32 (31.4)	8 (40.0)	7 (38.9)
40-49 yrs	3 (5.8)	7 (6.9)	8 (40.0)	6 (33.3)
50 yrs and above	0 (0)	5 (4.9)	2 (10.0)	1 (5.6)
Total Response	47 (92.3)	91 (89.2)	19 (95.0)	16 (88.9)
No Response	5 (7.7)	11 (10.8)	1 (5.0)	2 (11.1)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)



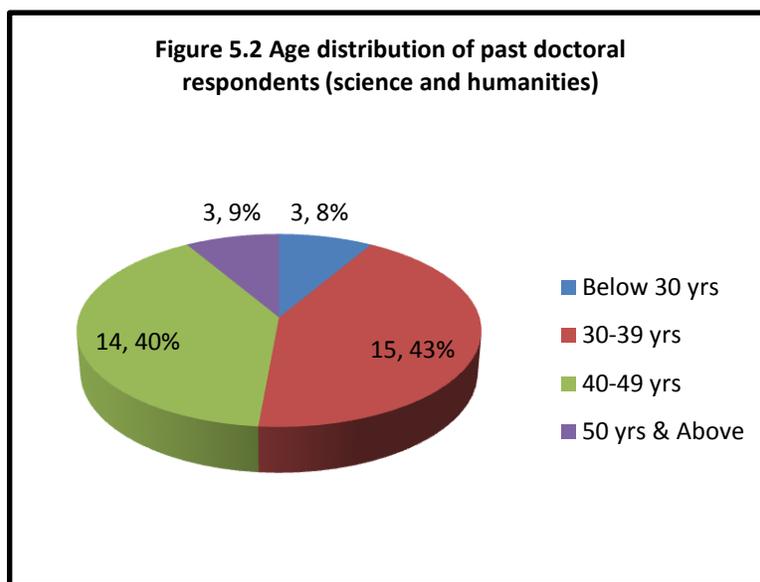
Among the masters science respondents, 34 (65.4 percent) were below 30 years, 10 (19.2 percent) were between 30 to 39 years, three (5.8 percent) were between 40 to 49 years and five (7.7 percent) did not indicate their ages. Although, the table indicates that none of the

respondents was above 50 years, this might not be the case since some of the respondents who failed to indicate their ages at enrolment could possibly fall in the category of 50 years and above.

With regard to masters humanities respondents, 47 (46.1 percent) were below 30 years at the time of enrolment, 32 (31.4 percent) were between 30 to 39 years, 7 (6.9 percent) were between 40 to 49 years, 5 (4.9 percent) were above 50 years, and 11 (7.7 percent) of the respondents did not indicate their ages at enrolment.

For the doctoral category, few respondents were below age 30 (3 for both science and humanities) and more of the respondents were in the middle age ranges of 30 to 39 (15 in both cases) and 40 to 49 (14 in both cases), and few respondents in the above 50 years range (3 for both science and humanities).

Put together as in Figure 5.1, 59 percent of the masters students (both science and humanities) were below 30 years at the time of first enrolment, 30 percent were between 30 to 39 years, 7 percent were between 40 to 49 years and 4 percent were 50 years and above at the time of enrolment. The figures point to the fact that majority of the masters respondents (89 percent) were 39 years and below at the time of enrolment. Although majority of the masters respondents were young (below 30 years), about 11 percent could be described as aged and those in the 30 to 39 years bracket as mature persons.



The values in Figures 5.1 and 5.2 illustrate the age distribution for the 154 masters respondents and 38 doctoral respondents, with corresponding percentages for each age range. For the purpose of this research, if we assume that the normal age for enrolment in masters studies is 30 or below at the University of Ghana, then the figures depict younger graduates among the masters respondents than among the PhD respondents, which is not unusual.

Five (5) science masters respondents and eleven (11) humanities masters respondents did not indicate their ages. This is a rather high non-response rate for the masters respondents which is in contrast with the non-response figures of one (1) for doctoral science respondents and two (2) for humanities doctoral respondents. The respondents' inability to indicate their ages could be attributed to their unwillingness to disclose their ages or that they simply did not find it necessary to respond.

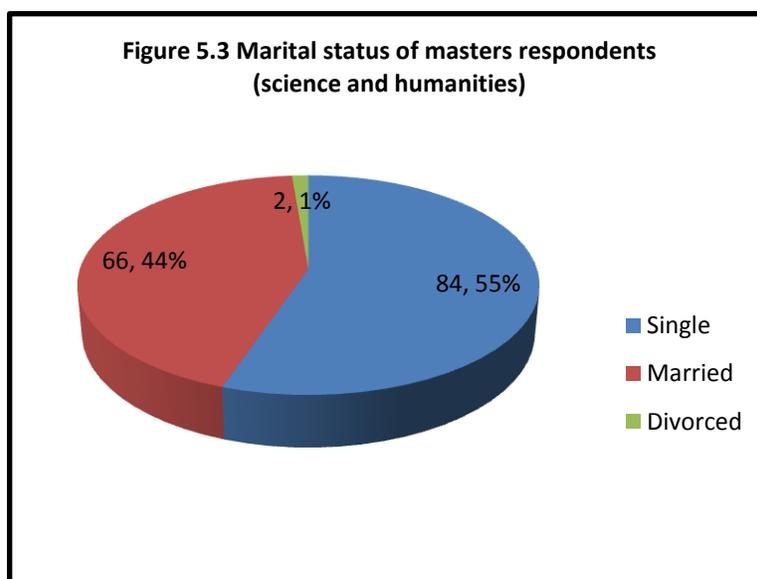
Age at enrolment could be a major determinant of students' ability especially to complete research-based thesis because research work is generally considered to be more demanding and stressful than course work. Ageing also comes with certain expectations such as increased family responsibilities and occupational demands as well as reduced physical fitness which may adversely affect older persons' ability to cope with the demands of research at the postgraduate level than in the case of younger persons. These statements are grounded on the views of scholars that there is an inverse relationship between learning and ageing mainly due to physical changes such as vision impairment, hearing impairment and related cognitive weakness which may occur as a person advances in age (Thorndike, 1927; Knowles, 1980; Merriam, 2001). Thorndike (op. cit.) specifically indicated that "the ability to learn declined very slowly and very slightly at one percent after age twenty-five" and Knowles (op. cit.) cited other studies that indicated that "the decline was that of speed of learning, not intellectual power". Studies by Martin et al. (2001) and Wamala (2011) also revealed that completion rates declined with older people; and that younger people in the University of Makerere in Uganda completed their doctorates earlier than their older counterparts. The common factor in all these studies therefore is that older people are likely to suffer from the challenges of stress and limited time during their postgraduate candidature and these situations might affect their ability to complete on time.

Therefore, although majority of the masters and doctoral respondents could be classified as young, the views regarding ageing and the challenges associated with older learners cannot be overlooked as a throughput factor among research postgraduate students at the University of Ghana, especially at the doctoral level where there are likely to be more older persons as compared with the masters level.

5.2.1.5. Marital status of past masters and doctoral student respondents

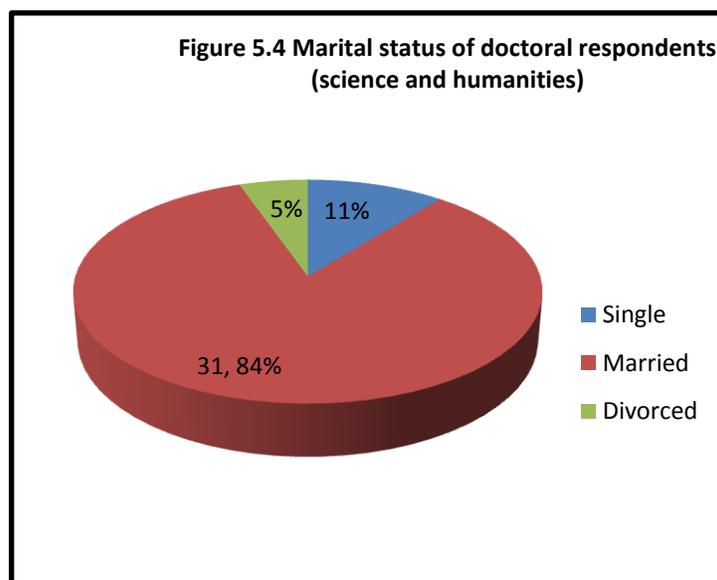
Data on marital status of the respondents was collected to determine whether being married or being single during postgraduate candidature could influence ability to complete studies on time. The marital demographics for the respondents as indicated in Table 5.4 revealed a mixture of single and married persons with single persons in the majority among both science and humanities masters respondents.

Marital Status	Masters (frequency & percentage)		Doctoral (frequency & percentage)	
	Science	Humanities	Science	Humanities
Single	31 (57.7)	53 (52.0)	2 (10.0)	2 (11.1)
Married	20 (38.5)	46 (45.1)	17 (85.0)	14 (77.8)
Divorced	0 (0)	2 (2.0)	0 (0)	2 (11.1)
Total Response	51 (98.1)	101 (99.0)	19 (95.0)	18 (100.0)
No Response	1 (1.9)	1 (1.0)	1 (5.0)	0 (0)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)



In the case of science respondents, 31 (57.7 percent) of the 52 science masters respondents were single during their candidature, whereas 53 (52 percent) of the 102 humanities masters respondents were single during their masters candidature. There was no significant disparity in both cases as the figures indicate a little more than half of the respondents being single in each case. Another significant observation is that 20 (38.5 percent) science masters respondents and 46 (45.1 percent) humanities masters respondents were married during their masters candidature. There were two divorcees among the humanities masters respondents, and only one respondent each in both cases did not indicate their marital status.

Although, in this study, there were more single persons than married persons (31 singles as against 20 married for science and 53 singles as against 46 married for humanities) among the masters respondents, the number of married persons is quite high since marital status was not considered in the sampling for the study.



With regard to the doctoral respondents, there were more married persons (17 out of 20 for science and 14 out of 18 for humanities) among the respondents, and only 2 singles each among science and humanities respondents respectively. Only one respondent in the science doctoral category did not indicate marital status and there were two divorcees among the humanities doctoral respondents. This contrasting trend in marital status for masters and doctoral respondents is not unusual at the University of Ghana and in many higher education institutions in Africa because getting married during studentship is generally permitted in higher education institutions and quite an appreciable number of university graduates get married after obtaining their bachelor's degrees and getting jobs.

Challenges similar to those identified for female graduate students such as marital responsibilities and family commitments are key issues associated with marital life. These challenges may affect completion ability for both male and female married students but may be more serious for the female married graduate student. With such relatively high proportions of married graduate students among the respondents, the adverse effects on the respondents' ability to complete cannot be ruled out in this study.

5.2.1.6 Employment status of past masters and doctoral respondents

In Table 5.5 below, 26 (50 percent) of the 52 science masters respondents were employed during their masters studies while the remaining half were unemployed. There were five (9.6 percent) self-employed persons among the 26 (50 percent) employed respondents. With regard to the humanities masters respondents, a total of 64 (62.7 percent) of the 102 respondents were employed with 20 (19.6 percent) being self-employed. In both cases, the unemployed

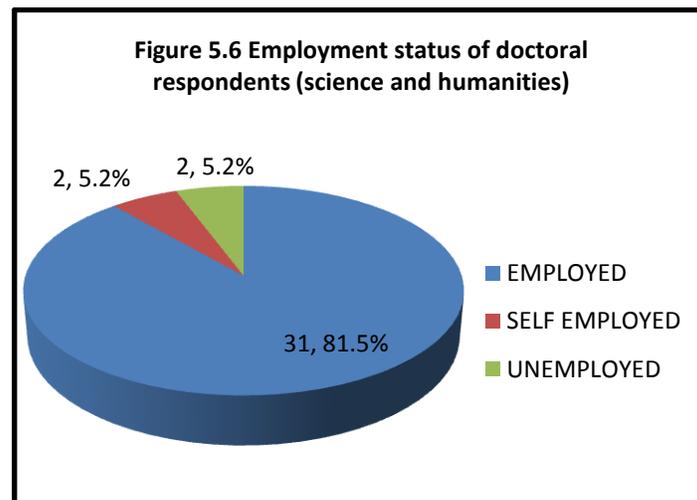
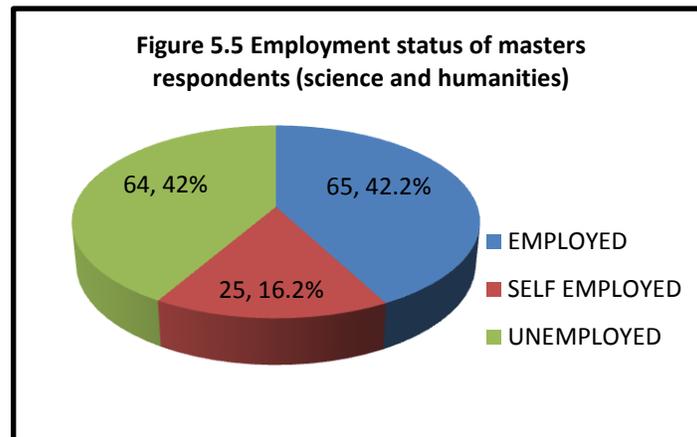
constituted 26 respondents (50 percent) and 38 respondents (37.3 percent) for science masters and humanities masters respondents respectively.

Employment Status	Masters (frequency & percentage)		Doctoral (frequency & percentage)	
	Science	Humanities	Science	Humanities
Employed	21 (40.4)	44 (43.1)	17 (85.0)	14 (77.8)
Self-Employed	5 (9.6)	20 (19.6)	0 (0)	2 (11.0)
Unemployed	26 (50.0)	38 (37.3)	1 (5.0)	1 (5.6)
Total Response	52 (100.0)	102 (100.0)	18 (90.0)	17 (94.4)
No Response	0 (0)	0 (0)	2 (10.0)	1 (5.6)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)

The employment status of doctoral respondents differ sharply from that of the masters respondents. For the science doctoral category, 17 of the 20 respondents, representing 85 percent were employed, and for the humanities doctoral category, 16 of the 18 respondents, representing 88.8 percent were employed. There were no self-employed persons among the 17 science doctoral respondents who were employed at the time of enrolment. Of the 20 science doctoral respondents, there was only one unemployed and two did not indicate their employment status. Similarly, there were two self-employed students among the 16 humanities doctoral employed respondents, and of the 18 respondents, there was one unemployed and one respondent did not indicate employment status.

The total number of respondents who were either employed or self-employed during their candidature as provided in Figures 5.5 and 5.6 was 90 out of 154 for masters respondents (58.4 percent) and 33 out of 38 (86.8 percent) for doctoral respondents. In the case of the unemployed,

the figures were 64 out of 154 (41.5 percent) for masters respondents and two (2) out of 38 (5.2 percent) for doctoral respondents.



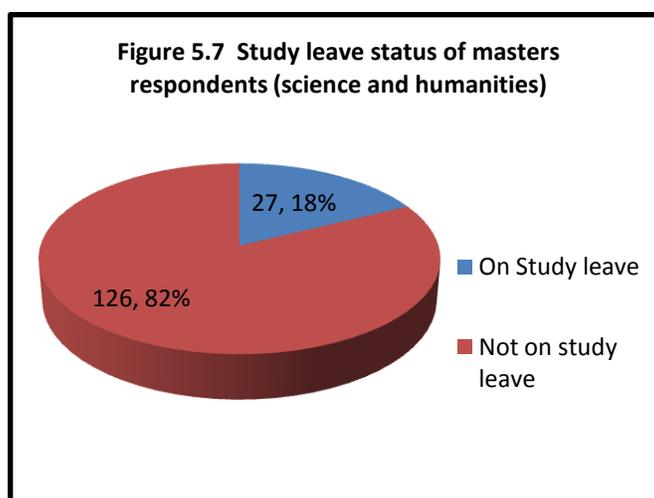
From the above presentation, although the proportion of employed and self-employed students among masters and doctoral respondents was high, the situation can be described as very high in the case of the doctoral respondents.

Being employed or unemployed while pursuing a research postgraduate programme may have its advantages and disadvantages. The employed may be financially more resourced than the unemployed on the programme, but if not granted study leave, the employed is likely to face a more serious challenge of time constraints in the course of the programme than the unemployed. Employment status is therefore an important variable for throughput or completion to the extent that it has both financial and time implications for the research postgraduate student. Whereas the employed graduate students have the advantage of relying on their salary and other allowances as a source of funding for the postgraduate studies, the unemployed is denied this benefit. On the other hand, whereas the employed graduate students would have limited time to study if not granted study leave, the unemployed is likely to have more time for studies.

5.2.1.7 Study leave status of masters and doctoral respondents

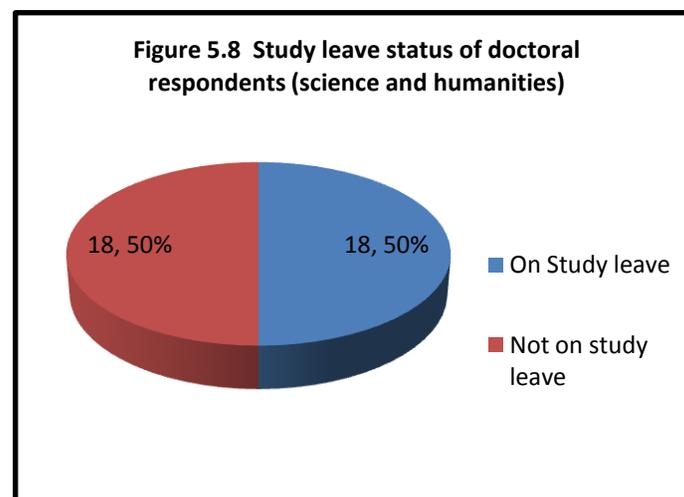
In Ghana, employees who intend to study may be granted study leave with pay or without pay by their employers. When study leave is granted with pay, the student employee is entitled to full salary and sponsorship of academic expenses while off the job in school. On the contrary, when study leave is granted without pay, the student employee is not relieved of assigned duties and is not entitled to salary during the period of leave. Study leave may also be partial, in which case the employees are expected to work partially while studying and are entitled to salary and other forms of sponsorship.

Study Leave Status	Masters (frequency & percentage)		Doctoral (frequency & percentage)	
	Science	Humanities	Science	Humanities
On Study Leave	13 (25.0)	14 (13.7)	10 (50.0)	8 (44.4)
Not on Study Leave	39 (75.0)	87 (85.3)	10 (50.0)	8 (44.4)
Total Response	52 (100.0)	101 (99.0)	20 (100.0)	16 (88.8)
No Response	0 (0)	1 (1.0)	0 (0)	2 (11.2)
Total	52 (100.0)	102 (100.0)	20 (100.0)	18 (100.0)



The study leave status of the respondents as illustrated in Table 5.7 indicates that a high proportion of the masters respondents were not on study leave during their studies. The figure for science masters respondents was 39 (75 percent) and that of humanities masters respondents was 87 (85.3 percent) respondents. With regard to those who were on study leave, the science masters respondents constituted only 13 (25 percent) of the 52 respondents while in the case of humanities masters respondents, 14 (13.7 percent) of the 102 respondents were on study leave. However, it is not possible to determine how many of the 27 science and humanities masters respondents were either on study leave ‘with pay’ or ‘without pay’ since there was no item to solicit such response.

With regard to the doctoral respondents, 10 (50 percent) of the science doctoral respondents and 8 (44.4 percent) of the humanities doctoral respondents were on study leave, with the remaining half in each case indicating that they were not on study leave. Considering that almost all the doctoral respondents were in full time employment but few on study leave as illustrated in Table 5.8, we can conclude that many of the doctoral respondents were working alongside with their doctoral studies.



The same conclusion for masters respondents applies to doctoral respondents as well. A significant number of both masters and doctoral respondents in this study were married and employed. By implication, those employed did not obtain study leave.

Bird and Crawley (in Haselgrove, 1994) identified employment status and its implications for time available at students' disposal for their studies as a serious factor affecting completion. Through the above discussions, it has been established that there exists a strong relationship between employment status (Table 5.5) and study leave status (Table 5.6) as determinants of research postgraduate study completion. Student employees need study leave to be able to

concentrate on their studies, and where the latter is not granted, the student employee becomes a working student and is denied adequate time to concentrate on his or her studies.

The conclusion that emerges from the analysis of the demographic characteristics of the postgraduate respondents is that type of enrolment (full-time or part-time mode of study), residential status, age at enrolment, marital status, employment status, and study leave status during postgraduate studentship are important personal and social factors in students' ability to complete research postgraduate studies, whereas gender and nationality play less significant role as determinants of postgraduate studies and research completion.

Analyzing the respondents' demographic characteristics provided an understanding of the respondents' enrolment status (full-time or part-time), the respondents' age profiles, gender composition, marital status, employment status which constitute personal attributes that determine students' completion duration. For instance, the age profile of the respondents point to more young respondents aged below 30 years at the time of enrolment among masters respondents than among doctoral respondents which is not unusual. However, there were also significant proportions of married students, and students in employment but not granted study leave by their employers among both masters and doctoral respondents. These situations are indicative of the possible causes of extended durations and non-completions among research graduate students at the University of Ghana.

5.2.2 PROFILES OF THESIS SUPERVISORS AND EXAMINERS

The characteristics of thesis supervisors and examiners sampled for this study are classified into three namely, classification by type of examiner, by examining experience, and by subject area or discipline.

5.2.2.1 Classification of thesis supervisors and examiners by type

Copies of the questionnaire were administered to 80 thesis supervisors, 80 internal examiners and 40 external examiners. From the above samples, 60 completed questionnaire were received from the supervisors, 70 from internal examiners and 30 from external examiners respectively as shown in Table 5.7.

Supervisors(n=60)				Examiners (n=100)			
(Frequency & Percentage)				(Frequency & Percentage)			
Principal only	Secondary only	Served in both capacities	Total	Internal	Externals (Ghana)	Externals (outside Ghana)	Total
16	2	42	60	70	9	21	100
(26.7%)	(3.3%)	(70.0%)	(100%)	(70%)	(9%)	(21%)	(100%)

Of the 60 thesis supervisors who completed the questionnaire, 42 (70 percent) served as in both capacities as principal and secondary supervisors, 16 (26.7 percent) served as principal supervisors only and two (3.3 percent) served as secondary supervisors. Of the 120 examiners, 70 percent were internal examiners and 30 percent were external examiners. The 30 percent external examiners consisted of nine (9 percent) from within Ghana and 21 (21 percent) from outside Ghana.

5.2.2.2 Classification of thesis supervisors and examiners by experience

Classification of thesis supervisors and examiners by experience as shown in Table 5.8 reveals that 50(83.3 percent) of the respondents had supervised thesis at the postgraduate level for 5 years and above and only 10 (16.7 percent) had less than five years of thesis supervision experience. In the case of thesis examiners, 80 had examined for 5 years and above, and 20 had less than 5 years examining experience. This means that the respondents were experienced thesis supervisors and examiners and were therefore well qualified to share their views on thesis supervision and examination.

Length of Service (Experience)	Supervisors		Examiners	
	Frequency	Percent	Frequency	Percent
5 Years and above	50	83.3	80	80
Less than 5 Years	10	16.7	20	20
Total	60	100	100	100.0

A similar trend was seen for thesis examiners, in which case the internal examiners were 80 (80 percent) and external examiners were 20 (20 percent).

5.2.2.3 Classification of thesis supervisors and examiners by subject area

In Table 5.9, 30 percent of the thesis supervisors representing 31.7 percent supervised theses in the sciences and the remaining 41 representing 56.7 percent supervised theses in the humanities. With regard to thesis examiners, 48 of the respondents examined theses in the area of science and 52 examined theses in the humanities. Whereas there were more humanities supervisors than those in the sciences, the proportion of science and humanities examiners was almost equal.

Subject Area	Supervisors		Examiners	
	Frequency	Percent	Frequency	Percent
Science	19	31.7	48	48
Humanities	41	68.3	52	52
Total	60	100.0	100	100.0

5.2.3 PROFILES OF PAST HEADS OF DEPARTMENTS

Interviews were conducted with ten past heads of departments, three past deans of graduate studies and four past thesis schedule officers. As in the case of thesis supervisors and examiners, experience and representativeness of science and humanities disciplines was considered in selecting the past heads of departments. With these pre-conditions in mind, five heads were selected from science and another five from humanities. Two of the past heads from humanities departments served as heads of department for four years each, likewise each of the remaining three. Each of the three heads drawn from science had four years experience as heads, and the remaining two also served as heads for six years each. All the five past heads from science departments were professors. In the case of those selected from humanities departments, two were professors and three were senior lecturers during the period they served as heads of department. With the exception of one, all the ten past heads from science and humanities departments also had thesis supervision and examining experience of more than ten years.

5.2.4 PROFILE OF PAST DEANS OF GRADUATE STUDIES AND PAST THESIS SCHEDULE OFFICERS

The three past deans of graduate studies interviewed served between 2000 and 2010 (the period under review in this study) and therefore had firsthand experience of the situations that prevailed

at the time. Each of the Deans had served the full term of four academic years. All of the past deans were of professorial rank. Similarly, the four past thesis schedule officers interviewed also served at the graduate school between 2000 and 2010.

5.3 DATA COLLECTION

As indicated in the above discussion, primary data was obtained through questionnaire and interviews. Secondary data was obtained through the review of literature and case files. The types of data obtained from these sources are discussed in the next section.

5.3.1 DATA OBTAINED FROM QUESTIONNAIRE

As indicated in chapter four, three different sets of questionnaires were administered to past postgraduate students (masters and doctoral candidates), internal and external examiners, and thesis supervisors between December 2012 and March 2013.

5.3.1.1 Administration of questionnaire to past masters and doctoral students

The questionnaire for past masters and doctoral students were distributed to 250 past masters students and 50 past doctoral students all of whom had extended their candidatures before completion of their programmes of study. Of the number distributed, 154 completed copies of questionnaire were received from past masters graduates and 38 from past doctoral graduates, making a total of 192 completed questionnaire received from the 300 masters and doctoral students sampled for the study. Of the 154 completed questionnaire received from the past masters respondents, 52 respondents representing 33.7 percent were past science masters students and 102 respondents representing 66.3 percent were past humanities masters students.

5.3.1.2 Administration of questionnaire to thesis supervisors and examiners

The supervisors questionnaire were administered to 80 thesis supervisors selected from the database of supervisors and 60 completed questionnaire were received from the 80 thesis supervisors.

A different set of questionnaire was administered to 80 internal examiners from whom 70 completed questionnaires were received, and to 40 external examiners from whom 30 completed questionnaires were received. In all, one hundred completed questionnaire were received from the 120 thesis examiners. The number of questionnaires distributed and returned for each category of respondents is presented in Table 5.10 (a).

Category of respondents	Number distributed	Number returned	% Returns
Doctoral respondents	50	38	76
Masters respondents	250	154	61.6
Supervisors	80	60	75
Internal Examiners	80	70	87.5
External Examiners	40	30	75
TOTAL	500	352	70.4

As indicated in Table 5.1, the questionnaire return rates were 76 percent for past doctoral students, 61.6 percent for past masters students, 75 percent for thesis supervisors, 87.5 percent for internal examiners, and 75 percent for external examiners. The overall questionnaire return rate was 70.4 percent (352 out of 500).

In the first place, the masters' and doctoral past students were contacted through their email addresses and requested to access the questionnaire through an on-line Google link facility. They were to complete the questionnaire on-line and submit the completed questionnaire to a dedicated database via email. The respondents were asked to acknowledge receipt of the email requesting them to complete the questionnaire and also to report any difficulties related to accessing the questionnaire. Acknowledging receipt made it possible to keep track of the number of respondents reached.

Secondly, the researcher sent another set of questionnaire to respondents who did not return the earlier completed questionnaire as a Microsoft Word file attachment. The respondents were asked to return the completed questionnaire as a Microsoft Word file attachment through the email. They were also given the option to print the questionnaire as hard copy, complete and return them to designated points for collection.

Thirdly, the researcher distributed hard copies of the questionnaire by hand to respondents within the University of Ghana campus, who were identified through email and telephone contact, to be completed and returned to dedicated delivery points for collection. The respondents within the University community included past masters candidates who were engaged as research assistants and junior faculty at the time of the study, and past doctoral candidates most of whom were research and teaching faculty of the University or affiliated research institutes of the University at the time of the study.

The same methods outlined above were adopted for administering the examiners and thesis supervisors' questionnaire. The multiple approach used for administering the questionnaire made it possible to reach out to all the respondents targeted for the quantitative data, with each method serving as a complement for the other. For the past postgraduates (masters' and doctoral) category of respondents, the hard copies yielded more returns than the email system. The low rate of return might be due either errors in the email addresses obtained from the past students' files, difficulties encountered by the respondents in accessing the Google link facility to complete the online questionnaire or a lack of the culture of completing questionnaire through on-line facilities among the respondents. The fact that the email method yielded relatively higher returns from external examiners than the masters' and doctoral respondents seemed to confirm these assumed causes of low questionnaire return rate.

5.3.1.3 Data obtained from masters and doctoral respondents

Data obtained from masters' and doctoral respondents, which reflected the questions or items in their questionnaire, covered access to funding for their studies and research; thesis supervision arrangements with respect to assignment of thesis supervisors to students, approval of thesis topics for students, and student-supervisor relationship; support and cooperation provided by heads of departments, supervisors and the graduate school to students; students' level of familiarity with regulations and procedures concerning postgraduate studies; students' level of skills and capacity to undertake graduate level research effectively; availability and adequacy of learning facilities; students' ability to complete and submit theses within approved study durations; causes of extended study durations, non-completions and suggestions for preventing such situations; challenges encountered during postgraduate studies; stages in the postgraduate

studies that accounted for extended candidature; and general impressions of students about their postgraduate experience at the University of Ghana.

5.3.1.4 Data obtained from thesis supervisors

Data obtained from thesis supervisors, which reflected the questions or items contained in their questionnaire, covered the following areas: availability of equipment and facilities for graduate level research; availability of good reading materials for graduate level research; availability of facilities for seminar presentation; challenges faced with graduate level supervision; level of motivation to supervise graduate level research work; adequacy of financial support for postgraduate studies and research; efforts by institution to provide and/or facilitate the provision of financial support for postgraduate studies and research; the preferred type of supervision with regard to sole supervision or team supervision; effectiveness of supervision in terms of timeliness, assignment of supervisors to students, supervisors involvement in the selection of thesis research topics, managing the supervision relationship; students' level of skills, knowledge and capacity for effective graduate level research; students' accessibility and availability for research guidance; students' ability to honour delivery promises and deadlines set by supervisors; general support and co-operation received from students during supervision; students' ability to complete research and submit theses on time.

5.3.1.5 Data obtained from thesis examiners

Data obtained from thesis examiners, which reflected the questions or items contained in their questionnaire, covered management of the thesis examination process. Aspects of the examination system that were appraised included thesis delivery method used by the graduate

school, examiners' preferred delivery method, assessment of the effectiveness of delivery method, accuracy of thesis delivery address, examiners' ability to meet deadlines set for completion of thesis assessment, clarity of the assessment guidelines, remuneration for examination of thesis and promptness of payment for examined theses, methods used for payment of remuneration, effectiveness of communication between examiners and the graduate school in connection with thesis examination, general view about quality of theses sent for examination and how this might affect promptness of assessment, other challenges encountered in the thesis examination process, and suggestions for improving the thesis examination process.

5.3.2 DATA OBTAINED FROM INTERVIEWS

5.3.2.1 Conduct of Interviews

Three different sets of interview schedules were used to obtain qualitative data between December 2012 and April 2013. These included interview schedules for past heads of departments drawn from science and humanities departments, past thesis schedule officers and past deans of graduate studies. In view of difficulties encountered in securing appointments with the interviewees, soft versions of structured interview schedules were sent by email to the interviewees for completion. After carefully reviewing responses in the completed interview schedules, face-to-face interviews were conducted with past thesis schedule officers, past deans of graduate studies and some past heads of departments to seek further clarification on some aspects of their written responses. Some of the past heads of departments were also contacted through telephone calls to seek clarification on some of their responses. The interviews served as further probe into data collected through the use of questionnaires to ensure that the findings were reliable.

Table 5.10 (b): Number of persons identified for interviewing and number interviewed		
Category of Interviewees	Number Identified	Number Interviewed
Past Deans of Graduate School	4	2
Past Heads of Department	20	10
Past Thesis Officers	4	4
Relevant Government Agency	3	1
TOTAL	28	16

As indicated in Table 5.10 (b), the researcher was able to conduct interviews with two out of four identified past deans of graduate studies, ten out of 20 identified heads of departments with equal representation in the sciences and humanities, all the four known and available past thesis schedule officers, and one relevant government agency, the Ghana Education Trust Fund (GETFund) Secretariat.

5.3.2.2 Data obtained from past heads of departments

Data obtained from interviews with past heads of departments included their headship experience, thesis supervision and examination experience, as well as their responsibilities towards ensuring efficient postgraduate study delivery and timely completion.

In the area of postgraduate study delivery and timely completion, information obtained from the past heads of department included their views on students' ability to submit theses on time, students' requests for extension, and challenges of their headship responsibilities towards efficient postgraduate study delivery and completion. The past heads also provided information on their working relationship with thesis examiners, their ability to complete examine theses within approved timelines, ways of helping students to submit their theses on time, knowledge of

drop-out or non-completion among postgraduates, strategies for avoiding or reducing non-completion among graduate students, and their appraisal of the thesis supervision and examination arrangements at the University of Ghana. The heads were also interviewed on challenges students were likely to face in during their research postgraduate candidatures.

5.3.2.3 Data obtained from past deans of graduate studies

The past deans of graduate studies were asked to provide information on the areas of graduate programme delivery that they considered most challenging at the time they became Deans and the efforts they made towards addressing such challenges. They were also interviewed on situations that were likely to prevent students from submitting their theses on time, role of departmental heads in ensuring timely submission of theses by students, funding for postgraduate research, supervision challenges and their views on sole supervision and team supervision at the University.

Responses to the above issues provided data for addressing the research objective of evaluating the responsibility of past deans of graduate studies as key stakeholders in the efficient graduate programme delivery and identifying the reasons for extended candidature and non-completion among masters and doctoral students at the University of Ghana.

5.3.2.4 Data obtained from past thesis schedule officers

The past thesis schedule officers provided information on the specific duties they performed during their tenure and ways in which they contributed towards the thesis submission and examination process for ensuring that students graduated from their programmes on time. The

interviewees also shared their views on whether students were submitting their theses on time, whether heads of departments were meeting deadlines set by the graduate school for submitting students' theses for examination, and possible reasons why heads of departments might delay in submitting students' theses on time for examination. The past thesis schedule officers also expressed their views on challenges in the thesis examination process and how to overcome them, knowledge of drop-out and non-completion cases among research postgraduate students and reasons for their occurrence.

5.3.3 DATA OBTAINED FROM CASE FILE REVIEWS

This involved the selection of typical case files with the appropriate characteristics to bring out clear examples or instances of emerging trends or specific problem situations related to prolonged extensions, and non-completion cases among graduate students.

From the graduate school database of thesis submission and examination, the researcher obtained information on delayed or extended completions from the list of graduating students who either extended their studentship or delayed in submitting the final copies of thesis for graduation. After obtaining the names of affected students from the database, the files were retrieved for review. The reason for adopting the case file review method was to obtain in-depth understanding of typical cases of extended completion to buttress and ensure further triangulation data obtained from the two main sources of questionnaire and interviews.

The review of student case files also made it possible to identify specific instances of extended completion and non-completion situations among postgraduate students at the University of Ghana. The reasons given by the students as well as their supervisors and heads of department

were contained in correspondence on students' files. They represented clear instances or situations that resulted in extended completion and non-completion for the students. The profiles of affected students were reviewed and specific causes of delayed completion for each case file were summarized into findings for further review in relation to findings from questionnaire and interviews. In all, 38 case files, made up of 10 extremely delayed masters cases, 15 extremely delayed doctoral cases, and 13 doctoral drop-out cases, were reviewed and analyzed.

5.4 ANALYSIS AND DISCUSSION OF DATA

As indicated above, data was obtained for the study through the review of literature, review of case files, questionnaire and interviews. The first four research objectives were addressed through literature review. This was made possible through a discussion of the meaning of throughput concepts, the significance of throughput studies to higher education institutions, funding institutions, as well as governments and their national policy making agencies. The review of literature provided further information that addressed the objectives of identifying selected models of student throughput situations, trends and postgraduate candidature durations; discussing the postgraduate programme delivery and throughput trends at the University of Ghana as compared to selected models in some higher education institutions; and also explaining the responsibilities expected of key stakeholders towards efficient postgraduate study delivery at the University of Ghana.

Research objectives five, six and seven were addressed with empirical data obtained from questionnaire, interviews and student case file reviews.

5.4.1 DATA WITH REGARD TO RESEARCH OBJECTIVE ONE: MEANING OF STUDENT THROUGHPUT AND ITS DETERMINING FACTORS

In chapter two, the concept of student throughput, its scope, significance and theoretical models were discussed. The discussion traced the origins of the concept of throughput from industry where it was used to refer to the relationship between input and output (de Beer, 2006), definitions of throughput and its application to educational institutions as postulated by Latief & Blignant (2008). According to the literature (de Beer, 2006), the concept of throughput originated from industry where the whole idea was about the relationship between maximizing output from input within specific time frames. The literature further indicates that as the term got borrowed by academics, it has been interpreted to mean how long a student takes to complete a programme (Latief & Blignant, 2008), the proportion of students in a cohort that are able to complete their study programmes within a specified time frame (Craincross, 1999; Horne & Naude, 2007). The meaning and usage of concepts and terminologies such as pass rate, success rate, failure rate, completion rate, drop-out rate, and attrition rate were also simplified through the review of literature. The literature also revealed that the main determinants of throughput situations included institutional factors such as pre-entry qualifications of the student, the criteria used for selecting qualified candidates, the academic environment, student or personal factors and supervision arrangements in the particular case of research postgraduate students (McCormack, 2005). It also came to light through literature that situating the concept in the appropriate contexts such as basic, secondary or tertiary level of education and understanding the demographic characteristics of students enhances the understanding of the concept of throughput. Key terminologies derived from throughput and completion usage which were considered relevant to the study were also explained.

Significance of throughput studies in higher education and in policy formulation was also discussed to underscore the importance of throughput studies in contemporary highly competitive education enterprise. As part of the discussions, instances in which educational institutions relied on throughput studies to reduce drop-out rate and increase success rates as indicated by Magura (2010) were cited. Other instances of the usefulness of throughput studies discovered from the literature included the fact that donors and funding agencies depended on the outcomes of throughput studies as a measure of success or failure in higher degree research (Lessing & Schultze, 2002) for their sponsorship decisions; as an indicator of enhanced institutional image and performance rankings (Bisschoff, 2005; Visser and Hansio, 2005); and as a guide to governments in formulating educational policies based on graduation rates rather than enrolment rates for provision of funding to educational institutions (the 1998 Swedish Postgraduate Education Reforms and the 2001 South Africa National Plan for Higher Education). Another area of significance identified in the literature was the use of throughput study outcomes, mostly graduation statistics, by governments in planning national human resource requirements as demonstrated by the 2001 Report of the South Africa Ministry of Education.

In discussing the factors that determine throughput situations, useful points were drawn from McCormack's (op. cit.) classification of the key factors into the three broad categories of institutional factors, supervisory arrangements and student or personal factors. The institutional factors identified through literature review included students' pre-entry qualifications and selection criteria used by institutional authorities; the academic environment in which students find themselves; decisions by the student regarding choice of academic discipline or area

including mode of study; ratio of teaching staff and/or research supervisors to students; and availability and quality of student support services. Issues identified under supervisory arrangements relate to supervision relationship; style and models of supervision adopted by the institution; supervisors' expectations of their students; and students' expectations of their supervisors. Regarding student or personal factors, cultural background of the student, emotional or psychological tendencies, financial issues, and socio-cultural issues such as feeling isolated, alienated, and interference.

The literature also supports the position that, all things being equal, supervision is the major determining factor for postgraduate throughput because it is expected to result in advising, controlling the quality of research, providing support and guidance to the research postgraduate student (Mouton, 2001), the absence of which would lead to little or no progress made by students to complete their studies on time. The view expressed by Rudd (1985) that neglect and dereliction of duty on the part of a supervisor leads to poor research supervision support Mouton's position, likewise that of Jack (1983) admonishing students not to develop poor working relationship with one's supervisor since that lead to poor supervision. Reference to Phillips & Pugh (1994) and Pole (1998) provided useful suggestions with regard to the merits of adopting joint supervision or sole supervision and the conditions under which each style or system may be practiced in higher education institutions. Some scholarly works on supervision and supervision arrangements which were discussed and cited in chapter two included Jacks et al. (1983), Rudd (1985), Abedi & Benkin (1987), Channell (1990), Elsey (1990), Aspland & O'Donoghue (1994), Baker et al (1996), Harris Report (1996), Cryer (1997), Spencer-Oatey (1997), Pole (1998), Yeatman (1998), Merritts & Walker (1999), Mouton (2001), Wisker &

Brown (2001), Hofstede et al. (2002), Marsh (2002), Vilkinas (2002), Rochford (2003), Collins (2003), McCormack (2004), McClure (2005), Moriarty et al. (2008), and Stack (2008).

Locally, relevant reports of the Association of African Universities, GETFund Secretariat, and the National Council for Tertiary Education as well as records at the Office of Research Innovation and Development, and the Finance and Human Resource Organization and Development at the University of Ghana were consulted. Specific individual scholarly works consulted included the works of Addae-Mensah, Effah and Gyekye, higher education consultants and researchers in Ghana, whose works focussed on higher education management and policy making in Ghana.

5.4.2 DATA WITH REGARD TO RESEARCH OBJECTIVE TWO: SELECTED MODELS OF STUDENT THROUGHPUT TRENDS AND POSTGRADUATE CANDIDATURE DURATIONS

One useful student throughput model identified in the literature was Tinto's (1975) student retention and student departure models which underscored the importance of the relationship between the student and his or her academic environment. Adaptations of Tinto's models by Draper and Yorke further underscored the need to factor students' background characteristics (pre-entry qualifications, personal goals, family background), academic and social aspects of the institution into efforts aimed at maximizing students' integration into the academic environment in order to retain students up to completion of their programmes.

Another useful throughput model identified through literature was Jiranek's Dissertation Research Completion Triangle which premised on factors that predictably completion or

otherwise of masters' and doctoral research. The factors, according to the literature, included student qualities and personal situation, supervision and the scholarly environment, and the availability of research facilities and resources (Jiranek, 2010; Kearns *et al.*, 2008; Wright, 2003; Wright & Cochrane, 2000).

The basic principle from all the models was that students' completion ability or success depends on the degree of 'academic integration' (academic experience) and 'social integration' (experiences other than academic within the learning environment), expressed mathematically as: Completion = Academic Integration + Social Integration ($C=AI + SI$).

The issues that relate to academic integration in this study include initial preparation of students through formal orientations to enable them to understand how the academic environment works. It involves knowledge of procedures and regulations required to experience a fulfilling academic life, enhancement of teaching and learning skills, research conduct, supervision arrangements, availability and adequacy of resources for teaching and research. Social integration involves the social aspects of the institution such as interaction with others, religious life on campus, the culture of the environment (whether students generally spend their time reading all the time; whether there are recreational facilities, whether the environment is safe and hygienic, whether it is easy to access health care, whether there exists good counselling arrangements, utility services for domestic care for residential students). Jiranek's dissertation research completion triangle does not deviate in principle from Tinto's student throughput models but it rather simplifies the understanding of the models.

The review of literature in chapter two ended with a discussion of student throughput trends and popular models of postgraduate candidature durations with particular reference to trends in American higher education institutions, United Kingdom and Australia, Canada, Europe and Africa. The discussion of candidature durations of selected world-class higher education institutions, namely, University of Oxford, University of Manchester, Concordia University, National University of Singapore, University of Monash, University of New South Wales, University of Cape Town and the University of South Africa, revealed eight stages in research postgraduate studies, especially with regard to doctoral studies, that are common to higher education institutions across the world. The discussion of the stages provided a more practical dimension to the explanation of throughput concepts and determining factors since throughput situations are largely determined by what happens during student candidature durations. The models of postgraduate candidature duration discussed in the review, especially the ‘Rothwell Model of Doing a PhD’ provided deep insight into the stages in doctoral candidature durations which could be adapted by other higher education institutions.

5.4.3 DATA WITH REGARD TO RESEARCH OBJECTIVE THREE: POSTGRADUATE STUDY DELIVERY AND THROUGHPUT TRENDS AT THE UNIVERSITY OF GHANA AND SELECTED HIGHER EDUCATION INSTITUTIONS

Chapter three reviewed the manner in which postgraduate studies delivery at the University of Ghana is structured and organized. The objective was to discuss and compare the postgraduate study delivery model and throughput trends at the University of Ghana (from inception to 2010) with models and trends in selected higher education institutions. The review of official institutional documentation on early systems put in place for postgraduate studies and models of

programme structures made it possible to understand the postgraduate delivery models at the University of Ghana.

The chapter traced the introduction of postgraduate studies and the stages in postgraduate studies development at the University from the era of total departmental control up to the establishment of a co-ordinating unit for postgraduate studies for the University. The chapter further explained the structure of postgraduate programmes, making a distinction between the structure of non-research and research postgraduate programmes, stages in research postgraduate candidature, models of postgraduate candidatures at the University of Ghana and some interventions to enhance postgraduate throughput.

Also in chapter three, enrolment and graduation figures were compiled from institutional basic statistics handbooks of the University and re-organized into five ten-year periods from 1961 to 2010. A clear picture of mismatch between postgraduate enrolments and graduation figures emerged from the compilations with annual enrolment figures far in excess of graduation figures, particularly during the last two decades of 1991-2000 and 2001-2010. The compilation of postgraduate enrolment and output figures made it possible to determine postgraduate throughput rates for each decade and these were 12.9 percent for the period 1961-1970, 7.7 percent for the period 1971-1980, 37.9 percent for the period 1981-1990, 30.6 percent for the period 1991-2000, and 46.4 for the period 2001-2010. It was therefore concluded that postgraduate throughput rate, simplified as research postgraduate output as a percentage of research postgraduate enrolment, fell below 50 percent at the University of Ghana. Trends of throughput rates recorded over the five decades indicated a drop of 5.2 percent by the end of the second decade in 1980, a sharp rise

of 30.2 percent by the end of the third decade in 1990, a decline of 7.3 percent by the end of the fourth decade in 2000, and a rise of 15.8 percent by the end of the fifth decade in 2010.

Country studies on enrolment and graduation trends in selected African higher education institutions including Ghana were also reviewed to demonstrate the position of the study institution among its African peers. The Partnership for Higher Education Advocacy (PHEA) study in five African countries and the CHET-HERANA studies in eight African countries revealed phenomenal increases in postgraduate enrolment over output figures for all the member countries, thus confirming the trends reported from the institutional enrolment and output figures for the University of Ghana. These institutional studies provided useful information regarding enrolment and completion trends for the University of Ghana in relation to the other African universities. The PHEA studies in particular established that postgraduate enrolment and completion, especially for doctoral studies, still remain low in African higher education institutions, a situation which required urgent intervention by higher education institutions in Africa and African governments. The review of comparative studies carried out on African higher education institutions including the University of Ghana made it possible to compare postgraduate throughput trends at the University of Ghana and other African higher education institutions.

No significant difference was noted between University of Ghana's postgraduate delivery model in terms of the stages in the delivery of masters' and doctoral programmes and what existed in most higher education institutions globally. The model is in line with the eight-stage model derived from the literature for research postgraduate studies. The University of Ghana's model

as at the time of this study was based on the model approved by the University's senate (see paragraph 2 in Section 3.2.2 of Chapter 3).

Although the University of Ghana's postgraduate throughput trend was as worrying as those of African higher education institutions (Tettey, 2009), it remains the best among higher education institutions in Ghana on the basis of available enrolment and output figures of the Ghana National Council for Tertiary Education. Its output position however did not compare favourably with the output trend in selected higher education institutions in Africa based on reports of the Association of African Universities. From Tettey's (op. cit.) 2006 comparative studies on masters' and doctoral output in six African Universities, namely University of Stellenbosch, University of Ibadan, University of Ghana, Nelson Mandela Metropolitan University and University of Kwazulu-Natal. The University of Ghana came fifth in this comparative study with figures slightly above those of Nelson Mandela Metropolitan University (see Figure 3.12 in Section 3.6.1 of Chapter 3).

Apart from Tettey (op. cit.) and CHET-HERANA studies on African higher education institutions (2008), the only reliable sources of throughput statistics have been institutional statistics on graduate input and output reported over the years in institutional handbooks. A compilation of these graduate input and output figures for the University of Ghana revealed yawning gaps on a yearly basis between postgraduate student enrolment trend and graduation trend. For instance, the period 1991 to 2001 recorded a total Masters' and PhD enrolment of 6,005 as against total Masters' and PhD output of 1,842 (see Table 3.7 under Section 3.5.6 in Chapter 3). The period 2001 to 2010 also revealed very high shortfalls in postgraduate

enrolment and graduation figures with total Masters' enrolment of 15,021 as against total Masters output of 7,329. PhD enrolment for the same period was 1,054 with as low as 140 graduates produced over the period (see Table 3.8 under Section 3.5.7.1 and Table 3.9 under Section 3.5.7.2 in Chapter 3). The immediate reason to give for these shortfalls could only be undue delays in completion for specific starting cohorts resulting in overlaps into successive cohorts as well as drop-outs or non-completions.

The literature also revealed some recent successes of improved completion rates stemming from government interventions in Norwegian and European higher education institutions, education reforms in South Africa, and in other developed countries such as Singapore, Thailand, Australia, Mexico, Japan and India.

The review of selected postgraduate candidature models of selected world-class higher education institutions made it possible to discuss and develop a research postgraduate candidature model involving eight stages of progression. The review revealed slight variations among countries and institutions, which could serve as a useful guide to other institutions.

5.4.4 DATA WITH REGARD TO RESEARCH OBJECTIVE FOUR: RESPONSIBILITIES OF STAKEHOLDERS TOWARDS EFFICIENT POSTGRADUATE STUDY DELIVERY AT THE UNIVERSITY OF GHANA

The responsibilities expected of key players in the efficient delivery of postgraduate studies for creating the appropriate institutional environment for timely completion of postgraduate research and studies were also outlined and explained. These were explained in chapter three of this

study and need not be repeated here. A summary of responsibilities expected of each stakeholder is presented below.

5.4.4.1 Responsibilities expected of government towards efficient postgraduate study delivery

The Government of Ghana is responsible for providing the necessary support for higher education institutions by providing adequate budgetary allocations to the Ghana Education Trust Fund (GETFund), National Council for Tertiary Education and the Scholarships Secretariat. The Government is also expected to make policies that support efficient postgraduate delivery in the country's higher education institutions. The GETFund is currently the main source from which government is able to provide funds to all sectors of education including the universities. According to the Act establishing the GETFund, the government meets its obligations towards the efficient delivery of postgraduate study to all publicly funded higher education institutions in Ghana, including the University of Ghana, through the GETFund in the following ways:

- i. generally providing the necessary infrastructure, equipment and financial support to carry out its mandate of producing postgraduate students
- ii. investing in postgraduate research through sponsorships and bursaries
- iii. prioritizing postgraduate research and relying on such research findings for its developmental agenda.

5.4.4.2 Responsibilities expected of the University towards efficient postgraduate study delivery

According to the University of Ghana Act, 2010 (ACT 806), the University is expected to “provide higher education, undertake research, disseminate knowledge, and foster relationships

with outside persons and bodies”. Its specific responsibilities in relation to enhancing postgraduate study delivery include:

- i. Providing relevant and adequate equipment and facilities for research
- ii. Recruiting qualified and adequate number of research and teaching staff and ensuring the right balance between the schedules of mainstream researchers and lecturers
- iii. Providing acceptable forms of motivation for its staff, especially for research supervision and examination of theses
- iv. Providing relevant reading materials for postgraduate studies
- v. Providing funding opportunities as well as facilitating access to funding for postgraduate studies

5.4.4.3 Responsibilities expected of the graduate school towards efficient postgraduate study delivery

As part of its statutory mandate of co-ordinating and regulating graduate study in the University, the graduate school is expected to offer the necessary support and co-operation to postgraduate students, thesis supervisors and examiners. The school is also responsible for determining and providing the most effective and efficient methods, processes and procedures for thesis supervision and examination. Specific responsibilities of the school in this regard include the following:

- i. Adopting efficient methods of delivering theses to examiners for assessment
- ii. Adopting clear guidelines for thesis examination
- iii. Operating an effective reminder system for ensuring that examiners meet deadlines set for returning theses examined

- iv. Advocating for attractive remuneration and incentives for thesis examination and supervision
- v. Putting in place systems that would ensure that theses examiners and supervisors are remunerated promptly.
- vi. Responding and attending to examiners' enquiries concerning thesis examination and related matters.

Thesis schedule is an important component of the school's responsibilities. The responsibilities of thesis schedule officers include:

- i. Receiving, processing and dispatch of theses submitted for assessment
- ii. Maintaining a good record and tracking system for theses received and dispatched to examiners
- iii. Operating a good reminder system for prompting examiners to complete assessment of theses and submit the assessment reports on time
- iv. Maintaining a good record of marked theses and assessment reports returned by examiners after assessment
- v. Organizing thesis assessment reports in a manner that would facilitate determination of result for each student
- vi. Understanding the rules governing determination of thesis results and sorting of thesis results for the attention of the graduate board
- vii. Ensuring that thesis results of students are promptly communicated to heads of departments for corrections to be effected

- viii. Ensuring that final corrected copies of these are submitted on time for publication of results and graduation
- ix. Processing claims submitted by examiners for prompt payment

5.4.4.4 Responsibilities expected of heads of departments towards efficient postgraduate study delivery

The responsibilities of heads of departments depend on the core business of the Faculty to which the departments belong. One of such responsibilities, according to the Statutes of the University of Ghana, which relates to postgraduate studies, is to “ensure the provision of adequate instruction and facilities for research in the subjects assigned to the Faculty and to co-ordinate the teaching and research programmes of the Faculty”. The Statutes further enjoins heads of departments to “organize the approved teaching and research programmes of the department and encourage the carrying out of research”. In carrying out the above mandate, heads of departments are required to directly or indirectly promote the efficient delivery of postgraduate study by:

- i. Offering the needed support and co-operation to postgraduate students
- ii. Facilitating the identification of diverse areas of research relevant to the department’s discipline
- iii. Ensuring early assignment of supervisors to postgraduate students
- iv. Ensuring early approval of thesis topics and examiners for postgraduate students
- v. Making prudent use of funds allocated to the department for the provision of teaching and research facilities for postgraduate studies
- vi. Providing forums such as seminars and internships for closer interaction between faculty and postgraduate students

Interviews conducted with ten past heads of departments confirmed the above roles. Other specific duties heads of departments performed towards ensuring early completion and submission of theses by postgraduate students include:

- i. Making sure students' thesis topics were researchable and impact oriented
- ii. Ensuring that students deliver assigned work to their supervisors according to deadlines
- iii. Assigning faculty to offer academic advice to students and encourage them to settle on a research topic early in their studies
- iv. Reminding students of the deadlines set by the graduate school and encouraging them to avoid going beyond their study durations
- v. Arranging for adequate supplies of analytical reagents for science students on time for their practical work and research
- vi. Working through the departmental graduate studies committee to develop attainable timelines for all graduate students
- vii. Encouraging supervisors to be proactive and meet with their students at regular intervals
- viii. Encouraging faculty to participate in graduate seminars and make contributions

5.4.4.5 Responsibilities expected of thesis supervisors and examiners towards efficient postgraduate study delivery

The main responsibility of supervisors towards their students is the supervisors' ability to generally co-operate with their students in all the activities and processes involved in ensuring a strong student-supervisor relationship. Based on excerpts from meetings of the School of Graduate Studies with postgraduate faculty on thesis supervision and the research management process and Mouton's (2001) guidelines on what students should expect from their supervisors in

the performance of their roles as adviser and expert guide, the specific things that supervisors must do to ensure efficient postgraduate study delivery include:

- i. Assisting students to identify and select research areas and researchable topics for their theses
- ii. Providing guidance and assistance to students on their studies and research work
- iii. Setting a plan of work with students for their research and thesis writing
- iv. Making themselves available and accessible to their students for consultation
- v. Honouring deadlines and delivery promises agreed with their students

Information extracted from the Guidelines for Thesis Examiners available at the Graduate School of the University of Ghana revealed the following responsibilities expected of thesis examiners:

- i. Indicating their availability and making time to examine theses
- ii. Acknowledging receipt of theses sent to them from the Graduate School
- iii. Examining theses in line with the assessment guidelines and with a high sense of integrity and confidentiality
- iv. Completing examination of theses within the stipulated time frame and submitting an assessment report on each thesis examined.
- v. Returning thesis together with the necessary documentations including a completed claim form for remuneration.

5.4.4.6 Responsibilities expected of postgraduate students towards efficient postgraduate study delivery

The student is expected to co-operate with their supervisors and, as much as possible, follow their recommendations and guidance. This is because supervisors require the cooperation of students to perform their foremost role of providing guidance to students in the conduct of their

research and in writing their theses. Therefore, a high level of cooperation is required of a postgraduate student who is under research supervision. According to the University of Ghana Handbook for Graduate Studies, Volume One (2010) and excerpts from meetings of the School of Graduate Studies with postgraduate faculty on thesis supervision and the research management process, the student is expected to:

- i. Make the necessary efforts to be familiar with the rules, regulations and procedures concerning postgraduate studies and supervision through participation in initial institutional orientations and reading of the rules governing academic work and student life at the University.
- ii. Acquire the necessary theoretical preparation to support research work
- iii. Make personal efforts to acquire the necessary skills and knowledge in research and thesis writing
- iv. Negotiate a supervision plan of work with supervisor(s) and be available and accessible for guidance by supervisors
- v. Devoting adequate time for studies and research and diligently honoring delivery promises and deadlines set with their supervisors
- vi. Complete and submit thesis on time and accept ownership of research and thesis

5.4.5 RESEARCH OBJECTIVE FIVE: DISCHARGE OF RESPONSIBILITIES BY KEY STAKEHOLDERS TOWARDS ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT

In this section, the performance of key stakeholders was evaluated on the basis of how each stakeholder discharged the expected responsibilities. Data was obtained from responses to

questionnaire as well as interviews conducted which were designed to address specific responsibilities and activities carried out by the stakeholders.

5.4.5.1 Discharge of responsibilities expected of the government

As discussed in Chapter 3, the government discharged its responsibilities by way of allocating resources, mainly financial, through the Ministry of Education. The agency with direct responsibility for the administration and disbursement of funds is the Ghana Education Trust Fund (GETFund) whose mandate is to receive and rationally disburse funds from tax revenue to facilitate the growth and development of education in Ghana. Established over a decade ago in 2000, the Fund has provided educational infrastructure and facilities (buildings, equipment, textbooks and other learning materials), funding for award of bursaries and other educational related programmes and projects (*EducationGhana*, 2010).

Through interview, the GETFund Administrator disclosed that the contributions made by the government of Ghana through the GETFund Secretariat to postgraduate study delivery at the University of Ghana in the recent past included the following:

- i. The completion of a 32-year old laboratory project for the Department of Chemistry to enhance students' research work.
- ii. Training of young teaching and research staff to obtain their doctoral degrees and post-doctoral fellowships for research through a faculty development and research facility funded by the GETFund.
- iii. Allocation of funds from the GETFund to the Students Loan Trust Fund to be accessed by needy students.

- iv. Allocation of funds from the GETFund to the Scholarships Secretariat on yearly basis for disbursement to all postgraduate students to support their research and thesis writing (from Graduate School).
- v. Construction of a four-storey Information Communication and Technology (ICT) building complex and provision of computers for use by undergraduate and postgraduate students of the University of Ghana.
- vi. Supply of science equipment to the College of Health Sciences of the University of Ghana

The GETFund Administrator further indicated that there had been challenges with regard to sustaining and improving contributions to the GETFund. These challenges included limited sources of funding and the need to increase available sources of funding to break the overdependence on taxes as the major source of funding for the Fund since its inception in the year 2000. The report further stressed the need to expand the sources of fund due to the increasing number of postgraduate students over the past decade. Another challenge reported in the newsletter was the pressure of demand on the Fund by all the levels of education, a situation which called for the need to prioritize the allocation of funds to a particular sector of education such as tertiary, at a particular time or how to strike the right balance among all the levels.

To address some of these challenges in the short term, managers of the Fund, one major recommendation to government was to grant tax incentives to potential corporate bodies and individual contributors to the Fund as a way of complementing any tax increases. On the issue of

tax incentives, the Fund Administrator advised that the effect of tax incentives be managed in a way that would not significantly affect government revenues.

In the opinion of the GETFund Administrator, the “GETFund as a dedicated source of financing education has made some significant and strategic contributions to the promotion and development of education in Ghana as a whole and to postgraduate studies and research at the premier University of the country (the University of Ghana).” Starting from about 2008, reported by the GETFund Administrator, the argument had been to allocate more of government funds towards basic and secondary education rather than the tertiary sector. No matter which sector attention should be focussed, this study revealed a situation of woefully inadequate funding for postgraduate studies and research as presented in the ensuing section.

(a) Provision of adequate financial support for postgraduate studies and research

The areas of responsibility assessed under this subject included availability of funding for postgraduate research, adequacy of financial support for postgraduate studies and research, and efforts made by the institution to secure funding or facilitate financial support for postgraduate studies and research.

i. Past postgraduate students' assessment of availability of funding for postgraduate research

The possible sources of funding for postgraduate students at the University of Ghana included government bursary (accessible by all Ghanaians undertaking postgraduate studies in all publicly funded tertiary education institutions), sponsorship by employer, educational loan, and

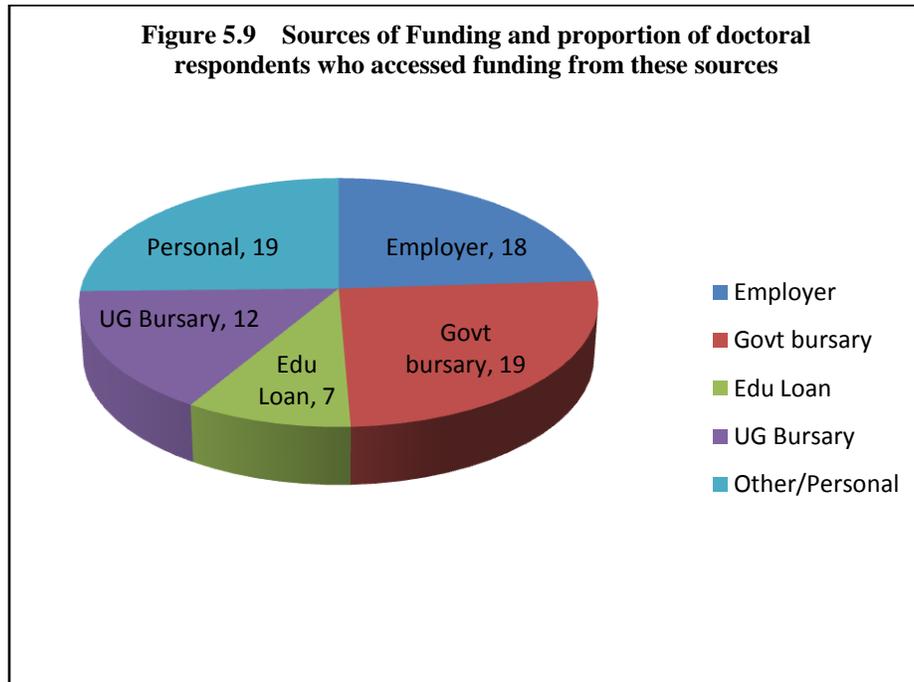
University of Ghana postgraduate fellowships awarded based on academic performance at the bachelor's degree and masters degree level for masters' and doctoral students respectively.

The respondents were asked to indicate the sources from which they obtained funding for their studies and research in order to find out the most accessible sources of funds and to determine the adequacy of government funding through the number of respondents who were able to access the facility and those who could not access the facility.

**Table 5.11 Sources of funding for doctoral studies and research:
Did you receive funding from the following sources for your doctoral programme? Indicate 'Yes' or 'No' against each funding source**

Sources of Funding	Science (n=20)				Humanities (n=18)				Total (n=38)	
	YES		NO		YES		NO		YES	NO
	nf	%nf	nf	%nf	nf	%nf	nf	%nf	nf / %nf	nf / %nf
Employer	9	45	11	55	9	50	7	38.8	18 (47.3)	18 (47.3)
Govt. bursary	12	60	7	35	7	38.9	10	55.5	19 (50)	17 (44.7)
Student Loan	3	15	16	80	4	22.2	14	77.7	7 (18.4)	30 (78.9)
UG sponsorship	6	30	13	65	6	33.3	12	66.7	12 (31.5)	25 (65.7)
Personal/other sources	10	50	9	45	9	50	8	44.4	19 (50)	17 (44.7)

As indicated in Table 5.12, about half of the doctoral respondents received funding from their employers, government bursary and personal sources. About one-third (12 respondents) received funding from the institution and one-fifth (7 respondents) took educational loans to support their studies and research. Thus, the least patronized funding sources among both science and humanities doctoral students were educational loan and University sponsorship.



The response pattern for all doctoral respondents is illustrated in Figure 5.9. The fact that most of the respondents depended more on sponsorship from their employers and government bursary gives the impression that there was limited funding from the institution itself, a situation which might have resulted in some doctoral students taking personal and educational loans.

Table 5.12 Sources of funding for masters studies and research: Did you receive sponsorship from the following sources of funding for your masters studies and research? Indicate 'Yes' or 'No' against each funding source?										
Available sources of funding	Science respondents (n=52)				Humanities respondents (n=102)				Total Masters respondents (n=154)	
	Yes		No		Yes		No		Yes	No
	Nf	%nf	nf	%nf	nf	%nf	nf	%nf	nf and %nf	nf and %nf
Employer	13	25	39	75	11	10.8	91	89.2	24 (15.5)	130 (84.4)
Govt. Bursary	33	63.5	19	36.5	60	58.8	41	40.2	93 (60.3)	60 (38.9)
Educational Loan	12	23.1	40	76.9	19	18.6	82	80.4	31 (20.1)	122 (79.2)
UG sponsorship	16	30.8	36	69.2	19	18.6	81	79.4	35 (22.7)	117 (75.9)
Personal/other	19	36.5	33	63.5	20	19.6	80	78.4	39 (25.3)	113 (73.3)

A striking observation from Table 5.12 is that apart from government bursary, a significant number of the masters respondents in both disciplines had to rely on personal sources to support their studies, whereas in the case of doctoral respondents, a significant number received funding from their employers apart from government bursary being the most accessed source. Therefore, although government bursary was the most accessed source of funding among both masters' and doctoral respondents (probably because all graduate students were eligible to receive a specified amount approved by government and it was easy to access), the over-reliance on other sources meant that the quantum of funds available to each postgraduate student beneficiary was inadequate. Another observation from Table 5.12 was that, for each funding source, those who did not receive funding outnumbered those who did except for government bursary, which is indicative of either a situation of inadequate funding for the respondents or that access was based on preference.

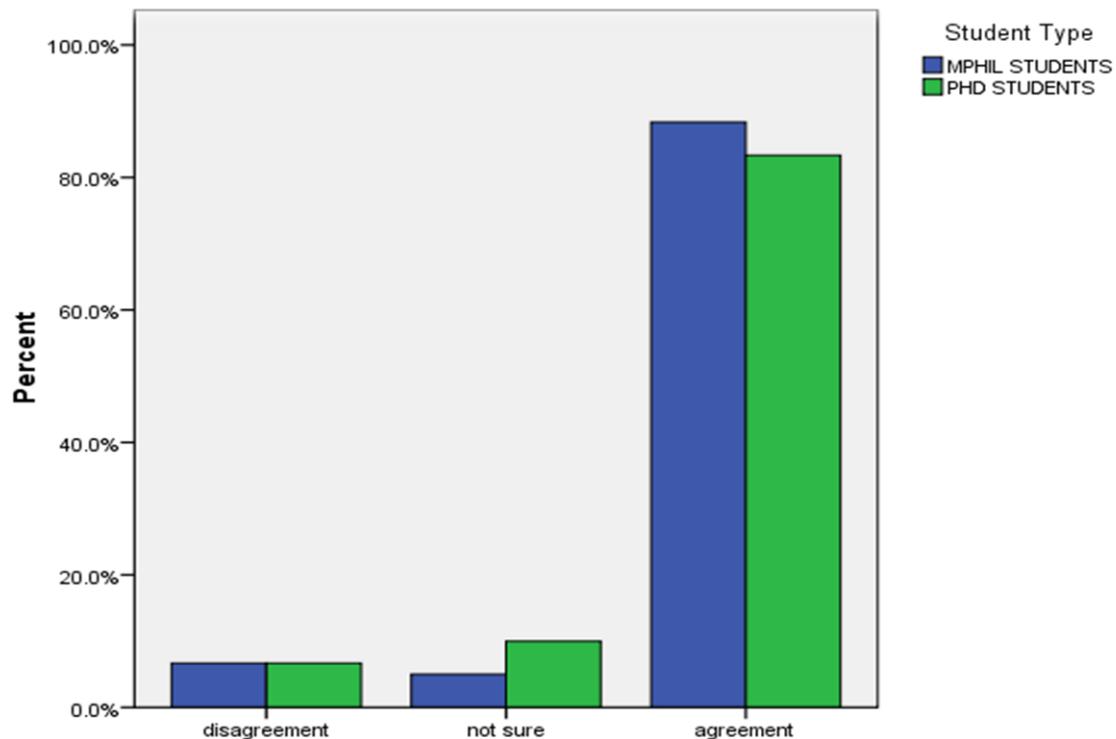
ii. Supervisors' assessment of adequacy of financial support for postgraduate studies and research by supervisors

Supervisors were asked to evaluate the adequacy or otherwise of financial support for their students' studies and research because by virtue of their supervisory role, they are in a position to know about their financial support. The supervisors were asked to either agree or disagree with the statement that there was inadequate financial support for their students' studies and research.

Response Category	Masters studies and research		Doctoral studies and research	
	nf	%nf	nf	%nf
Disagree	4	6.7	4	6.7
Not sure	3	5.0	6	10.0
Agree	53	88.3	50	83.3
Total	60	100	60	100

On the issue of adequacy or otherwise of financial support, 53 respondents (88.3 percent) agreed that there was inadequate financial support for their masters students studies and research work, three (5 percent) disagreed, and four (6.7 percent) were not sure. A similar trend was observed for doctoral studies and research where 50 respondents (83.3 percent) agreed that financial support was inadequate, with 6 (10 percent) disagreeing and four (6.7 percent) not sure. At both levels, majority of the respondents confirmed the inadequacy of financial support for postgraduate studies and research as illustrated in Table 5.13 and Figure 5.10. This trend confirms the position of the students that funding for their studies and research was inadequate.

Figure 5.10 Supervisors' assessment of adequacy of financial support for their masters and doctoral students' research work



5.4.5.2 Discharge of responsibilities expected of the Institution (University of Ghana)

Like other higher education institutions, the University of Ghana has established structures that co-ordinate and regulate the efficient translation of its mandate, including the delivery of postgraduate study in the University. In this regard, a school of research and graduate studies with its relevant boards and committees had been established to oversee the delivery of postgraduate studies and research. Research and postgraduate studies is mainly undertaken in the Universities institutes and centres whose focus had been on research and teaching at the postgraduate level. The University also demonstrated its commitment towards efficient postgraduate study delivery by recruiting qualified staff with doctoral qualifications for

postgraduate level teaching and research, and by attracting funding for its postgraduate students to undertake their research work both within and outside Ghana.

The responsibilities of providing the required human and financial resources for students appears to be a shared responsibility of government and the university and may be broken down into the following specific responsibilities for the purpose of this study:

- i. Recruitment of adequate teaching faculty and provision of research facilities in departments for use by both faculty and students
- ii. Ensuring good quality teaching, adequate and qualified faculty to supervise at the postgraduate level.
- iii. Facilitating access to funding and attracting funding for postgraduate research.
- iv. Motivating faculty to supervise research and examine thesis through the provision of satisfactory remuneration.

(a) Provision of adequate teaching and research facilities in departments

The issues considered under this subject covered the views of past masters and doctoral students on availability of equipment and other facilities for research, relevant reading materials, facilities for graduate seminars, and the quality of teaching or course work delivery.

- i. Past masters students' assessment of availability of equipment and other facilities for research work

The figures in Table 5.14 indicate that 31 science masters respondents (59.7 percent) were satisfied with the equipment and facilities available for their research work and 13 representing 25 percent were not satisfied. Of the 31 respondents, seven rated the situation as highly satisfactory. In the case of past humanities masters' students, 65 respondents (63.7 percent) expressed satisfaction with the equipment and other facilities available for research whiles 22

representing 21.6 percent described the situation as unsatisfactory. Ten of the 65 respondents rated the situation as highly satisfactory. The remaining 15 respondents could not provide a definite response.

Response category	Science (n=52)		Humanities (n=102)	
	nf	%nf	nf	%nf
Highly Satisfactory	7	13.5	10	9.8
Satisfactory	24	46.2	55	53.9
Unsatisfactory	13	25.0	22	21.6
Not sure	8	15.3	15	14.7
TOTAL	52	100	102	100

Comparatively, the humanities masters' respondents were more satisfied with the equipment and other facilities available for their research work than the science masters respondents. In other words, the science respondents appear to have faced more challenges with regard to availability of equipment and facilities for their research work than the humanities masters' students.

ii. Past doctoral students' assessment of availability of equipment and other facilities for research work

As shown in Table 5.15, thirteen (13) past science doctoral respondents (65 percent) expressed satisfaction with the equipment and facilities available for research, with two of them describing the situation as highly satisfactory. On the contrary, seven (7) expressed dissatisfaction.

Response category	Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf
Highly Satisfactory	3	15.0	4	22.2
Satisfactory	10	50.0	10	55.6
Unsatisfactory	7	35.0	3	16.7
Not sure	0	0	0	0
TOTAL	52	100	102	100

In the case of past humanities doctoral students, 14 respondents (about 78 percent) were satisfied, with four of them highly satisfied. Three were however dissatisfied with the condition of equipment and facilities for their research.

The response statistics suggest that a little more of the humanities doctoral respondents expressed satisfaction with the equipment and facilities available for their research work than their science counterparts.

In conclusion, although the trends for both masters' and doctoral respondents suggest that more of the respondents were generally satisfied with the equipment and facilities available for research than those who were not satisfied, the proportion of dissatisfied respondents together with those who were not sure was particularly high for masters' respondents. It can be concluded that doctoral students were more satisfied with the condition of equipment and facilities available for their research work than masters' students.

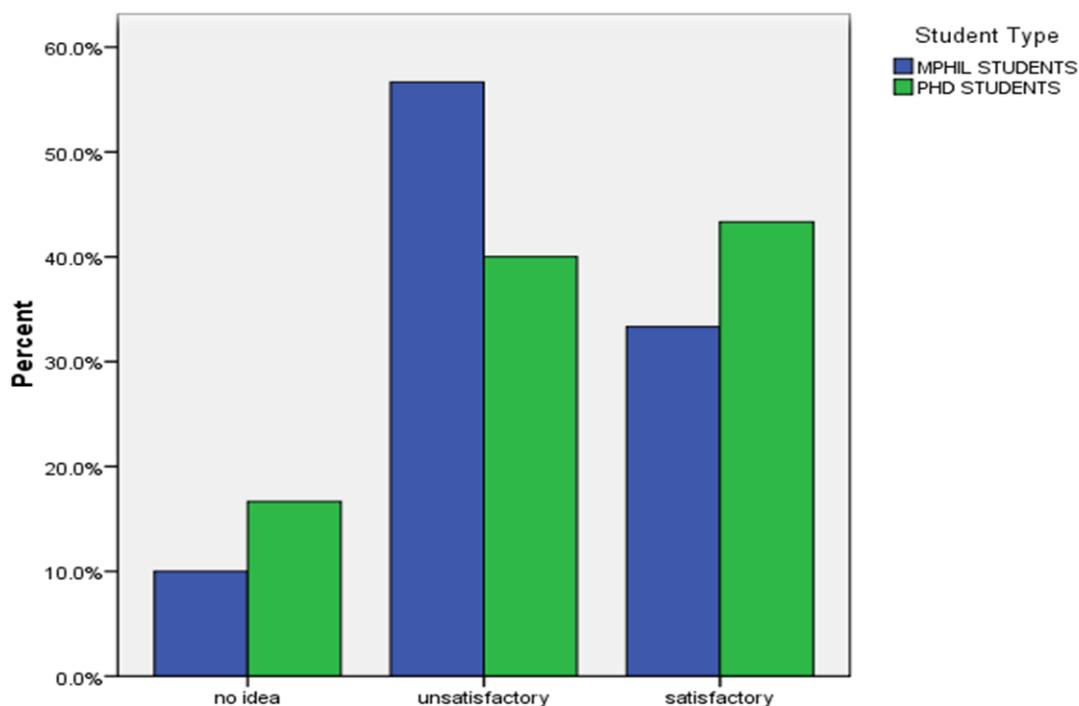
iii. Thesis supervisors' assessment of availability of equipment and facilities for their students' research work

According to the thesis supervisors' assessment in Table 5.16 and Figure 5.11 with regard to equipment and other facilities for their masters students' research work, more than half of the respondents (34 supervisors representing 56.7 percent) described the situation as unsatisfactory whereas 20 respondents representing 33.3 percent considered the situation to be satisfactory. With regard to doctoral level research, 40 percent of the respondents (24 supervisors) were satisfied with the situation, and four of the 24 supervisors described the situation as highly satisfactory. The remaining six respondents remained indifferent.

Response category	Masters students' research		Doctoral students' research	
	nf	%nf	nf	%nf
Satisfactory	20	33.3	26	43.3
Unsatisfactory	34	56.7	24	40.0
Not sure	6	10.0	10	16.7
TOTAL	60	100	60	100

Less than 50 percent of the respondents rated the availability of equipment and facilities for their masters and doctoral students as satisfactory. In other words, majority of the respondents were not satisfied with the equipment and facilities available for postgraduate research.

Figure 5.11 Supervisors' assessment of availability of equipment and facilities for their students' research work



iv. Thesis supervisors' assessment of availability of facilities for graduate seminars

Seminars are an integral part of postgraduate training. They provide the medium through which students demonstrate their level of understanding of issues as well as progress made on their research work. Seminars also afford supervisors and other faculty the opportunity to make input into students' research work which is necessary for ensuring quality research.

Response category	Masters students' research		Doctoral students' research	
	nf	%nf	nf	%nf
Agree	36	60.0	31	51.7
Not sure	0	0	5	8.3
Disagree	24	40.0	24	40.0
TOTAL	60	100	60	100

The supervisors were asked to indicate agreement or disagreement to the statement that departments did not have adequate facilities for graduate seminar presentations. As shown in Table 5.17, 60 percent of the respondents agreed that departments did not have adequate facilities for masters seminar presentations, while 40 percent disagreed. In a similar manner, 51.7 percent agreed that facilities for doctoral seminar presentations were inadequate, while 40 percent disagreed and 8.3 percent were indifferent. This means that although the same number of respondents (24) indicated that the departments had adequate facilities for both masters and doctoral seminars, more of the respondents agreed that departments lack facilities for both masters and doctoral seminars.

Based on the absolute values and percentage of those who agreed with the statement and the mean values, the conclusion could be drawn that the situation of inadequate facilities seminar presentations was more severe for masters seminars than for doctoral seminars.

v. Masters students' appraisal of availability of good reading materials in their departments for research work

Past masters' students were asked to appraise the adequacy and relevance of reading materials in their departments for their research.

Response category	Science (n=51)		Humanities (n=102)	
	nf	%nf	nf	%nf
Highly Satisfactory	14	26.9	31	30.4
Satisfactory	28	53.8	39	38.2
Unsatisfactory	4	7.7	24	23.5
Not sure	5	9.6	8	7.8
TOTAL	51	98.1	102	100

As many as 42 science masters students (about 80 percent) of the 51 science masters respondents were satisfied that their departments had good reading materials for their research work. Of the 42 respondents, 14 were highly satisfied. Four respondents were however not satisfied, and four other respondents remained neutral. In the case of humanities masters' students, 70 respondents (68.6 percent) were satisfied whereas 24 respondents (23.5 percent) were not satisfied. This situation is illustrated above in Table 5.18.

The above figures point to the fact that more humanities respondents (23.5 percent) expressed dissatisfaction with the availability of good reading materials than the science respondents (7.7

percent), suggesting that the situation was better for science students than humanities students. On a positive note, a good number of both science and humanities respondents (14 and 31 respectively) rated the situation as highly satisfactory.

From the above analysis, it is clear that the situation was more satisfactory with the science masters respondents than the humanities respondents comparing the number of respondents who were satisfied and those who were not satisfied in each of the disciplines.

vi. Doctoral students' appraisal of availability of good reading materials in their departments for research work

Among the science doctoral respondents, 18 students representing 90 percent of the respondents were satisfied with the situation and of this number, seven (35 percent) described the situation as highly satisfactory. The situation was rated as unsatisfactory by two respondents. For the humanities, 16 respondents (about 89 percent) were satisfied with the situation, while five of them (27.7 percent) rated the situation as highly satisfactory. In this case also, two respondents rated the situation as unsatisfactory. Details of these values are provided below in Table 5.19.

Response category	Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf
Highly Satisfactory	7	35.0	5	27.8
Satisfactory	11	55.0	11	61.1
Unsatisfactory	2	10.0	2	11.1
Not sure	0	0	0	0
TOTAL	20	100	18	100

Both science and humanities doctoral respondents shared almost the same views on the availability of good reading materials in their departments; however, more of the science respondents rated the situation as highly satisfactory compared to the humanities respondents.

Considering the number of respondents who were either satisfied or highly satisfied among masters' and doctoral respondents, the conclusion could be drawn that the doctoral respondents were more satisfied than the masters' respondents.

vii . Supervisors' assessment of availability of good reading materials for graduate students' research work

The students' supervisors were also asked about the availability of good reading materials for students' research work so that both students and supervisors position on the matter could be compared.

Table 5.20 Supervisors' assessment of availability of good reading materials for students' research work				
Response Category	MPhil research		PhD research	
	nf	%nf	nf	%nf
Satisfactory	42	70.0	38	63.3
Not sure	0	0	6	10.0
Unsatisfactory	18	30.0	16	26.7
Total	60	100	60	100

The figures in Table 5.20 indicate that 42 of the 60 respondents (70 percent) expressed satisfaction with the availability of good reading materials for masters students' research work. Eighteen (18) respondents (30 percent) were however not satisfied with the situation. The response pattern was similar for doctoral research work in the departments in which case 38 respondents (63.3 percent) were satisfied and 16 respondents (26.7 percent) were not satisfied with the quality of reading materials for their research work. More than half of both masters and doctoral respondents agreed that they had good reading materials for their research work.

(b) Assessment of availability of adequate and qualified faculty for postgraduate research and thesis supervision; efforts made by the institution to provide or facilitate financial support for postgraduate research

i. Adequacy of qualified faculty to supervise postgraduate research and theses work

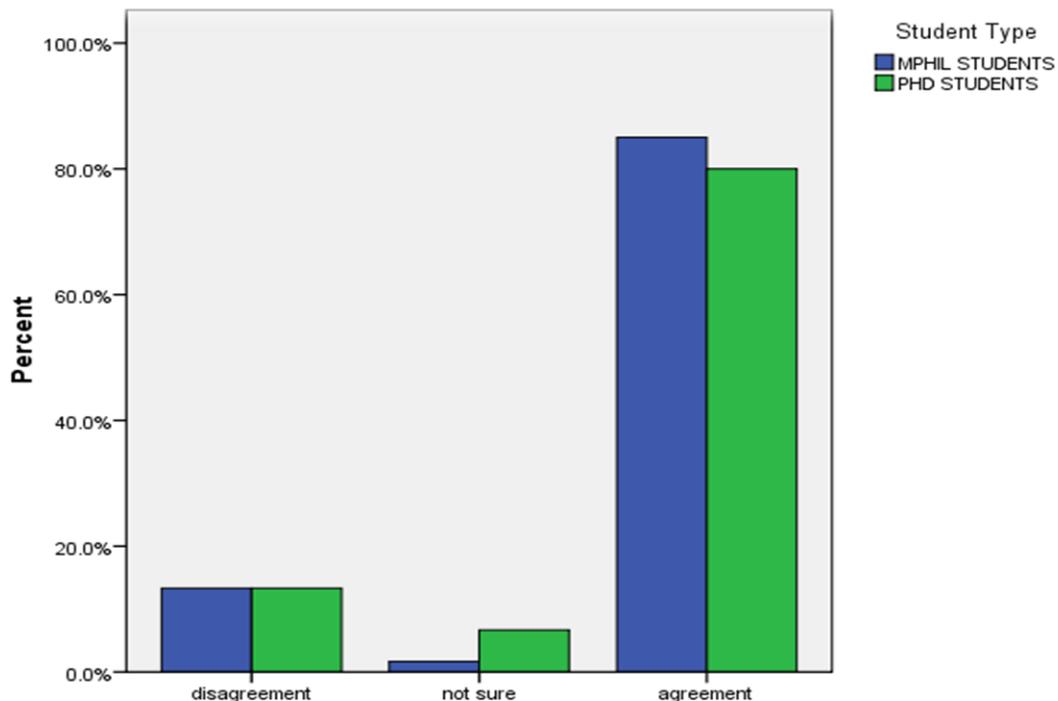
This situation was measured by the extent to which supervisors teaching schedule affected their ability to supervise graduate students. This was based on the assumption that if the institution has adequate qualified faculty to supervise postgraduate research and thesis work, they would have normal teaching and supervision load.

On the other hand, if faculty members are assigned too much teaching load, they would not spend adequate time on supervising their students. It therefore follows that overburdening faculty with teaching overload would result not only in limited time for research and thesis supervision but also poor quality of supervision.

Supervisors were asked to agree or disagree to the statement: supervisors had limited time for supervision because of overloaded teaching schedules. In other words, they were asked to indicate whether they were assigned too much teaching schedule that they were left with little or no time to supervise their students.

Response Category	MPhil research and thesis supervision		PhD research and thesis supervision	
	nf	%nf	nf	%nf
Disagree	8	13.3	8	13.3
Not sure	1	1.7	4	6.7
Agree	51	85.0	48	80.0
Total	60	100	60	100

Figure 5.12 Supervisors had limited time to supervise graduate theses due to overloaded teaching schedules(Agree or Disagree?)



Only eight respondents (13.3 percent) disagreed with the statement that their assigned teaching loads affected their supervision schedules at the masters' level, 51 respondents (85 percent) agreed with the statement and one respondent was not sure. In the case of doctoral research and thesis supervision, the same number disagreed with the statement, 48 respondents (80 percent) agreed, and four (6.7 percent) were not sure. The values in Table 5.21 and Figure 5.12 give an indication that at both masters and doctoral levels, supervisors had limited time for research and thesis supervision due to heavy teaching schedules.

iii. Supervisors' assessment of efforts made by the institution to provide or facilitate financial support for postgraduate research

Supervisors were further asked to give an assessment of efforts made by the University to either directly provide financial support or facilitate access to funding for postgraduate research by indicating whether they considered the institution's efforts satisfactory or otherwise.

Response Category	Masters studies and research (n=60)		Doctoral studies and research (n=60)	
	nf	%nf	nf	%nf
	Satisfactory	6	10.0	12
Not sure	12	20.0	22	36.7
Unsatisfactory	42	70.0	26	43.3
Total	60	100	60	100

The responses as shown in Table 5.22 to the issue of doctoral level funding initiatives by the institution indicated that as many as 26 respondents (43.3 percent) rated the University's efforts as unsatisfactory and the corresponding figures for masters level funding initiatives was 42 respondents (70 percent). The institution's efforts were rated as satisfactory by as few as six (10 percent) respondents for funding initiatives for masters students and 12 respondents (20 percent) for funding initiatives for doctoral students.

A more striking revelation was the large number of respondents (12 and 22 for masters and doctoral research funding efforts respectively) who were not sure of the institution's efforts with regard to provision or facilitation of financial support for postgraduate research. The number of neutral respondents in itself is a sign of lack of knowledge about the institution's initiatives or

efforts. However if the efforts made by the University during the period under consideration had made strong impact, the supervisors would have known about them. Based on the mean values, the conclusion can be drawn that the supervisors rated the institution's efforts at providing or facilitating financial support for graduate research both at the masters and doctoral levels as unsatisfactory.

(c) Motivating faculty to supervise and examine theses

The supervisors' employer, the institution, has a responsibility to provide acceptable remuneration for supervision and examination of theses.

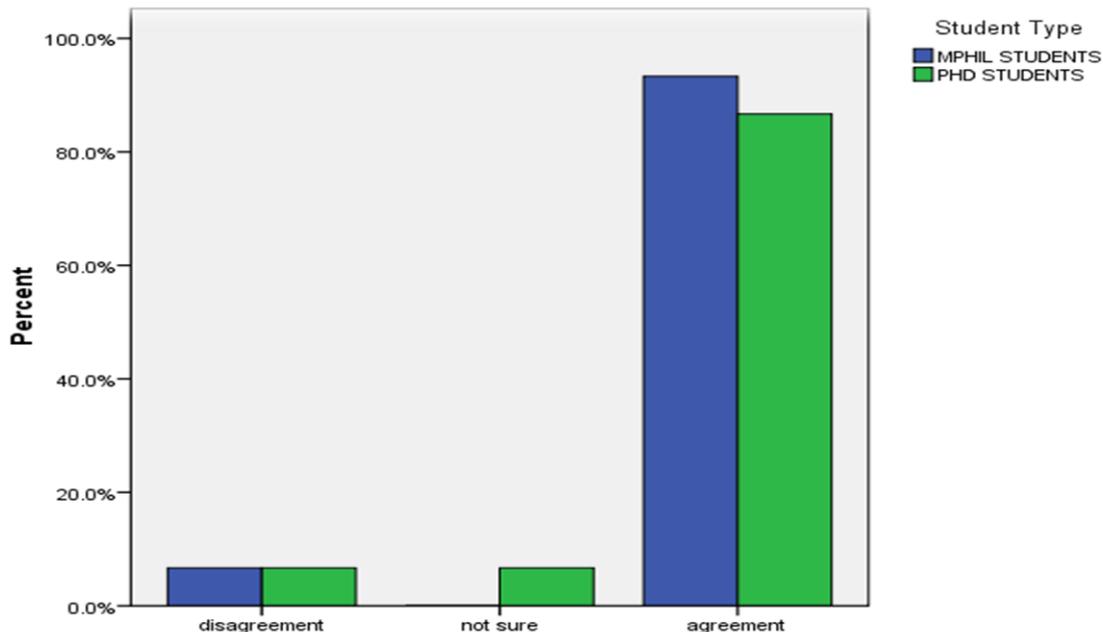
i. Supervisors' assessment of their motivation to supervise graduate research and theses

Although the common form of motivation is monetary reward, there could be other ways of recognizing thesis supervisors and examiners' efforts. The supervisors were asked whether they agree or disagree with the statement that there was lack of motivation to supervise graduate level research work.

Response Category	Masters research supervision (n=60)		Doctoral research supervision (n=60)	
	nf	%nf	nf	%nf
Disagree	4	6.7	4	6.7
Not sure	0	0	4	6.7
Agree	56	93.3	52	86.7
Total	60	100	60	100

Based on the response rates indicated in Table 5.23 and Figure 5.13, there is no doubt that majority of the respondents agreed with the position that faculty were not well motivated to supervise at both masters and doctoral levels.

Figure 5.13 Supervisors' assessment of their level of motivation to supervise graduate research: Faculty were not well motivated to supervise theses (Agree or Disagree?)



The number of respondents agreeing to the issue of lack of motivation suggests that most graduate level supervisors were not happy with the level of reward for thesis supervision.

ii. Thesis examiners' assessment of adequacy of remuneration for examining theses

For purposes of this study, a distinction has been made between supervisors and examiners although it is the same faculty who provide both services. In other words, majority of those who supervise theses also examine theses. Remuneration for examining thesis is considered as a motivational tool for theses examiners, and it was for this reason that thesis examiners were asked to indicate the adequacy or otherwise of the remuneration offered by the University for examining graduate theses.

Table 5.24 Thesis examiners' assessment of adequacy of remuneration provided by the University for examining theses as a measure of their level of motivation to examine theses				
Response Category	Internal Thesis Examiners (n=70)		External Thesis Examiners (n=30)	
	nf	%nf	nf	%nf
Highly Satisfactory	4	5.7	8	26.7
Satisfactory	36	51.5	18	60.0
Unsatisfactory	30	42.9	4	13.3
Not sure	0	0	0	0
Total	70	100	30	100

The response rates in Table 5.24 indicate that 40 of the 70 internal examiners (57.2 percent) were satisfied with the remuneration paid them for examining theses and four of these respondents rated the level of remuneration as highly satisfactory. The level of remuneration was however rated by 30 respondents (42.9 percent) as unsatisfactory. Turning to the external examiners, 26 of the 30 respondents (86.7 percent) rated the level of remuneration as satisfactory and eight of these respondents were highly satisfied with the remuneration. As opposed to the number of internal examiners who were dissatisfied with the remuneration, only four external examiners (13.3 percent) rated the level of remuneration offered them for examining theses as unsatisfactory. It therefore implies that there was a high level of dissatisfaction among internal examiners about the remuneration for examining theses than was the case with external examiners. It is therefore worrying that approximately 43 percent of the respondents (internal examiners) considered the remuneration for examination of theses to be unsatisfactory as employees of the institution.

5.4.5.3 Discharge of responsibilities expected of the graduate school

The main responsibilities of the graduate school towards ensuring timely submission of theses for graduation include: approval of thesis supervisors and examiners for students, receiving completed theses from heads of departments for examination, dispatching theses to examiners for assessment, prompting examiners about overdue theses, advising heads of department on change of examiners where necessary, arranging for and superintending oral defenses for doctoral students, determining the thesis results of students, receiving and processing final copies of theses and determining eligibility for graduation and award of degrees.

In addition to the responsibilities indicated above, the School oversees the selection of candidates for the award of university bursary, government bursary through its Graduate Fellowships Committee and also organized workshops on research methods and thesis writing for students, as well as research supervision for supervisors. Approval of supervisors and examiners for graduate studies is done at the departmental and faculty levels but the graduate school is the final approving body and can recommend changes to ensure compliance with its regulations. This section examines students' level of satisfaction with regard to the extent of support or co-operation received from the graduate school, the views of supervisors on supervision as well as examiners' views on how theses examination is handled by the graduate school.

The activities described above are categorized into two main responsibilities expected of the graduate school, namely:

- i. Ensuring a high level of support and co-operation to postgraduate students
- ii. Ensuring efficiency in thesis handling, examination and remuneration procedures

(a) Providing high level of support and co-operation for postgraduate students

Past postgraduate students assessed this responsibility by indicating their level of satisfaction with the general support and co-operation they received from the graduate school.

i. Doctoral students' assessment of support and co-operation provided by the graduate school

The data in Table 5.25 indicate that 18 past science doctoral students representing 90 percent of the respondents were satisfied with the graduate school's support and co-operation, and only two students (10 percent) were dissatisfied. Eight (8) of the 18 science respondents rated the level of support and cooperation as highly satisfactory.

Response Category	Doctoral Science (n=20)		Doctoral Humanities (n=18)	
	nf	%nf	nf	%nf
Highly satisfactory	8	40.0	7	38.9
Satisfactory	10	50.0	8	44.4
Unsatisfactory	2	10.0	1	5.6
Not sure	0	0	2	11.1
Total	20	100	18	100

In the case of humanities doctoral students, 15 respondents (about 83 percent) expressed satisfaction with the level of support and co-operation offered by the graduate school. Only one student rated the situation as unsatisfactory. Of the 15 respondents, seven (7) described the situation as highly satisfactory. On the average, both science and humanities doctoral respondents rated the level of co-operation and support as satisfactory. Approximately 40 percent of the doctoral respondents rated the graduate school's support and cooperation to them as highly satisfactory.

ii. Masters students' assessment of support and co-operation provided by the graduate school

With regard to the assessment of support and co-operation offered masters' respondents by the graduate school presented in Table 5.26, as many as 46 science respondents (89 percent) expressed satisfaction with the support and co-operation they had received from the graduate school during their candidature. Eleven (11) of the 46 respondents (21.1 percent) described the situation as highly satisfactory, and in the case of humanities respondents, 83 (about 81percent) were satisfied with the graduate school's support and cooperation.

Response Category	Masters Science (n=52)		Masters Humanities (n=102)	
	nf	%nf	nf	%nf
Highly satisfactory	11	21.2	22	21.6
Satisfactory	35	67.3	61	59.8
Unsatisfactory	5	9.6	17	16.7
Not sure	1	1.9	2	2.0
Total	52	100	102	100

Twenty-two (22) of the 83 respondents rated level of support they received from the graduate school as highly satisfactory.

(b) Ensuring efficiency in thesis handling, examination and remuneration procedures at the graduate school

The areas appraised under his sub-heading include thesis delivery processes, timeliness of payment of remuneration, communication between graduate school and examiners. Postgraduate students' ability to submit corrected versions of their theses to enable them graduate on time depends partly on how quickly thesis examiners complete examination of theses and submit assessment reports for thesis results to be determined for each student. This implies that the

efforts of the graduate school to achieve high completion rates can come to naught if thesis examiners do not examine theses sent to them and return the assessment results on time and if there are problems with the quality of reports submitted.

Both internal and external examiners assessed the handling of the process of thesis examination by the graduate school in the following seven areas: efficiency of delivery method used to dispatch theses to examiners, accuracy of delivery addresses used to dispatch theses to the examiners, examiners' ability to meet deadlines set for return of examined theses assessment reports, promptness or timeliness of payment for theses examined, effectiveness of communication between the graduate school and examiners and clarity of thesis examination guidelines. The results of assessment are presented in Tables 5.30 and 5.31.

- i. External examiners' assessment of accuracy of delivery addresses, adequacy of duration for completing examination of thesis, quality of assessment guidelines, and communication

As presented in Table 5.27 accuracy of delivery addresses used for dispatching theses ranked highest among the areas of assessment, followed in descending order by the thesis delivery method, clarity of guidelines, communication with the graduate school and the least area of satisfaction was timeliness of payments for thesis examination.

Areas of assessment	Response Categories (Frequencies and Percent)			
	Highly Satisfactory (frequency and percent)	Satisfactory (frequency and percent)	Unsatisfactory (frequency and percent)	Not Sure (frequency and percent)
1. Efficiency of delivery method used to send theses to examiners	18 (60.0)	11 (36.7)	1 (3.3)	0
2. Accuracy of delivery addresses used for dispatch of theses to examiners	25 (83.0)	5 (16.7)	0	0
3. Promptness or timeliness of payment for theses examined	5 (16.7)	13 (43.3)	11 (36.7)	1 (3.3)
4. Ability to respond to examiners' enquiries concerning theses examination and related matters (effectiveness of communication)	14 (46.7)	10 (33.3)	5 (16.7)	1 (3.3)
5. Clarity of assessment guidelines accompanying theses	20 (66.7)	9 (30.0)	1 (3.3)	0

ii. External examiners' preferred method for dispatching thesis to them and for return of examined thesis and assessment reports to graduate school

The thesis dispatch method was further investigated by asking the external examiners to indicate their preferred methods for delivering theses to them, and for return of theses examined and assessment reports, preferred methods of payment due examiners, suitability of duration given by the graduate school for completing the examination of theses, and whether there had been instances of theses missing in the course of dispatch to examiners.

Areas of assessment (Thesis delivery methods)	Response Category (with frequencies and percent) (n=30)					
	Hand delivery	By post	By courier	Soft copy by email	Not sure	Other
Delivery method through which you received theses for examination	3 (10)	10 (33.3)	16 (53.3)	1 (3.3)	0 (0.0)	0 (0.0)
Preferred theses delivery method	1 (3.3)	4 (13.3)	13 (43.3)	10 (33.3)	2 (6.7)	0 (0.0)
Preferred method for return of examined theses and assessment reports	4 (13.3)	2 (6.7)	6 (20)	13 (43.3)	2 (6.7)	3 (10)

Concerning the method through which theses were dispatched to them for examination, 16 of the respondents (53.3 percent) indicated that they received theses by courier, 10 (33.3 percent) received theses by post, three received by hand delivery and one received soft copies through the electronic mail. When asked to indicate their preferred methods for delivery of thesis to them, 13 external examiners representing 43.3 percent of the respondents preferred delivery by courier service, 10 external examiners (33.3 percent) preferred soft copies through the electronic mail, four representing 13.3 percent preferred delivery by post and only one respondent opted for hand delivery.

Regarding their preferred method for return of examined theses and assessment reports, most of the external examiners (13 respondents representing 43.3 percent) preferred sending soft copy through the electronic mail, six (6) preferred courier, four (4) preferred hand delivery, and two (2) opted for the postal system.

When asked to indicate their preferred method for dispatching theses to them, majority of the external examiners opted for courier service delivery and soft copies of theses to be sent to them by electronic mail, rather than by post or hand delivery. In the case of preferred method for return of examined thesis and assessment reports, the external examiners preferred submission of soft versions through the electronic mail and submission by courier. However, judging from the response pattern, it would appear that the use of the postal system and hand delivery would still be preferred by external examiners residing in Ghana but outside of the University of Ghana.

iii. Internal examiners' assessment of accuracy of delivery addresses, adequacy of duration for completing examination of thesis, quality of assessment guidelines, and communication

Internal examiners were also asked to indicate their opinion on the same areas of assessment as in the case of the external examiners. Concerning the delivery method used to send thesis to them, 38 (54.3 percent) of the 70 respondents rated it as satisfactory and the remaining 32 (45.7 percent) rated the accuracy of delivery address as highly satisfactory.

Areas of assessment	Response Category (with frequencies and percentages)			
	Highly Satisfactory (frequency and percent)	Satisfactory (frequency and percent)	Unsatisfactory (frequency and percent)	Not Sure (frequency and percent)
1. Efficiency of delivery method used to send theses to examiners	32 (45.7)	38 (54.3)	0	0
2. Accuracy of delivery address used to send theses to examiners	37 (52.9)	33 (47.1)	0	0
3. Promptness or timeliness of payment for theses examined	3 (4.3)	25 (35.7)	40 (57.1)	2 (2.9)
4. Graduate school's ability to respond to enquiries concerning theses examination and related matters	16 (22.9)	42 (60)	6 (8.6)	6 (8.6)
5. Clarity of guidelines accompanying theses sent for assessment	32 (45.7)	34 (48.6)	4 (5.7)	0

The internal examiners also evaluated the accuracy of delivery address used to send theses to them. In that regard, 38 (54.3 percent) of the respondents scored the accuracy as highly satisfactory and the remaining 32 (47.6 percent) rated it as satisfactory.

It is encouraging to note that none of the respondents was dissatisfied with the two highly ranked issues about thesis examination. The rest of the issues had some respondents describing them as unsatisfactory. The areas of assessment considered less satisfactory were remuneration for examining theses and promptness or timeliness of payment for theses examined. In the latter case for instance, as many as 40 (57.1 percent) of the internal examiners rated it as unsatisfactory, implying that the examiners were not paid on time.

Another area which was rated by quite a large number of respondents (30 respondents representing 42.9 percent) was the remuneration for thesis examination. Clarity of assessment guidelines as well as communication between the graduate school and examiners were also rated as satisfactory.

iv. Internal examiners' preferred methods of payment for examined thesis

The preferred methods of payment for examined theses were also investigated to determine whether the graduate school adopted the appropriate methods for paying claims due to examiners. Beyond this reason, it was also to determine whether the modes of payment in use contributed to delays in payment or not. The most preferred payment options among internal examiners were payment by cash and by cheque. This is evidenced by the fact that 28 respondents (40 percent) opted for these payment options. The remaining 14 respondents (20 percent) opted for payment by bank transfer. The most preferred payment method for external

examiners was bank transfer (15 respondents representing 53.6 percent), followed by payment by cheque (11 respondents representing 39.3 percent), and only one respondent preferred cash payment.

Response category (Mode of Payment)	Internal Examiners (n=70)		External Examiners (n=30)	
	nf	%nf	nf	%nf
Cash payment	28	40	1	3.6
Cheque payment	28	40	11	39.3
Bank Transfer	14	20	15	53.6
Other modes	0	0	1	3.6

Knowledge of examiners preferred payment method is important to be able to make adequate arrangements for the processes involved in such transactions. This would help speed up payment to examiners to serve as motivation to them.

5.4.5.4 Discharge of responsibilities by thesis examiners and supervisors

As already discussed, the responsibilities expected of thesis examiners and supervisors include their personal commitment to thesis assessment and the supervision process. To demonstrate their commitment, examiners are expected to complete examination of thesis and submit assessment reports within the deadlines given. Likewise, supervisors must provide and facilitate provision of the need support and cooperation to their students to enable them to complete their research and thesis successfully within stipulated deadlines or study durations.

(a) Assessment of examiners' ability to meet deadline for completing examination of theses

Both internal and external examiners were asked to indicate the adequacy of duration given by the graduate school for submitting thesis assessment reports and their ability to meet the deadlines given.

i. Adequacy of thesis examining duration given by the graduate school to examiners

As many as 50 of the 70 respondents (71.4 percent) indicated that they found the duration acceptable and that they usually met the deadlines given by the graduate school; fourteen (20 percent) indicated that although they considered the duration acceptable, they were sometimes not able to meet the deadlines set by the graduate school; and six (8.6 percent) indicated that the duration was too short and therefore they could not meet the deadlines given by the graduate school.

Table 5.31 Assessment of adequacy of duration given by graduate school to complete examination of theses and ability to meet deadlines for submission of assessment reports				
Response category	Internal Examiners		External Examiners	
	nf	%nf	Nf	%nf
Duration agreeable and usually met	50	71.4	13	43.3
Duration agreeable but not met sometimes	14	20	9	30
Duration too short and not met	6	8.6	2	6.7
Not sure	0	0	6	20
Total	70	100	30	100

From the foregoing, the conclusion could be drawn that as many as 64 (91.4 percent) of the internal examiners found the thesis examination duration acceptable to them, whereas some 20 (28.6 percent) found it difficult to work within the given durations. Relatively, more of the internal examiners (43.3 percent) found the thesis examination duration acceptable than the

external examiners (71.4 percent). Overall, the mean values suggest that both internal and external examiners generally accept the thesis examination duration but were sometimes not able to work within the given deadlines.

ii. Examiners' assessment of their ability to meet deadlines set by the graduate school for return of examined theses

Upon further probing into the examiners' ability to meet deadlines set by the graduate school for return of thesis, it came out that 18 external examiners (60 percent) rated their ability to meet deadlines as highly satisfactory, 11 of them (36.7 percent) as satisfactory, with only one dissatisfied. This rating represents overwhelming agreement (96.7 percent) that they were able to meet thesis examination deadlines set for them by the graduate school.

In the case of internal examiners, 62 out of 70 respondents (88.5 percent) were satisfied with the deadlines set by the graduate school. Also, half of the respondents (51.4 percent) rated their ability to meet the deadlines as highly satisfactory. Internal examiners who rated their ability to meet the deadlines were only eight (11.4 percent). This self-appraisal appears highly rated; nevertheless it represents the views of both internal and external examiners on the matter.

Response category	Internal Examiners (n=70)		External Examiners (n=30)	
	nf	%nf	Nf	%nf
Highly satisfactory	36	51.4	18	60.0
Satisfactory	26	37.1	11	36.7
Unsatisfactory	8	11.4	1	3.3
Not sure	0	0	0	0
Total	70	100	30	100

(b) Assessment of thesis supervisors' responsibilities, support and co-operation during the supervision processes

With regard to supervision and related arrangements, supervisors must be personally committed and interested in students' research efforts but must also provide the necessary support and co-operation to their students. Areas evaluated included the following:

- Providing the necessary support and co-operation to their students by offering appropriate advice regarding formulation researchable thesis topics, searching and reviewing appropriate literature, and guiding students to prepare a good research design
- Receiving the necessary support and co-operation from co-supervisors during supervision
- Generally agreeing to a research supervision contract with the student by setting a plan of work for the entire research and thesis with the student and ensuring that the plan of work is followed as much as possible to the end.
- The specific responsibility issues interrogated were:
 - Supervisors' availability or accessibility for consultation
 - Supervisors' ability to keep to delivery promises and deadlines
 - Guidance and assistance provided by principal supervisors on research and theses writing
 - General support and cooperation from principal supervisor and co-supervisors

i. Masters students' assessment of supervisors' performance of their supervisory responsibilities

As listed in Table 5.33, five areas of responsibility were evaluated by the masters respondents. In all the five areas, 90 percent of the respondents rated their supervisors' performance as satisfactory, except for their ability to keep to delivery promises and

Areas of assessment	Response Category (frequencies & percent)			
	Unsatisfactory	Satisfactory	Highly satisfactory	Not sure
1. Supervisors' availability or accessibility for consultation	1 (1.9)	15 (28.8)	33 (63.5)	3 (5.8)
2. Supervisors' ability to keep to delivery promises and deadlines	2 (3.8)	14 (26.9)	31 (59.6)	5 (9.6)
3. Guidance and assistance provided by principal supervisors on research and theses writing	0	16 (30.8)	33 (63.5)	3 (5.8)
4. General support and cooperation from principal supervisor	0	10 (19.2)	41 (78.8)	1 (1.9)
5. General support and cooperation from co-supervisors	1 (1.9)	17 (32.7)	32 (61.5)	2 (3.8)

deadlines which was rated as 86.5 percent of the respondents as satisfactory. It is even more encouraging that not less than 50 percent of the respondents rated the areas as highly satisfactory. The most highly rated areas of performance was the level of general support and cooperation received from the students' principal supervisors.

Areas of assessment	Response Category (frequencies & percent)			
	Unsatisfactory	Satisfactory	Highly satisfactory	Not sure
1. Supervisors' availability or accessibility for consultation	2 (2.0)	44 (43.1)	51 (50.0)	5 (4.9)
2. Supervisors' ability to keep to delivery promises and deadlines	8 (7.8)	49 (48.0)	40 (39.2)	5 (4.9)
3. Guidance and assistance provided by principal supervisors towards research and theses writing	6 (5.9)	38 (37.3)	53 (52.0)	5 (4.9)
4. General support and cooperation from principal supervisor	3 (2.9)	32 (31.4)	66 (64.7)	1 (1.0)
5. General support and cooperation from co-supervisors	7 (6.9)	35 (34.3)	57 (55.9)	3 (2.9)

Table 5.34 depicts a similar response pattern for humanities masters respondents in which case the most highly rated area was again the general support and cooperation offered by the principal supervisors.

As in the case of masters science respondents, not less than 50 percent of the humanities respondents rated the areas as highly satisfactory, except for the supervisors' ability to keep to their delivery promises and deadlines, which was rated by 39.2 percent as highly satisfactory. The general picture is that the masters respondents were generally very happy with their supervisors' performance in all the five supervision related areas.

ii. Doctoral students' assessment of supervisors' performance of their supervisory responsibilities

As in the case of the masters respondents, an overwhelming majority of the doctoral respondents expressed satisfaction with all five areas of assessment.

Areas of assessment	Response Category (frequency & percentage)			
	Unsatisfactory	Satisfactory	Highly satisfactory	Not sure
1. Supervisors' availability or accessibility for consultation	0	6 (30.0)	14 (70.0)	0
2. Supervisors' ability to keep to delivery promises and deadlines	1 (5.0)	8 (40.0)	10 (50.0)	1 (5.0)
3. Guidance and assistance provided by principal supervisors on research and theses writing	1 (5.0)	6 (30.0)	13 (65.0)	0
4. General support and cooperation from principal supervisor	0	4 (20.0)	16 (80.0)	0
5. General support and cooperation from co-supervisors	1 (5.0)	7 (35.0)	12 (60.0)	0

On the part of science doctoral respondents, their supervisors' availability or accessibility for consultation and their general support and cooperation were rated by all the respondents as satisfactory. These two areas were also rated by 70 percent and 80 percent respectively of the respondents as highly satisfactory. The other three areas were rated by not less than 90 percent of the respondents as satisfactory. Table 5.35 illustrates details of the response patterns.

The assessment by humanities doctoral respondents was also encouraging although it fell a little below that of science doctoral respondents as can be seen in Table 5.36. The area with the highest satisfactory rating (17 out of 18 respondents) was the general support and cooperation offered by principal supervisors and the least satisfactory rating (14 out of 18 respondents) was the general support and cooperation from their co-supervisors.

Areas of assessment	Response Category (frequency and percentage)			
	Unsatisfactory	Satisfactory	Highly satisfactory	Not sure
1. Supervisors' availability or accessibility for consultation	0	5 (27.8)	10 (55.6)	3 (16.7)
2. Supervisors' ability to keep to delivery promises and deadlines	1 (5.6)	9 (50)	6 (33.3)	2 (11.1)
3. Guidance and assistance provided by Principal supervisors on research and theses writing	0	7 (38.9)	9 (50)	2 (11.1)
4. General support and cooperation from principal supervisor	1 (5.6)	3 (16.7)	14 (77.8)	0
5. General support and cooperation from co-supervisor(s)	1 (5.6)	9 (50)	5 (27.8)	3 (16.7)

In conclusion, both masters and doctoral respondents were satisfied with the conduct of their supervisors and a substantial number of the respondents were highly impressed with their supervisors. The response patterns also suggest that science masters and doctoral respondents

were more satisfied with their supervisors in all the areas than the humanities masters and doctoral respondents.

(c) Supervisors' assessment of support and co-operation offered by co-supervisors to students

Section 12.6 of the regulations governing postgraduate studies at the University of Ghana provides that "the number of supervisors for Masters and Doctoral thesis shall be one to two supervisors for masters with dissertations, two supervisors for masters with thesis, and two to three supervisors for doctoral thesis". By the very nature of the regulations, team supervision is more encouraged than sole supervision at the University of Ghana. Although the responsibilities of principal supervisors and co-supervisors are not clearly defined in the regulations, the broad responsibility as stipulated in Section 12.5 is "to advise students on all thesis-related matters", and the specific duty for co-supervisors as indicated in Section 12.4 is "to assist the Principal Supervisor" in advising students on all-thesis related matters.

Since co-supervisors are mandated to assist in the supervision process, it is only proper to find out from their principals about their performance in the supervisory team in terms of the support and cooperation required of them.

Response category	Masters level supervision		Doctoral level supervision	
	nf	%nf	nf	%nf
Satisfactory	52	86.7	54	90.0
Not sure	0	0	4	6.7
Unsatisfactory	8	13.3	2	3.3
Total	60	100	60	100

As illustrated in Table 5.37 above, a good majority of the respondents (86.7 percent) rated the assistance offered by co-supervisors during masters level supervision as satisfactory; however, a relatively small proportion (13.3 percent) rated their assistance as unsatisfactory. Regarding doctoral level supervision, the rating of their performance was even better, with 90 percent of the respondents describing their support as satisfactory. Only two respondents were dissatisfied. Judging from the response pattern, the support of co-supervisors was highly appreciated by their colleagues who served as principal supervisors. There are however some minor indications of dissatisfaction, thus, implying that a few of the principal supervisors had some challenges with their co-supervisors at one time or the other during the supervision process.

(d) Assessment of supervisors' ability to set a plan of work for research and thesis writing with their students and keeping to the plan of work

Involving both the supervisor and the student in planning the supervision process is an effective way of making both parties aware of the stages or processes involved and what is required of each party in the process. The supervision plan of work, like any other plan, is more or less a supervision contract or agreement between the student and the supervisor and therefore serves as the basis for measuring progress.

Areas of responsibility evaluated under this subject included supervisors' own assessment of whether they did set supervision plans of work with their students, whether the plans were followed by both parties to the end, as well as the views of past masters and doctoral respondents on the same matter.

i. Supervisors' assessment of their ability to set plans of work with their students for their research and thesis supervision and their ability to follow the supervision plans

When the respondents were asked whether they set supervision plans of work with their students, 42 supervisors (70 percent) indicated that they did so, 12 supervisors (20 percent) did so only sometimes, and only 4 of them (6.7 percent) said they did not do so. It is obvious that although supervisors who indicated that they set supervision plans with their students (42 respondents) were more than those who did not (4 respondents), not all the supervisors set supervision plans with their students. Twelve (12) supervisors (20 percent) were not sure whether they set such plans with their students.

Response Category	Did you set supervision plans of work with your students?		Were you able to follow the plans of work for supervision?	
	nf	%nf	nf	%nf
Yes	42	70.0	18	30.0
Sometimes	12	20.0	30	50.0
No	4	6.7	0	0
Not sure	2	3.8	12	20.0
Total	60	100	60	100

When asked whether the plan of work was followed to the end of the research, 18 supervisors (30 percent) responded in the affirmative and 30 supervisors (50 percent) indicated that the plans were sometimes not followed through to the end of the research. From the above analysis, it would appear that although as much as 70 percent of the respondents had supervision plans with their students, only 18 (30 percent) were certain that the plans were followed to the end and 50 percent followed their plans of work only sometimes.

- ii. Past masters students' assessment of their supervisors' ability to set plans of work with their students for their research and thesis writing and whether the plans were followed

As presented in Table 5.39, 28 science masters respondents representing 53.8 percent of the 52 respondents agreed that their supervisors did set plans of work for their research and thesis; however, 17 respondents representing 32.7 percent said their supervisors did not do so, and four were unsure.

Response category	Science		Humanities	
	nf	%nf	nf	%nf
Yes	28	53.8	26	25.5
Sometimes	4	7.7	11	10.8
Not sure	3	5.8	5	4.9
No	17	32.7	60	58.8
Total	52	100	102	100

The respondents who indicated that their supervisors set supervision plan with them were more than those who said they did not do so.

Response category	Science		Humanities	
	nf	%nf	nf	%nf
Yes	18	34.6	20	19.6
Sometimes	8	15.4	18	17.6
Not sure	11	21.2	32	31.4
No	15	28.8	32	31.4
Total	52	100	102	100

In spite of the fact that more of the supervisors did set supervision plans with their students, the response pattern in Table 5.40 regarding their ability to follow the plans set with their students revealed that only 18 (34.6 percent) indicated that they were able to follow the agreed plans,

eight (15.4 percent) said they followed the plans sometimes, and 15 (28.8 percent) said they could not go by the agreed plans.

- iii. Past doctoral students' assessment of their supervisors' ability to set supervision plans of work with their students for their research and thesis writing and whether the plans were followed

Response category	Did supervisors set plan of work for your research and thesis?				Did they follow the agreed plan of work for your research and thesis?			
	Science (n=20)		Humanities (n=18)		Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf	nf	%nf	nf	%nf
Yes	13	65.0	7	38.9	11	55.0	7	38.9
Sometimes	2	10.0	3	16.7	3	15.0	7	39.0
Not sure	0	0	0	0	0	0	0	0
No	5	25	8	44.4	6	30.0	4	22.1
Total	20	100	18	100	20	100	18	100

As observed in the case of masters respondents, majority of the doctoral respondents (13 representing 65 percent) indicated that their supervisors agreed on supervision plans with them; however, five (25 percent) said their supervisors did not do so, and two said they did so sometimes. It is obvious in Table 5.41 that setting supervision plans with students was more common among doctoral respondents than is the case with masters respondents. Concerning the supervisors' ability to follow the agreed plans, more of the science doctoral respondents (55 percent) indicated that their supervisors did follow the plans than was the case with the humanities respondents.

5.4.5.5 Discharge of responsibilities expected of departments and departmental heads

Apart from the department ensuring that its students have a strong theoretical preparation and acquire research methods and thesis writing skills, heads of department are expected to co-operate with their students and provide strong support to them by assigning supervisors and

thesis topics to the students on time, facilitating co-operation among supervisors on one hand, and between supervisors and their students on the other hand, ensuring timely approval of requests made by students, timely processing of students' thesis to the graduate school for examination and cooperating with the graduate school during thesis examination and results declaration process. The following specific issues relevant for timely completion were investigated:

- Preparing students to be well grounded in the theories of the department's main discipline and training students to be conversant with research methods and thesis writing skills
- Students assessment of support or cooperation received from their heads of department
- Timeliness of assigning supervisors to the students
- Role of supervisors in the formulation of thesis topics for students
- Timeliness of approval of thesis topics for the students

(a) Postgraduate students' assessment of quality of teaching at the postgraduate level

As indicated earlier, it is the responsibility of departments to provide students with the right theoretical preparation for their research work. In this regard, the past students were asked to assess the quality of teaching they received prior to their research year. The response pattern in Table 5.42 indicates that 26 of the 52 science masters respondents (50 percent) rated the quality of teaching as highly satisfactory and 20 respondents (38.5 percent) rated the quality of teaching as satisfactory. Overall, 46 respondents (88.5 percent) were satisfied with the quality of teaching they received. Only one respondent was dissatisfied with the quality of teaching and five remained neutral.

The humanities respondents offered a more encouraging assessment considering that 97 of the 102 respondents (95.1 percent) generally rated the quality of teaching and theoretical preparation they received as satisfactory, with more than 50 percent of the respondents rating the same as highly satisfactory.

Response category	Science (n=52)		Humanities (n=102)	
	nf	%nf	nf	%nf
Highly satisfactory	26	50.0	52	51.0
Satisfactory	20	38.5	45	44.1
Unsatisfactory	1	1.9	1	1.0
Not sure	5	9.6	4	3.9
Total	52	100	102	100

More of the humanities masters respondents (95.1 percent) expressed satisfaction with the quality of teaching and theoretical preparation than the science masters respondents (88.5 percent). There was no assessment by doctoral respondents because doctoral programmes at the University of Ghana were purely research based at the time of this research.

In conclusion, majority of the past masters respondents were satisfied with the quality of teaching or course work delivery. This implies that all things being equal, the respondents had sound theoretical preparation for their research work.

(b) Supervisors' assessment of students' level of theoretical knowledge, research and thesis writing skills

i. Supervisors' assessment of students' level of theoretical preparation

The assessment of quality of teaching and theoretical preparation was further investigated by seeking the views of supervisors on the same matter in terms of their assessment of their students' level of theoretical preparation.

Response category	Masters students		Doctoral students	
	nf	%nf	nf	%nf
Satisfactory	38	63.3	41	68.3
Not sure	0	0	4	6.7
Unsatisfactory	22	36.7	15	25.0
Total	60	100	60	100

Whereas 38 respondents (63.3 percent) rated their students level of theoretical preparation as satisfactory, the remaining 22 (36.7 percent) rated their level as unsatisfactory. Forty-one supervisors (68.3 percent) rated their doctoral students level of theoretical preparation as satisfactory and 15 (25 percent) rated it as unsatisfactory. The students gave a better assessment of supervisors' assessment of their students' level of theoretical preparation than their supervisors.

ii. Supervisors' assessment of students' level of familiarity with research methods and thesis writing skills

Doctoral students' level of familiarity with research methods and thesis writing skills was rated satisfactory by more of the respondents than that of masters' students.

Response category	Masters students		Doctoral students	
	nf	%nf	nf	%nf
Satisfactory	42	70.0	44	73.3
Not sure	0	0	4	6.7
Unsatisfactory	18	30	12	20.0
Total	60	100	60	100

This is so because more of the supervisors (18 representing 30 percent) were dissatisfied with their masters students' level of familiarity with research methods and thesis writing skills than they were in the case of their doctoral students (12 representing 20 percent) as presented in Table

5.44. The levels of dissatisfaction appear quite high enough to engage the attention of departments, faculties and schools.

(c) Students' assessment of support or co-operation received from their heads of department

The success of student-supervisor relationships depends on mutual support and co-operation from the parties involved. Where difficulties arise, heads of department are expected to play a mediation role to help students out of their predicaments or to resolve such difficulties amicably in a manner that does not destroy the supervision relationship. On this subject, students were asked to rate the level of support and co-operation their heads of departments offered them during their studentship.

Response category	Masters respondents				Doctoral respondents			
	Science (n=52)		Humanities (n=102)		Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf	nf	%nf	nf	%nf
Highly satisfactory	29	55.8	39	38.2	12	60	6	33.3
Satisfactory	21	40.4	51	50.0	6	30	10	55.6
Unsatisfactory	1	1.9	8	7.8	2	10	0	0
Not sure	1	1.9	4	3.9	0	0	2	11.1
Total	52	100	102	100	20	100	18	100

Both masters and doctoral respondents were highly satisfied with the level of support and cooperation they received from their heads of department. For instance, almost all the science masters and humanities doctoral respondents rated their head's level of support and cooperation as either satisfactory or highly satisfactory. Details of these trends of assessment are presented in Table 5.46.

(d) Timely assignment of supervisors in departments to supervise students' research work

Postgraduate supervision must start at an early stage and this needs to be encouraged to help students decide on their areas of research interest and choice of research topics early in their candidature durations.

i. Timeliness of assigning supervisors to masters students

Past science masters respondents were asked to indicate whether they were assigned supervisors in the first year of their enrolment to find out the timeliness or otherwise of assigning supervisors to the masters and doctoral students.

Science respondents (n=52)		Humanities respondents (n=102)		
Response category	nf	%nf	nf	%nf
Yes	9	17.3	17	16.7
No	35	67.3	81	79.4
Not sure	8	15.3	4	3.9
Total	52	100	102	100

As can be seen from Table 5.47 above, 35 of the science masters respondents (67.3 percent) were not assigned supervisors in the first year of enrolment, whereas in the case of humanities respondents, 81 students (representing 79.4 percent) were not assigned supervisors in the first year of enrolment. This means that most of the humanities masters respondents were not assigned supervisors or did not know them in the first year. It also implies that proportionally more science masters respondents were assigned supervisors in the first year than was the case with their humanities colleagues.

ii. Timeliness of assigning supervisors to doctoral students

Compared to the masters level, the response pattern was better in the case of doctoral respondents, where all the respondents except one humanities doctoral student were assigned supervisors or had known their supervisors in the first year if enrolment as shown in Table 5.48.

Science respondents (n=20)			Humanities respondents (n=18)	
Response category	nf	%nf	nf	%nf
Yes	18	90	16	88.8
No	0	0	1	5.6
Not sure	2	10	1	5.6
Total	20	100	18	100

This pattern of response whereby 90 percent of the science doctoral respondents and 88.8 percent of the humanities doctoral respondents indicated that they were assigned supervisors in their first year of enrolment is encouraging. It confirms the requirements of the regulations that supervisors be identified and approved for doctoral students as part of the conditions for gaining admission into doctoral programmes at the University of Ghana.

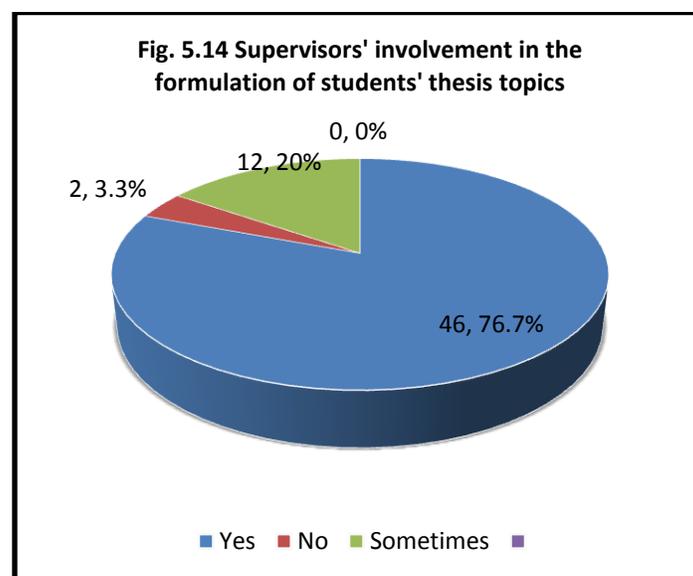
(e) **Involvement of supervisors in the formulation of thesis topics with their students in departments and timeliness of approval of thesis topics by departments for students**

i. Supervisors involvement in the formulation of thesis titles with their students

The student-supervisor relationship begins at the topic selection stage with the potential supervisor engaging the student right from the beginning in some discourse to find out the students' areas of research interest or assist them to discover the critical areas and develop interest in them. In this regard, supervisors were asked to indicate whether they were involved in the formulation of thesis topics for their assigned students or not.

When the supervisors were asked whether their heads of department involved them in the formulation of thesis titles with their students, 46 of the supervisors (76.7 percent) indicated that they participated or guided students in the formulation of thesis titles. However, 12 of the respondents (20 percent) indicated that they were sometimes involved and two (3.3 percent) indicated that they were not involved.

The response pattern and analysis suggest that most of the supervisors were involved in the selection and formulation of the thesis titles for their students.



ii. Timeliness of approval of thesis topics for masters students

At the University of Ghana, approval of thesis topics for students begins at the departmental level and is an important responsibility of heads of department and the Graduate Studies Committee. Although the approval process goes through Faculty and School Boards to the Board of Graduate Studies, the main responsibility rests with heads of departments to initiate

action early enough to enable the approval of documents received at various stages from the afore-mentioned boards. This is because in most cases, thesis topics approved for students at the departmental level do not change completely but may be revised in the course of the approval process.

Response category	Masters respondents				Doctoral respondents			
	Science (n=52)		Humanities (n=102)		Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf	nf	%nf	nf	%nf
Yes	10	19.2	22	21.6	16	80	11	61.1
No	35	67.3	73	71.5	4	20	6	33.3
Not sure	7	13.5	7	6.9	0	0	1	5.6
Total	52	100	102	100	20	100	18	100

When past science masters students were asked whether thesis topics were approved for them in the first year of enrolment, 10 respondents (19.2 percent) indicated that the department approved their thesis topics in the first year of enrolment, and 35 respondents representing 67.3 percent indicated that the department did not approve thesis topics for them in the first year of enrolment.

In the case of past humanities masters students, thesis topics were approved for 22 respondents (21.6 percent) in the first year of enrolment, while thesis topics were not approved in the first year of enrolment for as many as 73 respondents (71.5 percent). Seven respondents in each case were not sure when their thesis topics were approved.

ii. Timeliness of approval of thesis topics for doctoral students

The response pattern for the past doctoral students was contrary to that of the masters students. In the case of science doctoral students, 16 respondents (80 percent) had their thesis topics

approved by the department in the first year of enrolment, and four (20 percent) respondents indicated that their thesis topics were not approved by the department in the first year of enrolment. A similar pattern emerged for the humanities doctoral students, in which case thesis topics for 11 respondents (61.1 percent) were approved by the department in the first year of enrolment, but were not approved for six (33.3 percent) in the first year. One respondent was not sure when the thesis topic was approved by the department. This means that thesis topics were approved for almost all doctoral respondents by their departments in their first year of enrolment. Thesis topics were not approved for majority of the masters respondents in their first year of enrolment. On the contrary, they were approved for majority of the doctoral respondents.

5.4.5.6 Discharge of responsibilities expected of postgraduate students

At the University of Ghana, the responsibilities of students towards ensuring high postgraduate throughput, according to the University's Statutes and Handbooks for Graduate Studies, include but not limited to the following:

- developing a personal plan of action for completion of their studies in order to devote and manage time efficiently for studies and research. Personal planning includes time and financial planning to be able to meet all financial obligations to the institution and for one's own upkeep
- attending the compulsory orientation for fresh students and being familiar with and knowledgeable in the rules, regulations and procedures that govern the academic work in the University

- registering for the relevant taught courses and attending lectures and all other academic requirements including seminars, workshops and group work to prepare oneself theoretically and build research capacity
- following supervisors' guidance, appreciating supervisors' efforts and co-operating with them during supervision
- complete the research and theses work within the approved time frame for submission and graduation

Past masters and doctoral students, supervisors and heads of departments were asked give their assessment of how some of these responsibilities were discharged with a view to determining their impact on timely completion.

(a) Graduate students' participation in mandatory academic orientation

It is the responsibility of every newly admitted student to attend and participation in initial academic orientation sessions organized by the University to be provided with vital information, some of which may not be found in the written regulations and students' information handbooks. This is meant to assist newly admitted students to become conversant with the dos and don'ts of the academic environment and procedures.

Details of respondents' attendance or participation in academic orientation for fresh graduate students are presented in Table 5.50.

The response patterns show that 28 (53.8 percent) of the 52 science masters respondents attended academic orientation on enrolment, whereas as many as 20 respondents (38.5 percent) did not

attend. With respect to humanities masters respondents, 42 (41.2 percent) attended but 50 (49 percent) did not.

Response category	Masters respondents				Doctoral respondents			
	Science (n=52)		Humanities (n=102)		Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf	nf	%nf	nf	%nf
Yes	28	53.8	42	41.2	6	30	8	44.4
No	20	38.5	50	49.0	14	70	8	44.4
Not sure	4	7.7	10	9.8	0	0	2	11.1
Total	52	100	102	100	20	100	18	100

In the case of doctoral respondents, only 6 of the 20 science respondents (30 percent) attended academic orientation while 14 respondents (70 percent) did not attend. Among the 18 humanities doctoral respondents, 8 respondents (44.4 percent) attended and the same number did not attend. The rest of the masters and doctoral respondents were not sure whether they attended or participated in academic orientation upon enrolment.

In all the levels and disciplines, the number of respondents who did not attend or participate in initial orientation gives cause to worry about students' ability to be informed of the how to go about their academic work, particularly in the case of humanities masters and science doctoral respondents.

(b) Graduate students' level of familiarity with the University's regulations and procedures governing postgraduate studies

Although the number of respondents who did not attend academic orientation appear to be alarming, by their own assessment, only a few of the past students claimed they were not familiar with the regulations and procedures.

Response category	Masters respondents				Doctoral respondents			
	Science (n=52)		Humanities (n=102)		Science (n=20)		Humanities (n=18)	
	nf	%nf	nf	%nf	nf	%nf	nf	%nf
Very familiar	14	27.0	30	29.4	8	40	7	38.9
Somehow familiar	29	55.7	54	53.0	11	55	9	50.0
Not familiar	0	0	8	7.8	1	5	2	11.1
Not sure	9	17.3	10	9.8	0	0	0	0
Total	52	100	102	100	20	100	18	100

It is however worrying that more than 50 percent of both masters and doctoral respondents indicated that they were not too familiar with the regulations with the regulations and procedures governing postgraduate studies. It is also worrying that 19 of the 154 respondents indicated that they were not sure, and eight (8) humanities masters respondents frankly indicated that they were not at all familiar with the regulations and procedures.

(c) Supervisors' assessment of masters and doctoral students' level of familiarity with regulations and procedures concerning postgraduate supervision

Most of the past student respondents rated themselves as being familiar with the regulations and procedures concerning postgraduate studies. However, when the supervisors were asked to assess their students' level of familiarity with the regulations and procedures relating to supervision, the supervisors' responses clearly indicated that most of the students were not

familiar with the regulations and procedures. For instance, as presented in Table 5.52 below, 26 (43.3 percent) of the supervisors indicated that their doctoral students were not familiar with supervision regulations and procedures, while the same number (26 respondents) were of the view that their doctoral students were somehow familiar. The remaining eight (8) respondents were not sure of the students' level of familiarity with the regulations and procedures. On the part of masters students, 34 respondents (56.7 percent) said their students were not familiar with supervision regulations and procedures, and 22 (36.7 percent) rated their students as somehow familiar.

Response category	Masters students		Doctoral students	
	nf	%nf	nf	%nf
Familiar	22	36.7	26	43.3
Not familiar	34	56.6	26	43.3
Not sure	4	6.7	8	13.3
Total	60	100	60	100

The supervisors' rating of their students' level of familiarity suggests that although most of the students were not familiar with supervision regulations and procedures, the problem was more severe among masters respondents than among doctoral respondents. Four of the supervisors were not sure of masters students' familiarity with the regulations and procedures, and eight supervisors were also unsure in the case of doctoral students.

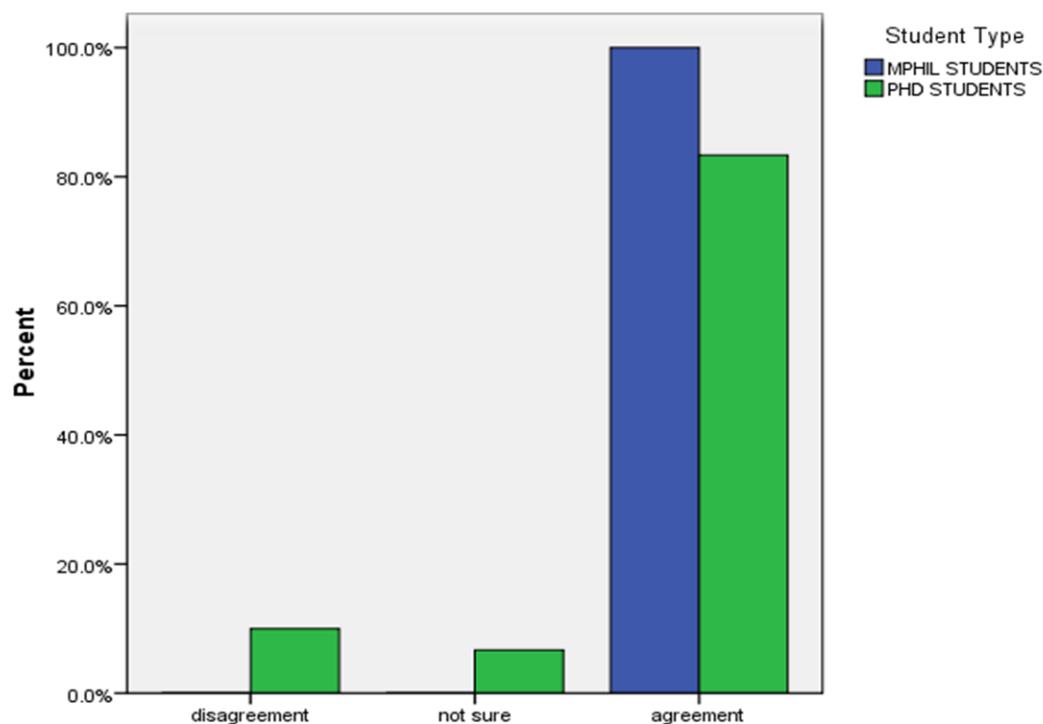
(d) Supervisors' assessment of masters and doctoral students' level of research and thesis writing skills

In addition to having sound theoretical preparation, research postgraduate students have a responsibility to build capacity to conduct research and complete their theses independently without difficulty.

Areas of research methods and thesis writing skills	Response Categories							
	Agree		Not sure		Disagree		Mean	
	Masters	Doctor	Masters	Doctor	Masters	Doctor	Masters	Doctor
1. Students are unable to select a research topic that presents a problem	58 (96.7)	48 (80)	0	4 (6.7)	2 (3.3)	8 (13.3)	1.93	1.67
2. Students are unable to design an acceptable research proposal	58 (96.7)	50 (83.3)	0	4 (6.7)	2 (3.3)	6 (10)	1.93	1.73
3. Students find it difficult to understand theoretical or conceptual framework of their research	60 (100)	50 (83.3)	0	4 (6.7)	0	6 (10)	2.0	1.73
4. Students are unable to state hypothesis scientifically	56 (93.3)	48 (80)	0	4 (6.7)	4 (6.7)	8 (13.3)	1.87	1.67
5. Students have weak knowledge of research methods	58 (96.7)	50 (83.3)	2 (3.3)	4 (6.7)	0	6 (10)	1.97	1.73
6. Students are unable to use correct methods to solve research problems	58 (96.7)	50 (83.3)	0	4 (6.7)	2 (3.3)	6 (10)	1.93	1.73
7. Ability to review literature critically, coherently and logically	58 (96.7)	50 (83.3)	0	4 (6.7)	2 (3.3)	6 (10)	1.93	1.73
8. Students are unable to present findings scientifically and accurately	58 (96.7)	48 (80)	0	4 (6.7)	2 (3.3)	8 (13.3)	1.93	1.67
9. Students lack sound research and analytical background	60 (100)	50 (83.3)	0	4 (6.7)	0	6 (10)	2.0	1.73
10. Students are unable to work independently	60 (100)	52 (86.7)	0	4 (6.7)	0	4 (6.7)	2.0	1.8
11. Students have poor report writing skills	58 (96.7)	54 (90)	0	4 (6.7)	2 (3.3)	2 (3.3)	1.93	1.87
12. Students have poor language skills	60 (100)	52 (86.7)		4 (6.7)	0	4 (6.7)	2.0	1.80
13. Students lack technical competence, knowledge of analytical tools and ability to analyze	60 (100)	50 (83.3)	0	4 (6.7)	0	6 (10)	2.0	1.73
14. Students are unable to devote and manage time for their studies	56 (93.3)	52 (86.7)	0	4 (6.7)	4 (6.7)	4 (6.7)	1.87	1.80

The common areas for building research capacity include: ability to select a researchable thesis topic, ability to design an acceptable research proposal, ability to state hypothesis scientifically, ability to use correct and appropriate methods to solve research problems, acquire strong knowledge of analytical and technical skills for conducting research, acquire good language and report writing skills, have sound theoretical background in the relevant discipline. Other important characteristics the research student must acquire include ability to work independently, ability to devote time for studies and manage the time well.

Figure 5.15 Supervisors' assessment of their masters and doctoral students' Research and analytical background



As indicated in Table 5.53, supervisors were requested to indicate whether they disagree, or agree with the perceived weaknesses in the above-mentioned areas for masters and doctoral students they supervised during the period under consideration. The response pattern shows that

the respondents considered their masters and doctoral students to be weak in all the fourteen research capacity building areas. In the case of masters students, less than five percent of the supervisors disagreed with the perceived weaknesses, whereas almost all the supervisors agreed that the students are weak in all the areas.

All of the respondents (supervisors) agreed that their masters students had following weaknesses:

- that the students found it difficult to understand the theoretical and conceptual framework for their research
- that the students lack sound research and analytical background (Figure 5.15)
- that the students had poor language skills
- that the students lacked technical competence, knowledge of analytical tools and ability to analyze
- that the students were unable to work independently

Not less than 48 out of the 60 respondents agreed that their doctoral students also had weaknesses in all the areas of assessment, the areas of high levels of weaknesses being the following:

- that the students had poor report writing skills
- that the students had poor language skills
- that the students were unable to devote and manage time for their studies
- that the students were unable to work independently

Considering the number of respondents who disagreed with the perceived areas of weaknesses for masters and doctoral students, the conclusion can be drawn that masters students were weaker in the research capacity areas than doctoral students.

(e) Supervisors' assessment of masters and doctoral students' availability and accessibility for guidance

Effective supervision requires that both parties in the supervision relationship play their roles well and responsibly. One of such roles is the need for each party in the relationship to make himself or herself available for guidance on the part of the student, and for consultation on the part of the supervisor. This requirement was examined in this study by asking supervisors to assess their students' availability or accessibility for guidance. The supervisors were asked to indicate whether they were satisfied or dissatisfied with their students' conduct in this regard.

Response category	Masters students		Doctoral students	
	nf	%nf	nf	%nf
Satisfactory	44	73.3	44	73.3
Not sure	4	6.7	6	10.0
Unsatisfactory	12	20.0	10	16.7
Total	60	100	60	100

Majority of the supervisors, precisely 44 representing 66.7 percent, were satisfied with the conduct of their masters students in making themselves available or accessible for guidance. Four of the supervisors were neutral in this assessment and 12 (20 percent) rated their masters students' availability or accessibility for guidance as highly satisfactory. In their assessment of the doctoral students on the same matter, 44 supervisors (73.3 percent) were satisfied with their doctoral students conduct whereas 10 (16.7 percent) were dissatisfied.

The overall assessment is that majority of the supervisors were satisfied with their masters and doctoral students' ability to make themselves available or accessible for guidance; nevertheless,

some supervisors were dissatisfied with their students' conduct in this area, suggesting that they might have encountered difficulties with some of their students.

(f) Supervisors' assessment of masters and doctoral students' ability to keep to delivery promises and deadlines set as part of the supervision arrangement

As part of the supervision arrangements, supervisors normally give students deadlines to complete and deliver sections of their thesis or complete stages of their laboratory experimentations in order to help them stay on course and work within their normal candidature durations, all with the aim of completing their studies on time. Deadlines and time frames also keep the research student busy and the supervisor is able to plan his or her itinerary with other students as well as for other commitments in an organized manner. Respecting deadlines set for delivering assignments is therefore an important responsibility of the student in the supervision relationship to ensure early completion.

Response category	Masters students		Doctoral students	
	nf	%nf	nf	%nf
Satisfactory	40	66.7	36	60.0
Not sure	4	6.7	8	13.3
Unsatisfactory	16	26.7	16	26.7
Total	60	100	60	100

In assessing their masters students' ability to keep to delivery promises and agreed deadlines, 40 respondents (66.7 percent) rated their students' performance as satisfactory and 16 (26.7 percent) were dissatisfied with the students' conduct. Regarding their doctoral students' conduct in this area, 36 respondents (60 percent) were satisfied and 16 (26.7) were dissatisfied.

Notwithstanding the fact that majority of the respondents expressed satisfaction with their students' ability to honour their delivery promises and agreed deadlines, the number of respondents who were dissatisfied is quite substantial to be ignored. It suggests that a substantial number of students are unable to honour their delivery promises and agreed deadlines set with their supervisors.

(g) Supervisors' assessment of general support and co-operation received from their masters and doctoral students

The forms of student responsibilities discussed above, namely, students' availability and accessibility for guidance, and their ability to keep to agreed deadlines and delivery promises, constitute some of the areas in which students can support and co-operate with their supervisors. Stack (2008) looks at the supervisory relationship as a unique one in which there is an unequal balance of expertise and power. In other words, each party in the relationship has something to offer to make the relationship successful. Since lack of co-operation can lead to poor student-supervisor relationships and possibly non-completion, it is an important responsibility to be observed by all research postgraduate students.

Response category	Masters students		Doctoral students	
	Nf	%nf	nf	%nf
Satisfactory	52	86.7	50	83.3
Not sure	4	6.7	8	13.3
Unsatisfactory	4	6.7	2	3.3
Total	60	100	60	100

Table 5.56 presents the responses of supervisors with regard to the level of support and cooperation their students exhibited in the supervision process. A large majority of the supervisors, precisely 52 out of 60 representing 86.7 percent in the case of masters students, and

50 out of 60 (83.3 percent) in the case of doctoral students, were satisfied with their students' level of support and cooperation. Less than five percent of the 60 respondents were dissatisfied. This therefore implies that with the exception of a few isolated cases of lack of support and cooperation, both masters and doctoral students offered the necessary support and cooperation expected of them to the satisfaction of their supervisors.

5.4.6 RESEARCH OBJECTIVE SIX: FACTORS RESPONSIBLE FOR EXTENDED COMPLETION AND NON-COMPLETION AMONG POSTGRADUATE STUDENTS AT THE UNIVERSITY OF GHANA

5.4.6.1 Introduction

Following from the use of the mixed methods approach for this study, a number of factors have been identified from literature review, analysis of quantitative data obtained from questionnaire, documentary analysis through the review of case files, and analysis of data obtained through interviews. The discussions would focus on factors responsible for extended completions, followed by factors responsible for non-completion or drop-out situations. But before following this order of presentation, the following comments by one of the interviewees provide evidence of extended and non-completions during the period under review:

Quote 5.1

My motivation to become Dean of graduate studies at the University of Ghana was to position UG as a leader in graduate output and enhance the capacity of students in proposal writing for grants. When I took over the deanship, my predecessor had ensured that the maximum periods allowed for the completion of graduate programmes of study were written into the regulations. Enforcing this however became difficult because senior members (academic staff of the university) who had registered for graduate programmes had exceeded the maximum period allowed. While some students were still pursuing Masters' programmes for 4-5 years, others registered for PhDs for 7 to 10 years. I brought this up at my first annual meeting with deans, directors and Heads of Departments to deliberate on this problem. The meeting agreed that the situation of all affected candidates should be examined on case by case basis, following submissions to be made by departments. Based on the submissions received from candidates, their

supervisors and heads of departments, amnesty was granted them and new deadlines were set by the board, where the board found the reasons deserving of such extensions. At the end of the grace period, all who had not complied had their registrations declared as having lapsed. It was a difficult but bold decision that brought some sanity and discipline into graduate studies.

The above quotations clearly demonstrate that graduate output was low because masters and doctoral students were spending very long durations on their programmes of study and many were dropping out.

5.4.6.2 Factors identified from the review of literature

The factors identified from the review of literature as responsible for extended completions were extensively discussed in chapter two of this study and included factors derived from Tinto's student-centred and institutional factors, Jiranek's three dimensional factors (student qualities and personal situations, supervisory and scholarly environment, research facilities and resources), and from studies by other researchers on postgraduate throughput such as students' entry qualification or background preparation, the students' choice of field of study, attendance mode (part-time or full-time), scholarships held, and technical difficulties in the course of research. The specific issues in Jiranek's theory that can lead to extended study durations include the student's academic ability, financial situation, language skills, interpersonal skills, ability to persist and avoid self-inflicted behaviours, student-supervisor relationships, and availability of materials, equipment and expertise for research. In line with McCormack's (2005) and Latona & Browne's (2001) classifications, an acceptable approach is to classify the factors determining time-to-completion into personal factors, institutional factors, and supervisory arrangements.

Personal factors related the student's personal characteristics and choices within his or her control, institutional factors include matters related to the academic environment (the student's academic performance, availability of facilities for research, adequacy and quality of supervisors), availability of student support services (finance, accommodation, counseling and guidance services, access to information, knowledge of regulations, procedures and systems), and supervisory arrangements relate to student-supervisor relationships and understanding the expectations of each person. The extent to which these factors impact on a student's capacity to persist defines the level of progress to be made on academic demands such as research and the time it takes to complete one's studies and research.

5.4.6.3 Factors identified from analysis of quantitative data

Based on the analysis and discussion of quantitative data, the following factors were identified as responsible for extended durations at the University of Ghana:

(a) Students' personal factors

Age at enrolment, marital status, employment status and the tendency to combining work with study are students' personal choices that lie within the student's control. Other personal matters include students' financial background, efforts made to acquire basic knowledge of the academic environment, become familiar with the regulations and procedures that govern the institutional environment and learn to set one's priorities right in an academic environment.

While age, marital, employment and study leave arrangements could be considered as minor issues and might not have any serious adverse effects on the student's progress, there seem to be some level of negligence on the part of the students to arm themselves with relevant information

as students. In this regard, the study revealed that many of the students did not attend the academic orientation organized by the University for fresh graduate students (see Table 5.50 in part (a) under Section 5.4.5.6), they were not familiar with the University's regulations and procedures concerning postgraduate studies (see Table 5.51 in part (b) under Section 5.4.5.6) and majority of their supervisors indicated that many of the students were not too familiar with the regulations and procedures regarding postgraduate supervision (see Table 5.52 in part (c) under Section 5.4.5.6). It is worrying to note that majority of doctoral student respondents for this study did not attend the academic orientation.

(b) Inadequate equipment and facilities for research and seminars

The results of analysis show that equipment and facilities for research particularly among masters students were inadequate. This was particularly serious in the case of science masters and doctoral respondents (see Tables 5.14 and 5.15 in parts (i) and (ii) under Section 5.4.5.2). The study also showed that facilities in the departments for graduate seminars were inadequate, especially among masters students (see Table 5.17 in part (iv) under Section 5.4.5.2).

(c) Supervision challenges

The areas of supervisory arrangements that might have resulted in prolonged study durations and completion for the students' were the following:

i. Late assignment of supervisors to masters students

While supervisors were assigned for doctoral students early in the first year of enrolment; however, that was not the case for majority of masters students (see Table 5.47 in part d.(i) under Section 5.4.5.5). Supervisors were approved for the masters students in their research year

which resulted in starting their research work late and probably left them with less than one year to complete their research work and write a thesis for examination and possible graduation.

ii. Delay in approval of thesis topics for students

Thesis topics were approved by departments for majority of the doctoral respondents in their first year of enrolment but not for masters students (see Table 5.49 in part e.(ii) under Section 5.4.5.5). Although, this is a regulatory requirement, delay in approving thesis topics for the students meant that they could not start their research work on time.

iii. Inability of students to honour their delivery promises and be available for guidance

Although majority of students received the support and cooperation of their principal and co-supervisors, they failed to reciprocate this gesture to their supervisors. Majority of the supervisors indicated that some of their masters students were not available for guidance and were not keeping to the schedules agreed with them (see Tables 5.54 in part (e) under Section 5.4.5.6; and 5.58 under Section 5.4.6.5). The students' inability to make themselves available for guidance as regularly as expected by their supervisors could be attributed to combining work with study without striking the appropriate balance of the two to enable them have sufficient time to interact with their supervisors.

iv. Inadequate time for supervision due to low staff-student ratio and heavy teaching load

Majority of supervisors claimed they did not have sufficient time for supervision due to heavy teaching schedules (see Table 5.21 in part b.(i) under Section 5.4.5.2). This implies that most students were not meeting their supervisors as regularly as required to enable them make progress on their research and thesis.

v. Difficulty in following supervision plan set with students

It was encouraging to note that a good number of supervisors set supervision plans of work with their students. Unfortunately, most of them were not able to follow the supervision plans of work agreed with their students and most of the students were not available to their supervisors for guidance (see Tables 5.40 in part d.(ii) under Section 5.4.5.4 and 5.44 in part b.(ii) under Section 5.4.5.5). Since the plan represents the road map to research success, difficulty in following it meant difficulty in making progress on research and thesis writing for the students, resulting therefore in much longer time spent on aspects of the research trajectory than it should have been. It also follows that most supervisors and heads of department would find it difficult to monitor progress being made by the students to keep them working on their research and theses and be able to advise where necessary.

(d) Inadequate financial support for postgraduate research

This was perhaps one of the major challenges for the respondents as majority of them did not obtain funding from sources within the University, but rather from sources outside of the university such as government bursaries, sponsorship from their employers, educational loans, and from their private sources (see Tables 5.11, 5.12 and Fig. 5.9 in part a.(i) under Section 5.4.5.1). No meaningful progress can be made in research without funding and a student without money cannot take good care of himself or herself, let alone conduct research (Bird and Crawley in Haselgrove, 1994). The results point to the fact the University had inadequate sponsorship opportunities or sources of funding for research.

Majority of supervisors were of the view that funding for students research work was woefully inadequate (see Table 5.13 in part a.(ii) under Section 5.4.5.1), and they were not satisfied with efforts by the University to provide funding for postgraduate students' research or facilitate access to other sources of funds by attracting funding from other sources for their benefit (see Table 5.22 in part b.(iii) under Section 5.4.5.2).

(e) Lack of capacity to conduct research scientifically

Supervisors' assessment of their students' capacity and skills for doing research revealed very alarming responses. The supervisors were of the view that their students were weak in research and thesis writing skills. The areas in which students were considered to be weak are outlined in Table 5.53 in part (d) under Section 5.4.5.6). Given the seriousness of the weaknesses, the students could not have completed their research and thesis on time even if their supervisors offered good quality supervision.

(f) Poor level of theoretical preparation

Students rated their level of theoretical preparation through the quality of teaching they received during their course work preparation as highly satisfactory. On the contrary, their supervisors rated their students' level of theoretical preparation as unsatisfactory (see Table 5.43 in part (b) under Section 5.4.5.5). One is inclined to accept the supervisors' assessment since, as supervisors, they were in a better position to interact with the students more closely than other faculty. Their assessment provides further evidence of weaknesses in postgraduate students, especially masters students.

(g) Handling thesis examination and examination processes

The method used to dispatch thesis to external thesis examiners was not acceptable to most of them. Instead of hard copies sent to them by courier, most external examiners preferred to be sent soft copies of the thesis for assessment (see Table 5.28 in part b.(iii) under Section 5.5.4.3). Assuming that the dispatch process was cumbersome to them (having to carry heavy thesis from courier along with them), that would definitely result in some loss of time in returning examined theses.

Internal examiners were not happy with the level of remuneration for examining theses and most of them were also not happy that in spite of the low level of remuneration, they were not being paid promptly (see Table 5.24 in part c.(ii) under Section 5.4.5.2). A good number of the internal examiners preferred to be paid cash instead of cheques (see Table 5.30 in part b.(iv) under Section 5.4.5.2). These concerns coming from examiners were likely to affect the examiners' interest and motivation for examining theses well and promptly.

(h) General lack of motivation for thesis supervision and examination

Quite a significant number of supervisors and internal examiners were not satisfied with the level of remuneration being paid them for supervising research and examining theses. This situation of dissatisfaction was particularly true of internal supervisors (see Table 5.23 part c.(i) under Section 5.4.5.2) and thesis examiners who had little interest in accepting supervision and thesis examination responsibilities. This situation might have affected the quality of supervision and also resulted in theses not being assessed and returned on time to enable students graduate on time.

5.4.6.4 Factors identified from review of extended masters candidature case files

Ten extremely delayed cases of masters candidature comprising one science and nine humanities candidates were considered by the board of graduate studies at the University of Ghana in August 2010 as "exceptional cases" requiring urgent action to avoid further extension of candidature.

Table 5.57 Summary of data obtained from delayed masters candidature case files								
Case No. (1)	Date Enrolled (2)	Expected Sub. Date (3)	Thesis sent to Dept (4)	Dept to graduate school (5)	Thesis to graduate school (months) (6)	Extended Duration (Months) (7)	Date thesis Result Determined (8)	Entire Cand. duration (months) (9)
ME/001	2004	2006	-	2009	-	36	Sep. 2010	72
ME/002	2004	2006	-	-	-	-	Sep. 2010	72
ME/003	2005	2007	-	-	-	-	Sep. 2010	60
ME/004	2005	2007	Jan 2009	Jun 2009	6	24	Sep. 2010	60
ME/005	2005	2007	Aug 2008	Jun 2009	10	24	Sep. 2010	60
ME/006	2005	2007	Sep 2008	Jun 2009	9	24	Sep. 2010	60
ME/007	2006	2008	-	Jul 2009	-	12	Sep. 2010	48
ME/008	2006	2008	Dec 2008	Jun 2009	6	12	Sep. 2010	48
ME/009	2006	2008	Sep 2008	Mar 2009	6	8	Sep. 2010	48
ME/010	2003	2005	-	Aug 2007	-	25	Sep. 2010	84

The cases were singled out for consideration because of the long delay in getting a third assessment report from the examiners. In other words, each of the ten cases had two thesis assessment reports only instead of three. These cases were used in this study as evidence of delayed masters candidature. A summary of each of the ten cases is attached as Appendix 6.

(a) Causes of extended masters candidatures based on the review of case files

The case file data in Table 5.57 brought up interesting revelations that explains the overly prolonged masters candidature durations. These include long extension durations taken by

candidates to submit their theses to their heads of department ranging between eight to as long as 36 months, delays on the part of departments in submitting the theses to the graduate school for examination ranging between six to ten months, delay in determining thesis result due to prolonged examination durations. In the particular case of extended durations, three of the case files recorded 24 months extension, two recorded 12 months, two recorded 25 and 36 months respectively and the shortest extension duration was eight (8) months. The end result was that masters candidates who should have completed their programmes within 24 months, ended up doing so within durations ranging between 48 to 84 months, thanks to the granting of amnesty to affected candidates by the board of graduate studies.

5.4.6.5 Factors identified from review of extended doctoral candidature case files

Data obtained from the files of fifteen doctoral candidates with extreme cases of extended candidature selected from doctoral extension candidates who graduated within the period 2001-2011 can be found in Appendix 7. The cases were numbered DE/001 to DE/015 to conceal the identities of the past students. From the case files, each student's particulars and specific stages, events and times of occurrence were identified and these are presented below in tabular form for ease of interpretation.

Case No. (1)	Enrol Age (2)	Work Status (3)	Enrol Status (4)	Study Prog. (5)	Extension (Months) (6)	Duration Thesis examined (months) (7)	Thesis Result (8)	final thesis (months) (9)	Entire Cand. duration (months) (10)
DE/001	40	Lecturer	PT	H	24	24 ; 28	R	12	161
DE/002	41	Lecturer	FT	H	6	24	P	3	67
DE/003	44	Lecturer	FT	H	12	36	P	8	90
DE/004	56	Lecturer	PT	H	27	12; 8	R	2	120
DE/005	47	Lecturer	PT	H	0	13	P	3	80
DE/006	50	Admin	PT	H	0	10	P	4	78
DE/007	30	NA	FT	H	24	16	P	7	82
DE/008	46	Lecturer	PT	H	24	5	P	2	88
DE/009	48	Lecturer	PT	H	48	5	P	3	113
DE/010	38	Lecturer	PT	H	24	5	P	3	91
DE/011	44	Research	FT	S	28	6	P	5	72
DE/012	39	Research Officer	FT	S	24	12	P	36	106
DE/013	37	Lecturer	PT	S	24	5	P	5	96
DE/014	33	Medical	FT	S	24	11	P	1	91
DE/015	45	Research Officer	PT	S	12	13	P	3	91

Legend:
Case No= Case file identity; Enrol. Age = age of student at enrolment; Enrol Status = Part time (PT) or Full Time (FT) enrolment; Study Prog. = S (science student) or H (humanities student); Thesis Result = P (pass) or R (referral); Final Thesis = time taken by student to submit final corrected copy of thesis for graduation.

These included date of enrolment, expected date of submitting thesis (normal study duration), actual date of submitting thesis for examination, extended duration, date thesis result was determined, thesis result, date of re-registration if thesis was referred, date of re-submitting thesis for re-examination, date of oral defense, date re-examined thesis result was determined, thesis examination duration, period within which final corrected thesis was submitted for graduation, candidature duration, sponsorship information, and reasons for taking extension and delay in

graduation. The extended candidature cases summarized above consisted of nine part-time and six full-time candidatures. At the time of enrolment, six (6) candidates out of the fifteen cases were between 30-39 years; seven (7) candidates were between 40-49 years; and two (2) candidates were 50 and above. Occupational profile of the fifteen cases as obtained from the student files were ten (10) university lecturers, three (3) research officers, one (1) university administrator, and one (1) unemployed. Of the fifteen cases, only two submitted their theses on time. The summarized profiles of the candidates are provided in Table 5.58.

(a) Causes of extended doctoral candidatures based on the review of case files

From Table 5.57 above, various instances can be identified as the causes of delayed candidature for affected doctoral candidates.

i. Causes related to personal characteristics: age, employment status, and study mode

The following factors (themes) can be identified from the case file data in Table 5.58.

Theme 1:

Age of some of the affected candidates: A minor observation which is debatable relates age of affected candidates. For instance, 10 of the 15 candidates were 40 years and above at the time of enrolment. Though this is considered a minor observation, sociological and psychological theories establish an inverse relationship between ageing and learning; therefore this observation ought to be taken seriously.

Theme 2:

Combining work with study and inability to manage time: All the affected candidates were in full time employment at the time of enrolment and might have continued on full time during their doctoral studies, a trend that has been observed earlier in this chapter as a strong reason for students' inability to devote adequate time for their studies.

ii. Causes related to extended candidature durations, thesis submission, examination, determination of thesis result

The main causes of extended candidatures identified in from of themes from the data available in the case file reviews include:

Theme 1:

Long extension durations in which case most of the affected candidates had 24 months of extended study durations and as long as 27, 28 and 48 months in some cases.

Theme 2:

Thesis examination duration lasted between 5 to 24 months with most of the affected cases taking more than ten months to complete examination. Closely linked to this factor is the nature of thesis result (passed or referred theses).

Theme 3:

Conditions associated with theses referral: The regulations provide under Section 23.6.4 that the candidate be permitted to re-submit a corrected thesis for re-examination. In this review, there were two cases of referral which resulted in one of the theses being examined within 24 months and re-examined within 28 months on separate occasions, and the second one within 12 months and re-examined within 8 months. This situation resulted in overly prolonged candidature durations for each of the candidates.

Theme 4:

Delay in submission of final corrected thesis: Submission of final corrected copies of theses after determination of results for graduation was done by most of the candidates within six months except in two cases of 12 and 36 months duration.

5.4.6.6 Factors identified from analysis of qualitative data

Interviews conducted for heads of department and students' responses to open-ended questions revealed a number of reasons or causes of extended candidature among postgraduate students. The interview responses and open-ended statements point to specific causes which were analyzed and grouped into themes for ease of reference, understanding and relevance to the objectives of the study. While some of the comments related directly to specific themes, others contained a combination of issues that could best be put under separated thematic areas. The following themes were drawn from the statements and supported by each of the statements as follows:

(a) Lack of/inadequate equipment and facilities for research

Students had difficulties in getting the necessary equipment and facilities to conduct their research as scheduled. It was also reported that departments lack office space for their students to work from in order to be closer to their supervisors. These sentiments were contained in the following comments from a doctoral science student and a head of department:

Quote 5.2

I experienced difficulty in accessing some inventories so I had to order from the US through a friend because e-payment from here (Ghana) was unsuccessful. This led to my inability to get materials needed for research on time and late completion/submission of my theses.

Quote 5.3

We lack research facilities for postgraduate work; (and also) office space for postgraduate students where they can stay for easy accessibility by supervisors.

When asked to indicate the equipment and facilities that were either lacking or inadequate, the past heads mentioned reagents, ICT facilities such as well-equipped computer laboratories for graduate students, resources and equipment especially for students in the field of remote sensing and geographical information systems (GIS), well-equipped research laboratory, qualified technical staff to support supervisors and office space and accommodation for research postgraduate students.

(b) Departments delayed in approving thesis topics for students

This was a common reason among masters students for not being able to start their research work and thesis writing early enough to enable them submit their thesis on time, necessitating the need for extended study duration. A student put this concern bluntly as follows:

Quote 5.4

We were not given approval in time for our topics to enable us start in good time and my thesis was not submitted to the post-graduate studies school early. Supervisors were assigned only after one has submitted his or her thesis topic and heads of department delayed students with the process.

This situation was also identified through the analysis of quantitative data (see Table 5.49). Though, the students appeared to put the blame on their heads of department, the latter were of the view that students were sometimes to be blamed for the delay in approving thesis topics. Commenting on some of the reasons why students could not complete their research and theses on time, a head of department stated as follows:

Quote 5.5

Most of the time, the students wasted the first semester of their second year shopping for a research topic. By the time they settle on one and get approval, they would have been in the second semester of the second year.

It is therefore clear from the above statements that some departments delayed in the approval of thesis topics for their students and that this situation sometimes contributed to late completion of research and submission of theses for examination.

(c) Limited time for supervision and examination of thesis

The results of quantitative data showed that internal examiners and thesis supervisors did not have sufficient time for thesis examination and supervision of the students due to loaded teaching schedules and other official commitments (see Table 5.18 on overloaded teaching schedule). Evidence from qualitative data supports the existence of this problem in most departments at the University of Ghana. The following comments from a head of department and a past doctoral student confirms this finding:

Quote 5.6

Some internal examiners took too long in doing the job, but sometimes you can't blame them considering the number of scripts they have to mark especially at the undergraduate level and the pressure on them to publish in order to get promoted or have their (employment) contracts renewed

Quote 5.7

Internal evaluation (of my thesis) was delayed; my first thesis came back after 3 years of submission (2007-2010). It was failed and I had to be re-admitted in 2010 and I submitted (again) in 2011.

According to a head of department, the problem is two-dimensional in the sense that whereas supervisors were partly to blame for lack of time to supervise their students, students were not making time to avail themselves for supervision. The head of department commented on the matter as follows:

Quote 5.8

I think a number of students were not abreast with time schedules for supervision with their supervisors and some supervisors didn't devote the required time and attention to students". Some of the students didn't abide by departmental time lines.

Some of the concerns of five past students about their supervisors' inability to devote adequate time for supervision were the following:

Quote 5.9

I finished my work but the supervisors couldn't finish reviewing it on time;

Supervisors were not reading draft chapters early enough

Supervisors were not correcting work drafts early for me to continue

The work delayed for a while because of difficulty in accessing the supervisor

As part of my program, I had to go to Kenya for three months and that delayed my thesis. Secondly, my supervisors were busy and couldn't review the thesis on time. There should be consequences for supervisors who don't read students' work in a timely fashion.

From the above analysis, it would appear that time for supervision was inadequate and that the blame cannot be put on students alone but also their supervisors. Some internal examiners delayed in examining theses due to the same reason of inadequate time resulting from too much of teaching and other academic commitments.

(e) Supervision, data collection and data analysis challenges

It has already been established in this study that there were problems with supervision arrangements such as late assignment of supervisors to students and inability of supervisors and students to work according to their agreed supervision plan of work (see Tables 5.47 in part d.(i) under Section 5.4.5.5 and 5.40 in part d.(ii) under Section 5.4.5.4) as well as student-supervisor

relationship problems. Further evidence of supervision challenges other than the above which some students encountered was obtained from qualitative data. These included isolated problems with team supervision, inconsistent comments from some supervisors and ill-health on the part of some supervisors. Three of such comments read as follows:

Quote 5.10

The inability of supervisors to work together as a team slowed progress with thesis.

My supervisor was at times not consistent with his comment; he says one thing and changes to another.

My principal supervisor was operated upon.

With respect to challenges encountered by some students concerning data collection and analysis, the issues involved relate to difficulty in accessing respondents, loss of data collected, distance involved in going to study site for field work, technical challenges involved in data collection and analysis, and starting data collection late caused by over-staying exchange programme. Comments gathered from nine students' responses in support of these challenges read as follows:

Quote 5.11

I could not meet most of my respondents because they were too busy by the nature of their work

I lost data just a week to the deadline and didn't have a backup, so I had to collect extra data to augment my initial data

I had to travel to Wa in the Upper-West Region for some of my input

I required extension due to problems encountered in the field

I had to ask for extension due to travelling outside Accra to visit my research area

I had to adjust from analyzing the speeches of three persons and that took time

I needed a lot of time to shoot and edit my video documentary. I was the first to have used video and photography as research tools/methods in Archaeology

Data collection took more time than I expected due to the difficulty in getting the required information which delayed data collection

I had to apply for extension because I went on an exchange program abroad and was unable to collect my data on time.

The impression one gets from the above comments is that a number of students encountered problems with data collection or field work which delayed their research phase and prevented them from completing and submitting their theses on time, leaving them with the only option of extending their candidature durations.

(f) Combining work with study

Quantitative data (see Tables 5.5 under Section 5.2.1.6 and 5.6 under Section 5.2.1.7) indicate that majority of masters and doctoral candidates were employed at the time of enrolment in their programmes. Whilst this is allowed by Universities especially at the postgraduate level, the challenge has been the student's own discretion about how to manage and maximize time for work and study. In this regard, the problem stems from students working full time and studying full time at the same time. Where they studied on part-time, especially in the case of doctoral students, the demands of the job make it difficult for them to end up working full time rather than on part time. Comments by three past students on their experiences regarding combining work with study were the following (individual comments put together):

Quote 5.12

My job as a headmistress was also very demanding.

Although I was officially on part-time study leave I didn't have free time assigned to do the thesis, so I combined full-time work and periodically did the work on part-time.

I was combining the work with my job and numerous domestic commitments.

The above statements represent personal confessions of the students' own actions that resulted in some form of challenge for them and therefore prevented them from completing their research works and submitting their theses on time, with the consequence of delayed or extended completion.

Most of the confessions made by the past postgraduate student respondents were confirmed by past heads of department during interviews. Commenting on the matter, four heads of department indicated that:

Quote 5.13

Most graduate students being adults work to provide for themselves and their dependants, this makes it difficult for them to concentrate on their academic work.

Students with financial problems were engaged in full time or part time employment, and it appears some students wanted (do it) to guarantee themselves reasonable job security on completion of the programme.

Most of our PhD students happen to be studying on part time and among them, I know one who lectures in the department and in other universities. The major challenge was how to challenge such students not to lose focus as a result of other responsibilities.

The main problem was with students not working hard enough on their theses because they were working elsewhere.

The above discussion establishes that most graduate students were not able to complete their research and thesis on time due to their inability to manage their time efficiently to suit working and studying. A new phenomenon that has emerged from the point of view of heads of department is that some students were forced to continue to work full time to secure their already existing jobs, others did so to meet their financial needs while some others did so simply because they failed to set their priorities right.

(g) Miscellaneous challenges encountered by students

Besides personal challenges for students such as inadequate funds for personal care during studentship, and family demands especially on students who were married, qualitative data from students responses revealed other issues such as ill-health, personal arrangement and residing far away from institution of study. Some of the respondents commented on their personal challenges as follows:

Quote 5.14

I took extension due to ill health and family demands, I had a surgery.

In my department we had to do one year of clinical practicum, hence I had to get a year's extension to arrange this and complete it.

I was stationed in a very deprived area where I had difficulty in accessing good libraries and internet services.

The lesson from the above discussion is that students encounter personal problems during their candidature. The challenge is how students should handle these personal issues so that they do not escalate into serious problems with adverse consequences on their ability to complete their studies on time.

5.4.6.7 Factors responsible for non-completion among masters and doctoral students

The factors considered to be the causes of non-completion in this study were identified from the results of analyzed qualitative data derived from interviews, open-ended responses and review of doctoral candidature drop-out cases.

(a) Factors identified from qualitative data analysis

Masters and doctoral respondents gave a number of reasons why the postgraduate students dropped out of their studies at the University of Ghana. The reasons given by the respondents included supervision challenges, financial difficulties, decision to get into other lucrative ventures, pressure from employers to choose between work and study, poor performance in course work examinations (applicable to masters' students only), frustrations from supervisors and family or domestic challenges.

Interviews with past heads of department also confirmed existence of drop-out cases among postgraduate students. Specifically, six out of the ten heads of department interviewed acknowledged instances of drop-out or non-completion in their departments. The instances or reasons included inability to complete data collection because of working and studying at the same time, lack of capacity to undertake doctoral studies, misplaced priority, student-supervisor conflicts, and financial challenges.

The following themes which represent causes of non-completion among postgraduate students were derived from the qualitative responses:

Theme 1:

Supervision or supervisor challenges such as poor student-supervisor relationship leading to misunderstandings, conflicts and frustrations for affected students.

Theme 2:

Students encountered financial difficulties arising from poor financial background, and inadequate sponsorship opportunities or sources of funding for research.

Theme 3:

Data collection and data analysis challenges such as inability to complete data collection because of working and studying at the same time.

Theme 4:

Personal (student) challenges in the form of family constraints, misplaced priorities such as decision to get into other lucrative ventures, employers' inability to grant students study leave, and poor performance at the course work stage in the case of masters' students.

Theme 5:

Students have weak research methods and thesis writing skills resulting in lack of capacity to undertake research at the masters and doctoral levels.

i. Discussion of themes identified as causes of non-completion

Views on these themes have been expressed by past postgraduate respondents in their responses to open-ended questions in the questionnaire, past heads of departments, supervisors and past thesis schedule officers as follows:

Theme 1: Supervision challenges:

The specific issues that resulted in students dropping out of their programmes included poor student-supervisor relationships which tend to slow progress on the students' research. Unresolved student-supervisor relationships lead to misunderstanding and conflicts leaving the student frustrated and withdrawn from the programme. Commenting on the negative consequences of poor student-supervisor relationship, one head of department stated that:

Quote 5.15

Conflicts or misunderstanding between supervisors and students sometimes arises and students drop out due to their inability to work with such supervisors.

From this statement, it would appear that affected students do not get the support of their heads of department or other responsible officer hence they are forced by the circumstances to drop-out. The fact is that except in rare cases, students who drop out would normally not give prior notice. On this matter, another head of department sympathized with students as follows:

Quote 5.16

They (student drop-outs) just drop out, and you never see them again to find out why.

Theme 2: Financial difficulties

Most postgraduate students were unable to get financial support for their studies due to inadequate sponsorship opportunities or sources of funding to meet the usually high cost of research especially in the sciences. Three of the common statements made by students on the issue of funding and financial challenges they encountered were as follows:

Quote 5.17

I had to ask for extension due to lack of funds to conduct field research in good time and late return of results for samples sent abroad for analysis.

My study duration was extended because I needed to source help in terms of materials and financial support.

I could not complete on time because I had to start working in thewhen my father had a fatal accident and could no longer assist me.

From the students' comments, the financial challenge was the cause of extending study duration for two respondents, and the third case depicts the plight of a needy student who ran into financial difficulties in the course of studies due to a break in the parental support.

Theme 3: Challenges with data collection and data analysis

These challenges involve students' inability to complete collection of data for various reasons the major one being lack of time, supervision problems, and lack of funds for field work. This suggests that some of the factors that result into non-completion can fuel other problems that militate against students' ability to continue with their studies. A typical example of such a situation could be deduced from the following comment by a head of department to the effect that financial difficulties can sometimes push students to work for a while to make some money but are never able to come back. According to the head of department:

Quote 5.18

Students couldn't complete data collection because they were working; sometimes students get employed in their thesis year and drop-out.

Theme 4: Personal (student) challenges

Examples of personal challenges reported in qualitative data included family constraints, effects of misplaced priorities such as decision to get into other lucrative ventures, employment challenges, inability to pass the required credit units for progression to research year caused by poor academic performance (applicable to masters' students only) which lead to compulsory withdrawal by the University. Poor academic performance may be traced to poor financial situation, marital and domestic challenges and pressures that conflict with studies, and lack of capacity to undertake doctoral studies. Citing some instances of postgraduate students with weak background and those who lack focus and suffer the consequences of misplaced priority, a past head of department indicated that:

Quote 5.19

In the PhD category, two of the students in my department were incapable of pursuing a PhD even though they had sufficient background qualification. One other student was simply not focused and consistently expended his energies on other things (moonlighting) instead of completing his research.

Lack of focus or the tendency to be driven in misplaced priorities may be due to the absence of a research work plan especially in the case of doctoral students.

Theme 5: Lack of research methods and thesis writing skills

Thesis supervisors clearly pointed out that postgraduate students were deficient in the necessary research methods and thesis writing skills (see Table 5.53 in part (d) under Section 5.4.5.6). The following statements from a supervisor in response to open-ended questions on the matter lays bare the extent of the problem: According to the supervisor:

Quote 5.20

Students come up with ill-formulated research topic and design. They pick a topic, and having started, find that they cannot get enough data to write. Some students find the thesis writing very cumbersome. Research topic not thought through, and lack of writing skills (They do not think through their research topics, and they lack writing skills). They seem to want a degree but unwilling to do what it takes to get the degree.

(b) Factors identified from the review of selected doctoral drop-out case files

Attrition or non-completion has been identified as one of the reasons why graduation figures continue to fall below enrolment figures at both undergraduate and postgraduate levels. In other words, while the same reasons for extended candidature durations may result in non-completions for students, there may as well be other factors that are peculiar to doctoral students by the nature of their study programme which involves maturity, independence, and a high potential for research.

Case No. (1)	Work Status (2)	Study Program / status (3)	Normal Study Duration (months) (4)	Extended duration (Months) (5)	Enrol. to drop-out duration (months) (6)	Reasons for extension and drop-out (7)
DO/001	Research	S (FT)	36	24	60	Lapsed candidature caused by overstaying exchange program; re-admission offer rejected
DO/002	Research	S (FT)	36	24	60	Equipment breakdown and combining part time teaching with study
DO/003	Lecturer	S (FT)	36	36	60	Project-based doctoral studies affected by change in project plans beyond candidate's control.
DO/004	Clergy & Lecturer	H (FT)	36	6	42	Unexplained reason simply referred to as "some challenging situations". Aged 51 at enrolment.
DO/005	Lecturer	H (PT)	60	0	36	Candidate aged 35 abandoned program mid-way due to heavy teaching load resulting in lack of progress
DO/006	Not available	H (FT)	36	24	60	Overstayed exchange program due to need for further training in research methods at host institution.
DO/007	Not available	H (FT)	24	24	60	Programme abandoned after one year into extension period in spite of approved change to part time.
DO/008	Not available	H (FT)	24	12	56	Candidate dropped out during extension period. No reason offered.
DO/009	Admin.	H (PT)	60	0	12	Candidate aged 51 at enrolment abandoned programme in the first year of enrolment to take up political appointment. Offer of re-admission after lapsed candidature rejected by candidate.
DO/010	Clergy	H (PT)	60	0	-	Candidate aged 46 at enrolment abandoned program in the first year possibly due to work-related challenges or lack of time.
DO/011	Clergy	H (PT)	60	0	60	Candidate aged 48 at enrolment wrote to department to withdraw from program without notifying graduate school after thesis had been examined and referred.
DO/012	Admin.	H (FT)	24	0	6	Candidate aged 64 at enrolment was to take some masters level courses before enrolling on doctoral study but abandoned programme midway. No reasons given.
DO/013	Admin.	H (FT)	36	12	120	Delay in submitting thesis for examination due to impasse between student and lead supervisor; thesis referred eventually and candidate asked to effect corrections for re-examination but failed to do so.

For the reasons stated above, case file reviews were limited to drop-out doctoral candidates to find out if there were other reasons for drop-out situations other than those identified for extended candidatures. The summary of the review as presented in Table 5.59 revealed most of reasons for extended candidature for masters and doctoral students. Interestingly, some of the reasons could be said to be more applicable or unique to doctoral students.

Personal characteristics and academic experience of thirteen drop-out doctoral cases which were extracted from information provided in Appendix 8, and numbered DO/001 to DO/013. The following themes were derived from the summary and these represent reasons for non-completion for the doctoral cases under review:

Theme 1:

Overstaying the approved duration for exchange programmes in institutions abroad resulting in lapsed candidature as in case numbers DO/001 and DO/006.

Theme 2:

Lack of time for studies caused by combining work with study and poor planning resulting in lack of progress as in case number DO/007 and DO/010.

Theme 3:

Lack of time due to heavy teaching load while on part time study resulting in lack of progress as in case number DO/005.

Theme 4:

Breakdown of equipment being used for research, the remote cause being inadequate equipment and facilities for research as in case number DO/002.

Theme 5:

Ageing problems at the time of enrolment as in case numbers DO/004 and DO/012.

Theme 6:

Inability to correct and re-submit a referred thesis for re-examination as in the case numbers DO/011 and DO/013.

Theme 7:

Inability to harmonize duration of doctoral research funded by and tied to projects with project duration and policies as in case number DO/003.

Theme 8:

Unresolved student-supervisor relationships as in case number DO/003.

Theme 9:

Unexplained circumstances and inability on the part of students to communicate difficulties being encountered as in case numbers DO/004, DO/008 and DO/010.

It should be noted that in all cases of lapsed candidature or non-completion, the graduate school offered the affected candidates remedial options such as applying to be considered for re-admission into the programme but the candidates failed to take up the recommended remedial opportunities.

5.5 CONCLUSION

All of the methods used to collect data for this study, namely, questionnaire, interviews and documentary reviews provide ample evidence of extended completion durations and non-completion among masters and doctoral students at the University of Ghana. The methods have revealed the same or similar factors believed to have contributed to extended completion

durations and non-completions at the University of Ghana during the period under consideration. The consistency and similarity in the findings from different approaches lends credibility to these factors as well as the findings to be derived from the analysis. The rest of the objectives and research questions that were not addressed through literature review have been addressed by scientific or evidence-based results.

In chapter six, a summary of the main findings from the data analyzed and discussed would be presented and appropriate recommendations would be provided. On the basis of the findings and recommendations, models for a more efficient postgraduate study delivery would be recommended for achieving high postgraduate throughput at the University of Ghana for adoption by other higher education institutions that may be confronted by similar situations in the future.

CHAPTER SIX

SUMMARY, FINDINGS AND RECOMMENDATIONS

6.1 INTRODUCTION

In this last chapter, a summary of the main issues dealt with in each chapter is provided as well as the limitations of the study. The findings of the study are also presented in relation to the objectives and the research sub-questions. In presenting the findings, effort would be made to relate the findings to each stakeholder in the efficient postgraduate study delivery initiatives. All the findings would then be summarized and presented under the subheadings of factors responsible for extended completion and those responsible for non-completion at the University of Ghana.

In the second part of the chapter, recommendations are made towards addressing the factors found to be responsible for extended completion and non-completion. The recommendations are also related to the research sub-questions and objectives in much the same manner as the findings are presented. Again, since the recommendations must be made for action, each recommendation reflects the role to be played by each stakeholder towards ensuring efficient postgraduate study delivery and for eliminating or reducing extended completions and non-completions among postgraduate students at the University of Ghana. A statement of the main contribution the study has made to the theory and practice of educational management, as well as areas identified from the study for future research are also provided after the recommendations.

In the concluding part of this chapter, the findings and recommendations made are translated into models of postgraduate candidature that the University should adopt or adapt in order to realize the benefits of the findings and recommendations which are directed towards attaining efficiency in postgraduate study delivery for research postgraduate students for improving postgraduate throughput at the University of Ghana.

6.2 SUMMARY OF THE STUDY

The problem that this study set out to investigate was to identify challenges in postgraduate studies delivery at the University of Ghana which are responsible for extended completions and non-completions among research postgraduate students at the University of Ghana, and to recommend strategies for overcoming the challenges with the aim of enhancing throughput at the postgraduate level. To achieve this broad objective, the study started with a background survey about the concept of throughput, trends in higher education, factors that determine throughput trends in higher education, perceptions and information about the University. The research problem was stated and from it were derived the research sub-questions and the objectives of the study.

The review of literature for the study started in Chapter Two and was concentrated on meaning, significance, models, determining factors, global trends in postgraduate throughput and postgraduate candidature durations. The chapter delved deeper into the concept of student throughput and its significance in higher education. To facilitate the discussion of throughput determinants in higher education, Tinto and Jiranek's models of student throughput were discussed first. Global perspectives of student throughput covering trends in American, UK and

Australia, Canadian, European and African higher education institutions were also reviewed. To conclude the literature review for the study, the researcher also discussed extensively models of postgraduate candidature durations drawing on structures and procedures in a number of reputable Universities world-wide and summed up postgraduate candidature durations into eight major and common steps.

In Chapter Three, the researcher reviewed literature in the area of postgraduate programme delivery and throughput trends at the University of Ghana and selected Universities in Africa. It traced the origins of postgraduate studies at the University of Ghana, discussed the structure of postgraduate programmes, responsibilities of key stakeholders in the postgraduate programme delivery, postgraduate throughput trends at the University of Ghana from 1952 to 2010, compared and discussed enrolment and completion trends of the University of Ghana with selected Universities in Africa as well as some commissioned studies in selected African Universities.

The methods used in collecting data for the study were discussed and justified in Chapter Four and in Chapter Five, data collected for the study was presented, analyzed and discussed in relation to the research sub-questions and objectives. A greater part of Chapter Five reviewed the extent to which stakeholders played their respective roles in ensuring efficiency in postgraduate studies delivery and presented the causes of extended completion and non-completion among postgraduate students at the University of Ghana. The findings and recommendations from the study were presented in Chapter Six with an indication of the study

limitations, contribution of the study to the theory and practice of higher education management, and areas for future research.

6.3 LIMITATIONS TO THE STUDY

This study, which has dealt with postgraduate throughput at the University of Ghana, is a baseline study, aimed at providing evidence-based findings of perceptions in the minds of stakeholders in postgraduate study delivery at the University of Ghana, including the University's external publics, and reports based on short-term or problem solving surveys carried out on the performance of the University at certain points in its 65 years of existence.

As clearly reflected in the title, the study focused on one public University, the oldest of all the Universities in Ghana. As a model and a mentor for the other public Universities in Ghana, it would be assumed that the findings and recommendations from this study could reflect the state of postgraduate study delivery in the other Universities which should justifiably benefit from the study. However, at the end of the study, the following four limitations were identified.

6.3.1 LIMITATION WITH RESPECT TO GENERALIZATION OF STUDY RESULTS

Although, all the public Universities in Ghana operate mainly the same structure, each University has a unique focus in terms of mandate, discipline, student population and mix, and staff strength. In that sense, it cannot be assumed that the results of this study can be wholly generalized as a representation of the situation in the other public Universities, let alone the private ones. In the main, it is limited to the University of Ghana, and could be useful to other higher education institutions in terms of theory, concepts and experiences emerging from the study that can serve as a guide for their future operations.

6.3.2 LIMITATIONS WITH RESPECT TO LACK OF DEPTH IN SOME AREAS OF INVESTIGATION

Limited by resources and time constraints, the researcher was not able to delve as deep as expected in a few areas of the study. In other words, it should be admitted that findings relating to some areas of the study could have been more comprehensive and therefore enrich the study more than they did without resource and time constraints. This was mainly due to the wide scope of respondents required for the study to obtain a holistic view of the problems being investigated. Without wide coverage of respondents, the study would have suffered another limitation with respect to its scope. For instance, one of the most visible challenges or causes of extended completions and non-completions among postgraduate students was that majority of postgraduate students lacked research and thesis writing skills and that their theoretical preparation was also weak. This represented the opinion of their supervisors and some heads of department. However, this finding could have been more meaningful if further investigation was done into what caused the weaknesses in the students. The questions that one might ask are: Were the research methods and thesis writing taught well to the students?; Were the students just too academically-ill prepared to understand the theories and practical aspects of research?; Did the lecturers have the right teaching facilities such as computer laboratories to teach practical aspects of research methods?. Frankly, but for the resource and time constraints, the researcher could have explored the issues a little further.

6.3.3 LIMITATIONS WITH RESPECT TO RESOURCES

Resource limitations for the study included inadequate funding and time. Concerning funding, the researcher could not obtain funding for the study within the first two years although the employer had approved of the study by granting the researcher part-time study leave. Under

such condition, tuition fees for the first two years of the study, travel from Ghana to the University of South Africa for supervision, and cost of field work were unbearable at the initial stages of the study. In the third and fourth year, the University of South Africa awarded postgraduate bursary for the study, and in the fourth year, the researcher was also awarded partial funding by the University of Ghana-Carnegie Next Generation of Academics in Africa Project on the basis of relevance of the study to the University of Ghana. The study could have progressed more speedily than it did if funding had come right from the beginning.

The other resource limitation was time devoted to the study largely due to part-time study coupled with full-time administrative work, which brought so much inconvenience to the researcher.

6.3.4 LIMITATIONS WITH RESPECT TO PERIODIZATION OF STUDY

This is a minor limitation given that most studies are usually situated within a specific time period to ensure its relevance. This study reviewed the state of postgraduate study delivery during the period beginning from the 1999/2000 to 2009/2010 academic year (ten-year period). Although, many of the challenges and issues that emerged from the study still persist, the findings from the study cannot be considered as representing the current state of postgraduate study delivery at the University of Ghana. Certain interventions must have taken place during the four years of study which were not covered in this study.

6.3.5 LIMITATIONS WITH RESPECT TO ACCESS TO INFORMATION

Most throughput studies made use of students in active candidature which should normally make it relatively easier to collect data from them at one place or to organize focus group discussions.

The researcher made use of students who had completed their studies and were not so much attached to their institutions at the time of the survey. The researcher encountered the initial problem of collating the correct contact addresses, telephone numbers and email addresses from individual files and databases available at the graduate school. In most cases, the students had changed their addresses (including even email addresses) and these situations posed serious challenges at the data collection stage. The second issue about data collection was the difficulty in getting past students to agree to complete questionnaire after all that they went through during their studies. It took a lot of effort, persuasion and use of multiple approaches to gather data from the past students in particular.

Obtaining information from relevant offices in the form of statistical data was also problematic due largely to the inability of many of the departments or offices to organize data in a manner that is readily available for use by the researcher in order to compare current trends with what pertained during the period considered for the study to make relevant analysis and conclusions. Some of the areas where it was difficult to obtain information were statistics on the University's annual budgeted amounts for postgraduate research and fellowships and amounts actually received from government over a ten-year period, amount of government bursaries and thesis grants received from government for disbursement to research postgraduate students between 2000 and 2010, just to mention a few instances.

6.4 FINDINGS FROM THE STUDY

6.4.1 INTRODUCTION

Findings from the study were derived from literature review, quantitative data, qualitative data and are presented in this Chapter according to how each finding addressed the research sub-questions and objectives for the study. As indicated earlier in Chapter One, the following objectives or sub-questions, namely, understanding the concept of student throughput and its determining factors; models of student throughput trends and postgraduate candidature durations; postgraduate study delivery and throughput trends at the University of Ghana and trends in selected higher education institutions, and postgraduate study delivery and throughput trends at the University of Ghana and how these compare with trends in selected higher education institutions, were addressed through literature review in Chapters Two and Three. The rest of the objectives were addressed with data from quantitative and qualitative research, including case file reviews.

6.4.2 FINDINGS WITH RESPECT TO STUDENT THROUGHPUT AND ITS DETERMINING FACTORS

Through the review of literature, the study identified a number of definitions of student throughput. All the definitions have to do with completion or success in an academic programme be it at the national level (number of high school students who passed examinations in mathematics as against number who registered for the exams in the whole of Ghana), or within an institution (number of students who enrolled for a three year B.Comm degree in Accounting at UNISA in 2010 as against the number that graduated in 2013 at the end of the expected duration of the programme), or the length of time it takes students to complete a specific module, course or subject. The term was sometimes interpreted as those who passed in a

certain course as a ratio of those who did not (success-failure relationship). Four areas of convergence for all the definitions of student throughput were discovered and outlined in Chapter Two: a starting point and an end point, it is all about students' ability to complete their studies on time, the students should belong to or have a common identity; and is based on or determined by duration or quantity turned out. Any definition of student throughput must be situated in a specific context to make the right meaning. It is a dynamic concept and is gaining more importance in educational management because of rising student populations in most parts of the world and the need to rationalize the allocation of scarce resources in the education enterprise. Five areas of significance of throughput studies were identified from the literature (Section 2.3 of Chapter 2). The concept has been simplified by two relevant models developed by Tinto and Jiranek (see Section 2.4.1. to 2.4.4 of Chapter 2). The main factors identified from the literature as determinants of throughput situations were institutional factors (entry qualifications and selection criteria, academic environment, choice of discipline, staff-student ratio, student support services including finances, equipment and facilities for learning); supervisory arrangements; student or personal factors.

6.4.3 FINDINGS WITH RESPECT TO STUDENT THROUGHPUT MODELS AND TRENDS, AND POSTGRADUATE CANDIDATURE DURATIONS

One thing that has emerged about all the student throughput models and trends worldwide in the literature is that student throughput had been dwindling or on the decrease over time due to population dynamics, increased access to education, and economic hardship. Even the advanced economies had their share of experience at one point or the other. There were throughput challenges in American higher education institutions with the highest attritions rates in the humanities even as recent as 2000-2008, and at the postgraduate level, the main challenge has

been inadequate financial support (Nevill & Chen, 2007 cited in paragraph 9 under Section 2.6.2 of Chapter 2) and this called for serious interventions including the PhD Completion Project at the Council for Graduate Studies, which included among other things, a recommendation that ‘Completion and Attrition’ should be studied as a subject at the masters’ level to ensure that higher successes are attained at that level considered as the critical source for producing doctorates (see paragraph 11 in Section 2.6.2 of Chapter 2) . The trends and reasons for low throughput rates in the U.K. and Australian higher education institutions were no different. Low submission and completion rates were reported by HESA, McCormack, Winfred, Rudd, and other scholars and education statistical agencies (see paragraph 2 in Section 2.6.3 of Chapter 2). In Canadian higher education institutions, masters’ students dropped out after 4 years of learning, and doctoral students after spending 9 years on the programme resulting from free-choice and force-choice drop-out factors (see paragraph 2 in Section 2.6.4 of Chapter 2). In Europe, the seriousness of the situation compelled the Swedish government to institute interventions at the doctoral level with glowing reports of success (see paragraph 2 in Section 2.6.5 of Chapter 2). In Africa, the low throughput situation was even worse and efforts to salvage the situation are not making remarkable impact as they did in the developed countries due to economic challenges. The absence of a regional agency to be responsible for compiling throughput statistics resulted in fragmented individual country studies; however, studies by World Bank/UNESCO Task Force on Higher Education and Society, South African Regional Universities Association, CENIS, PHEA, CHET-HERANA, and individual efforts by Tettey, Sayed, Kruss and Badat, Mouton, Mutala, Kigotho and others brought very alarming but useful results (see Sections 2.6.6 and 2.6.7 of Chapter 2). Marginal successes were however chalked in

some parts of Africa, notably in South African higher education institutions, which has become a model for the rest of Africa.

Eight common stages in postgraduate candidature for efficient delivery of postgraduate studies and for on-time completion based on models in University of Oxford, University of Manchester, University of Toronto, Concordia University, Estonian Universities, National University of Singapore, University of Monash, University of New South Wales, Memorial University of Newfoundland, Norwegian University of Life Sciences, University of Cape Town, and the University of South Africa were identified in the literature. This intensive scanning of institutional models revealed interesting commonalities and solid systems for postgraduate study delivery (see Section 2.7 of Chapter 2.).

6.4.4 FINDINGS WITH RESPECT TO POSTGRADUATE STUDY DELIVERY AND THROUGHPUT TRENDS AT THE UNIVERSITY OF GHANA AND SELECTED HIGHER EDUCATION INSTITUTIONS IN AFRICA

Postgraduate study delivery at the University of Ghana is structured basically along the categories of programmes approved by the University. This means that the nature of delivery depends on the category of programme one enrolls into and these are non-research (taught) postgraduate masters programmes (offered without thesis), and research postgraduate programmes (offered with thesis), which may be masters or doctoral programme. Major stakeholders in the delivery of postgraduate studies at the University of Ghana comprised the government, industry and the private sector, management of the University, the University's graduate school, Faculties, Schools and departments, thesis supervisors and examiners, and postgraduate students themselves.

Postgraduate enrolment and output trends for the University of Ghana have been very unstable since the very first decade (1961-1971) of offering postgraduate studies. The University experienced a steady rise in enrolments in the second decade (1971-1981) but output figures remained low especially for doctoral studies (see Fig. 3.1a. in Section 3.5.3 of Chapter 3), then there was a drastic decrease in enrolments in the third decade (1981-1991) while increases were recorded in masters graduation figures but not for doctoral studies (see Table 3.6 in Section 3.5.5. and Fig. 3.3a. of Chapter 3). The fourth decade (1991-2001) saw an astronomical increase in masters and doctoral enrolment figures relative to the previous decades, output increased but with a huge gap compared to the quantum of increase in enrolments (see Table 3.7 and Fig. 3.4a. in Section 3.5.6 of Chapter 3), and in the fifth decade for this study (2001-2010), enrolment and output remained generally stable in the early part of the decade but rose steadily for both masters and doctoral studies in the later part (see Tables 3.8 in Section 3.5.7.1 of Chapter 3; and Fig. 3.5 and 3.7 in Chapter 3). Completion rates for masters students increased during the decade but decreased for doctoral students (see Fig. 3.7b. under Section 3.5.7.2 of Chapter 3). Over the five decades, completion rates were low in the first two decades but picked up from the second to the third decades, dropped again from the third to the fourth and picked up again from the fourth to the fifth decades up to 2010 (see Fig. 3.9 under Section 3.5.8 of Chapter 3).

Similar throughput trends prevailed in other public Universities in Ghana and in other African higher education institutions but with relative improvement in output for Universities in South Africa and University of Ibadan in Nigeria (Tettey, 2009; Cloette *et. al*, 2008).

6.4.5 FINDINGS WITH RESPECT TO THE DISCHARGE OF RESPONSIBILITIES BY KEY STAKEHOLDERS TOWARDS ENSURING EFFICIENT DELIVERY OF POSTGRADUATE STUDY AND HIGH POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA

6.4.5.1 Introduction

In this section, the findings with regard to how the Government, the University, the graduate school, departments, supervisors, examiners and students discharged their respective expected responsibilities towards ensuring efficient delivery of postgraduate studies to avoid extended completion and non-completions would be presented.

In defining the responsibilities of each stakeholder, the researcher noted that some of the responsibilities are common to more than one stakeholder. In other words, they are shared responsibilities. For instance, both the government and the University have a shared responsibility of providing adequate and qualified faculty, equipment and other facilities for the University, but the focus and extent of the responsibility for each stakeholder might be different. It has also been observed that the findings from both quantitative and qualitative data were in some cases very similar as would be seen in the ensuing summary of findings.

6.4.5.2 Findings with respect to how the government discharged its responsibilities

Government's responsibilities appraised in this study included the provision of equipment and facilities for postgraduate level teaching and research, provision of adequate faculty with capacity for postgraduate research and thesis supervision, and provision of funding for postgraduate studies.

(a) Inadequate equipment and facilities for postgraduate level teaching and research

Lack of equipment and facilities in tertiary institutions in general was mainly reflected in inadequate classrooms, laboratories and equipments, reading materials and ICT facilities in spite of major attempts made by government between 1994 and 1998 and the period thereafter up to 2010.

Notwithstanding the contributions made by government during these periods, the study found out that equipment and facilities for postgraduate level teaching and research were inadequate. The deficiency in the provision of these facilities was reflected by the views of past postgraduate students, especially in the area of Science (see Tables 5.14 and 5.15 in Section 5.4.5.2 of Chapter 5). The inadequacy of equipment and facilities for research was also reflected in research supervisors assessment of the situation in departments (see Table 5.16 in part a.(iii) under Section 5.4.5.2 of Chapter 5), as well as inadequacy of facilities for postgraduate seminars (see Table 5.17 in part a.(iv) under Section 5.4.5.2 of Chapter 5).

Although, it was found out that the past masters' and doctoral student respondents were satisfied with the quality and quantity of reading materials available for their research work (see Tables 5.18 and 5.19 in part a.(v) and (vi) under Section 5.4.5.2 of Chapter 5), quite a substantial proportion of the supervisors (30 percent and approximately 27 percent for masters and doctoral research respectively) were not satisfied with the quality and quantity of good reading materials for their postgraduate students' research work (see Table 5.20 in part a.(vii) under Section 5.4.5.2 of Chapter 5).

(b) Inadequate number of qualified faculty for postgraduate research and thesis supervision due to government regulation of recruitment in the University

Although government does not directly recruit faculty for publicly-funded Universities, it regulates the appointment of faculty in terms of number and qualification through NCTE for purposes of salaries and other emoluments and for maintenance of standards in tertiary education. The government also has the responsibility of ensuring that the acceptable student-lecturer ratio is attained through a balance of number of faculty and student population, since this is particularly essential for postgraduate research and supervision (see paragraph 6 in Section 3.4.4 of Chapter 3).

This study established a situation of faculty saddled with too much teaching schedule that they could not devote sufficient time to supervise postgraduate research and theses (see Table 5.21 in part (b) under Section 5.4.5.2 of Chapter 5). Some heads of department also attested to the inability of some faculty to complete examination of theses on time due to the same problem (refer to Quotes 5.6 and 5.7 in part (c) under Section 5.4.6.6 of Chapter 5).

The finding from this study concerning overloaded teaching schedule for lecturers leading to inadequate time for supervision gives the impression that for well over a decade, the situation of low Student-Teacher Ratio in the public Universities still persists with its adverse consequences on teaching and research supervision in the Universities.

(c) Inadequate financial support from government for postgraduate studies and research

Government support in terms of funding of postgraduate studies and research comes in different forms. For the purpose of this research, government funding is limited to what goes directly to

students from the government, namely, government bursaries and thesis grant, and educational loans to needy students.

The study revealed a situation of inadequate direct financial support from government to postgraduate students for their studies and research within the period prior to 2010 in the sense that although majority of the students accessed government bursaries and thesis grants, many at the same time, relied on funding from their employers, personal finances, and educational loans to support their studies and research (see Tables 5.11, 5.12 and Figure 5.9 in part a.(i) under Section 5.4.5.1 of Chapter 5). This finding was further confirmed by the position of majority of supervisors that funding for their students' research work was woefully inadequate (see Table 5.13 in part a.(ii) under Section 5.4.5.1 of Chapter 5). It also agrees with the finding by the NCTE in its 1998 Technical Report that government was not capable of meeting its financial obligations to the tertiary sector which resulted in the recommendation that it was time to let students bear a substantial part of the academic cost (Paragraph 1 in part (a) under Section 3.4.2.4 of Chapter 3).

The conclusion therefore is that in spite of its contributions, government had not been able to completely resolve the equipment and facilities deficiency at the University of Ghana and probably in the other public Universities in Ghana.

6.4.5.3 Findings with respect to how the University discharged its responsibilities

The University's responsibilities towards ensuring efficient postgraduate study delivery and timely completion for its postgraduate students, which were evaluated in this study, include its efforts towards providing financial support or facilitating the provision of funding for

postgraduate research, provision of equipment and facilities for postgraduate students' research work at the departments, and motivating its faculty to supervise and examine postgraduate theses.

(a) Inability to attract adequate funding or to facilitate access to funding for postgraduate research

Provision of financial support to students is a shared responsibility just as it has been generally accepted world-wide that cost of education must be funded on cost-sharing basis. The University is expected to complement the efforts of other stakeholders by committing part of its internally-generated funds towards supporting its postgraduate research and making efforts to attract funding for its research at the postgraduate level. As indicated in Table 5.11 (in part a.(i) under Section 5.4.5.1 of Chapter 5), a few masters' and doctoral students were awarded the University of Graduate Fellowships on competitive basis. Supervisors were of the opinion that the University's ability to attract adequate funding or to facilitate access to funding for postgraduate research was not enough (see Table 5.22 in part b.(iii) under Section 5.4.5.2 of Chapter 5).

(b) Insufficient internal funds to complement government's effort to provide equipment and facilities for postgraduate students' research work in departments

Tertiary institutions in Ghana including the Universities had been mandated as far back as the 1990s to undertake activities that would earn them income as a way of complimenting the inadequate government funding (see paragraph 4 under Section 3.4.4 of Chapter 3). Considering the initial difficulties in generating income internally, 'Academic Facility User Fees' (AFUF) from fees collected from students were allocated to departments for procurement of equipment and facilities for teaching and research. Later, departments were to indicate their academic

equipment and facility needs in a departmental budget to be approved by the University to ensure efficient management of the University's scarce financial resources.

The study however found out that equipment and facilities for postgraduate research were inadequate especially for science postgraduate students (already cited in part (a) under Section 6.4.5.2 of this Chapter). This situation resulted in some students not being able to complete their research work on time and some heads of department attested to the existence of such situations (refer to Quotes 5.2 and 5.3 in part (a) under Section 5.4.6.6 of Chapter 5)

6.4.5.4 Findings with respect to responsibilities of the graduate school and how they were discharged

According to Addae-Mensah (2013), "co-ordination of research efforts in Universities has improved with the establishment of schools of research and graduate studies and research centres". This statement implies that schools of research and graduate studies are mandated to spearhead research efforts within a University in addition to co-ordinating the efficient delivery of postgraduate programmes.

Since issues about funding and provision of equipment and facilities for postgraduate have already been considered as joint responsibilities of the government and the institution, this section focused on findings with respect to how the graduate school discharged its role in ensuring that thesis supervisors and examiners were motivated to perform their duties efficiently and in a timely manner to ensure timely completion. Findings concerning how effectively the graduate school managed thesis examination processes.

Regulatory concerning policy on approval of thesis topics for students and number of supervisors to be assigned to students, which seemed to limit the authority of heads of department with respect to such responsibilities, would also be discussed as part of the findings that relate to the graduate school.

(a) Lack of motivation for faculty to supervise research and examine theses

There was a general lack of motivation for faculty to supervise and examine thesis due to their heavy teaching workload usually at the undergraduate level and low levels of remuneration for thesis supervision and assessment (see paragraph 2 under Section 3.4.5.2 of Chapter 3). There was the need to offer some attractive remuneration to thesis supervisors and examiners to enable them sacrifice some time of their heavy schedules to perform supervision and thesis examination duties.

The findings that most supervisors were not motivated enough to supervise and examine theses (see Table 5.23 in part c.(i) under Section 5.4.5.2 of Chapter 5) and that most internal examiners of thesis were also not satisfied with the level of remuneration they were offered for examining theses (Table 5.24 in part c.(ii) under Section 5.4.5.2 of Chapter 5) were therefore to be expected.

(b) Lack of efficiency with respect to management of the thesis examination process

Efficient management of the thesis examination process is an important integral part of ensuring early completion and return of examined theses. This study revealed a mismatch between the thesis delivery methods preferred by examiners especially external examiners. Whereas the examiners would have preferred soft copies of the thesis sent to them by email and the

assessment reports returned by email, they were being sent these by courier and postal systems which were sometimes slow to reach the examiners (see Table 5.28 in part b.(ii) under Section 5.4.5.3 of Chapter 5).

This situation coupled with the low level of remuneration and inability to pay examiners promptly (see Table 5.29 in part b.(iii) under Section 5.4.5.3 of Chapter 5) resulted in lack of interest or motivation to prioritize thesis examination. Another revelation from the study was that many of the internal examiners preferred to be paid either by cash or by cheque while majority of the external examiners preferred payment by bank transfer and by cheque (see Table 5.30 in part b.(iv) under Section 5.4.5.3 of Chapter 5).

6.4.5.5 Findings with respect to responsibilities of departments and how they were discharged

(a) Postgraduate students lacked capacity to conduct research and thesis writing skills

The study established that most postgraduate students lacked capacity to conduct research scientifically and write good theses (Tables 5.53, in part (d) under Section 5.4.5.5 of Chapter 5), and their level of theoretical preparation was weak (Table 5.43 in part b.(i) under Section 5.4.5.5 and Quotes 5.19 and 5.20 in part (a) under Section 5.4.6.7). This meant that some departments failed in their responsibility to help their postgraduate students to acquire the necessary theoretical preparation as well as research and thesis writing skills. This situation suggested that students with such weaknesses found it difficult to complete their research and thesis on schedule even if they had adequate funds for their research work.

(b) Thesis topics were not approved on time for most postgraduate students

The study revealed that some departments delayed in approving thesis topics for their postgraduate students (see Table 5.49, part e.(ii) under Section 5.4.5.5 and Quote 5.4 in part (b) under Section 5.4.6.6 of Chapter 5). The consequence of this situation was that students could not start their research work without the approval of thesis topics for them. In the particular case of masters students whose thesis topics were approved in the second year, time to conduct full scale research and write thesis would be limited, compelling them to go beyond their approved study durations.

(c) Supervisors were not assigned on time for most postgraduate students

Supervisors were not assigned early enough for a significant number of students (see Tables 5.47 and 5.48, in part d.(i) and (ii) under Section 5.4.5.5 of Chapter 5). The consequences of this situation are not different from that of late approval of thesis topics for postgraduate students stated above.

(d) Late submission of theses to the graduate school for examination contributed to extended candidature

This situation was identified with the ten past masters candidates who were granted amnesty by the graduate school because of incomplete theses assessment reports and long extended durations (see Table 5.57 under Section 5.4.6.4 of Chapter 5). The records indicated that departments delayed the submission of theses to the graduate school for examination for five of the ten candidates for periods ranging from six months to ten months (refer to Column 6 of Table 5.57). The late submission of theses by departments to the graduate school resulted in long extended durations (refer to Column 7 of Table 5.57) calculated from the expected date of submission

(refer to Column 3 of Table 5.57) to actual date of submitting their theses to the graduate school (refer to Column 5 of Table 5.57). The late submission of their theses no doubt contributed to the candidate's exceptionally long candidature durations ranging between 48 to 84 months (refer to Column 9 of Table 5.57).

In the case of doctoral students (see Table 5.58 under Section 5.4.6.5 of Chapter 5), although the records did not capture date of submitting theses by departments to the graduate school, there might be similar situations of delay on the part of some departments in submitting theses to the graduate school shortly after they had been received from students.

6.4.5.6 Findings with respect to responsibilities of supervisors and examiners and how they were discharged

(a) Findings with respect to the discharge of responsibilities by thesis supervisors

i. Some supervisors did not devote sufficient time to thesis supervision and examination

The study showed that a number of postgraduate student respondents expressed concern about the inability of their supervisors to devote sufficient time for their guidance in research work and thesis writing and even suggested that some form of punishment be instituted against such supervisors (refer to Quote 5.9 under Section 5.4.6.6 of Chapter 5).

This is a matter to be given serious consideration by the University since by the terms of their appointment, Faculty are expected to undertake supervision and assessment of thesis as part of their academic responsibilities. It therefore follows that supervision and thesis examination are as equally important as teaching and other academic duties. As a matter of fact, since

supervision and thesis assessment are time-bound, they ought to be given a high level of urgency, thus, deserving of extra remuneration aside of salaries.

ii. Conflicts among members of supervisory team affected progress of some students' research work

Some supervisors in team supervision arrangements sometimes fail to work together and this situation of disagreement or personal conflicts affect progress of students' work. Although, evidence from this work suggested isolated cases, there might be unknown or unreported cases of similar nature which departmental heads either failed to resolve or did not resolve on time resulting sometimes in lack of progress on the part of the student (refer to Quote 5.10 under Section 5.4.6.6 of Chapter 5).

(b) Findings with respect to responsibilities of thesis examiners and how they were discharged

i. Examiners delayed in examining theses and submitting assessment reports

The main reason for granting amnesty for determination of the ten masters candidature case files was the inability of examiners to submit assessment reports on the candidates' theses which left their examination dossiers with only incomplete assessment reports (see Appendix 6).

Calculating from the date students' theses were submitted to the graduate school for examination and the year of determining their thesis results under amnesty (date thesis result determined – column 8, minus date department submitted thesis to graduate school – column 6), the examination duration for the outstanding reports could be said to be not less than 12 months for 8 of the 10 affected candidates (see Table 5.57 under Section 5.4.6.4 of Chapter 5). Similar long thesis examination durations were revealed for majority of the extended doctoral candidature

case files (see Table 5.58 under Section 5.4.6.5 and Quotes 5.6 and 5.7 under Section 5.4.6.6 of Chapter 5).

The above situations resulted in long waiting periods for affected students after completing and submitting their theses for examination resulting in delayed completion for the students, as reported in Chapter One, thus confirming the findings of Ntiamoah-Baidu's consultative meeting with Heads of department in 2008.

6.4.5.7 Findings with respect to discharge of responsibilities by research postgraduate students

(a) Personal characteristics of some students and the choices they made affected their progress on postgraduate studies, research and completion

The study revealed that age, marital status, working and studying full time, poor financial status, inability to prepare oneself intellectually for postgraduate work in the areas of research and thesis writing skills and familiarity with academic and social regulations of the academic environment, were postgraduate students' personal choices that resulted in extended candidature durations. Apart from evidence from the literature about ageing and studying (cited in paragraph 7 under Section 5.2.1.4 of Chapter 5), it is difficult to make any direct inferences from quantitative and qualitative data about the effect of age on the respondents' completion ability. However, the observation that majority of the case files for extended doctoral candidatures were 40 years and above at the time of enrolment, might be given some serious thought (see Table 5.58 and paragraph (i) of Section 5.4.6.5 of Chapter 5). The ageing factor also manifested in some of the doctoral drop-out cases where at least five of the thirteen candidates were 46, 48, 51, 51, and 64 years at the time of enrolling on the doctoral programme (refer to Case Files numbered DO/004, DO/009, DO/010, DO/011, and DO/012 in Table 5.59 under Section 5.4.6.7 of Chapter 5). The

findings appeared to have confirmed the views of Thorndike, Knowles, Merriam, Martin *et. al*, and Wamala on ageing and learning.

(b) Most postgraduate students who combined studying with work were not able to devote adequate time for their studies

The situation had been very clearly revealed through quantitative data indicating that majority of the masters' and doctoral respondents were employed without study leave (see Table 5.5 and 5.6 in Section 5.2.1.7 and Quote 5.12 in section 5.4.6.6 of Chapter 5) and through qualitative data to the effect that nearly all the doctoral case files of extended completion were in full time employment at the time of enrolment (see Table 5.58 and paragraph 2 of section 5.4.6.5). Some postgraduate students were also unable to complete data collection because they were working as opined by some heads of department (refer to Quote 5.18 in Section 5.4.6.7 of Chapter 5). Others simply lacked focus or did not set the right priorities (refer to Quote 5.19 in Section 5.4.6.7 of Chapter 5).

(c) Students whose theses were either referred or failed took much longer time to re-register and complete their theses for re-examination

Through the review of case files, it was found out that candidates whose theses were referred by examiners because they did not meet approved standards had to be re-examined after the necessary corrections had been made, resulting in two examination durations for the thesis and prolonged waiting period for the student (see paragraph (ii) in part (a) under Section 5.4.6.5, and Quote 5.7 under Section 5.4.6.6 (c) of Chapter 5).

(d) Many postgraduate students were not able to adhere to supervision plans of work agreed with their students

Most of the postgraduate students, especially masters students, who extended their study durations did not adhere to the supervision plans agreed with their supervisors (see Table 5.54 in part (e) under Section 5.4.5.6 of Chapter 5) because they were not able to deliver assignments as promised (see Table 5.55 in part (f) under Section 5.4.5.6 of Chapter 5), they hardly availed themselves for guidance, and they did not devote adequate time for research and supervision as a result of combining full time study with full time work. Also, since the effectiveness of working according to plan depended on both supervisor and student, limited time on the part of their supervisors also affected the students' ability to make the plan work. From the foregoing, multiple reasons could be given for the inability of postgraduate students to follow supervision plans agreed with their supervisors.

(e) Some doctoral students overstayed the approved durations of their exchange programmes abroad

The situation was discovered in the review of doctoral drop-out case files numbered DO/001 and DO/006 (see Table 5.59 under Section 5.4.6.7 in Chapter 5). The purpose of sponsoring students on exchange programmes abroad is mainly to train the students in areas where the host institution has comparative advantage in a specialized area or to enable them undertake research in a special area of their research with the aim of speeding up their work and also for enhancing the quality of research. However, some students overspend their exchange programme duration due to a variety of reasons including veering of the objective of the exchange programme, change of originally agreed programme for the student on arrival at the host institution (sometimes due to language and other academic requirements of the host institution). The reasons for the two doctoral cases were not clearly outlined in their case files, however, one was

the need for the student to receive further training in research methods (refer to Case File numbered DO/006 under Section 5.4.6.7 of Chapter 5).

6.4.5.8 Findings attributable to both students and their supervisors

(a) Student-Supervisor relationship challenges affected progress of affected students

Qualitative data from the study revealed instances of strained working relationships between students and their supervisors. It is however difficult to attribute the cause of the conflict to either the student or the supervisor unless there is written or oral evidence of the causes, hence the reason for not classifying this finding as inability of either students or supervisors to discharge their responsibilities. Evidence from this study included the effect of conflicts and misunderstanding between supervisors and students resulting in non-completion (refer to Quote 5.15 under Section 5.4.6.7 of Chapter 5), and delay in the submission of a doctoral thesis for examination caused by misunderstandings between student and lead supervisor (refer to Case File numbered DO/013 in Table 5.59 under Section 5.4.6.7 of Chapter 5).

(b) Unexplained reasons for non-completion or drop-out situations

A few of such situations were discovered from the review of doctoral drop-out case files for case files numbered DO/004, DO/007, DO/008, DO/010 and DO/012 in Table 5.59 under Section 5.4.6.7 of Chapter 5, where no specific reasons were given or could be traced as the cause of dropping out. This finding is further supported by the view of a head of department that in most cases, the causes of drop-out were not known because such students might not usually give notice to enable heads of department obtain some information from them (refer to Quote 5.16 under Section 5.4.6.7 of Chapter 5).

6.4.6 FINDINGS WITH RESPECT TO FACTORS RESPONSIBLE FOR EXTENDED COMPLETION AND NON-COMPLETION AMONG RESEARCH POSTGRADUATE STUDENTS AT THE UNIVERSITY OF GHANA

6.4.6.1 Factors responsible for extended completion among postgraduate students

On the basis of both theoretical and empirical data gathered from this study, the causes of extended completion among masters' and doctoral students at the University of Ghana between 2000 and 2010 included the following factors which could be attributed to stakeholders in the quest for efficient postgraduate study delivery for high throughput:

(a) **Factors attributable to the Government**

The main causes of extended candidature or completion attributable to the Government of Ghana included:

- i. Inadequate equipment and facilities for postgraduate level teaching and research caused by the inability of government to allocate sufficient funds to address such resource needs of the University. This shortfall existed notwithstanding the projects and facilities provided during the period under consideration by the government.
- ii. Inadequate number of qualified faculty for postgraduate research and thesis supervision due to government control over the required recruitment quota for lecturers and research fellows.
- iii. Inadequate financial support from government for postgraduate studies and research as demonstrated by the gaps in the institutional budget and government funding and the level of government bursary and thesis grants disbursed to postgraduate students.

(b) **Factors attributable to the management of the University of Ghana**

The University of Ghana's complementary role to the Government fell below expectation and therefore resulted in:

- i. Limited institutional financial support from internally generated funds to support postgraduate studies and research and inability to attract funding from sources other than government or diversify the limited sources of funding available for postgraduate research to reduce over-dependence on the few available sources.
- ii. Insufficient internally generated funds to complement government's effort to provide equipment and facilities for postgraduate students' research work in the departments

(c) Factors attributable to the School of Research and Graduate Studies

- i. Lack of motivation for faculty to supervise research and examine theses caused by low levels of remuneration in the face of limited number of academic staff in relation to number of research postgraduate students.
- ii. Lack of efficiency with respect to management of the thesis examination process caused by lack of an efficient delivery and communication system between the School and thesis examination with regard to matters related to the examination process.

(d) Factors attributable to departmental lapses

Departments are the action spots for anything required of or by the student; thus, no actions can be taken by higher levels of authority in the University such as Faculty/School boards and the Board of Graduate Studies if they were not initiated or approved by departments. The following factors were identified in this study as causes of extended completion for which departments could be held responsible:

- i. Postgraduate students lacked capacity to conduct research and thesis writing skills (it is expected that departments have a responsibility to train their students in both theoretically and practically to build their capacity for conducting research).
- ii. Thesis topics were not approved on time for most postgraduate students resulting in late start of research work and inability to complete thesis on time.
- iii. Supervisors were not assigned on time for most postgraduate students. The consequences of this lapse are the same as stated in (ii) above.
- iv. Some departments delayed in submitting theses received from students to the graduate school for examination.

(e) Factors attributable to the thesis supervision and examination

Findings from this study also point to the fact that certain actions on the part of thesis supervisors and examiners contributed to extended completion durations for some students. These lapses included the following:

- i. Some supervisors did not devote sufficient time to thesis supervision and examination due to lack of time and motivation.
- ii. Examiners (particular reference to internal examiners) delayed in examining theses and submitting assessment reports due to the same problems of lack of time, motivation and also inefficient handling of the thesis examination process by the School of Research and Graduate Studies.
- iii. Conflicts among members of supervisory teams affected the progress of some students' research work and resulted in extended completion as the supervisors failed to resolve their differences at the expense of the students.

(f) Factors attributable to the research postgraduate students

- i. Personal characteristics of some students and the choices they made affected their progress on postgraduate studies, research and completion. These issues had to do with age and personal planning for postgraduate studies, employment, and choice of study mode.
- ii. Most postgraduate students who combined studying with work were not able to devote adequate time for their studies, a situation which resulted in extended completion.
- iii. Students whose theses were either referred or failed took much longer time to re-register and complete their theses for re-examination. Any student who went through re-registration to correct theses was bound to complete after his or her cohorts because of the extra time granted the student.
- iv. Many postgraduate students were not able to adhere to supervision plans of work agreed with their students. This is particularly true with work-and-study students who were hardly available to receive guidance from their supervisors.
- v. Some doctoral students overstayed the approved durations of their exchange programmes abroad sometimes due to change in host institution's arrangements or students' own decisions to the detriment of his or her studies.

(g) Factors attributable to both students and their supervisors

The study also found out the following issues that could not be attributed solely to one stakeholder in the postgraduate delivery process. These issues relate to:

- i. Student-Supervisor relationship challenges. This situation is normally caused by disagreement between the parties or an offending conduct from the student. Progress of students' work is affected in the process.
- ii. Some unexplained or unknown reasons for non-completion or drop-out situations as affected students just discontinue their programmes without any prediction.

6.4.6.2 Factors responsible for non-completion among postgraduate students

It would seem difficult to make a distinction between factors responsible for extended completion and those responsible for non-completion. This is due to the close relationship or similarity between extended completion and non-completion as the former situation could in many instances lead to the latter.

For instance, if a student is weak in research and thesis writing, that situation would result in wrong methods or approaches being used, slow progress, extension of time, and if the problem persists during the extended time, the student might abandon the studies or run out of time and would not be able to present a thesis for examination and graduation. The same scenario would hold for a student who is not receiving adequate supervision or lacks the required financial support for postgraduate work. There is therefore a progressive relationship between extended completion and non-completion which underscores the similarity in the causative situations and difficulty in making a distinction.

Notwithstanding the closeness or similarity in the two completion situations, this study revealed the following factors which resulted directly in non-completion or drop-out for some masters' and doctoral students (see Section 5.4.6.7 in Chapter 5).

- (a) **Supervision challenges** such as poor student-supervisor relationship leading to misunderstandings, conflicts and frustrations for affected students. Unresolved or protracted student-supervisor relationships retarded progress and some students gave up working on their thesis (refer to Theme 1 and Quote 5.15 in part (a) under Section 5.4.6.7 of Chapter 5).
- (b) **Financial difficulties** arising from poor financial background and inadequate sponsorship opportunities or sources of funding for research (refer to Theme 2 and Quote 5.17 in part (a) under Section 5.4.6.7 of Chapter 5).
- (c) **Personal (student) challenges** in the form of family constraints, misplaced priorities such as decision to get into more lucrative ventures, employers' inability to grant students study leave, and poor performance at the course work stage in the case of masters' students. There seemed to be ageing problems with some doctoral students at the time of enrolment (refer to Case Files numbered DO/004 and DO/012 in part (b) under Section 5.4.6.7 of Chapter 5), and unexplained circumstances and inability on the part of students to communicate difficulties they were encountering as in Case Files numbered DO/004, DO/008 and DO/010 in part (b) under Section 5.4.6.7 of Chapter 5.

- (d) **Weak research methods and thesis writing skills** resulting in lack of capacity to undertake research at the masters' and doctoral levels (see Quote 5.19 in part (a) Theme 4, under Section 5.4.6.7; and Quote 5.20 in part (a) Theme 5, under Section 5.4.6.7 of Chapter 5).
- (e) **Overstaying the approved duration for exchange programmes** in institutions abroad resulting in lapsed candidature as in Case File numbered DO/001 and DO/006 (see Table 5.59, part (b) under Section 5.4.6.7 of Chapter 5).
- (f) **Lack of time for studies and research caused by combining work with study** and poor planning resulting in lack of progress as in Case Files numbered DO/007 and DO/010 (see Table 5.59, part (b) under Section 5.4.6.7 of Chapter 5).
- (g) **Breakdown of equipment** needed for research, the remote cause being inadequate equipment and facilities for research in the department as in Case File numbered DO/002 (see Table 5.59, part (b) under Section 5.4.6.7 of Chapter 5).
- (h) **Inability to correct and re-submit referred theses** for re-examination as in Case Files numbered DO/011 and DO/013 (see Table 5.59, part (b) under Section 5.4.6.7 of Chapter 5).
- (i) **Inability to harmonize project duration and doctoral study duration** in cases where doctoral studies was tied to and funded by projects as in Case File numbered DO/003 (see Table 5.59, part (b) under Section 5.4.6.7 of Chapter 5).

6.5 RECOMMENDATIONS FROM THE STUDY

6.5.1 INTRODUCTION

The recommendations for ensuring efficient postgraduate delivery and high throughput for among research postgraduate students aimed at addressing the findings from the study. In essence, the recommendations were made in relation to what each stakeholder should do to address the causes of extended completion and non-completion among research postgraduate students for which the stakeholders should be held responsible. The solutions recommended to the causes would be presented in a straightforward manner in this section with those responsible for recommended actions identified in the discussions. As indicated earlier, it is expected that the recommendations would be translated into recommended models for efficient postgraduate study delivery that would ensure high throughput for the University of Ghana.

6.5.2 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF GOVERNMENT IN ENSURING EFFICIENT POSTGRADUATE DELIVERY AND HIGH THROUGHPUT AT THE UNIVERSITY OF GHANA

From the findings from this study, it was noted that government could do better than it did to ensure efficient postgraduate study delivery and high throughput by addressing the following causes of extended completion and non-completion: Inadequate equipment and facilities for postgraduate studies and research; inadequate financial support for postgraduate studies and research; inadequate number of qualified faculty for postgraduate research and thesis supervision due to regulation of recruitment of academic teaching staff and research fellows.

6.5.2.1 Recommendations to address the problem of financial support from government for postgraduate studies and research

The following approaches to funding for postgraduate studies and research may be considered by government:

(a) Adequate allocation of funds in relation to GDP to research at the postgraduate level

It is high time government identified research as the catalyst for economic development. The call has long been made for governments to have the political will to devote at least one percent of GDP to research as a matter of national policy. This call is being re-echoed in this study for a move from the less than one percent range to meet the African Union's recommendation and to emulate the examples of Sweden, Singapore and other developed countries (see Section 3.4.2.1 of Chapter 3).

(b) Rationalization of fund allocation methods

i. Categorical (prioritized or need-based) funding approach

Research at the postgraduate level should be treated as prioritized area if government is desirous of turning out masters graduates for its managerial and professional human resource requirements and doctoral graduates to build the required think-tank for economic development. To address this critical need, government must make conscious effort to provide adequate funds for research which should be channeled through the Universities for postgraduate level research especially at the doctoral level. Government must dialogue with Universities to agree on areas that research efforts must be channeled so that the Universities can fashion their postgraduate studies and research along those lines with the needed funding from government. The examples

of substantial grants released to Paul Obrien's research group at the Manchester University and Steve Ward and Paul O'Neill's group at Liverpool University are good models to follow (see paragraph 1 under Section 3.4.2.1 of Chapter 3).

ii. Block grant approach

Government currently appears to be using the block grant approach, although provision of funds is based on budgets from the Universities. Whereas this system makes it flexible for Universities to determine allocation of funds released by government for their critical needs, the current formula does not prioritize postgraduate studies and research. For example, direct academic costs to departments and general educational expenditure cost (from where allocations are made to take care of cost of examination and allowances of external examiners) constitute 50 percent and 10 percent respectively of government's annual budgetary allocations to public Universities(see part (c) under Section 3.4.2.4 of Chapter 3). This allocation formula appears to have subsumed postgraduate studies and research costs under these two cost centres, thereby leaving actual allocations for postgraduate studies and research to the discretion of the Universities.

The University of Ghana (the nation's premier University) has come of age to become a research University after many years of mentoring many other Universities in the country. Government must assist the University with the necessary funding to develop the research culture through the acquisition of the appropriate equipment and facilities for postgraduate studies and research, and to enhance the capacity of faculty by redirecting more of its allocated funds towards postgraduate studies. It is therefore recommended that the University be permitted to allocate 60 percent of

government subvention for its direct academic cost of which postgraduate studies expenditure should be allocated at least 60 percent.

(c) Rationalization of direct funding to postgraduate students in the form of bursaries and scholarships

The government, through the GETFund and the Scholarships Secretariat, should rationalize the formula for disbursing bursaries and scholarships for postgraduate studies and research. The system of disbursing funds to all categories of masters and doctoral students irrespective of need should be reviewed.

The East African experience of Equity Based Subsidy (EBS) system is recommended to cater for the genuinely needy rather than everybody (See paragraph 5 under Section 3.4.2.1 of Chapter 3). If this is carefully done on the basis of genuine needs assessment, a lot more funds would be made available to needy postgraduate students at a higher rate than the amount being disbursed under the wholesale or mandatory bursary and thesis grant system which leaves beneficiaries with meager amounts that could hardly do anything about research and thesis at the postgraduate level.

The funding strategy adopted by the Washington University in the U.S. to support all doctoral students from start to completion (See paragraph 6 under Section 3.4.2.1 of Chapter 3) and Edgar's (2000) proposals for re-distribution of funds to improve Canadian doctoral funding and Canada's research capacity (See paragraph 7 under Section 3.4.2.1 of Chapter 3) which were based on the Washington University approach are worthy of emulation by University of Ghana and the Government of Ghana. These funding strategies basically support funding of doctoral

students from the beginning to completion of research and thesis, usually based on satisfactory progress made by students. The specific recommendations made by Edgar (op.cit.) to the effect that universities and government should work together to increase the number of awards to underfunded programmes, make eligibility criteria more flexible for student applicants, increase the level of awards based on changes in tuition and inflation should be taken seriously.

(d) Marginal increase in the Value Added Tax for Educational Purposes

Owing to the heavy pressure on the GETFund as the funding base for government, the GETFund Administrator was of the opinion that the Value Added Tax level which is the major source of funds for the GETFund be increased, while seeking ways of diversifying the sources for the Fund. Since direct taxes are the surest way of getting money readily to address critical challenges, it is recommended that government considers increasing the VAT by a reasonable margin to enable it generate more funds and increase its annual allocations to public Universities, including the University of Ghana.

6.5.2.2 Recommendations to address the problem of inadequate equipment and facilities for postgraduate studies and research

"Countries which have benefitted from research have invested heavily in research infrastructure such as state-of-the-art science laboratories, libraries and appropriate equipment and tools for research" (Addae-Mensah, 2013).

The Ministry of Education, through the National Council on Tertiary Education, must dialogue with management of public Universities, including the University of Ghana, to identify and agree on their major equipment and facility requirements so that provision of equipment and facilities

can be prioritized based on need. The questions that immediately come to mind are: How does the government provide Science Laboratory equipment, ICT facilities, and library collections, for instance? Does the University or the needy departments within the University have space? The answer to all these questions is money.

It is recommended, therefore, that government should have the will to place the issue of providing adequate equipment and facilities for postgraduate research high on its agenda and allocate a reasonable proportion of its resources to address the shortage in the Universities in a systematic manner. This way, the inadequacy could be addressed with time to enable postgraduate students undertake research without any challenges such as lack of the right equipment and equipment breakdown as revealed in this study.

6.5.2.3 Recommendations to address the problem of inadequate number of qualified faculty for postgraduate research and thesis supervision

As a policy requirement, government regulates the appointment of all categories of staff in public Universities for purposes of planning wages and other staff allowances budget. With current state of inadequate faculty for postgraduate work, it is recommended that government should allow the University to meet its staff requirements especially academic teaching staff and research fellows with doctoral qualifications to bridge the yawning gap in its Student-Teacher Ratio to enable it to perform its mandate especially with focus on postgraduate training.

This would serve as a clear demonstration of government's recognition and the importance it attaches to the contribution of postgraduate studies and research to national development in such critical areas as agriculture, health, science and technology.

6.5.3 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF THE UNIVERSITY IN ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT

On the basis of the findings of the study, financial support for postgraduate studies was inadequate to compliment efforts made by government and there were limited sources of funding available to postgraduate students.

6.5.3.1 Recommendations to address the problem of inadequate financial support from the University for postgraduate studies and research

According to the financial norms of the NCTE, Universities are expected to raise a certain level of revenue in order to maintain and improve quality and this must include government grant, fees charged to students and internally-generated income (NCTE Norms for Tertiary Education (Universities), 2012). This defines the normal sources of finance for Universities. The question one ought to ask is: if government grant was inadequate and fees charged to students were not based on full-cost recovery, how could a University cater for its needs and complement the efforts made by government through internally-generated income, when the Universities are not, by their mandate, for-profit organizations? Considering the seriousness of the University's funding situation, the following recommendations should be considered to improve upon the situation:

(a) Establishment of a Postgraduate Research Endowment Fund (PREF)

The University should consider establishing a Postgraduate Research Endowment Fund (PREF) to support research at the postgraduate level. As the name goes, such an endowment fund should be established solely for promoting postgraduate research, especially at the doctoral level. The private sector and industry should be the obvious target for resourcing the Endowment Fund. To facilitate inflow of funds, a strong University-Industry linkage must be established at the same

time to create the right platform for industry to benefit from the University's research findings and its graduates. This may require the establishment of a Unit within the University to kick-start modalities for the University-Industry linkage as it exists at the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana, and in other reputable Universities in developed countries.

If industry and the private sector have the confidence that their investment in the fund of contributions to the Fund would result in quality human resource and research findings for use, there should be no doubts about their willingness to contribute to the Fund. It is further recommended that the University shows the way by proper archiving of its research findings electronically so as to make them readily and easily available to industry, preferably free of charge, in the formative years of the relationship. Funds from the PREF could be used to augment the current levels of University of Ghana Fellowship for Master of Philosophy and doctoral students. The number of recipients could also be expanded to cover more beneficiaries.

(b) Public Universities (including UG) should be permitted to charge full fees for selected programmes

With respect to fees charged to students, government may have to allowing public Universities to charge realistic fees since it is not able to take care all that it takes to train students by itself. The Latin American experience, which allowed its Universities to charge full fees for certain market-driven and highly sought after programmes and the returns from such full fees used to assist the needy or sustain the less subscribed disciplines, may be considered for Ghanaian public Universities. Already, some private tertiary institutions are making great strides in that direction,

and therefore, the well-established institutions, such as the University of Ghana, should not be seen to be creating a dual society if allowed to charge full fees for selected programmes only.

The effect of the relatively high fees paid by students would in turn be reduced if the University is able to use part of the fees to provide financial support to the same students who paid the relatively high fees for their research. In conclusion, charging full fees for selected postgraduate programmes is highly recommended for adoption at the University of Ghana in consultation with government.

(c) Prioritizing and rationalizing the use of available internally-generated funds

i. Prudent investments and efficient use of available funds

The University should expand its internally-generated fund base through prudent investments, contributions from its alumni and friends, and rationalization of its available funds by prioritizing projects to be undertaken to address crucial needs such as postgraduate studies.

ii. Commercialization of agricultural and other potentially viable activities

The University may consider commercializing its agricultural research activities to private investors with University staff focusing on teaching and research in agriculture so that income from the agricultural activities can be ploughed back into maintaining equipment and facilities at the research centres.

6.5.4 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF THE GRADUATE SCHOOL IN ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT AT THE UNIVERSITY OF GHANA

Causes of extended completion or non-completion that fall within the domain of the graduate school included lack of motivation for supervisors and examiners and inefficiencies in the thesis examination process. Having discussed the lack of equipment and facilities, and inadequate funding at the level of government and the institution, recommendations to address the stated causes of extended completion or non-completion are made:

6.5.4.1 Recommendations to address the problem of lack of motivation for thesis supervision and examination

The major causes of these situations were insufficient number of academic staff who were overloaded with teaching and other academic responsibilities. The pressure on faculty made them naturally look at supervision and examination as extra services being demanded of them due to limited time at their disposal to perform such duties. While sympathizing with faculty, thesis supervision and examination are too important to be handled as extra duties by faculty.

(a) Recruitment of adequate and qualified faculty to handle postgraduate level work

The point has already been made that the solution to overloaded faculty was beyond the University and a recommendation was made that government should allow public Universities to recruit qualified academic staff to enable the Universities attain their Student-Staff Ratios in all the disciplines especially doctoral degree holders for postgraduate level. Government should request Universities to deposit their projected staff recruitment plans to be approved as part of the national budget and rolled out in phases to avoid placing recruitment embargoes on Universities for long periods.

(b) Payment of enhanced remuneration for thesis supervision and examination

The graduate school, through its Board of Graduate Studies should recommend enhanced remuneration packages for thesis supervision and examination. To obtain the required finances to be able to pay the enhanced levels of remuneration, thesis examination fees should be factored into the fees to be paid by postgraduate students.

(c) Recognizing thesis supervision and examination as part of criteria for promotion

Motivation should not only take the form of monetary rewards. In this regard, it is recommended that the graduate school, through its Board should recommend the recognition of supervision and thesis examination as part of the conditions or assessment criteria for promotions. These should be motivating enough to faculty to supervise and examine theses with the seriousness and promptness that these services deserve. It should result in timely completion of thesis examination and submission of assessment reports.

6.4.4.2 Recommendations to address lack of efficiency in the thesis examination process**(a) Review of the thesis examination process and procedures**

This may be achieved in the following ways:

- i. The graduate school must maintain a reliable database of both internal and external thesis examiners which should be updated regularly and accurately. Ideally, both internal and external examiners should be consulted about their availability to examine the theses and their preferred method of delivering the theses to them before preparing to dispatch theses to them.

- ii. This study revealed that external examiners generally preferred to be sent soft copies of theses through the electronic mail system. The School should consider sending soft copies to external examiners as the first choice unless an external examiner specifically requests for hard copy.
 - iii. Submission of full versions of soft copies of theses should be made compulsory for all masters' and doctoral students. This means that all theses submitted for examination must be in both hard and soft forms. Provision should be made by the graduate school for safe storage of the soft versions to be sent to external examiners and interested internal examiners.
 - iv. Communication between the graduate school and thesis examiners must be made more reliable by facilitating contact with the Thesis Office, responding promptly to examiners' enquiries and complaints.
 - v. Considering number of graduate students, and the requirements of the Thesis Office, well qualified staff must be assigned to thesis processing schedule. The thesis submission and examination database should be updated regularly and thesis examination records should be kept confidential and in a manner that would facilitate easy retrieval.
- (b) Adoption of residential marking of theses and setting restrictive but rational deadlines for submission of thesis assessment reports**
- i. Residential examination of theses should be adopted as a matter of urgency.
 - ii. The residential marking should last for two weeks and be held at a location outside the University.
 - iii. Examiners who sign up for residential marking should be given attractive remunerated which should be paid promptly.

- iv. Deadlines for submitting assessment reports on thesis should be reviewed as follows: For a thesis examined under residential marking, reports should be submitted at the end of the two weeks of examination session to the graduate school. For non-residential examiners who should be sent soft copies or hard copies, a period of six weeks should be allowed for submission of assessment reports.

6.5.5 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF HEADS OF DEPARTMENT IN ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT AT THE UNIVERSITY OF GHANA

The causes of extended completion and non-completion which are attributable to departments included weaknesses in research methods and thesis writing skills on the part of students; delays at the departmental level in approving thesis topics for postgraduate students; and late submission of theses from departments to the graduate school for examination.

6.5.5.1 Recommendations to address postgraduate students' lack of capacity to conduct research and thesis writing skills

(a) **Enhancing the teaching of Research Methods at the departments**

- i. Enhancing knowledge and skills of postgraduate students in research and thesis writing through regular workshops and seminars

Departments within the University must put in place measures to enhance the knowledge and skills of their students as a matter of urgency to deal with the deficiencies revealed through this study (see Table 5.53, part (d) of Section 5.4.5.6). Enhancing students' research capacity could be done through effective teaching of research methods in the departments. Irrespective of their disciplines, postgraduate students must be well grounded in the application of quantitative and

qualitative designs, acceptable and standard formats for theses and report writing skills, among other things.

ii. Building capacity of faculty to teach research methods especially at the postgraduate level

There should be a system of helping faculty to build capacity in the theory and practice of research methods on a regular basis as revealed in a study by Lessing and Lessing (2004) that faculty also need to be retooled in research capacity just as students need help (see paragraph 8 under Section 1.2.3 of Chapter 1).

(b) Project Work and Long Essay writing should be made compulsory at undergraduate level

While departments might be blamed partly for the deficiencies in research and thesis writing skills, the University as an institution must also take part of the blame for its own policy that makes project or long essay writing optional for bachelor's degree students (Handbook for Undergraduate Degree Programmes, 2010). This regulation which makes Project Work and Long Essays optional at the undergraduate level also makes it easier for most undergraduate students to opt out of project and long essay writing, which is the surest way of introducing undergraduate students to some of the basic skills in Research Methods. Most students therefore graduate from bachelor's degree programmes without experiencing the skills involved in writing long essay or project report and therefore have very little or no knowledge of how to conduct research and write good academic reports.

It is therefore highly recommended that the university revises this regulation to make writing of project work reports and long essays compulsory for all bachelor's degree students.

(c) Research methods and thesis writing skills should be taught at the Faculty, School or College Level or as a core and permanent mandate of a designated unit within the University

Acquiring the basic skills in research and thesis writing right from the undergraduate level would make students become familiar with the research process before they enroll for postgraduate studies. It would also seem that the teaching of research methods in many departments was weak. In this regard, it is recommended that the teaching of research methods be done at the faculty or school level as a compulsory course for all research postgraduate students, where aspects of research methods could be taught by different lecturers to students within a Faculty, School or College in relatively small groups. Additionally, the teaching of research methods should be modernized with power-point presentations and hands-on practical lessons. A pool of faculty with expertise in the teaching and practice of research methods in the departments should be created for teaching research methods and in the starting years, the University might consider an attractive remuneration package to selected research methodology lecturers. Designing a comprehensive programme of building students' research capacity, using the programmes of the University of New South Wales Research Division as a guide (see paragraph 6, Section 2.7.2.2 in Chapter 2) should be seriously considered.

(d) Emergency intervention strategies towards building postgraduate students' capacity in research and thesis writing

At the postgraduate level, particular attention must be paid to strengthening students' capacity in the areas of weakness found in this study. This must be done in the form of interventions to help build the research capacity of postgraduate students to drive the University's research agenda of becoming a research University in the near future. Regular special training sessions should be held as a matter of urgency for all masters' and doctoral students in the areas of weakness noted

from this study. This intervention training sessions would also help postgraduate students to go about their research activities in a professional manner and be able to write good theses with little supervision, thus making it possible for them to complete their theses on time for completion, all other requirements being available.

6.5.5.2 Recommendations to address delays at the departmental level in approving thesis topics and supervisors for postgraduate students

(a) Early approval of thesis topics for postgraduate students

While departments and students could be blamed for delays in the approval of thesis topics for students at the departmental level, there were also regulatory provisions that did not seem to augur well for early approval of thesis topics. As revealed by some heads of department through interviews conducted in this study, whereas some students waited till the second year to begin what they termed "shopping for" research topics, some heads of department also failed to assign supervisors early to assist the students to settle on a researchable topic early in their studies. According to Section 13.2 of the graduate student regulations, thesis topics were to be approved for MPhil students in the first semester of the second year (final year) through faculty and school boards. This timeline appears to be too late in their programme and probably made departments not to begin their part of approval as early as they should. It is therefore recommended that departments approve thesis topics for their students to begin their research work preferably in the second semester of the first year. It should be possible to settle on a thesis topic after one semester of course work because all postgraduate students are normally required to indicate their research areas in the application forms for admission, which implies that, the student would have already indicated his or her areas of interest. To further make it possible for students to choose

their thesis topics early, they must be asked to settle on thesis topics during the second semester of the first year.

(b) Early approval and assignment of supervisors to master's and doctoral students

For this reason, it is further recommended that supervisors should be assigned to masters' students in the second semester of the first year to assist them in the selection of thesis topics and proposal writing.

6.5.5.3 Recommendations to address the inability of postgraduate students to avail themselves for supervision guidance

(a) Assignment of aspects of research work to students to undertake during first year long vacation periods

Once supervisors are assigned to students, the supervision relationship begins immediately including the first semester long vacation periods. If students are made to work by giving them assignments constantly on their research work, they should be able to write the first chapter and literature review during the first year long vacation before they begin the second year, during which, they take no written courses or examinations.

(b) Offering of one year-long compulsory course in the research year (final year)

Notwithstanding the above, evidence from this study showed that due to financial reasons, some masters' students engaged in full time or part-time jobs during the second year of the masters' programme because they do not take courses and write examinations. This action prevents them from making progress in the second (research) year. It is recommended that departments offer one compulsory year-long course in two parts, with each part to be taken in the first and second semesters of the final year alongside with their research work. It is believed that this

arrangement would make it possible for students to be seen more regularly by their supervisors and thus prevent them from taking up jobs in the final year of their studies.

Following this model would reduce the tendency of students extending their study durations under flimsy excuses usually with the motive of taking up jobs.

6.5.5.4 Recommendations to address late submission of theses from departments to the graduate school for examination

(a) Review of the thesis submission procedures

Interviews with heads of departments and past thesis schedule officers revealed that this situation usually occurred because of difficulties in getting examiners for students, students submitting their thesis late to the departments or too close to the deadline set by the graduate school, absence of supervisors to endorse or give approval for student to submit thesis or occasional negligence on the part of departmental support staff to submit thesis to the graduate school on time. To avoid the occurrence of these situations, departments should:

- i. Seek approval of examiners for students' theses as soon as they indicate intention to submit their theses for examination. The existing deadline of the beginning of second semester in the year of completion for both masters' and doctoral students appears feasible and appropriate.

Departments should also advise or assist students to do and take note of the following:

- ii. Obtain clearance from their supervisors and head of department by completing a Thesis Clearance and Submission Form (TCSF) to submit their theses. The required number of

theses together with the TCSF should be given to the student as an attachment to the thesis to be submitted directly by the student to the graduate school.

- iii. Prior to submitting the thesis to the graduate school, the student must have deposited a copy of the thesis with the department.
- iv. Copies for the University Library should be submitted by the student only after submission to the graduate school.
- v. The form for intention to submit thesis for examination must be completed by the student at least four weeks to the intended date of submission, endorsed by the lead supervisor.
- vi. Once this form is endorsed, the lead supervisor is obliged to recommend examiners for the theses in consultation with the head of department. A separate form for appointment of examiners should be completed by the head of department and submitted directly to the graduate school once intention to submit a thesis is given by the student to conceal the identity of the examiners to the student.

These recommendations were made to eliminate delays in submission of thesis from the departments to the graduate school and are in keeping with models in the Universities in South Africa, and other reputable Universities. If this model is followed, delays in submitting theses from departments to the graduate school would be eliminated considerably for on-time completion.

6.5.6 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF SUPERVISORS AND EXAMINERS IN ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT AT THE UNIVERSITY OF GHANA

The issues relating to the causes of extended completion or non-completion that could be addressed by supervisors and examiners included limited time for supervision; conflicts between supervisors; and delays in examination of theses and submission of assessment reports.

6.5.6.1 Recommendations for addressing the problem of limited time for supervision

The reasons revealed by this study for inadequate time for supervision included inadequate faculty to supervise theses in relation to the number of research postgraduate students due to low Student-Teacher Ratios. The effect was that few faculty members were overloaded with teaching at the undergraduate level and other academic responsibilities. The recommendations to be considered are:

- i. The problem of low student-teacher ratio could be resolved by increasing the number of qualified faculty members indicated earlier especially with focus on postgraduate level work.
- ii. Another way to address the problem is to motivate the few supervisors with attractive remuneration to put in extra effort to supervise students.
- iii. Supervision arrangements at the University of Ghana require too much of face-to-face contacts between supervisors and their students. It is recommended that variety of supervision methods such as interacting with students and providing guidance through the internet via officially assigned electronic mailing system. This would reduce the need to be physically present with supervisors unless the situation so requires. Using the internet system also has the advantage of enabling supervisors to work at their preferred

times wherever they may be provided they are able to make contact with their students and can be reached by their students. Supervisors and students must be assisted by the University to acquire the necessary tools such as laptops as well as easy and fast internet access.

- iv. Within the short-term while the issue of increasing the pool of lecturers is being considered, external supervision should be encouraged. Departments should assist in attracting academics from other Universities both locally and abroad to assist with supervision especially at the doctoral level.

6.5.6.2 Recommendations for addressing conflicts between supervisors and their effects on students

Evidence from this study suggests that there were isolated instances of conflicts among supervisors which sometimes affected the progress of the students being supervised. Conflicts are bound to arise in any human endeavour; however, what matters most is the ability of the parties involved and those concerned to quickly resolve the disagreements so that the conflict situation does not cause extensive damage. The following recommendations are to be considered:

(a) Code of Ethics for Supervisors and students

There is the need for a code of conduct or ethics for supervisors and also to regulate student-supervisor relationships, aimed at restricting or cautioning supervisors in a supervisory team not to fall into such conflict situations for the sake of their students and the reputation of the University.

(b) Formulation of Grievance Procedure for Students

There should also be in place an efficient grievance procedure to deal with conflicts between supervisors and their students expeditiously. Once a complaint is lodged by an affected student, the Departmental Graduate Studies Committees (DGSC) should be empowered to deal with the matter first, then to an Academic Grievances Committee for Postgraduate Studies (AGC) if the matter could not be resolved by the DGSC. The AGC should be chaired by the Pro-Vice-Chancellor in charge of academic matters, with the Dean of Graduate Studies and the Dean of the relevant Faculty or School as core members of the Committee. This recommended grievance procedure is adapted from similar systems in the University of Cape Town (UCT), Oxford University, and Manchester University.

6.5.6.3 Recommendations for addressing the problem of limited time for on the part of internal thesis examiners and delays in examination and submission of thesis assessment reports**(a) Adoption of an attractive residential thesis marking policy**

The same recommendations relating to ways of motivating faculty, the need to increase the number of faculty in relation to student numbers are equally applicable to examiners since it is the same faculty who supervise and examine theses. Beyond these, residential thesis examination should be encouraged at the University of Ghana. To do this, arrangements should be made by departments to invite external examiners to the University soon after submission of theses to spend some time (two to three weeks) to examine theses and submit assessment reports to the graduate school.

The residential thesis examination should be made attractive to encourage external examiners to accept to spend time and energy on this exercise. Some of the side attractions to ensure the

success of the residential marking should include sponsoring examiners travel, providing decent accommodation and free meals for the examiners, introducing the external examiners to the Dean of Faculty or School and the Pro-Vice-Chancellor in charge of academic matters to make the external examiners feel welcomed to the University. An important attraction is the ability of the University to pay the external examiners for their services as soon as they submit their assessment reports. It is recommended that a Special Account is held by the graduate school to facilitate quick payment to the examiners.

Once at the University of Ghana, the Dean of Graduate Studies should be the official contact person in all matters relating to thesis examination. This arrangement would help maintain confidentiality of thesis examination without too much interference by the department or heads of department in the process.

Concerning internal examiners, an optional residential thesis examination period should be instituted for them as well at a location outside of the University premises for a period of two weeks to mark theses assigned to them. As in the case of external examiners, transportation, lodging and feeding should be sponsored by the University, and the remuneration should be attractive enough to motivate faculty to patronize the residential thesis marking. Payment for theses examiners should be made as early as possible preferably in not more than three weeks after submission of assessment reports.

(b) Improvement of the process for handling thesis before, during and after dispatch for examination

Delays in thesis examination might also sometimes be due to inefficient administrative procedures involved in handling thesis delivery and communication between examiners and the Thesis Office. These procedures including good record keeping, updating thesis examination system with accurate information, and implementing an efficient reminder system, should be improved tremendously to avoid delays in dispatching theses to examiners and to ensure that the examined theses and reports are returned on time.

(c) Assigning qualified and dedicated staff to thesis handling schedules

Staff assigned to thesis schedule must be qualified in terms of the skills required for the office and must be hard working staff who appreciate the consequences of their omissions. A senior member administrator at the level of Assistant Registrar is proposed to handle the recommended thesis examination schedule at the graduate school.

6.5.7 RECOMMENDATIONS WITH RESPECT TO THE ROLE OF POSTGRADUATE STUDENTS IN ENSURING EFFICIENT POSTGRADUATE STUDY DELIVERY AND HIGH THROUGHPUT AT THE UNIVERSITY OF GHANA

Postgraduate students are perhaps the most important players in ensuring efficient postgraduate study delivery and timely completion because they are the direct products and beneficiaries of either an efficient or inefficient study delivery. More so, the whole concept of throughput is about students. They are important in either making or unmaking the system. For instance, if supervisors are well motivated and have all the resources they need to supervise students but the students cannot avail themselves for supervision and guidance, all efforts to make the study

delivery system more efficient would come to naught. To address the shortcomings identified with postgraduate students from this study, the following recommendations would be useful.

6.5.7.1 Recommendations for addressing the problems related to postgraduate students' personal characteristics and personal choices

The issues of concern with regard to personal characteristics include age at enrolment (ageing), lack of or poor personal planning prior to enrolment, employment and choice of study mode.

(a) Personal assessment of one's strengths and weakness and personal planning of study

Theories abound in support of life-long learning (Sheppard, 2002; Merriam, 2001) which suggest that learning takes place throughout one's lifetime. Many of these theories confirmed that there is an inverse relationship between ageing and learning. On the basis of the foregoing, applicants to postgraduate studies are advised to do a fair assessment of their personal strengths and weaknesses with respect to age before deciding to enroll.

On the problem of lack of personal planning and inability to focus on studies, students are further advised to seek counseling from those who had been through postgraduate studies or from the University's academic departments about the cost involved in studying their programmes of choice, research and other necessities involved in the entire programme to enable them make a rational decision.

(b) Ensuring that all postgraduate students attend the mandatory orientation and receive initial counseling on the academic environment

Attending the mandatory orientation programme for fresh postgraduate students would be helpful in addressing personal planning issues. The objective of a good orientation or induction according to the Manchester model of orientation is "to enable students to engage with and

develop understanding of the factors which contribute to academic success, including developing an awareness of their own strengths and weaknesses...”. On registration, students must sort out personal details about their needs, meet supervisors, familiarize herself or himself with facilities available such as laboratories and a place where students can stay and work, self-help arrangements, know who is responsible for addressing specific problems in the department or school, and attend inductions for postgraduate students. With good personal planning and orientation, students would be able to settle well very early in the programme for a smooth and progressive academic work including research.

This recommendation is in line with activities recommended in the first year of registration in the Rothwell Model (see Section 2.7.3 of Chapter 2) involving sorting out one’s personal details, meeting supervisors, course advisors, how some personal issues are resolved, and attending induction programmes. Giving students an information rich orientation programme requires that the University itself should have a comprehensive orientation and induction package for fresh postgraduate students such as the Manchester model known as ‘the University of Manchester Framework on Student Induction and Transitional Support’. The framework involves arrangements for settling into residence either on campus or off campus, orientation with campus and city, socializing, budgeting, getting introduced to programme or level of study and ICT facilities, meeting peers and more senior students, academic and administrative staff (see part (a) under Section 2.7.2 of Chapter 2).

(c) Choice of appropriate study mode in relation to students’ pre-occupation

Another apparently wrong choice candidates could make at the time of enrolment is how to choose the right study mode based on their personal assessment and prior engagements. The

decision to study on part-time or on full-time must be well thought through. Since most masters programmes at the University of Ghana were not offered on part-time at the time of this study, this appears to be a minor issue. The recommendation is however very relevant to both masters' and doctoral students, most of whom might usually be working at the time of enrolment, to make the right choices about studying on part-time where their jobs would not allow them much time for studies or on full-time when the employers can afford to grant them leave to study. The recommendation is based on studies carried out in Australia and the U.K. by Jiranek and others which revealed a number of factors that influence completion time and candidature duration including students' field of study and attendance mode (part-time or full-time) choices (see Section 2.4.4 of Chapter 2). Studies by Latona & Browne (2001), Seagram *et. al.* (1998), Martin, et al (1999) conclude that shorter completion times were more associated with full time enrolments rather than part time enrolments(see paragraph 4, part (a) under Section 2.5.2 of Chapter 2).

(d) Expanding the number of masters' programmes offered on part-time basis

In this study, it was found out that most of the masters' and doctoral student respondents were employed at the time of enrolment. This situation suggests that even at the masters' level, majority of students get employed before they enroll on postgraduate studies. Against this backdrop, it is recommended that the University considers approving part-time options for most of its masters programmes so that students would have option to make the right choice of study mode given their employment status. If the right choices are made by students at the time of enrolment, it would go a long way to eliminate the problem of limited time at disposal of some students and their inability to avail themselves for supervision.

6.5.7.2 Recommendations for addressing the problem of limited time for studies and research on the part of postgraduate students resulting from poor work-study arrangements by postgraduate students

(a) Programmes should be run on both full-time and part-time basis

The recommendation about offering masters programmes on both part-time and full-time as in the case of doctoral programmes is relevant to address this problem.

(b) Introduction of supervision contracts to regulate supervision

In addition to these measures, students must be made to sign supervision contracts with their supervisors. Such a contract would enable the student to indicate how he or she intends to complete the studies and research within specific timelines agreed between the supervisor and the student, with the former's approval. Copies of the contract must be deposited with the head of department and the graduate school. This would strengthen the existing weak system whereby only some supervisors were able to set supervision plans of work either verbally or by some other means. There should be a policy that requires every supervisor to sign supervision contracts with their students and this requirement must be implemented. The use of supervision contracts is a common feature in most world-class Universities and is common in South African Universities. The supervision contract helps students to be serious and work towards the agreed timelines. To the supervisor, department and graduate school, it serves as the basis for assessing and monitoring progress being made by students being supervised.

6.5.7.3 Recommendations for addressing the inability of postgraduate students to adhere to supervision plans of work agreed with their supervisors

(a) On-line supervision using the email system should be encouraged

The recommendations with regard to the introduction of an efficient on-line supervision system for students and their supervisors to reduce face-to-face meetings is very relevant and applicable in addressing students' inability to adhere to supervision plans.

(b) Adoption of supervision contracts

Also relevant to this problem is the introduction of supervision contracts to bind students to the contracts (already mentioned).

(c) Empowering students to make the right choices regarding study mode and job demands

Students' ability to make the right choices of study mode that would favour their employment status. Students should be advised as part of the application and admission procedures not to enroll for full time study if they are in full time employment and vice-versa. Students must show evidence of having been released by their employers to study and the employers' consent must be sought by the student at all times with regard to choice of study mode if they must combine work with study. To implement this recommendation, it may be necessary to develop a form for that purpose to be completed by employers as part of the conditions for admission into research masters and doctoral programmes at the University of Ghana.

(d) Engaging students to make use of long vacations for their research work

Getting the students to be a bit more busy in their second (research) year by making them register for at least two courses to be taken alongside with research work would help to reduce

the tendency of students wanting to engage in jobs and other occupations that take them away from their research and thesis writing engagement and keep them closer to their supervisors.

(e) Introducing flexible compulsory courses to keep students closer to campus

It might be helpful to let doctoral students also register to take some courses in 'Advanced Research Methodology' and 'Data Analysis and Use of Analytical Tools' at least in the first year of enrolment to enable them gain additional theoretical preparation and familiarity with research methods and processes, and to stay closer to their supervisors. Keeping doctoral students busy in the initial year would also ensure early student-faculty interaction and building relationships that would ensure that they work closely with the supervisors in later years to help them keep to their agreed supervision plans.

6.5.7.4 Recommendations for addressing challenges associated with Student Exchange Programme arrangements resulting in extended candidature and non-completion

As noted earlier in this study, some doctoral students sponsored on exchange programmes abroad, aimed at enhancing their research capacity and to enable them have access to better research facilities, unfortunately dropped out due to demands of the host institutions, which probably were not originally planned or agreed at the time of the exchange agreement.

(a) Advising students on the terms and conditions of exchange programmes awarded to them

To avoid such unfortunate circumstances, departments and students involved in the exchange programme arrangements must endeavour to understand the full terms and conditions of the exchange agreements before selecting students to go on such exchange programmes.

(b) Regular interaction between exchange student, department and the graduate school

Where such additional requirements come up upon the student's arrival at the host institution, the student's home department and the graduate school should be informed as early as possible to consider whether the additional requirement is to the advantage of the student and advise appropriately.

(c) Granting waiver or deferment to exchange students who encountered challenges due to unforeseen circumstances abroad

The important role the student must play in such matters is to be able to inform the home department of any new developments as early as possible for advice before agreeing to the new requirements. If this is not done, the student runs the risk of losing his candidature by the time he or she returns to the home institution and this situation could lead to re-registration and sometimes lapse of candidature which could hardly be defended or justified by the student. Appropriate arrangements must be put in place in the regulations to ensure that the time taken by unforeseen circumstances does not count towards the student's candidature back at home in order to avoid lapse of the student's candidature when longer than the expected time has been spent by the student.

6.5.7.5 Recommendations for addressing challenges associated with project-based and funded doctoral students

Project-based and funded doctoral students could sometimes run into challenges arising from change in the original project contract terms and conditions which might present problems such as mismatch of doctoral study duration and project duration and funding implications. In other instances, the focus of the project might change mid-way and the sponsors might demand that the

doctoral research focus also change accordingly. The above incidents, which might not be in the original terms of contract, as in the case of the difficulties associated with student exchange programmes discussed earlier, have the potential of derailing the student from progress and sometimes implying that the research work should begin afresh.

Although, these might be isolated cases, it is worth recommending that students and their supervisors work out such changes with the sponsors in such a manner that would not discourage or frustrate the student. In cases where the project becomes stale because funding has dried up, such students must be assisted by the institution or the department through other available facilities to enable the student complete the doctoral studies in a similar or suitable area. If not handled well, the affected student might have no option but to discontinue his or her doctoral studies as reported for Case File numbered DO/003 (see Table 5.59 under Section 5.4.6.7).

6.5.7.6 Recommendations for addressing delays on the part of students in submitting corrected versions of passed theses and re-submission of corrected versions of referred theses

Going by the HFCE (2001) definition of completion, it is only when a student who has registered for a programme has been awarded the degree or qualification for which he or she has registered that the student could be said to have completed the programme. Instances of late submission of corrected versions of passed theses, or re-submission of re-worked copies of referred theses were noted (see column 9 in Table 5.58 under Section 5.4.6.5). The real issue here is that affected students delayed in effecting the necessary corrections according to the deadlines given for such submissions to be made. It therefore boils down to the same issues of students not devoting adequate time to effect the necessary corrections probably due to the same challenges already

discussed. But apart from students not being able to make time to effect corrections on time, it would seem that the deadlines given by the regulations were not restrictive enough to compel students at these last stages of their candidature to effect the corrections for submission and completion. A clear example is the requirements in Section 23.6.4 of the Handbook for Graduate Studies Volume One (2010) that theses passed subject to corrections be submitted within three months in the case of MPhil candidates and six months in the case of doctoral candidates. These durations appeared to be too long or flexible and might encourage laziness and procrastination. Eventually, students might be tempted to wait until close to the deadlines only to realize that it would be impossible to beat the deadline.

(a) Revision of deadlines for submission of corrected thesis for graduation or re-examination

In much the same way, the deadlines for making corrections and re-submitting referred theses for re-examination, namely nine months and twelve months for masters' and doctoral candidates respectively should be revised to shorter durations to make them more restrictive and compelling. Restrictive deadlines could yield expected results than relaxed deadlines. It is therefore recommended that the deadlines be revised as follows:

- i. For submission of corrected versions of thesis passed subject to corrections, the recommended deadlines from the date of notification should be within one month for masters' thesis and two months for doctoral theses.
- ii. For re-submission of corrected versions of referred theses, the deadline from the date of notification should be four months for masters' theses and six months for doctoral theses.

6.5.8 CONCLUSION

In this section, the findings with regard to how the Government, the University, the graduate school, departments, supervisors, examiners and students discharged their respective expected responsibilities towards ensuring efficient delivery of postgraduate studies to avoid extended completion and non-completions have been presented.

In defining the responsibilities of each stakeholder, the researcher noted that some of the responsibilities apply to more than one stakeholder. In other words, they are shared responsibilities. For instance, both the government and the University have a shared responsibility of providing adequate and qualified faculty, equipment and other facilities for the University, but the focus and extent of the responsibility for each stakeholder could be different, with one (the University) complementing the other (the Government). It has also been observed that the findings from both quantitative and qualitative data were in some cases very similar.

6.5.9 RECOMMENDED CANDIDATURE MODELS FOR IMPROVEMENT IN POSTGRADUATE STUDY DELIVERY AT THE UNIVERSITY OF GHANA

Three models have been developed based on the findings and recommendations from the study, and in accordance with the objectives of the study. The models differ from existing candidature durations discussed in Chapter Three in some aspects because they were designed to address the adverse findings from the study towards speeding up the processes involved in the candidature stages for attaining timely completions at the University of Ghana. The three models presented as Appendices 9, 10 and 11 respectively are: (1) Model for Improved (Research) Masters Candidature and Guide to Timely Completion, (2) Model for Improved Doctoral Candidature

and Guide to Timely Completion, and (3) Model for Improved Thesis Submission and Examination Process. Each of the three models is explained briefly as follows:

6.5.9.1 Model for improved Masters candidature and guide for achieving timely completion

This seven-stage model (Appendix 9) is essentially based on full time study duration and has the following features:

(a) Personal Planning and Orientation

The introduction of personal planning services and implementation of compulsory orientation at enrolment during the first of two years' study duration to prepare students for what they should expect during their candidature to enable the student to make a good start and to overcome initial personal challenges. As already mentioned in paragraphs 1 and 2 of Section 2.7.2.1, this feature is contained in the University of Manchester Framework for Student Induction and Transitional Support. The Norwegian Universities model discussed in paragraph 5 of Section 2.7.2.1 which requires students to prepare their own individual educational plans during the first semester of the first year also supports this recommendation.

(b) Early assignment of supervisors and approval of thesis topics

Early assignment of supervisors and approval of thesis topics for students at Stage 2 of the model (before the end of the first year) as opposed to approving topics and supervisors in the second (final) year is recommended to enable supervisors and students to start research work in the second semester of the first year before they progress to final year. As indicated in the model in

Appendix 9, research Masters students should be able to write their research proposals and review literature at this stage under supervision once supervisors have been assigned.

(c) Blocking first year long vacation for research work

The model encourages supervisors to keeping students busy by assigning them research work during vacation after completing first year, which students hardly spend working on their thesis. Supervisors' role in assigning students on research during vacation is very crucial for the success of this recommendation because if students are not assigned by their supervisors, they are likely to end up using the vacation period for other things. Following from Stage 2, research Masters students should be able to complete literature review if not completed by the end of the second semester of the first year, write the introduction and literature review chapters of the thesis and begin data collection during the vacation. To achieve the above, it would be necessary to build students' capacity for early research work by teaching Research Methods courses in the first semester of the first year alongside other taught courses. Students must also be made to attend Research Methods seminars and workshops.

(d) Introducing a Year-Long Course in the final (research) year to make students more accessible to their supervisors

By instituting a flexible compulsory year-long course in the final year by all research Masters students in the first and second semesters, students would be compelled to report for lectures at least once every week and would therefore be available to meet their supervisors regularly during their final year. The course must be interesting and career-oriented and must attract credits to count towards graduation requirements. This arrangement would enable students concentrate on their thesis rather than take up jobs in the research year.

By the end of the second year, students would be expected to complete data collection (fieldwork), analyze data in the first semester and devote the second semester to writing the remaining chapters of their theses, undertake an oral examination on their theses and submit them for examination.

(e) More restrictive durations for thesis examination and submission of corrected versions

Thesis examination and submission durations should be more restrictive. This requires shortening of the existing durations, encouraging and motivating thesis examiners to complete examination within the set durations. In this regard, the model recommends that thesis examiners should complete examination and return assessment reports within 2 to 4 weeks of receiving thesis if examination is done under residential thesis marking arrangements and within 6 weeks if thesis is mailed to examiners. It should also be possible to determine students' theses results between 2 to 4 weeks after submission of examiners' assessment reports. This means that students could be informed of the result of their theses within 6 weeks after submission of thesis for examination. Thereafter, if the thesis is passed, the student should be given 4 weeks to effect any changes or revisions and submit the final corrected thesis for graduation. Masters thesis referred for correction should be submitted for re-examination within 6 months.

(f) Warning signals for students likely to be exposed to 'danger zones' of extended candidature and non-completion

The model projects potential 'danger zones' that students should avoid during their candidature. These danger zones or warning signals include avoiding failure in course work examinations and having to re-sit examinations for failed courses (repeating examinations for the second time and not passing could lead to withdrawal or dropping out), and avoiding extension of candidature as

indicated in the non-rectangular boxes in the model. To avoid late submission and extended candidature, of which most working students are at risk, it is recommended that students opt for part-time study at the Masters level. In such cases, the activities prescribed for Stages 1 to 4 for the two-year full-time period may be taken over 3 years in 6 stages.

6.5.9.2 Model for improved doctoral candidature and guide for achieving timely completion

In principle, this model (Appendix 10) is similar to the improved masters' candidature model and has the following key features:

(a) Personal planning and orientation arrangements in the first year of enrolment.

At this stage, preparations for transition and starting the programme as in the case of Masters candidature discussed in Section 6.5.9.2 are required to settle down for studies. Other preparations such as registration, sorting out personal details, meeting one's supervisors, laboratory staff, faculty, knowing where to stay and work, who to address problems to and attending graduate induction seminars as recommended in the Rothwell Model for doing a PhD in Section 2.7.3 are important steps to take at this stage.

(b) Optional course work and early assignment of supervisors and thesis topic

The model prescribes two options for enrolment. Depending on a student's entry qualifications, the department or graduate admissions committee may advise that an applicant enrolls for research and thesis only; or the admitted candidate be requested to take prescribed courses. Both types of entrants at Stage 1 (Year One) must, in addition to personal planning, transitional and orientation activities, be assigned supervisors right from the onset, complete their research proposals and literature review, and begin writing the introduction and literature review chapters.

(c) Emphasizing completion and submission of thesis for examination within 36 months of enrolment

At Stage 2 (Year 2), students are expected to write the first two chapters of their thesis, usually the introduction and literature review chapters, prepare data collection instruments and start field work or laboratory work. At Stage 3 (Year 3) which is the final year for full time doctoral students, the model prescribes that students complete field work (data collection), analyze data, complete thesis write-up and submit thesis for examination.

(d) Modified and shortened thesis examination duration

The model recommends that thesis submitted for examination be examined and assessment reports should be ready within 4 weeks under residential thesis examination arrangements or within 6 weeks where thesis is sent to examiners under non-residential examination arrangements (see Appendix 10 Stage 4). It further recommends that results of theses examined be determined within 4 weeks of receiving the thesis assessment reports for straight pass cases, and within 6 weeks for cases referred to the Examination Committee of the Board of Graduate Studies.

(e) Exemption of outstanding doctoral thesis (pass with distinction or graded excellent) from taking formal oral defense

Doctoral candidates with excellent straight passes from all examiners may be exempted from undertaking oral defense of their doctoral thesis. Candidates other than those in this category must undertake oral defense of their thesis within 4 weeks after examination reports are received.

(f) Modified and more restrictive durations for submission of final corrected thesis for graduation

Candidates with excellent straight passes from all examiners may be given a limited duration of 4 weeks to take care of minor revisions and submit their theses for graduation, while those outside this category must revise and submit final corrected versions within 8 weeks after passing the oral defense. This means that a candidate exempted from oral defense should be able to graduate much earlier than one who has to take an oral defense. Doctoral thesis referred for correction should be re-submitted for re-examination within a maximum duration of 12 months.

(g) Warning signals or ‘danger zones’ that students should avoid during their candidature

Similar to the warning signals in Appendix 9, the doctoral track also depicts danger paths to avoid during candidature and these include: extension of candidature into Stage 4 (Year 4), thesis being referred or failed (Stage 7), re-admission, re-registration or dropping out (Stage 8), revising and re-submitting referred thesis for re-examination (Stage 9), re-examined thesis referred for the second time or failed (Stage 10). The model seeks to warn doctoral candidates at the University of Ghana against taking the “long path” to graduate as shown by the red arrows in Appendix 10.

(h) Four-year part time doctoral study duration

According to the model, it is possible to enroll for part-time doctoral studies and complete over four years instead of five years, if the stages in the model are followed. It is recommended that, to avoid walking the long path during full-time study, doctoral candidates must plan early in their candidature to opt for four years of part-time doctoral enrolment, in which case the activities

involved at Stages 1 to 3 over three-year full-time period could be spread over 4 years (Stages 1 to 4).

6.5.9.3 Model for improved thesis submission and examination process

The following findings from the study form the bases for recommending this model presented as Appendix 11:

(a) Students usually failed to give notice of intention to submit theses

Students failed to, or hardly give adequate notice of intention to submit thesis to their supervisors. This situation resulted in pressure being put on their supervisors and heads of department to take steps to nominate examiners for their theses within very short periods or after theses had been submitted by the students. The model has addresses this challenge in the following ways:

(i) Introducing completion of Thesis Submission Intention Form (TSIF)

A student intending to submit his or her thesis at a particular time must complete this form and return it to the student's department and the School of Graduate Studies at least four weeks to the intended date of submitting the theses. Samples of the form from the University of Cape Town and University of South Africa are attached as Appendices 3A and 3B. This would enable the supervisor and the head of department to identify and notify examiners for the thesis and seek their consent in advance.

(ii) **Form for appointment of thesis examiners**

Heads of department may adopt the form for appointment of examiners recommended in this model for appointment of examiners (Appendices 4 and 5). The forms should be submitted directly to the School of Graduate Studies soon after submission of the TSIF.

(b) **Late submission of theses received from students to the School of Graduate Studies for examination**

Some theses were sometimes kept for too long at the departments after students had presented them for onward submission to the graduate school due to various reasons. Meanwhile, the regulations did not permit students to submit theses themselves to the graduate school as is done in some Universities.

The model recommends submission of thesis by the students themselves to the graduate school as is done in most Universities. This would make the student personally responsible for ensuring that the thesis gets to the right place. The caveat here is that information on examiners nominated for the student should be kept confidential and this is taken care of by having heads of department submit the form for nomination of examiners directly to the graduate school.

(c) **Examination of thesis often delayed (from date of submission to determination of result)**

Delay in examination of thesis was identified in this study as one of the major causes of delayed completion. To address this problem, the model prescribes stages, associated activities at each stage, timelines and responsible action officers to transform and speed up the thesis examination process. The main features include the following:

(i) Introduction of residential thesis marking

Optional but attractive Residential Thesis Marking (RTM) for both internal and external examiners should be introduced. This arrangement would reduce the time taken to complete examination of theses considerably to as early as between two (2) weeks and four(4) weeks.

(ii) Early conduct of oral examination seminars for Masters candidates

The model further recommends that all masters' oral examinations be conducted as soon as notice of intention to submit is given and before the thesis is submitted for examination. This would eliminate the situation whereby determination of thesis is suspended because the department was able to organize oral examination seminar for the student.

(iii) Exemption of candidates who obtained excellent or distinction in their theses from oral defense

In the case of doctoral thesis defense, it is recommended that thesis passed with distinction or graded excellent be exempted from formal oral defenses. Thesis submission seminar conducted prior to the submission of thesis at the candidate's department should suffice.

(iv) Early determination of results of theses referred to the Board of Graduate Studies

Thesis reports referred to the Board of Graduate Studies for determination of the result (candidates who did not obtain straight passes from all examiners) should be determined within four (4) weeks of review of assessment reports for such candidates.

(v) Examiners to be encouraged to examine soft copies of theses and submit soft versions of assessment reports

The model strongly recommends submission of soft versions of thesis in addition to hard copies by every masters' and doctoral student. Unless an examiner indicates otherwise, sending soft

copies should be the first and obvious choice for the examiners. This would not only eliminate delays caused in preparing hard copy thesis for dispatch to examiners but also reduce the huge cost involved in the courier and postage services.

(vi) Adherence to shorter durations for examination and determination of thesis results

Recommended durations from submission of thesis for examination to determination of results based on this model are as follows: Thesis examined through the RTM system – maximum of four (4) weeks; Thesis examined through non-residential thesis marking system – maximum of eight (8) weeks; Thesis examined and referred to the Board of Graduate Studies for determination of results – maximum of ten (10) weeks.

6.6 CONTRIBUTION OF THE STUDY TO THE THEORY AND PRACTICE OF EDUCATIONAL MANAGEMENT

The study has contributed new knowledge to the theory and practice of educational management in the specific field of higher education considering its uniqueness as a study that covered the entire spectrum of the nature of postgraduate students' academic experiences and the value of timely postgraduate completion to stakeholders. The extensive nature of the variables, which informed the involvement of a number of respondents, makes this study one of the few studies whose findings are based on a wide range of issues and diverse viewpoints, thereby providing a holistic picture of a pervasive problem that deserves serious attention in higher education management. Due to its diverse nature, new findings in terms of factors responsible for extended completion and non-completion have emerged in addition to the traditional or well-known ones in the literature.

Undoubtedly, the study underscores the fact that throughput challenges can be better appreciated and resolved through a multiple and holistic approach rather than focusing on investigating just one or few aspects of the problem such as supervision related issues.

Another area of contribution to knowledge is the use of the case file review approach to interrogate research problems, which has not been widely used in throughput literature. This study has amply demonstrated the importance of student record keeping as a relevant source of information and a necessity in contemporary research, especially for throughput studies.

Most student throughput studies in the literature depend on data from continuing students (including cohorts, class groups, and at best final year students) as well as statistical data from educational institutions and educational policy agencies. This study made use of past students (persons who had completed their studies) to tell the real stories of their academic experiences.

Practically, the study is multifaceted, in that, it can be situated within more than one aspect of the discipline of educational management, namely: Teacher Education (inclusion of supervisors and examiners), Curriculum Studies (coverage of issues related to students' theoretical preparation and acquisition of research knowledge and skills), Financing of Education (inclusion of issues regarding cost and funding of education), and Academic Quality Assurance issues (inclusion of concerns about facilities for learning), all of which are practical aspects of Educational Management. Above all, the study touches on policy formulation issues at both governmental and institutional levels and should definitely serve as an educational policy document.

The study has therefore extended the frontiers of scholarship and practice in Educational Management.

6.7 RECOMMENDATIONS FOR FUTURE RESEARCH

One of the limitations of the study was the inability of the researcher to delve into the remote causes of certain findings such as the research methods and thesis writing challenges for postgraduate students as mentioned earlier. Another major factor responsible for extended completions and non-completions was supervision challenges including student-supervisor relationships. These two most outstanding challenges are certainly of interest to the researcher and should equally be of interest to other scholars for future research to explore the issues further on a larger scale involving at least three of the six older public Universities, namely, the University of Ghana, Kwame Nkrumah University of Science and Technology, and the University of Cape Coast, which are the leading institutions of postgraduate training in Ghana. Beyond this, there have been certain interventions to address the problem of delayed completion, non-completion and low postgraduate throughput at the University of Ghana since 2010. How these intervention measures have impacted on postgraduate study delivery and throughput after three to four years of their initiation would be a good area for future research.

6.8 CONCLUSIONS

All the objectives and research sub-questions posed have been addressed through the mixed methods approach using literature review, quantitative and qualitative methods: Through the review of relevant literature, the meaning of student throughput has been simplified and its determining factors thoroughly explained; readers would be highly informed about relevant models of student throughput situations and trends as well as postgraduate candidature durations;

an attempt has been made to accurately document postgraduate study delivery and throughput trends for the University of Ghana, indicating low throughput within the period considered for the study; and responsibilities of stakeholders have been identified and clearly laid out.

The survey was comprehensive and made it possible to appraise the extent to which the stakeholders discharged their responsibilities towards achieving high completion rates, the factors responsible for extended completions and non-completions within the context of postgraduate study delivery at the University of Ghana became known. In essence, some factors other than those already known were also identified from the study, thus projecting the uniqueness of this study and its contribution to scholarship.

It is the hope of the researcher that the recommendations made from this study would be given serious attention to add value to postgraduate study delivery at the University of Ghana. It should also be of great value to other higher education institutions.

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APPENDICES

- APPENDIX 1: SAMPLE SUPERVISION CONTRACTS
- APPENDIX 2: THESIS SUPERVISION APPROVAL FORM
- APPENDIX 3A & 3B: NOTICE OF INTENTION TO SUBMIT (SAMPLES)
- APPENDIX 4: APPOINTMENT OF EXAMINERS FORM (MASTERS)
- APPENDIX 5: APPOINTMENT OF EXAMINERS FORM (DOCTORS)
- APPENDIX 6: RAW DATA SHEET FOR SELECTED DELAYED MASTERS
CANDIDATURE CASE FILES
- APPENDIX 7: RAW DATA SHEET FOR SELECTED EXTENDED
DOCTORAL CANDIDATURE CASE FILES
- APPENDIX 8: RAW DATA SHEET FOR SELECTED DOCTORAL DROPOUT
OR NON-COMPLETION CASE FILES
- APPENDIX 9: MODEL FOR IMPROVED MASTERS CANDIDATURE AND
GUIDE TO TIMELY COMPLETION
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EXAMINATION PROCESS
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GRADUATE STUDIES, UNIVERSITY OF GHANA
- APPENDIX 13: DATA COLLECTION INSTRUMENTS (QUESTIONNAIRES
AND INTERVIEW SCHEDULES)

APPENDIX 1

**CODE OF CONDUCT
SUPERVISION AGREEMENT BETWEEN GRADUATE STUDENT AND
SUPERVISOR**



Please also consult the website
<http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=17176>

This **supervision agreement** between

(Name of graduate student) _____
(Signature) _____
(Date) _____

and

(Name of supervisor) _____
(Signature) _____
(Date) _____

is designed to ensure that the supervision experience is as mutually productive as possible.

CANDIDATURE DETAILS

A1 Full name of candidate:

- Surname _____
- First names _____

A2 Academic and professional qualifications:

- Degree(s) _____
- Professional _____

A3 Candidate's experience: (in his/her own words) giving particular attention to research experience and mastery of techniques/second languages/equipment as may be relevant and indicating access to technology e.g. PC equipment, internet access (Attach details as **Attachment A3**, if necessary)**A4 Project description and thesis/dissertation title:**

- Title _____

- Project description (attach full details as **Attachment A4**)

A5 Personal particulars:

- Student number: _____
- Degree registered for: _____
- Postal address: _____

- Postal code: _____
- E-mail address: _____
- Telephone nr(s) (H) _____ Work: _____

Cell/Mobile _____

SUPERVISION ARRANGEMENTS

General obligations of supervisors are outlined in the Procedures. By signing this document, both parties acknowledge their understanding of the general expectations it contains.

A6 Supervisor:

- (a) Initials & surname: _____
- (b) Contact details:
- Telephone nr(s) _____ Cell/Mobile: _____
 - Address: _____

- Postal code: _____
- E-mail: _____

A7 Responsibilities for supervision in this case (in addition to the standard set as listed in the Procedures)

(List in Attachment A7)

A8 Co-supervisor(s)/tutor/mentor, if any:

- (a) Initials & surname: _____
- (b) Contact details:
- Institution: _____
 - Telephone nr(s) _____ Cell/Mobile: _____
 - Address: _____

- Postal code: _____
- E-mail: _____

A9 Responsibilities: (List in Attachment A9)

EXPECTATIONS

B1 Supervisor's expectations

The supervisor must set out in as much detail as he/she can what he/she expects of the candidate, including (where relevant) an assessment of the time to be spent on each phase of the project:

(Enclose expectations as Attachment B1)

B2 Supervisor's plans and commitments2.1 The **supervisor** must set out his/her plans for providing –

- (a) supervision (Enclose as Attachment B2.1a)
- (b) financial support where applicable (for example in cases where the supervisor and the student are involved in a research group or funded research project; see B3 for detail)

(Enclose as Attachment B2.1b)

(c) project finance, space, equipment, technology needs and operating costs

(Enclose as **Attachment B2.1c**)

(d) travel and/or publication support (Enclose as **Attachment B2.1d**)

2.2 Supervision arrangements

(a) Expected absence of supervisor(s) on leave/sabbaticals (giving arrangements for supervision if away for more than 2 months in any one year) during the next 3 years: (Enclose as **Attachment B2.2a**)

(b) Field work: (Outline arrangements for field work as **Attachment B2.2b**)

(c) Laboratory work: (Outline supervision and arrangements for laboratory work (if any) as **Attachment B2.2c**)

(d) Courses and classes (List any class, workshop or course that the student must attend as a pre-requisite and costs associated with this as **Attachment B2.2d**)

(e) Training needs if any (Enclose as **Attachment B2.2e**)

FUNDING PLANS

B3 Specify all approved financial assistance to support this study, and if necessary, how these funds are to be used.

	YEAR	CATEGORY	USE	SOURCE	AMOUNT
Bursaries Salaries					
Laboratory Costs					
Fieldwork					
Equipment					
Conferences Courses					
Other Running Costs					
				TOTAL	

Note: If, on withdrawing or being refused re-registration the student becomes contractually obliged to repay any of the above. This should be noted. Funding from external agencies may stipulate such a provision. (The NRF sometimes does this.) If a lack of progress is due to factors beyond the student's control (e.g. health problems or unavoidable contingencies) the student may not be obliged to repay these funds, and the supervisor(s) should negotiate with the funding agencies for this stipulation to be waived.

THE CANDIDATE'S EXPECTATIONS

B4.1 The candidate must set out in as much detail as he/she can and what he/she expects of the supervisor especially giving attention to access to research facilities. (Provide detail in **Attachment B4.1**)

B4.2 Comment by supervisor on this: (Comments as per **Attachment B4.2**)

THE CANDIDATE’S PLANS AND COMMITMENTS

B5.1 The candidate must set out his/her plan for the project, and a detailed time commitment of what he/**she** plans to give to the project. (Plan as per **Attachment B5.1**)

B5.2 Comment by supervisor: _____ (Comment as per **Attachment B5.2**)

INTELLECTUAL PROPERTY ISSUES

All intellectual property issues are set out in the *Procedures for Master's and Doctoral Students*

OBSERVATIONS BY THE CHAIRPERSON OF THE DEPARTMENT

I have reviewed this completed Code of Conduct/Supervision Agreement and am satisfied that it reflects the shared understanding of supervisor and candidate and that the department is able to meet the obligations to the candidate set out in this Code of Conduct/Supervision Agreement:

Signed: _____
Initials and Surname: _____ Date: _____

OBSERVATIONS BY THE EXECUTIVE DEAN/DEAN’S NOMINEE

I have seen this completed Code of Conduct/Supervision Agreement and I have the following comments:

Signed: _____
Initials and Surname: _____ Date: _____

Once seen by all parties, copies must be returned to and retained by the candidate, supervisor, Chairperson of the Department and College Higher Degrees Committee.



**Newcastle
University**

Research Student /Supervisor Learning Agreement

This Learning Agreement is not intended to be a legally binding agreement but it ensures that students have received, understood, and accepted the expectations of their research programme. The agreement is between:

Name of Supervisor/s:

(Please list all known)

School/s:

and

Name of Student:

Student Number

Research Programme:

Date of Initial Registration :

End of period of Registration:

We commit ourselves to striving for a productive, trustful and honest working relationship, aiming for the achievement of a research degree award, which can be best achieved by adhering to the principles contained in this learning agreement.

1. Supervisory and Working Arrangements

- 1.1 The supervisor/s will explain the respective roles of the academic supervisor and the other member/s of the supervisory team
- 1.2 The supervisor and student will identify who is responsible for arranging meetings or other formal contact and agree the agenda for these structured interactions. For full-time students the formal contact between student and supervisor or supervisory team should be at least 10 structured interactions per year, normally monthly. For part-time students or those studying their programme by distance learning a pro-rata number of formal meeting will be agreed. It should be noted that additional meetings may be initiated if necessary.
- 1.3 It is the responsibility of the student to make a record of the formal contact with their supervisor/s in their Research Training Portfolio (RTP), along with a list of any agreed action points.
- 1.4 The supervisor/s will ensure that the student is advised of appropriate School/ Faculty/ University health and safety policy and procedures. The student agrees to observe these requirements.

2. Project Planning and Milestone Setting

- 2.1 The supervisor/s will give guidance about the nature of research and the standards expected, the planning of the research programme, literature and sources, requisite techniques, and the avoidance of plagiarism.
- 2.2 The student will accept responsibility for their own research activity and learning under the direction of their supervisor/s. The student will be responsible for submitting a project proposal within the timescale established by the Faculty and to maintaining the progress of his/her work in accordance with the stages agreed.
- 2.3 Any circumstances which might require the mode of study to be modified or for University registration to be extended, suspended or withdrawn should be brought to the attention of the supervisor by the student.
- 2.4 The supervisor/s and student will identify who is responsible for obtaining any ethical clearances required by the research project as well as who is responsible for any matters relating to Intellectual Property Rights (IPR).

3. Training and Personal Development

- 3.1 It is agreed that the student's specific training needs, both personal and project related, will be identified.
- 3.2 It is the responsibility of the student to participate in identifying their personal training needs and to attend training programmes provided by School/ Faculty/ University.
- 3.3 It is the responsibility of the supervisor/s to make the student aware of the importance of continued research training and to identify opportunities for training in accordance with Faculty guidelines.
- 3.4 It is the responsibility of the student to keep a record of their skills development in their Research Training Portfolio, via the ePortfolio on-line system, over the period of the programme.

4. Progression and Monitoring

- 4.1 The supervisor/s will ensure that the student is made aware of any inadequacy in his/ her progress or standards of work below that generally expected, confirming this in writing to the student and arranging any supportive action necessary.
- 4.2 *It is the duty of the student to comply with good academic practice as outlined in University and School guidance and the duty of the supervisor to point out practices which are below the standard expected.*
- 4.2 An Annual Progress review is required for all research students in order to continue on the programme. The supervisor/s will ensure that the student is aware of the requirements for progression including, where appropriate, the procedure for confirming candidature. The supervisor/s and student will agree to participate and fulfil the requirements for progression.
- 4.3 The supervisor/s and student will agree any deadlines for submission of written work and the times involved for supervisor feedback.
- 4.4 The supervisor/s will outline the extent of assistance that will be given for students to prepare reports, presentations and the responsibility they will have to report annually on the student's progress.

5. Submission and Completion

- 5.1 The student will be responsible for submitting their completed thesis within the timescale agreed with the supervisor/s in their project plan and in accordance with the terms of their individual programme candidature.
- 5.2 The supervisor/s will ensure that the student is aware of the procedures for submitting the completed thesis and the deadline for this in accordance with the regulations of the programme.

6. Collaborating and Sponsoring Organisations

- 6.1 Both the student and supervisory team agree to fulfil their responsibility to any collaborating or sponsoring organisation, including compliance with any necessary confidentiality agreements.

We confirm that, at our meeting on (date)

We reached agreement on our roles and responsibilities as supervisor/s and student in accordance with the above summary.

.....

Signed by the supervisor/s on
 behalf of the University of Newcastle
 upon Tyne

Signed by the postgraduate student

Once signed this agreement should be forwarded by the supervisor to the relevant graduate school and a copy kept for reference within the school and in the student's Research Training Portfolio. This should be completed within the first 3 months of the student's candidature



GRADUATE STUDENT - SUPERVISOR AGREEMENT¹

Student

Name :	Email :
--------	---------

Course

Degree :	Start Date:
----------	-------------

Title of Project

--

Supervisor(s)

Name :	Email :
--------	---------

Department/College

--

Student's Advisory Committee Members

<ul style="list-style-type: none"> • • •

Student Funding

Source:
Amount:
Duration :

- This agreement is to be regarded as an aid to planning and completing the project. It is not intended to be legally binding.
- The Supervisor and the Student are free to change, omit, or add items to suit their joint purposes.
- If the research question or methods change substantially, or issues arise which require that the agreed dates be altered, modify the contract, **highlighting the changes**.
- **Copies** should be provided to both signatories.

¹ Modified from: Hopkins, W.G. (2001). A research agreement for students in exercise and sport science. Sport Science, 5, available at: <http://sportsoci.org/>.

What **question(s)** does the project address?

1. Describe the **design** of the study, the **subjects**, **sample size**, and the **independent** and **dependent variables**.
- For multiple projects, duplicate this panel:

Design :
Subjects :
Sample size :
Independent Variables :
Dependent Variables :

2. Who is giving **statistical advice** on the design and analysis?

3. List any **difficult, invasive, or time-consuming measures** that require another person's help. Who is helping, and what is their status on any publication (co-authorship or acknowledgement)?

Measures :
Person(s) :
Publication Status :

4. Describe any **pilot work completed** or needed to be completed to establish the feasibility of the project, including student training (animal care; statistics including commercial software such as SPSS, etc.).

5. What is the supervisor's **initial** intellectual contribution to this research project?

6. What is the student's **initial** intellectual contribution to this research project?

7. Are there any pre-existing contracts that impact on the student's ability to claim **Intellectual Property rights** or that may delay publication?

- Supervisor and student should discuss IP rights and append any written agreement to this document.

8. What is the **approximate cost** of the research project not including the student's stipend? Where are the funds coming from?

- If the student is expected to contribute to the cost of the project this must be made clear at the outset.

Cost :	Funding source(s) :
--------	---------------------

9. If ethics approval is required, who will write the first draft of the application? What is the timeline for submission?

Who :	Timeline :
-------	------------

10. Indicate **who is responsible** for each of the following issues.

- Securing assistance of others (e.g. technician, statistician) :
- Certification of student (e.g. for lab safety procedures) :
- Calibration and maintenance of equipment :
- Agreements or contracts for access to outside equipment/facilities :
- Intellectual property rights for collaborative work with other institutions :

Issue :	Responsibility :
---------	------------------

11. If human subjects are involved, who will **provide feedback to subjects** when the project is finished?

--

12. What will be the **role, if any, of the supervisor in obtaining and analyzing the data?**

- Examples: active assistance with whatever; training of other personnel; guidance with analysis only.

--

13. How many **hours per week** will the student spend on the project generally (when gathering data and when writing up)?

Fall Term:
Winter Term : :
Spring/Summer Term:

14. How many **hours per week of additional, formal commitments** (coursework, marking, demonstrating, teaching, outside work) does the student have?

Fall Term:
Winter Term : :
Spring/Summer Term:

15. When will the student table a **written proposal** and give a **seminar** on the proposal?

Written proposal :	Seminar :
--------------------	-----------

16. How often or when will the student have **regular meetings** with the supervisor and supervisory committee, and who will keep and circulate minutes of the meetings?

Meetings with supervisor :
Meetings with committee :
Minutes :

17. Who is to take responsibility to **arrange meetings**?

--

18. If **shared equipment or facilities** must be used, who is responsible for booking the equipment or otherwise ensuring it will be available?

List Equipment/Facility :
Booked by:

19. Which **seminars, colloquia and journal clubs/research teams** is the student expected to attend?

--

20. What is the approximate date for completion of lab/field work/collection of data?

--

21. What is the approximate date for completion of data analysis?

--

22. Indicate the approximate dates of submission of the first draft of the thesis (could be subdivided by section of thesis).

--

23. How long at most will the supervisor take to review and return each draft?

# of drafts :	Turn-around time :
---------------	--------------------

24. Will the student write up the project for **journal publication(s)** before extending it into a thesis?

--

25. If the data are sufficient to **submit for publication**, who will write the first draft of the manuscript, and what will be the order of the authors?

Write first draft :
Order of authors :

26. What is the model for the **form of the thesis** (e.g., traditional chapters, collection of manuscripts with Introduction and Conclusion), **style of the thesis** (styles for headings, references, tables, and figures; e.g., APA, a specific journal, a past thesis), and will it be submitted in paper or electronic form?

Form :
Style :
Paper or Electronic :

27. If the student is **dissatisfied with supervision** and has been unable to resolve it with the supervisor, who will the student consult?

--

I agree, to the best of my ability, to act in accordance with the above agreement.

Student: **Date:**

Supervisor(s): **Date:**

APPENDIX 2

OISE GRADUATE STUDIES THESIS SUPERVISION APPROVAL

Please submit the completed form to the OISE Registrar's Office, Graduate Unit, 4th Floor.

Student Name: _____ Student Number: _____

Department: _____ Degree: _____ Program: _____

Date of First Registration: _____ Terminal Date: _____

A: Supervisory Committee. Please read the following very carefully

1. M.A. students completing a thesis require the signatures of the supervisor and second reader.
2. Ph.D. and Ed.D. students require the signatures of the supervisor and two regular committee members.

When forming a thesis committee:

- Each member must indicate his/her acceptance to serve on the committee by his/her signature
- If a nominee is not a member of the U of T, School of Graduate Studies, home department approval must be given
- A change in Thesis Supervisor must be accompanied by a rationale
- To indicate a change in Committee Membership: list all current members, but include signatures of new members only. Previous members not listed will be assumed to have withdrawn from the Committee.

Check (x) one and supply information required: () New Committee () Change in Membership

	Name	Department	Signature
Supervisor:	_____	_____	_____
Member:	_____	_____	_____
Member:	_____	_____	_____
Member:	_____	_____	_____

B: Title of Thesis

Check (x) one of the following: () Original Title () Change in Title (attach rationale for change)

Type or print clearly: _____

C: Ethics Review

If the proposed research involves human subjects, animal subjects, or biohazard materials, the student and supervisor must submit a protocol for research ethics review. For forms and more information regarding research ethics review, see the Ethics Review Office website: <http://www.research.utoronto.ca/ethics/>. The thesis committee must approve the thesis proposal *before* a protocol is submitted for ethics review, and the protocol must be approved by the relevant ethics committee *before* data collection begins.

D: Departmental Approval

Course requirements have been completed (); have not been completed ().

If not completed, attach letter and rationale if any course requirements have been waived.

I hereby approve the appointment of your Supervisor and/or Supervisory Committee and the title of your Thesis. Your Supervisory Committee will act for the Department in giving formal approval to your proposal, in receiving progress reports from time to time, and in the evaluation of the thesis. It is expected that you will take the initiative in keeping in touch with your Supervisory Committee.

Department Chair's Signature: _____ Date: _____

The Ontario Institute for Studies in Education of the University of Toronto

THESIS PROPOSAL ABSTRACT

Student Name: _____

Department: _____

Degree: _____ Program: _____

Thesis Supervisor: _____

Thesis Title: _____

Ethics Review: If the proposed research involves human subjects, animal subjects, or biohazard materials, the student and supervisor must submit a protocol for research ethics review. For forms and more information regarding research ethics review, see the Ethics Review Office website: <http://www.research.utoronto.ca/ethics/>. The thesis committee must approve the thesis proposal *before* a protocol is submitted for ethics review, and the protocol must be approved by the relevant ethics committee *before* data collection begins.

Brief Statement of Thesis Proposal

The student's Thesis Committee approved this thesis proposal.

Date: _____ Signed: _____
Thesis Supervisor

Distribution: 2 Copies to be returned to the Registrar's Office, Graduate Studies Unit;
1 copy to be retained by the student

July 2007

APPENDIX 3A



DDB09 – Notice of intention to submit PhD thesis

Complete and return this form to:

Doctoral Degrees Board Office
 Masingene Building
 Middle Campus, Room 5.04
 University of Cape Town
 Rondebosch, 7700

Contact:

Janine Isaacs
 Tel: (021) 650 2202
 Fax : (021) 650 4913
 E-mail: janine.isaacs@uct.ac.za

Contact details (during examination/graduation period)	
Name	
Address	
Telephone number	
Fax number	
E-mail address	

I hereby declare that I intend to submit my thesis for the **June / December** graduation ceremony.
 (Please **delete** that which is not applicable).

Student number	
Department	
Supervisor/s name	
Supervisor/s e-mail address	
Thesis title	

Should I not be able to meet the deadlines for submission as set out in Rule GP5.3 of the General Rules and Policies Handbook, I **undertake to inform the Doctoral Degrees Board Officer** immediately.

Note: If you submit your thesis for examination at a time other than the specified submission dates of 11 February 2013 (before 12h00) or 15 August, there may be a considerable delay before you receive the result. While every effort will be made to process the work for examination as soon as possible, the University does not however undertake to reach a decision on the award of the degree by any specific date.

Please also note Rule GP5.3 of the General Rules and Policies Handbook on re-registration that stipulates that if you do not submit by 12h00 on the first day of the new academic year, you will be required to re-register.

Candidate's Signature		Date	
Supervisor's Signature (I support / I do not support submission of this thesis for examination)		Date	



<p>Funder</p> <p>Who funded the project? Ignore any bursaries or scholarships received.</p>	
<p>Patenting opportunities.</p> <p>Describe any IP that you feel may be worth protecting.</p>	
<p>Public Disclosure</p> <p>Has there already been any presentation or publication of the work?</p>	
<p>Research Materials</p> <p>Are there any research materials (cultures, software, etc – see IP Policy for full description) that have been developed? If so broadly describe them and indicate who will become the custodian of them if not your supervisor.</p>	

RCIPS Assessment

Protectable IP present?	
Public disclosure status	
Follow-up actions	
IP already protected?	
Funder issues?	

APPENDIX 3B

**NOTICE OF INTENTION TO SUBMIT DISSERTATION/THESIS FOR EXAMINATION
NOTICE**

SURNAME AND INITIALS: _____

STUDENT NUMBER: _____

DEGREE: _____

FINAL TITLE OF THE DISSERTATION/THESIS UNDER WHICH IT WILL BE SUBMITTED (please print and ensure that the correct wording is used)

I HEREBY GIVE NOTICE THAT I INTEND TO SUBMIT MY DISSERTATION/THESIS FOR EXAMINATION WITH A VIEW TO THE GRADUATION CEREMONY TO BE HELD DURING (please indicate with X)

AUTUMN 20.....	SPRING 20.....
-----------------------	-----------------------

SIGNATURE

DATE

APPENDIX 4

Appointment of Examiners Form Masters' Degrees



School of Graduate Studies

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version at <http://get.adobe.com/reader>. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Fill in the required data, save and print the file; (5) Send the completed form to

School of Graduate Studies; Memorial University of Newfoundland; IIC-2012 (Bruneau Centre for Research and Innovation); St. John's, NL A1C 5S7 Canada Fax: 709.864.4702 eMail: sgs@mun.ca

Student Information			
MUN #:	Last Name:	First Name:	Middle Name:
Anticipated Submission Date:		Academic Unit:	
Thesis/Project/Internship/Folio/Practicum Title:			
External Examiner Information			
Last Name:		First Name:	Title:
Current Position:		Highest Degree Held:	
Address:			
Telephone:		Fax:	eMail:
Reason for recommendation (e.g. publications in area, etc.)			
Internal Examiner Information			
Last Name:		First Name:	Title:
Academic Unit:		eMail:	
Telephone:			
Last Name:		First Name:	Title:
Academic Unit:		eMail:	
Telephone:			
Signature of Head of Academic Unit or Delegate			
I recommend the examiners above and confirm that they have agreed to serve in this capacity. I also certify that the examiners have had no involvement with the research/writing of this thesis.			
Signature of Head of Academic Unit:		Date:	

Memorial University protects privacy and maintains the confidentiality of personal information. The information requested in this form is collected under the general authority of the Memorial University Act (RSNL1990CHAPTERM-7). It is required for administrative purposes of the School of Graduate Studies. If you have any questions about the collection and use of this information, please contact the Manager—Enrolment and Strategic Initiatives, School of Graduate Studies, at 709.864.2445 or at sgs@mun.ca.

Updated December 2011

APPENDIX 5

Appointment of Examiners Form

Doctoral Degrees



School of Graduate Studies

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version at <http://get.adobe.com/reader>. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Fill in the required data, save and print the file; (5) Send the completed form to

School of Graduate Studies; Memorial University of Newfoundland; IIC-2012 (Bruneau Centre for Research and Innovation); St. John's, NL A1C 5S7 Canada Fax: 709.864.4702 eMail: sgs@mun.ca

Student Information			
MUN #:	Last Name:	First Name:	Middle Name:
Anticipated Submission Date:		Academic Unit:	
Thesis Title:			
External Examiner Information			
Last Name:	First Name:	Title:	
Current Position:	Highest Degree Held:		
Address:			
Telephone:	Fax:	eMail:	
Reason for recommendation (e.g. publications in area, etc.)			
Last Name:	First Name:	Title:	
Current Position:	Highest Degree Held:		
Address:			
Telephone:	Fax:	eMail:	
Reason for recommendation (e.g. publications in area, etc.)			
Internal Examiner Information			
Last Name:	First Name:	Title:	
Academic Unit:			
Telephone:	eMail:		
Last Name:	First Name:	Title:	
Academic Unit:			
Telephone:	eMail:		
Signature of Head of Academic Unit or Delegate			
I recommend the examiners above and confirm that they have agreed to serve in this capacity. I also certify that the examiners have had no involvement with the research/writing of this thesis.			
Head of Academic Unit's Signature:		Date:	

Memorial University protects privacy and maintains the confidentiality of personal information. The information requested in this form is collected under the general authority of the Memorial University Act (RSNL1990CHAPTER-7). It is required for administrative purposes of the School of Graduate Studies. If you have any questions about the collection and use of this information, please contact the Manager – Enrolment and Strategic Initiatives, School of Graduate Studies, at 709.864.2445 or at sgs@mun.ca.

Updated December 2011

APPENDIX 6

Candidature data obtained from selected masters extended case files	
Case No.	EVENTS AND REASONS FOR DELAYED CANDIDATURE
ME/001	Candidate registered for the MPhil programme in August 2004 and was expected to complete and submit thesis in July 2006. Candidate submitted thesis to department in June 2009 thus extending study period for almost 36 months. Department submitted thesis to the graduate school a day after it was submitted. As at August 2010, two out of three assessment reports had been received on the candidate's thesis. Candidate spent 60 months instead of 24 to submit thesis for examination. As at August 2010 when thesis result was determined, candidate had spent 60 months on the programme without obtaining the degree.
ME/002	Candidate registered for the MPhil programme in August 2004 and was expected to complete and submit thesis in July 2006. The date of submission of thesis to the department and the graduate school for examination were not available, hence candidate's extension duration cannot be determined. As at August 2010, only two thesis examiners' assessment reports had been received, and the candidate had spent 72 months (6 years) but was yet to be awarded the degree.
ME/003	Candidate registered for the MPhil programme in August 2005 and was expected to complete and submit thesis in July 2007. The date of submitting thesis to the department and the school of graduate studies for examination were not available. Candidate's extension duration cannot be determined. As at August 2010, only two thesis examiners' assessment reports had been received and the candidate had spent approximately 60 months but was yet to be awarded the degree.
ME/004	Candidate registered for the MPhil programme in August 2005 and was expected to complete and submit thesis in July 2007. Candidate submitted thesis to the department in January 2009, and department submitted thesis to the graduate school for examination after 6 months in June 2009. As at August 2010, only two examiners' assessment reports had been received on the thesis. Candidate spent 42 months instead of 24 to complete and submit thesis to department. Candidate therefore had approximately 18 months of extended study period. It took the department 6 months to submit thesis to graduate school for examination. Candidate's study duration was 60 months from the time of registration to the time of determining thesis result in August 2010.
ME/005	Candidate registered for the MPhil programme in August 2005 and expected date of completion and submission of thesis for examination was July 2007. Thesis was submitted to the department in August 2008, thus, the candidate had extended study period by almost 12 months. Department submitted thesis to the graduate school in June 2009. As at August 2010, only two examiners' assessment reports had been received on the candidates' theses. Candidate spent 46 months on the programme as at August 2010 when the thesis result was determined.
ME/006	Candidate registered for the MPhil programme in August 2005 and was expected to submit thesis in July 2007. Candidate submitted thesis to the department in September 2008 and thus extended study period for 14 months. Department submitted to the graduate school in June 2009, 9 months after thesis was submitted to the department. As at August 2010, only two external examiners' assessment reports had been received on the candidates' theses. Candidate spent 60 months without graduating as at the time thesis result was determined in August 2010.
ME/007	Candidate registered for the MPhil programme in August 2006 and was expected to complete and submit thesis in July 2008. Candidate submitted thesis to the department in July 2009, thus extending study duration for 12 months. Department submitted thesis to the graduate school in the same month. As at August 2010, only two examiners' assessment reports had been received on the candidates' theses. As at the date of determining thesis result, candidate has spent 48 months on the programme but was yet to be awarded the degree.
ME/008	Candidate registered for the MPhil programme in August 2006 and was expected to submit thesis in July 2008. Candidate submitted thesis to the department in December 2008, thus extending study duration for five months. Department submitted thesis to the graduate school in June 2009, six months after thesis was received at the department. As at August 2010, only two examiners' assessment reports had been received on the candidates' theses. The candidate spent 30 months instead of 24 to complete and submit thesis to the department; however, it took department 6 months to submit thesis to graduate school for examination. As at the time of determining thesis result, candidate had spent 48 months on the programme.
ME/009	Candidate registered for the MPhil programme in August 2006 and was expected to submit thesis in July 2008. Candidate submitted thesis to the department in September 2008, thus extending study period for two months only. Department submitted thesis to the graduate school in March 2009, six months after candidate had submitted thesis

	to the department. As at August 2010, only two examiners' assessment reports had been received on the candidates' thesis. Candidate had spent 48 months on the programme as at the date of determining thesis result.
ME/010	Candidate registered for the MPhil programme in August 2003 and was expected to complete and submit thesis in July 2005. Candidate submitted thesis to department in August 2007, thus extending study period for 24 months. Department submitted thesis to the graduate school a day after submitting to the department. As at August 2010, only two examiners' assessment reports had been received on the candidates' theses. The candidate spent 48 months instead of 24 to complete and submit thesis to the department and the graduate school for examination. As at the time of determining thesis result, candidate spent 84 months (7years) on the programme.

APPENDIX 7:

Raw data sheet for selected extended doctoral candidature case files

CASE FILE NO. DE/001

The candidate registered for a part-time PhD programme of five years duration in Linguistics but graduated after thirteen years of candidature duration. Candidature events are summarized below.

Candidature events/stages	Timelines
Date of First Registration/Enrolment	August 1997
Normal date for submission of thesis	July 2002
Date thesis was submitted for examination	August 2004
Period of extended candidature	24 months
Date thesis result was determined (Thesis Referred)	October 2005
Re-registration	January 2006
Date thesis was submitted for re-examination	January 2007
Thesis examination duration: First examination: Re-examination:	24 months (August 2004 to December 2006) 28 months (February 2007 to June 2009)
Date of taking oral defence	December 2009
Date result of re-examined thesis determined	January 2010
Date final thesis was submitted for graduation	December 2010
Final thesis submission duration	January to December 2010 (12 months)
Candidature duration	August 1997 to Dec. 2010 (13 yrs and 5 months)
Other details: Age at enrolment: 40; occupation: university lecturer; study programme abroad beneficiary; full time lecturing while a PhD student; 24 months extension; thesis referred; candidate re-registered; thesis examined twice; candidate spent 12 months to revise and submit final copy of thesis for graduation.	

CASE FILE NO. DE/002

Candidate registered for a full time PhD programme of three years duration in English but graduated after five years and seven months of candidature duration. Below is a summary of candidature events.

Candidature events	Timelines
Date of First Registration/Enrolment	August 2004
Normal date for submission of thesis	July 2007
Date thesis was submitted for examination	November 2007
Period of extended candidature	6 months
Date of taking oral defence	December 2009
Date thesis result was determined (Pass with correction)	December 2009
Thesis examination duration	Nov. 2007 to Dec. 2009 (24 months)
Date final thesis was submitted for graduation	February 2010
Final thesis submission duration	12/2009 to 02/2010 (2 to 3 months)

Candidature duration	Aug. 2004 to Feb. 2010 (5 yrs and 7 months)
Other details: age at enrolment: 41; occupation: university lecturer; government scholarship beneficiary; 6 months extension; thesis examination delayed.	

CASE FILE NO. DE/003

Candidate registered for a full time PhD programme of three years duration in African Studies, graduating after seven years and six months of candidature duration:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2002
Normal date of thesis submission	July 2005
Date Thesis was submitted for examination	June 2006
Period of extended candidature	12 months
Date oral defence was taken	May 2009
Date thesis result was determined (Pass with corrections)	May 2009
Thesis examination duration	June 2006 to May 2009 (3 years)
Date final thesis was submitted for graduation	January 2010
Final thesis submission duration	May 2009 to January 2010 (8 months)
Candidature duration	Aug. 2002 to Jan. 2010 (7 yrs and 6 months)
Other details: age at enrolment: 44; occupation: university lecturer; government scholarship beneficiary; 12 months of extended duration; thesis examination delayed; candidate delayed in correcting thesis for final submission and graduation.	

CASE FILE NO. DE/004

Candidate registered for a part time PhD programme of five years duration in History and graduated after ten years of candidature duration. Candidature events were as summarized below:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2001
Normal date of thesis submission	July 2006
Date thesis was submitted for examination	September 2008
Period of extended candidature	27 months (2 years and 3 months)
Date Oral defence was taken	August 2009
Date thesis result was determined (Thesis referred)	November 2009
Re-registration	September 2010
Date thesis submitted for re-examination	December 2010
Date re-examined thesis result determined	July 2011
Thesis Examination duration: First examination	12 months
Second examination	8 months
Date final copy of thesis submitted for graduation	September 2011
Final thesis submission duration	July to Sept. 2011 (two months)
Candidature duration	August 2001 to September 2011 (10 years)
Other details: age at enrolment: 56; occupation: university lecturer and head of dept; candidate was on study leave and was sponsored by employer; 27 months of extended period; thesis examination delayed; thesis referred; candidate re-registered to rework thesis; re-examination delayed; early submission of revised thesis for graduation.	

CASE FILE NO. DE/005

Candidate registered for a part time PhD programme of five years duration in Sociology but graduated after six years and eight months of candidature duration. Candidature events were as summarized below.

Candidature events	Timelines
---------------------------	------------------

Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2008
Date thesis was submitted for examination	July 2008
Period of extended candidature	Submitted on time
Date oral defence was taken	December 2009
Date thesis result was determined (Pass with corrections)	January 2010
Thesis examination duration	July 2008 to August 2009 (13 months)
Date final thesis submitted for graduation	March 2010
Submission of final thesis for graduation	January to March 2010 (2 to 3 months)
Candidature duration	August 2003 to March 2010 (6 years and 8 months)
Other details: age at enrolment: 47; occupation: university lecturer; government scholarship beneficiary; candidate submitted thesis on time; thesis examination delayed; final revised thesis was submitted early for graduation.	

CASE FILE NO. DE/006

Candidate registered for a part time PhD programme of five years duration in Adult Education but graduated after six years and six months of candidature duration:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2008
Date thesis submitted for examination	August 2008
Period of extended candidature	Submitted on time
Date oral defence was taken	July 2009
Date thesis result was determined (Pass subject to corrections)	September 2009
Thesis examination duration	July 2008 to May 2009 (10 months)
Date final thesis submitted for graduation	December 2009
Submission of final thesis for graduation	Sept. to Dec. 2009 (3 to 4 months)
Candidature duration	Aug. 2003 to Dec. 2009 (6 yrs and 6 months)
Other details: age at enrolment: 50; occupation: university administrator; self-sponsored cost of studying; thesis submitted on time; delay in thesis examination; revised thesis submitted early for graduation.	

CASE FILE NO. DE/007

Candidate registered for a full time PhD programme of three years duration in the Study of Religions and graduated after six years and ten months of candidature duration.

Candidature events	Timelines
Date of First Registration/Enrolment	August 2004
Normal date of thesis submission	July 2007
Date thesis submitted for examination	June 2009
Period of extended candidature	24 months
Date all examiners' reports were received	August 2010
Date Oral defence was taken	October 2010
Thesis examination duration	June 2009 to October 2010 (16 months)
Date Thesis Result was determined (Pass with corrections)	November 2010
Date final thesis submitted for graduation	May 2011
Submission of final thesis for graduation	November 2010 to May 2011 (7 months)
Candidature duration	August 2004 to May 2011 (6 years and 10 months)

Other details: age at enrolment: 30; occupation: unemployed; study abroad programme beneficiary; 24 months of extended period; examination of thesis delayed lasting for 16 months; oral defence taken late; thesis revision for graduation delayed.

CASE FILE NO. DE/008

Candidate registered for a part time PhD programme of five years duration in Archival Studies, graduating after 7 years and 4 months of candidature duration. Profile of events during candidature were as follows:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2008
Date thesis submitted for examination	June 2010
Period of extended candidature	24 months
Date all examiners' reports were received	September 2010
Thesis examination duration	June to October 2010 (5 months)
Date oral defence was taken	October 2010
Date thesis result was determined (Pass subject to correction)	October 2010
Date final thesis submitted for graduation	November 2010
Final thesis submission duration	October to November 2010 (2 months)
Candidature duration	August 2003 to Nov. 2010 (7 years and 4 months)

Other details: age at enrolment: 46; occupation: university lecturer; candidate was on study Leave with pay and sponsored by employer; full-time lecturing during candidature resulting in limited time for research; thesis examination delayed; revised thesis submitted early for graduation.

CASE FILE NO. DE/009

Candidate registered for a part time PhD programme of five years duration in Sociology, graduating after 9 years and 5 months of candidature duration. Candidature events were as indicated below:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2008
Date thesis was submitted for examination	June 2012
Period of extended candidature	48 months (4 years)
Date all examiners' reports were received	September 2012
Thesis Examination duration	June to October 2012 (5 months)
Date Oral defence was taken	October 2012
Date thesis result was determined and result	October 2012 (Pass with correction)
Date final thesis submitted for graduation	December 2012
Final thesis submission duration after oral defence	October to December 2012 (3 months)
Candidature duration	August 2003 to Dec. 2012 (9 years and 5 months)

Other details: age at enrolment: 48; occupation: university lecturer; candidate was on study leave with pay and was also sponsored by employer; full time lecturing during PhD studies leaving him with limited time for research and thesis writing; data collection difficulties due to unwillingness of study institution to grant access to data considered classified; change of research topic in the third year of registration; new topic and supervisor

approved thereafter; candidate re-admitted and granted further three years in the sixth year to submit thesis for examination; candidature extended for 48 months.

CASE FILE NO. DE/010

Candidate registered for a part time PhD programme of five years duration in Sociology, graduating after 7 years and 7 months of candidature duration:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2008
Date thesis submitted for examination	July 2010
Period of extended candidature	24 months
Date all examiners' reports were received	October 2010
Date thesis result was determined and result	December 2010 (Pass subject to corrections)
Thesis examination duration	July to November 2010 (5 months)
Date oral defence was taken	November 2010
Date final thesis submitted for graduation	February 2011
Final thesis submission duration after oral defence	December 2010 to February 2011 (3 months)
Candidature duration	August 2003 to Feb. 2011 (7 years and 7 months)
Other details: age at enrolment: 38; occupation: university lecturer; candidate was on study leave with pay and sponsored by employer; ISEP/North Carolina exchange student; full time lecturing alongside PhD study; there was change of external examiner for candidate's thesis; 24 months of extended study duration; there was some delay in thesis examination; revised thesis submitted early.	

CASE FILE NO. DE/011

Candidate registered for a full time PhD programme of three years duration in Animal Science, graduating after six years of candidature duration. The candidature events were as follows:

Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date of thesis submission	July 2006
Date thesis submitted for examination	November 2008
Period of extended candidature	28 months (2 years and 4 months)
Date all examiners' reports were received	March 2009
Thesis Examination duration	November 2008 to April 2009 (6 months)
Date oral defence was taken	April 2009
Date thesis result was determined and result	May 2009 (Pass subject to correction)
Date final thesis submitted for graduation	September 2009
Final thesis submission duration for graduation	May to September 2009 (5 months)
Candidature duration	August 2003 to Sept. 2009 (6 years)
Other details: age at enrolment: 44; occupation: research officer; sponsored candidate; difficulties in acquiring sensitive equipment for research; 28 months extended duration; combined working with PhD studies; thesis examination lasted for 6 months; candidate delayed in submitting final thesis for graduation.	

CASE FILE NO. DE/012

Candidate registered for a full time PhD programme of three years duration in Soil Science but graduated after 8 years and 10 months of candidature duration. The following is a summary of candidature events.

Candidature events	Timelines
Date of First Registration/Enrolment	August 2002
Normal date of thesis submission	July 2005
Date thesis was submitted for examination	June 2007
Period of extended candidature	24 months
Date all examiners' reports were received	May 2008
Thesis Examination duration	June 2007 to June 2008 (12 months)
Date Oral defence was taken	June 2008
Date Thesis Result was determined and result	June 2008 (Pass with correction)
Date final thesis submitted for graduation	May 2011
Final thesis submission duration after oral defence	June 2008 to May 2011 (36 months)
Candidature duration	August 2002 to May 2011 (8 years and 10 months)
Other details: age at enrolment: 39; occupation: research officer; government bursary beneficiary; exchange abroad student; combining work with PhD studies; extended study period for 24 months; for 36 months submission of final corrected thesis delayed for 36 months; candidate re-registered to submit final corrected version of thesis.	

CASE FILE NO. DE/013

Candidate registered for a part time PhD programme of five years duration in Microbiology but graduated after 8 years of candidature duration. The candidature events are summarized below.

Candidature events	Timelines
Date of First Registration/Enrolment	February 2003
Normal date for thesis submission	January 2008
Date thesis was submitted for examination	February 2010
Period of extended candidature	24 months
Date all examiners' reports were received	June 2010
Thesis Examination duration	February to June 2010 (5 months)
Date oral defence was taken	August 2010
Date thesis result was determined and result	October 2010 (Pass subject to corrections)
Date final thesis submitted for graduation	February 2011
Submission of final thesis after oral defence	October 2010 to February 2011 (5 months)
Candidature duration	February 2003 to Feb. 2011 (8 years)
Other details: age at enrolment: 37; occupation: university lecturer; candidate extended study duration by 24 months citing lack of funding for laboratory work as the reason as he needed more time to source for additional funding for his research on HIV-AIDS; thesis examination delayed and lasted for 5 months; thesis result was determined 3 months after the oral defence; and it took candidate 5 months to submit final thesis for graduation.	

CASE FILE NO. DE/014

Candidate registered for a full time PhD programme of three years duration in Public Health but graduated after 7 years and 7 months of candidature duration. A summary of candidature duration is as indicated below.

Candidature events	Timelines
Date of First Registration/Enrolment	August 2002
Normal date for thesis submission	July 2007

Date thesis was submitted for examination	August 2008 (by student); Feb. 2009 (by department)
Period of extended candidature	24 months
Date all examiners' reports were received	December 2009
Thesis Examination duration	February 2009 to December 2009 (11 months)
Date oral defence was taken	January 2010
Date thesis result was determined and result	January 2010 (Pass with correction)
Date final thesis submitted for graduation	February 2010
Submission of final thesis after oral defence	January to February 2010 (one month)
Candidature duration	August 2002 to Feb. 2010 (7 years and 7 months)
Other details: age at enrolment: 33; occupation: medical officer; lack of funding for field work; research site located far away from institution of study; also had difficulty in obtaining data for research; candidate extended study duration by 24 months; thesis kept at department for 8 months after submission by the candidate; thesis examination delayed, lasting for 11 months; candidate submitted revised final thesis within one month for graduation.	

CASE FILE NO.DE/015

Candidate registered for a part time PhD programme of five years duration in Environmental Science, but graduated after 7 years and 7 months of candidature duration. The candidature events were as follows:

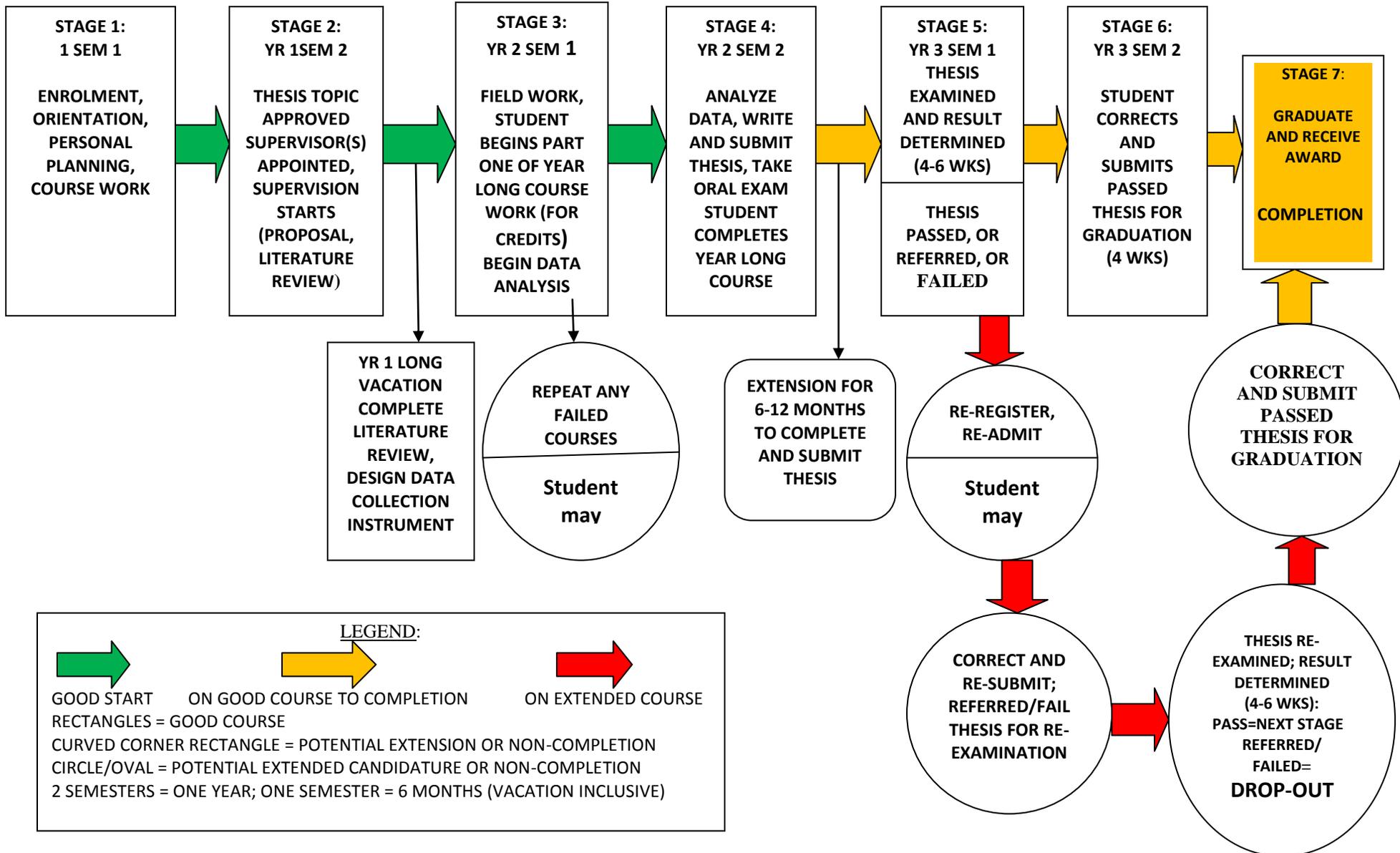
Candidature events	Timelines
Date of First Registration/Enrolment	August 2003
Normal date for thesis submission	July 2008
Date thesis was submitted for examination	August 2009 (by student); Dec. 2009 (by department)
Period of extended candidature	12 months
Date all examiners' reports were received	September 2010
Thesis Examination duration	August 2009 to September 2010 (13 months)
Date oral defence was taken	December 2010
Date thesis result was determined and result	December 2010 (Pass with correction)
Date final thesis submitted for graduation	February 2011
Submission of final thesis after oral defence	December 2010 to February 2011 (3 months)
Candidature duration	August 2003 to Feb. 2011 (7 years and 7 months)
Other details: age at enrolment: 45; occupation: research officer; sponsored candidate; extended candidature by 12 months; department delayed in submitting thesis for examination; thesis examination delayed, lasting for 13 months; and early submission of revised thesis for graduation.	

APPENDIX 8

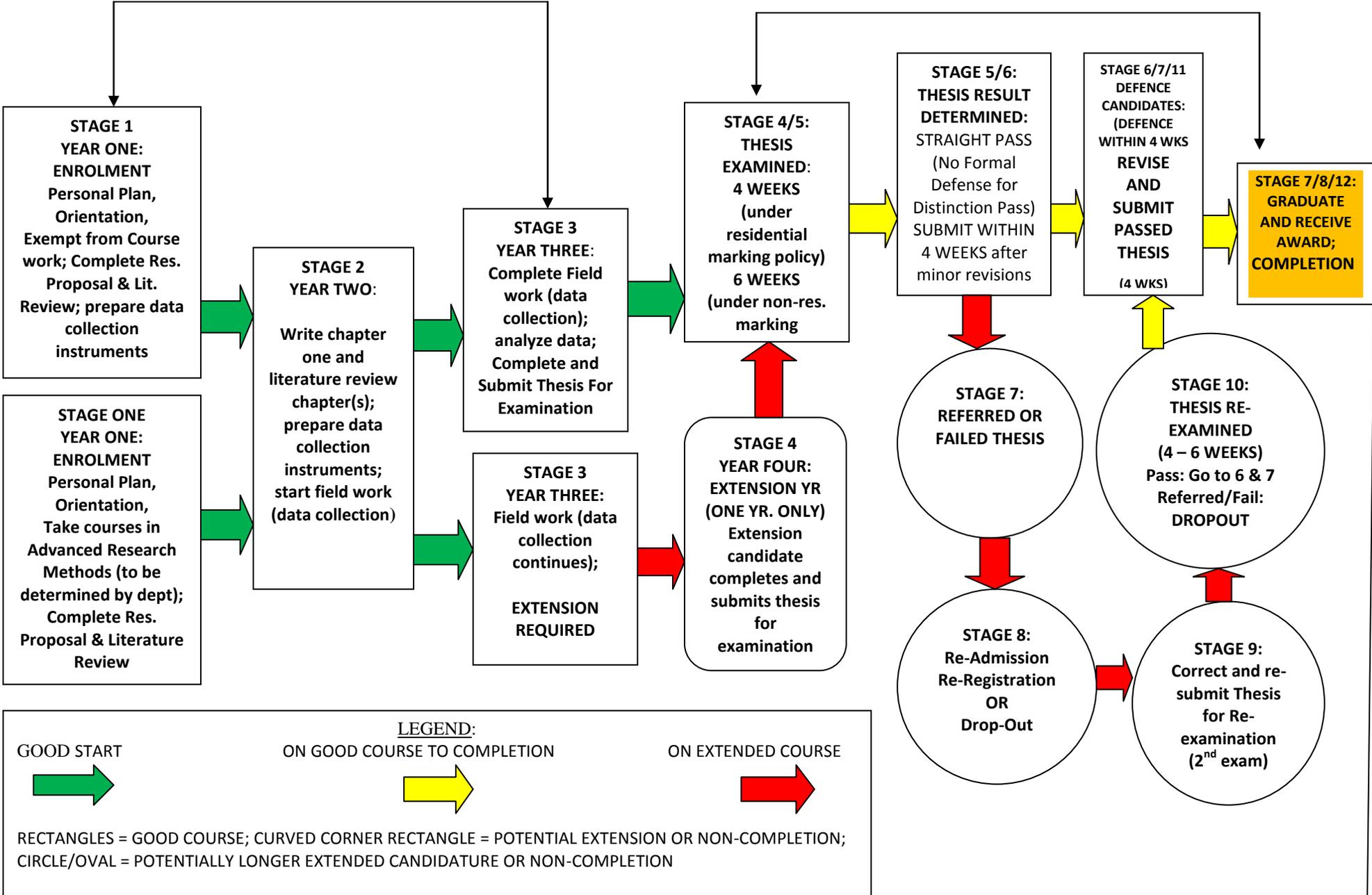
Raw data sheet for selected doctoral drop-out or non-completion case files	
Case No.	EVENTS AND REASONS FOR NON-COMPLETION
DO/001	Candidate enrolled in April 2007 and was expected to submit thesis for examination in May 2010 toward the award of a PhD degree in Nuclear Science (Radiation Protection). Candidate applied for change of student status from full time to part-time after his two years of extension had lapsed in June 2012. A letter from the student, supported by his Head of Department and Dean attributed cause of lapsed candidature to delays in overseas fellowship exchange and training programme because he had overstayed due to change in academic arrangements of host institution. A request for change of candidature from full time to part time was declined because it should have been done before lapse of his full time candidature. Candidate was asked to re-apply for admission to pursue the programme afresh on part-time basis, which he did not act upon.
DO/002	Candidate enrolled in August 2006 was expected to submit thesis for examination in July 2009 towards the award of PhD in Medical Physics. He requested for one year extension to enable him complete and submit thesis by December 2010, and was granted. The candidate could not meet this extension deadline and requested for a second year of extension to enable him submit thesis by July 2011. The candidate's supervisor wrote a letter in support of the candidate's request confirming that the candidate <i>"faced unforeseen challenges, especially in the area of equipment breakdown"</i> which received further support by the Dean. The graduate school approved a second year of extension. Ironically, about the same period, the graduate school received a letter from the candidate's employer and sponsor, which indicated among other things that: <i>"Student XYZ has been reported to my office as also holding a full-time teaching appointment at (a Polytechnic Institute)". The letter further indicated that "(the candidate) is under investigations and I would like you to confirm whether he is still a full-time registered student on your PhD programme"</i> . There had not been any further report on the candidate even after the expiry of the second year of extension.
DO/003	Candidate enrolled in PhD Medical Physics programme in August 2007 and was expected to submit thesis for examination in July 2010. He was granted one year of extension based on the reason that certain developments aimed at satisfying the objectives of the research project to which candidate was attached and also for improving the quality and outcome of his PhD research had necessitated a review of his PhD research work plan. Candidate could not meet first extension deadline and was granted one additional year upon request which expired in July 2012. Nothing had been heard from the candidate and his department since expiration of extension. From the records, candidate was going about his full time lecturing duties.
DO/004	The candidate enrolled in January 2007 for a three-year full-time PhD programme in the Study of Religions and was expected to complete and submit thesis for examination in December 2009. Candidate was granted extension for six months up to June 30, 2010. The reason given by the student for the extension was "some challenging situations". Candidate discontinued registration on expiration of extension granted. Other profiles: aged 51, Clergy and Lecturer.
DO/005	The candidate enrolled in a five-year part-time PhD programme in Linguistics in August 2006. Three years into the programme In September 2009, candidate wrote to withdraw from the programme, citing the following reasons: "although I have been granted part-time study leave from the University, my workload has not reduced and I have been working full-time since and therefore have not been able to make much progress with the research work; I would also like to change the focus of the research area from "pragmatics" to Language documentation"; I would now like to re-register as a full time PhD student so I can concentrate on the programme". The reasons were confirmed and request to withdraw supported by the Head of Department. The request to withdraw was approved by the graduate school and candidate was advised to go through the process of re-registration but candidature failed to respond. Candidate was 35 years old at the time of enrolment.
DO/006	The candidate registered for full time three years PhD in African Studies in August 2006, was expected to submit thesis for examination in July 2009 but could not meet the deadline. Candidate was granted extension for one year to submit thesis by June 2010; this deadline was also not met and candidate was granted a second year of extension to submit thesis by June 2011. Candidate was among a group of 6 PhD students sponsored on an exchange programme in Norway. In a letter supporting candidate's request for extension, the head of department indicated that the students would undertake further training in research methodology and related subjects while on the exchange programme. In spite of

	assurances from supervisor and head of department that candidate's work was on course for completion and submission of thesis by June 2011, this was not the case. Candidate exhausted 2 years permissible extension resulting in lapse of candidature.
DO/007	Candidate registered for full time three years PhD in African Studies in August 2006 and was expected to submit thesis for examination in July 2009. At the end of the second year, candidate changed from full time to part time study and was to submit thesis in July 2011. The records indicate that candidate registered for the fourth year in September 2009 and there has not been any registration thereafter.
DO/008	Candidate registered for full time three years PhD Sociology in August 2007 and was to complete in July 2010. The records further indicated that candidate registered in September 2010 for the 2010/2011 academic year. This was the candidate's first year of extension. There was no record of candidate's registration for second year of extension for submission of thesis by June 2012.
DO/009	Candidate registered in May 2007 for part-time five years PhD in Sociology and was to submit thesis in July 2012. There was no record of further registration after first registration. Candidate was 51 years at the time of enrolment; went into politics, became a parliamentarian and a minister of state for ten years.
DO/010	Candidate registered for five years part-time PhD in Religions in October 2004 and was to submit thesis by December 2009. There was no record of further registration thereafter. If candidate had taken the two years permissible extension, submission should have been by December 2011. Candidate was 46 years at the time of enrolment; he was a clergy; and the General Overseer of a multi-national Church.
DO/011	Candidate registered for five years of part-time PhD in Religions in October 2004 and was expected to submit thesis by December 2009. He was 48 years, clergy and father of 5 at the time of registration. Candidate submitted thesis for examination in June 2009 in the fifth year of the programme. The thesis was passed by one examiner, referred by one examiner, found to contain extensive plagiarized material, and the fourth examiner was asked to return the thesis for the long delay in examining the thesis. It became known to the graduate school later that candidate had written to the department to withdraw from the programme. It also became known later that candidate had been awarded a doctorate degree by another University.
DO/012	Candidate applied for admission to PhD in History but was admitted into MPhil in August 2007 to take foundational courses the passing of which would enable him proceed to PhD in order to prepare him as a historian. He was 64 at the time of enrolment in the MPhil degree; and had just retired as mayor.
DO/013	<p>Candidate registered for a three-year full-time PhD programme in Public Administration in February 2003 and was therefore expected to submit thesis in January 2006. Candidate submitted thesis in November 2007 after one year of extension. The thesis was not submitted on time to the graduate school for examination because, according to the Head of department, it was submitted without supervisors' endorsement. Other reasons given by the department for the delay were:</p> <ul style="list-style-type: none"> • Thesis was not written under the supervision of members of the supervisory committee. • Candidate did not participate in any seminars and presentations. • Candidate added on a supervisor who was not originally assigned and was told to take his name off the list of supervisors indicated in the thesis but he refused. <p>To resolve the impasse, the graduate school requested that examiners be appointed to examine the thesis. Thesis was referred based on the examiners' assessment reports. The candidate was asked by the Board of graduate studies to re-submit a revised thesis for re-examination by October 2012. The Board further requested the department to reconstitute a supervisory team to supervise the candidate to revise the thesis according to the comments of the examiners; the supervisors may request that fresh data be collected if found necessary; and that the candidate should co-operate fully with the new supervisory committee members. No revised thesis was submitted by the deadline given.</p>

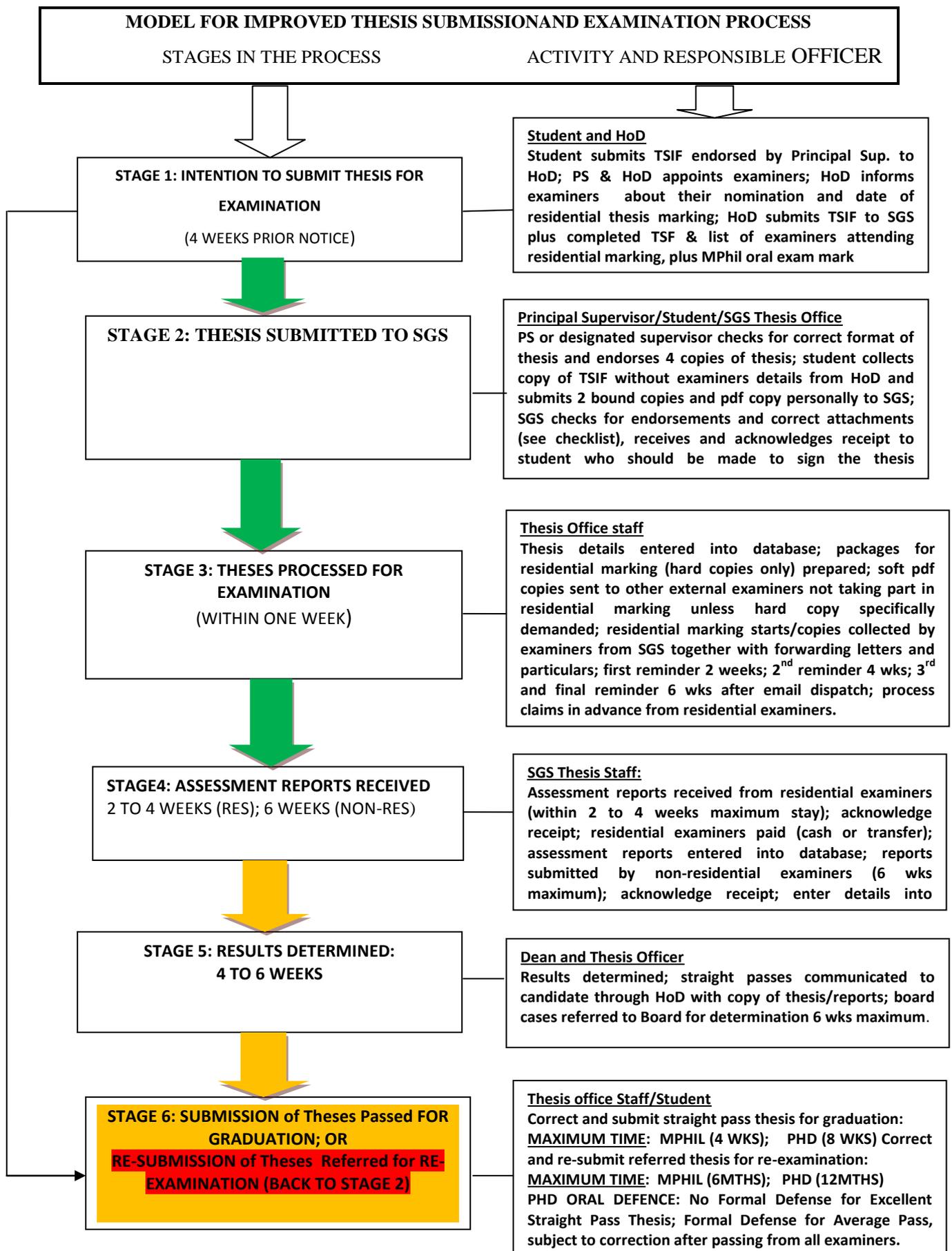
APPENDIX 9: MODEL FOR IMPROVED MASTERS CANDIDATURE AND GUIDE TO TIMELY COMPLETION



APPENDIX 10: MODEL FOR IMPROVED DOCTORAL CANDIDATURE AND GUIDE TO TIMELY COMPLETION



APPENDIX 11



APPENDIX 12



**UNIVERSITY OF GHANA
SCHOOL OF GRADUATE STUDIES**

P. O. BOX LG 571, LEGON, ACCRA, GHANA

My Ref: No.....DGS.

30th June, 2012

Mr. Christopher Amehoe
School of Graduate Studies
University of Ghana
Legon.

Dear Mr. Amehoe

PERMISSION TO ACCESS INFORMATION AT THE SCHOOL OF GRADUATE STUDIES FOR RESEARCH

I write to grant you permission to access information on thesis submission and examination as well as files of past postgraduate students of the University of Ghana for your doctoral research titled: Postgraduate Throughput at the University of Ghana.

We hope you will share the findings of your research with the School.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'K. Ofori'.

PROF. KWADWO OFORI
(DEAN OF GRADUATE STUDIES)

APPENDIX 13:

DATA COLLECTION INSTRUMENTS

QUESTIONNAIRES FOR PAST MPHIL AND PHD GRADUATES
 QUESTIONNAIRES FOR THESIS (RESEARCH) SUPERVISORS
 QUESTIONNAIRES FOR THESIS EXAMINERS
 INTERVIEW SCHEDULE FOR FORMER HEADS OF DEPARTMENT
 INTERVIEW SCHEDULE FOR PAST THESIS SCHEDULE OFFICERS
 INTERVIEW GUIDE FOR PAST DEANS OF GRADUATE STUDIES
 INTERVIEW GUIDE FOR GOVERNMENT FUNDING STAKEHOLDER AGENCIES

PAST MPHIL AND PHD GRADUATES' QUESTIONNAIRES ON POSTGRADUATE THROUGHPUT (COMPLETION DURATION AND DETERMINANTS) AT THE UNIVERSITY OF GHANA

Dear Respondent:

I would like to solicit your views on the delivery of postgraduate programmes and factors that account for extended completion and non-completion among postgraduate students at the University of Ghana. Sharing your experience will help to improve upon postgraduate delivery and completion at the University of Ghana. Your responses would be held in absolute confidence.

A. PERSONAL INFORMATION

(please check 'X' against response box or provide response in the blank spaces provided)

1. **Postgraduate Student Type at UG:** 1= Ghanaian 2= International
2. **Postgraduate Student Status at UG:** 1= Full-Time 2=Part-Time
3. **Sex:** 1= Male 2= Female
4. **1= Year Enrolled:** 2=Year **Graduated**(e.g. Aug. 2000)
5. **Age at enrolment:** 1= below 30yrs 2=30 – 39yrs
3= 40 – 49yrs 4= above 50yrs
6. **Most recent programme registered or completed at UG** (e.g. MPhil English)
.....
7. **Marital status during studentship (Please select more than one response if applicable).**
1= Single] 2= Married 3= Divorced
8. **Employment status during studentship:**
1= Employed 2= Self-Employed 2= Unemployed

B. SPONSORSHIP/FUNDING FOR PROGRAMME

9. **Were you on study leave?** 1= Yes 2= No
10. **Were you sponsored by your employer?** 1= Yes 2= No
11. **Did you receive Government Bursary?** 1= Yes 2= No
12. **Did you receive Educational Loan/Student Loan?** 1= Yes 2= No
13. **Were you awarded UG Graduate Fellowship?** 1= Yes 2= No
14. **Was your studies self-sponsored?** 1= Yes 2= No

C. AWARENESS OF RESPONSIBILITIES AND SERVICES TO YOU AS A POSTGRADUATE STUDENT

15. **Did you attend orientation on enrolment?**

1= Yes 2=No 3= Not sure

16. **Were you assigned supervisor(s) in the first year of enrolment?**

1= Yes 2=No 3= Not sure

17. **Was your thesis topic approved in the first year of enrolment?**

1= Yes 2=No 3= Not sure

18. **Did your supervisors or supervisory team set a plan of work for your research and thesis?**

1= Yes 2=No 3= Not sure

19. **Was the plan of work for your research and thesis followed to the end of the study programme?**

1= Yes 2=No 3= Not sure

20. **If no, why?**

21. **Did you re-sit one or some of the courses prescribed for you during studies?**

1= Yes 2=No 3= No idea 4= Not applicable

Please candidly appraise the following situations in terms of your level of satisfaction during your studentship (Please CIRCLE one response only in the box).

Responses: 1=Unsatisfactory 2= Unsure 3= Satisfactory 4=Highly Satisfactory

	Items	Response Options			
		1	2	3	4
22	Your supervisor(s) availability/accessibility for consultation	1	2	3	4
23	Ability of supervisor(s) to keep to delivery promises	1	2	3	4
24	Guidance or assistance offered by supervisors or supervisory team on research methodology and thesis writing	1	2	3	4
25	Quality of Teaching/Course work delivery	1	2	3	4
26	Support /cooperation offered by the Graduate School	1	2	3	4
27	Support/cooperation offered by your Head of Department	1	2	3	4
28	Support/cooperation offered by your Principal Supervisor	1	2	3	4
29	Support and cooperation offered by secondary supervisor(s)	1	2	3	4
30	Availability of equipment and facilities for your research work	1	2	3	4
31	Availability of good reading materials for your research	1	2	3	4

- 3= Thesis examination and determination of thesis results
 4= Revision of thesis after examination and determination of results
 5= Publication of my final results for graduation
 6= All of the above
 7= None of the above

43. **Your general comments on your postgraduate experience at University of Ghana**

.....

Thank you very much for your time and contribution!

**POSTGRADUATE THESIS SUPERVISORS' QUESTIONNAIRE ON
 POSTGRADUATE THROUGHPUT (COMPLETION ABILITY AND ITS
 DETERMINANTS) AT THE UNIVERSITY OF GHANA**

Dear Thesis Supervisor:

You have been selected as one of our experienced thesis supervisors to share your views on the thesis supervision process as part of a study on the factors that determine early completion, late completion and non-completion among postgraduate students at the University of Ghana. This is an academic exercise and you are respectfully requested to complete and return the questionnaire. Your responses will be held in absolute confidence.

A. SUPERVISOR PROFILE

1. **Rank:** 1=Professor 2=Senior Lecturer 3=Lecturer
 4= Other.....

2. **Type of Supervisor:**

- 1=Principal 2=Secondary 3=Served in both capacities

3. **How long have you supervised at postgraduate level?**

- 1=5 yrs & above 2=Less than 5 yrs

4. **Subject area of supervision:** 1= Science 2= Humanities

B. SUPERVISION PROCESS AND RESPONSIBILITIES OF PARTIES INVOLVED

5. **How is your assignment as a postgraduate thesis supervisor normally initiated? (you may choose more than one response if applicable)**

- 1= Self 2=By head of dept 3=By the student
 4= Other _____

6. **At what stage do you normally start supervising MPhil students assigned to you?**

- 1=Semester 1 2=Semester 2 3=Semester 3
 4=Semester 4 5= Other _____

7. **At what stage do you normally start supervising PhD students assigned to you?**

- 1=First Year 2=Second Year 3=Third Year
 4=Other.....

8. **Does the department formally involve you in the choice or formulation of thesis topics for students assigned to you?**

- 1=Yes 2=No 3==Sometimes

9. **Do you set a supervision plan of work with your assigned students?**

- 1=Yes 2=No 3==Sometimes

10. **If yes to Q5 above, is this plan of work followed to the end of the programme?**

- 1=Yes 2=No 3==Sometimes

11(a) **Which of these do you recommend at MPhil level?**

- 1=Sole supervision 2=Team supervision
 3= Other.

11(b). **Give reason(s)**

12(a). **Which of these do you recommend at PhD level?**

- 1=Sole supervision 2=Team supervision
 3= Other

12 (b). **Give reason(s)**

13. **Do you think SOLE SUPERVISION can be adopted at the postgraduate level where feasible?**

- 1=Yes 2=No 3==Not sure

Please candidly appraise the following supervision situations based on your experience as supervisor

Responses: 1=Unsatisfactory 2=Not sure 3=Satisfactory 4= Highly Satisfactory

	Items	Response Options			
14	Students' availability or accessibility for guidance	1	2	3	4
15	Students' ability to keep to their delivery promises and agreed timelines	1	2	3	4
16	Students' level of theoretical preparation	1	2	3	4

17	Financial support/facilitation for postgraduate studies	1	2	3	4
18	Administrative support for postgraduate studies	1	2	3	4
19	Support and cooperation from your students	1	2	3	4
20	Support and cooperation from your co-supervisor(s)	1	2	3	4
21	Availability of equipment and facilities for your students' research work	1	2	3	4
22	Availability of good reading materials for your students' research work	1	2	3	4

23. **Students' level of familiarity with research methods/thesis writing skills**

PhD 1= Not familiar 1= Not sure 2=Familiar 3=Very Familiar

MPhil 1= Not familiar 1= Not sure 2=Familiar 3=Very Familiar

24. **Students' level of familiarity with rules, regulations and procedures concerning postgraduate studies/supervision**

PhD 1= Not familiar 1= Not sure 2=Familiar 3=Very Familiar

MPhil 1= Not familiar 1= Not sure 2=Familiar 3=Very Familiar

On a scale of [1 – 3] (1= Disagree 2= Not sure 3= Agree, please appraise the existence or otherwise of the following supervision problem situations for your MPhil and PhD students. PLS CIRCLE your response at both levels.

NO.	ITEMS	MPHIL			PHD		
		1	2	3	1	2	3
25	Students are unable to select a research topic that presents a problem	1	2	3	1	2	3
26	Students are unable to design an acceptable research proposal	1	2	3	1	2	3
27	Students find it difficult to understand theoretical/conceptual frame work	1	2	3	1	2	3
28	Students' inability to state hypothesis scientifically	1	2	3	1	2	3
29	Students have weak knowledge of research method	1	2	3	1	2	3
30	Students are unable to use correct methods to solve the research problems	1	2	3	1	2	3
31	Students are unable to review literature critically, coherently and logically	1	2	3	1	2	3
32	Students are unable to present findings scientifically and accurately	1	2	3	1	2	3
33	Students lack sound research and analytical background	1	2	3	1	2	3
34	Students are unable to work independently	1	2	3	1	2	3
35	Students have poor report writing skills	1	2	3	1	2	3
36	Students have poor Language Skills	1	2	3	1	2	3
37	Students lack technical competence	1	2	3	1	2	3

	knowledge of analytical tools and ability to analyze data						
38	Students are unable to devote and manage time for their studies	1	2	3	1	2	3
39	Departments lack facilities for seminar presentation	1	2	3	1	2	3
40	Inadequate financial support for students for their studies and research	1	2	3	1	2	3
41	Limited time for supervision resulting from overloaded teaching schedule	1	2	3	1	2	3
42	Lack of co-operation from the students supervised	1	2	3	1	2	3
43	Students do not follow the agreed plan of work and deadlines set	1	2	3	1	2	3
44	Lack of motivation for supervisors	1	2	3	1	2	3

45. **Please suggest ONE MAJOR REASON (from your experience) for late completion and submission of thesis in your department.**
46. **Please suggest ONE MAJOR REASON (from your experience) why postgraduate students discontinue or drop out of their programmes in your department/faculty.**
47. **Please state one area or areas of the current thesis supervision process at the University of Ghana that you are SATISFIED with.**
48. **Please state one area or areas of the current thesis supervision process at the University of Ghana that you are DISSATISFIED with.**
49. **Your general comments about thesis supervision process or system at the University**

Thank you very much for your time and contribution!

**THESIS EXAMINERS' QUESTIONNAIRE ON POSTGRADUATE THROUGHPUT
(COMPLETION ABILITY AND ITS DETERMINING FACTORS)
AT THE UNIVERSITY OF GHANA**

Dear Thesis Examiner:

You have been selected as one of our experienced examiners to share your views on the thesis examination process as part of a study on the factors that account for early, late and non-completion among postgraduate students at the University of Ghana. This is an academic exercise and you are respectfully requested to complete and return the questionnaire. Your responses will be held in absolute confidence.

- A. EXAMINER PROFILE (mark response with 'X' in the box)**

1. **Rank:** 1= Professor 2= Senior Lecturer
 3= Lecturer 4=Other
2. **Type of Examiner:** 1= External (Ghana) 2= External (Outside Ghana)
 3= Internal (at UG)
3. **How long have you been examining thesis for UG?**
 1=5 yrs & above 2= Less than 5 yrs
4. **Subject area of theses examined:** 1= Science 2= Humanities

B. THESIS EXAMINATION PROCESS/RESPONSIBILITY

5. **How are theses sent to you by the Graduate School?**
 1= Hand delivery 2= By post
 3=By courier 4=Soft copy sent by email
6. **Indicate your preferred thesis delivery method(s).**
 1= Hand delivery 2= By post
 3=By courier 4= Soft copy sent by email
 5=Other
7. **Indicate your preferred method for return of examined theses and assessment reports.**
 1= Hand delivery 2= By post
 3=By courier 4= Soft copy sent by email
 5=Other
8. **Duration (length of time) given by Graduate School to examiners to complete examination of thesis.**
 1= Too short 2= Too Long 3=Acceptable
 4= Acceptable but not feasible 5= Other.....
9. **Preferred method/medium of payment for thesis examination.**
 1=Cash 2=Cheque 3=Bank Transfer
 4=Other.....

Please candidly appraise the following situations (7 - 15 (except question 11)).
Response options: 1=Unsatisfactory 2=Not sure 3=Satisfactory
4=Highly satisfactory

	Items	Response Options			
10	Delivery method being used by UG Graduate School to send theses to you.	1	2	3	4
11	Your ability to meet deadlines set by the UG Graduate School for return of thesis.	1	2	3	4
12	Remuneration for examining theses at UG	1	2	3	4
13	Promptness of payment for theses examined.	1	2	3	4
14	Graduate School's ability to respond to your enquiries concerning thesis examination and related matters.	1	2	3	4
15	Clarity of guidelines for assessment of theses sent from the UG Graduate School	1	2	3	4
16	Accuracy of thesis delivery address used by UG Graduate School to send theses to you	1	2	3	4

17. **Did you ever encounter any instance of thesis sent to you but got missing in transit?**
 Yes No Not sure
18. **Please suggest one way to improve upon or speed up the UG thesis examination process**
19. **Please indicate a major difficulty you encountered with the thesis examination process**
20. **Please suggest a solution to the problem stated above.**
21. **Please state area (s) in the thesis examination process/system that you are SATISFIED with**
22. **Please state area (s) in the thesis examination process/system that you are DISSATISFIED with.**
23. **Your general comments about the thesis examination process**

Thank you very much for your time and contribution.

POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA
INTERVIEW GUIDE FOR GOVERNMENT STAKEHOLDER AGENCIES

A. Introduction

Dear Sir/Madam,

I am conducting research on postgraduate throughput at the University of Ghana for my doctoral thesis and would like to solicit your views on how postgraduate studies has been delivered at the University of Ghana during the past ten years and factors that account for extended or non-completion among our research postgraduate students.

Your organization has been selected as one of the key stakeholder funding agencies of postgraduate studies in the country. I would be grateful if you share your views on the subject to help obtain data for this study which aims to contribute towards improving postgraduate studies delivery and completion at the University of Ghana. Your responses will be held in absolute confidence.

B. Organization Profile

Name of Organization

Position of Officer to be interviewed

C. Support for postgraduate studies delivery

1. What is your agency's core mandate with regard to support for postgraduate studies in Ghanaian publicly-funded universities?

2. In what specific ways has your agency supported postgraduate studies delivery at the University of Ghana within the last ten years?
3. What are the major challenges that the Secretariat faced in supporting postgraduate programme delivery at the University of Ghana?
4. In what ways can the challenges be addressed?
5. Give a fair assessment of the contribution your agency's support towards efficient postgraduate studies delivery at the University of Ghana? In other words, do you think government, through your agency, could have done better than it did during the past ten years?
6. What recommendations would you make to government with respect to postgraduate funding at the University of Ghana?
7. Your general comments on the future of your agency in terms of funding of postgraduate studies and research at the University of Ghana.

Thank you very much for your time and contribution.

POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA **INTERVIEW SCHEDULE FOR FORMER HEADS OF DEPARTMENTS**

A. Introduction

Dear Sir/Madam,

I am conducting research on postgraduate throughput at the University of Ghana for my doctoral thesis and would like to solicit your views on how postgraduate studies has been delivered over the years at the University of Ghana and factors that account for timely, extended or non-completion among research postgraduate students.

You have been selected as one of the experienced heads of departments to share your experience on the subject as your contribution towards improving upon postgraduate studies delivery and completion at the University of Ghana. Your responses will be held in absolute confidence.

B. Body of the interview

Headship, Thesis Supervision and Examination Profile

1. Department where you served as Head
2. Position (Lecturer/ Senior Lecturer/ Professor)
3. How long did you serve as Head of Department?
4. Number of years of thesis supervision experience
5. Number of years of thesis examination experience

Roles/responsibilities towards postgraduate studies completion

1. As head of department, what specific roles did you play to ensure that postgraduate students in your department complete their studies on time during the period of your headship?
2. Do you agree with the view that most requests for extension were on the increase among MPhil students in recent years? Give reasons for your answer.
3. Do you agree with the view that most requests for extension were on the increase among PhD students in recent years? Give reasons for your answer.
4. What were your major challenges in executing your responsibilities towards ensuring that postgraduate study submitted their thesis on time?
5. Please indicate **AGREEMENT OR DISAGREEMENT** to each of the following general perceptions about **MPhil students** ? In your opinion, who should be held responsible for such situations?

Perception/ Situation	Do you agree?		If you agree, who should be held responsible?			
	Agree	Disagree	student	supervisor	institution	All
Generally poor student-supervisor relationships						
Supervisors had very limited time to supervise research						
Inadequate facilities to support students' research work and supervision						
Combining work with studies was a major reason for extensions and non-completion of theses						
Inadequate facilities to enable lecturers supervise research work						
Inadequate financial support for students' research work						

6. Please indicate **AGREEMENT OR DISAGREEMENT** to each of the following general perceptions about PhD students? In your opinion, who should be held responsible for such situations?

Perception/ Situation	Do you agree?		If you agree, who was responsible?			
	Agree	Disagree	student	supervisor	institution	All
Generally poor student-supervisor relationships						
Supervisors had very limited time to supervise research						
Inadequate facilities to support students' research work and supervision						
Combining work with studies was a major reason for extensions and non-completion of theses						
Inadequate facilities to enable lecturers supervise research work						
Inadequate financial support for students' research work						

7. What were some of the pressing needs of the department for efficient postgraduate programme delivery and completion?
8. Please indicate some one of the difficulties/challenges that made it impossible for you to submit your students' theses on time from the department to the Graduate School for examination.
9. What is your view about time spent by INTERNAL EXAMINERS on thesis examination during your headship?
10. What is your view about time spent by EXTERNAL EXAMINERS on thesis examination during your headship?
11. What can heads of departments do to ensure that postgraduate students submit their theses on time:
 - (a) In the case of M.Phil students
 - (b) In the case of PhD students
12. As a former Head of department, did you know of instances/cases of postgraduate student drop-outs or non-completion in your department?
13. Indicate one major reason for such non-completion or drop-out cases.

- (a) In the case of MPhil graduates
 - (b) In the case of PhD graduates
14. Do you think **SOLE SUPERVISION** (assigning one supervisor only to a student) can be adopted at the postgraduate level? If yes, please indicate at what level and in which circumstances.
 15. In your opinion, which stage(s) or activities in postgraduate studies were most challenging for MPhil and PhD students in your department their candidature.

C. Closing

Thank you very much for your time and contribution.

POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA **INTERVIEW GUIDE FOR PAST DEANS OF POSTGRADUATE STUDIES AT THE** **UNIVERSITY OF GHANA**

A. Introduction

Dear Sir/Madam,

I am conducting research on postgraduate throughput at the University of Ghana for my doctoral thesis titled: *Postgraduate Throughput at the University of Ghana*. The study is about identifying factors that account for extended completion or non-completion among research postgraduate students so that remedial actions can be recommended based on empirical evidence to make further progress with regard to high completion rate.

As one of our “living” and cherished former Deans of Graduate Studies of the University of Ghana, I would appreciate your views on how postgraduate study has been delivered at the University of Ghana over the last ten years, particularly during your deanship. Sharing your experience would help to obtain information that would not only enrich this study but also contribute greatly towards improving upon postgraduate studies delivery and completion at the University of Ghana.

Your responses will be held in absolute confidence.

B. Respondent’s Profile

Period of deanship at the School of Graduate Studies:

From: To:

C. Body of the interview

1. What was your strongest motivation to become Dean of Graduate Studies at the University of Ghana?
2. What were the major challenges that militated against the efficient delivery of postgraduate studies especially MPhil and PhD studies at the time you assumed office as Dean?
3. Which specific initiatives did you introduce or take during your deanship to ensure that research postgraduate students complete their studies on time?

4. Would you say that PhD students were generally completing and submitting their theses on time for examination during your tenure?
5. If no, what in your opinion, were the main causes of delayed completion and non-completion among MPhil and PhD students at the University of Ghana?
6. Do you agree with the perception that research and thesis supervision is a major challenge at the postgraduate level, and what are the main issues at stake at the University of Ghana?
7. What strategies can the Graduate School or the University adopt to address supervision challenges affecting supervisors and students?
8. Do you think sole supervision should be allowed at the MPhil and PhD levels at the University of Ghana? Please give reasons in support of your views on this matter.

Thank you for sharing your views.

POSTGRADUATE THROUGHPUT AT THE UNIVERSITY OF GHANA **INTERVIEW SCHEDULE FOR PAST THESIS SCHEDULE OFFICERS**

A. Introduction

Dear Sir/Madam,

I am conducting research on postgraduate throughput at the University of Ghana and would like to solicit your views on how postgraduate studies has been delivered over the years at the University of Ghana and factors that account for timely, extended or non-completion among research postgraduate students.

You have been selected as one of the past thesis schedule officers to share your experience on the subject as your contribution towards improving upon postgraduate studies delivery and completion at the University of Ghana. Your responses will be held in absolute confidence.

B. Respondent Profile

1. Title/Position held at Graduate School:
2. Period served on Thesis Schedule: From: To:

C. Body of the interview

3. What were your specific duties as a thesis schedule officer?
4. How did your duties contribute towards ensuring that postgraduate students complete their studies on time?
5. Would you say that most MPhil graduates were submitting their theses on time (without extension) during the period you worked on thesis schedule? Give reasons for your response.

6. Would you say that most PhD graduates were submitting their theses on time (without extension) during the period you worked on thesis schedule? Give reasons for your response.
7. Were heads of Department submitting students' theses on time to the School of Graduate Studies for examination?
8. In your opinion and based on your experience what factor(s) or reason(s) account for the inability of some heads of department to submit students' theses on time to the Graduate School for examination after receiving them from the students?
9. What is your view about time taken by internal and external examiners to examine students' theses when you were on thesis schedule at the Graduate School? Were they able to meet the School's agreed examination durations?
10. Suggest ways in which the Graduate School can ensure that postgraduate students complete and submit their theses on time:
 - (a) In the case of MPhil students
 - (b) In the case of PhD students
11. What in your opinion are the main reasons why postgraduate students abandon their programmes or drop out of their studies?
12. If you are assigned thesis schedule at the Graduate School once again, which new measures would you introduce to speed up thesis examination process at the Graduate School?

Thank you very much for your time and contribution.