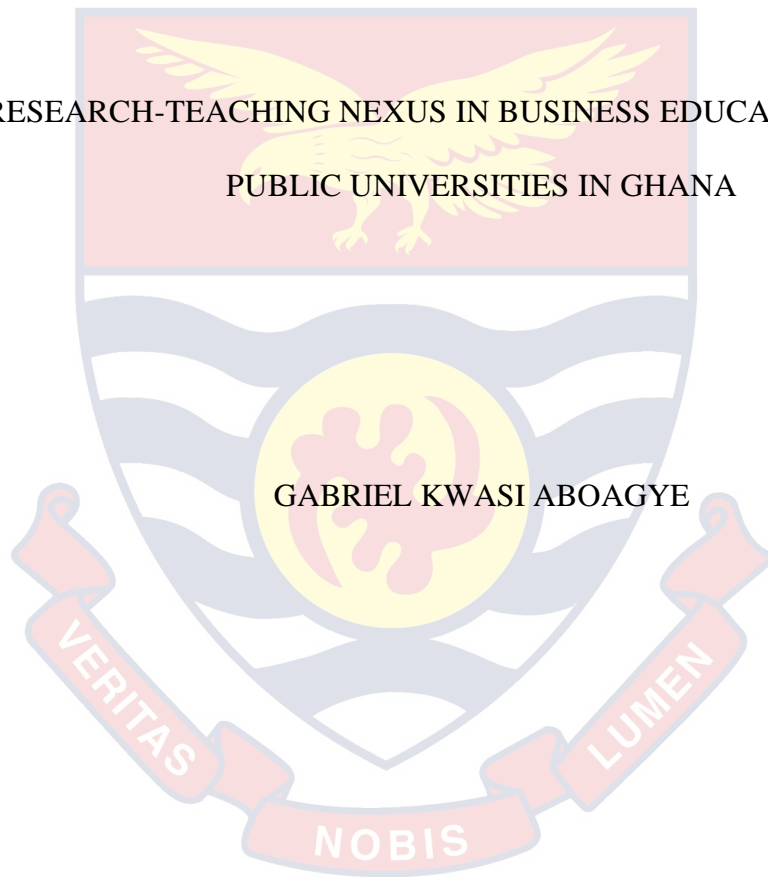


UNIVERSITY OF CAPE COAST

RESEARCH-TEACHING NEXUS IN BUSINESS EDUCATION AMONG
PUBLIC UNIVERSITIES IN GHANA



GABRIEL KWASI ABOAGYE

2020



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University of Cape Coast

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PUBLIC UNIVERSITIES IN GHANA

BY

GABRIEL KWASI ABOAGYE

This thesis submitted to the Department of Business and Social Sciences
Education of the Faculty of Humanities and Social Sciences Education,
College of Education Studies, University of Cape Coast, in partial fulfilment
of the requirements for the award of Doctor of Philosophy degree in
Management Education

JANUARY 2021

DECLARATION

Candidate's Declaration

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

Candidate's Signature: Date:

Name:

Supervisors' Declaration

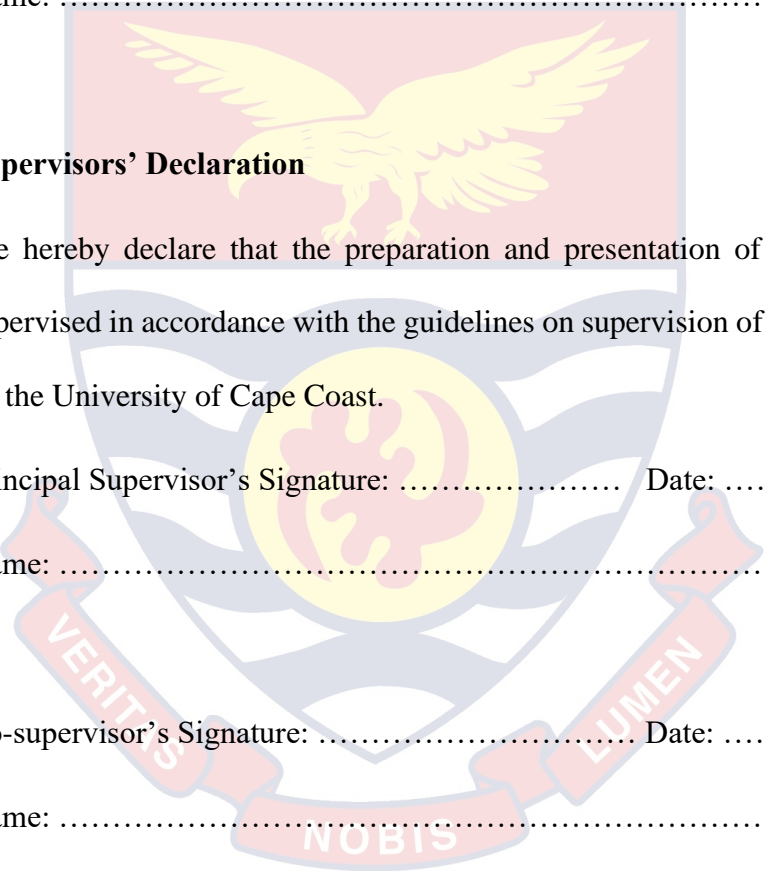
We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: Date:

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Co-supervisor's Signature: Date:

Name:



ABSTRACT

The study examined the link between research and the teaching of Business Education in public universities in Ghana. The study focused on the extent to which faculty members integrate research into their teaching in higher education. Using the stratified disproportionate sampling technique and the census method, 367 and 52 Business Education students and faculty members, respectively, were engaged from two public universities in Ghana for the 2018-2019 academic year. Questionnaires and interview protocols were used for data collection. The questionnaires were validated through the Principal Component Analysis (PCA) method. The quantitative data were analysed inferentially (i.e one-way repeated measures ANOVA, one-way MANOVA, Chi-square), and descriptively (i.e means, standard deviations, frequencies and percentages), while the qualitative data were analysed thematically using the reflexive analysis. It was found that faculty engage students at the research-led level of research integration into teaching. Students predominantly reported they heard lecturers discuss research during lessons, coupled with reading research papers. Research productivity was found as a significant positive predictor of teaching effectiveness. In addition, the levels of combination of research into teaching significantly differed among the ranks of faculty. Conclusively, the study found that the reconciliation of research into teaching is important in enhancing teaching and students' learning experiences. It was, therefore, recommended that research culture be embedded in departmental activities. Faculty members are also encouraged to practice research-based teaching. In determining the teaching effectiveness of faculty members, the management of universities are encouraged to incorporate research-teaching integration components.

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DEDICATION

To my parents, siblings, and mentors.



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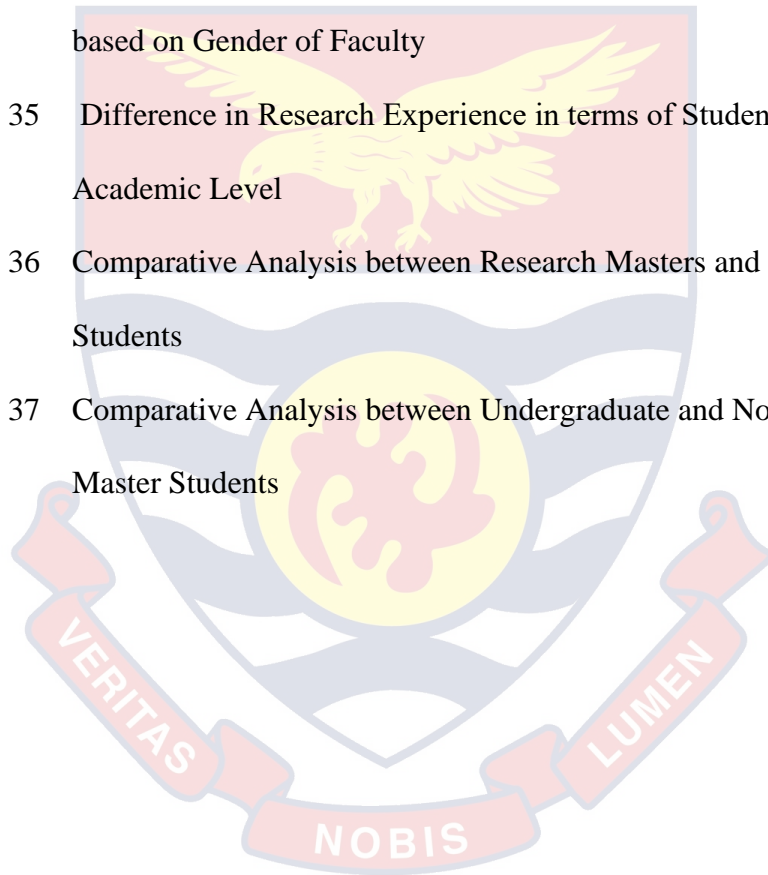


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CHAPTER ONE

INTRODUCTION

Universities, over the world, are struggling to define their identity as either, research-intensive, teaching-intensive or liberal universities (research and teaching universities). Meanwhile, scholars have also indicated that in order to create meaningful knowledge, there must be a harmonious connection among research and teaching (Magi & Beerkens, 2016). However, the extant literature suggest that in the present universities the fundamental impediment has been that faculty members undertake both research and teaching, at various occasions and in various circumstances disjointedly, rather than simultaneously, while making the conscious efforts of integrating this research into their teaching. Other studies have, nevertheless, seemingly shown a stronger relationship, moderate relationship, as well as, zero relationship between research and teaching (Marsh & Hattie, 2002). Based on this contradiction that this study is warranted by examining the Research-teaching Nexus (RTN). Specifically, the study describes how faculty and students conceptualise and practise the link between research and teaching within the context of Business Education.

Following this overview, the focus of this chapter sets the tone and context for the study through the background to the study supported by the statement of the problem and the research objectives that establish the lacunae for this study. The essence and scope of this investigation have also been made explicit through the significance of the study, limitations and delimitation, as well as, the organisation of the study.

Background to the Study

Today, universities, the world over, are striving to achieve an enriching nexus between research and teaching, which is alluded to as the Research-teaching Nexus (RTN). This nexus includes the commitment on the part of faculty members to introduce undergraduate students to, and build-up postgraduate students research experiences, strategies and qualities as a distinctive feature of the university (Borg, 2013). Therefore, the conceptualisation of the research-teaching nexus seems to rest on the philosophies of idealism and pragmatism. In providing further explanations, Tavakoli and Howard (2012), from the idealist perspective, described the link as complicatedly inserted inside ideas regarding what universities do and what they represent, and not what they must do. Clearly, such a stance is not objective in nature. On the contrary, Hénard and Roseveare (2012) grossly challenge such a perspective from the empiricist point of view. The argument made was that advanced education plays a fundamental part in the public arena by making new information, transmitting it to learners to encourage development and inventiveness in them.

As a component of the roles played by advanced education, quality teaching should be guaranteed through fostering the quality training needs upheld by advanced education establishments to guarantee that the education they offer meets the assumptions for learners and the necessities of employers, both today and for what is to come in the future. The impression created is that research should be in a position to discover the needs of society, employers and students, as well as, create a sense of innovation and creativity in students for them to become problem solvers in society. This view implies that if harnessed

properly, the link between research and teaching could be properly established and become more useful.

Stemming from this discourse, the questions left unanswered are whether, it is conceivable to merge research and teaching harmoniously. If that is likely, is it possible to create better spaces for the nexus across disciplinary spaces? Also, can building on the connection between research productivity and teaching effectiveness become a catalyst for building better connections between and among faculty members, students and 'real world' communities? It is therefore, regularly hard to find some kind of harmony among teaching and research and to incorporate the two effectively to promote effective learning outcomes. That notwithstanding, it is possible because it is likely that, one's research can be influenced by one's teaching and vice versa. Illustratively, it is regularly evident that encouraging an idea compels one to comprehend it better than anyone might have expected for what it's worth now that research assumes a critical part in enhancing the adequacy of the teaching and learning procedure.

Theoretically, the Scholarship of Teaching and Learning (SoTL) model demonstrates that research, teaching, and service are entwined into a complete, dynamic relationship, persistently impacting and overlapping with one another (Boyer, 1990) expected to be undertaken by every faculty member in most universities. The proposition is, however, that acceptable teaching is an insightful, dynamic action executed by faculty members as students, featuring the four keys to scholarship including discovery (research), integration (moving external the disciplinary silos), application (presenting information as a powerful influence for important issues), and teaching (reflective practices).

Since then, the RTN has become a topic of international interest. This is attributed to the fact that the research-teaching nexus has been researched in countries including South African (Lubbe, 2015), Australia (Halse, Deane, Hobson, & Jones, 2007; Ramsden & Moses, 1992; Stappenbelt, 2013), Canada (Shore, Pinker, & Bates, 1990), China (Zhang & Shin, 2015), Denmark (Jensen, 1988), Estonia (Magi & Beerkens, 2016), Finland (Annala & Makinen, 2011), Korea (Shin, 2011), the Netherlands (Leisyte, Enders, & de Boer, 2009; Visser-Wijnveen, Van Driel, Van der Rijst, Verloop, & Visser, 2010), New Zealand (Kieser & Herbison, 2001; Robertson & Bond, 2001, 2005), Norway (Kyvik & Smeby, 1994; Smeby, 1998), Portugal (Lopes, Boyd, Andrew, & Pereira, 2014), South Africa (Lubbe, 2015), Spain (Casanovas-Rubio, Ahearn, Ramos, & Popo-Ola, 2016; Geraldo, Trevitt, Carter, & Fazey, 2010), Sweden (Gerschwind & Brostrom 2015; Taylor, 2007, 2008), the UK and the USA (Horta, Dautel, & Veloso, 2012; Kremer, 1991; Serow, 2000). There have additionally been some relative investigations (Gellert, Leitner, & Schramm, 1990; Gottlieb & Keith, 1997) undertaken and they indicated that the problem has been how to clearly establish a categorical connection between the two intricately linked terminologies.

One of the main problems concerning the nexus is that the thought is intricate, disciplinary-based and university circumstantial. The complexity is due to the competencies from both faculty and students, coupled with other factors to enhance the link leading to different interpretations and conceptualisation of the link. Also, different interpretations add to the complexity (Brew, 2007; Healey, 2005; Schapper & Mayson, 2010). Discipline-based, because some discipline easily lend themselves to integrating research to

teaching than others. Hence, the choice of one's discipline affect the extent to which faculty members integrate research into teaching. For instance, according to Barnett (2005), as far as subject content is concerned, it is relatively easier to integrate research into teaching in the Natural Sciences than in the Humanities.

Contributing to the debate, Healey (2000) claims that integrating research into teaching ought to be viewed as a core aspect of teaching scholarship. This scholarship is manifested through the effective link between research and teaching activities in universities and other institutions of higher learning. This, in his view, has the tendency to make students ready for life long learning. Hence, the need to investigate how faculty members can upgrade the connections among research and teaching exercises practically speaking.

Furthermore, faculty members operate at different levels regarding the levels of integration of research into teaching. Illustratively, a model research-teaching nexus within the context of certain disciplines such as Business Education consists of five teaching activities that define an ideal research-teaching nexus to include teaching research results, making research known, indicating being a researcher, assisting with leading exploration, and giving research (Visser-Wijnveen, Van Driel, Van der Rijst, Verloop, & Visser, 2010). By implication, the fourth and fifth activities connote research-based teaching, which is the third level of integration of research into teaching. Various publications (Healey & Jenkins 2009; Healey, Flint, & Harrington, 2014; Walkington, 2015, 2016) offer faculty members concrete strategies and options for integrating research into teaching across the various levels of students' study.

Illustratively, while most of the identified literature focus on the research-teaching nexus in advanced education, reveals that the connection among research and teaching is most grounded at the PhD level and most fragile at the Bachelors' level (Kyvik & Aamodt, 2015; uz Zaman, 2004). This is not unexpected because it is a common knowledge that under normal circumstances, PhD education is easily susceptible to research integration into teaching, relative to the lower levels of education. PhD dissertations are therefore recognised as individual research achievements, whereas, in other occasions the master's thesis may be deemed a research activity, while the Bachelors' projects is normally mainly a symbolism of a study journey for the student (Kyvik & Aamodt, 2015; Smeby, 2000). These assumptions have been formalised in the definition of learning outcomes, especially, at the PhD level, in reference to the national and international qualifications' frameworks.

These experiences can be especially, applicable when regulating students' research in which the experience of teaching and research is frequently described as blurred (Robertson & Bond, 2001), This can be probable at the undergraduate level (Trowler & Wareham, 2007). According to Healey and Jenkins (2009), it is relatively easier to integrate research into teaching at the postgraduate level (research-based and research-tutored) than the undergraduate level (research-led and research-oriented) due to the nature of their curriculum design, where postgraduate programmes are research dominated.

A plethora of studies have revealed a number of benefits inherent in the research-teaching nexus when implemented effectively by faculty members. Prominent among these benefits are that faculty members and

learners can be collaborators and work together, in the research part of teaching, however, in different components of teaching and teaching arrangement to offer learners a chance to molding and upgrading their own learning encounters (Healey, Flint, & Harrington, 2014). In such a partnership, faculty members and learners energetically engage in, and remain to pick up from the way toward getting the opportunity of working through collaborative partnerships. This presupposes that the effective engagement of students and faculty as partners in academia, is arguably, perhaps the most basic achievement factors for the advancement of higher education in the 21st century.

Moreover, students can gain direct experience of the research environment and, in some disciplines, are allowed to take part in research work (Jensen, 1988). In addition, students believe the nexus enhances staff enthusiasm and the credibility towards their respective institutions (Neumann, 1994). This creates the impression that if faculty members fails to conduct research in their area of expertise, they are not at the forefront of their discipline, thereby, disadvantaging students.

On the contrary, the nexus does not only offer benefits to the stakeholders involved. It also has its own side effects including funding mechanisms and the inequality of rewards between research and teaching have led to tensions among faculty members (McLernon & Hughes, 2003). Therefore, seeking rewards, funds, and career development has made faculty members concentrates more on research at the expense of the teaching. This in turn, according to Turell (2003), has affected the quality of education. Validating these disadvantages, Neumann (1994) indicates that there are flaws associated with staff engagement in research leading to circumstances where

these staff do not have enough time for their students, and that students do not benefit directly from staff research. Breen and Lindsay (1999) also cite that research activity detracts teaching, thereby, affecting lecturers' contact hours with their students. This contrasts with the findings of Friedrich and Michalak (1983), who denied the basic complaint that there is not sufficient opportunity to be a decent researcher and a decent educator. They further demonstrate that it is conceivable to do great research without diminishing fundamentally, from the time and consideration given to teaching, and they recommend that the way to accommodating the demands made by research and teaching is the effective organisation and management of time.

Friedrich and Michalak (1983), therefore, conclude that there are diverse perspectives regarding the nexus between research and teaching which could be described as either a trade-off or having a synergistic relationship. In addition, Baker, Bates, Garbacik-Kopman, and McEldowney (1998) reinforce a warning that a drenching in research obviously can raise slenderness that diminishes the broad-based knowledgeability that learners see similar to a significant component of good teaching.

Theoretically, in addition to the research-teaching nexus model developed by Healey (2005) that underpins this study is the Scholarship of Teaching and Learning (SoTL) by Boyer (1990) and the Experiential Learning Theory by Kolb (1984). It is interesting to know that all these theories have some commonalities that can explain the research-teaching nexus. These theories are pertinent to this current investigation since they emphasise the progression levels that reflect how learning and teaching take place inside the

setting of the research-teaching nexus of which the relevance of these theories to this current study has been made explicit in the next chapter.

Historically, the Humboldtian University ideal represents a holistic combination of research and teaching in academia which forms the basis for the bond between research and teaching. For example, the gathering of research-intensive universities in the UK has endeavored to build up expressly, the reasoning behind their research-excellent climate being advantageous to undergraduate learning (Russell Group, 2009). Nonetheless, the expected advantages of studying in a research-active climate has the tendency to ruin teaching (Brew, 2010). It is worthwhile to indicate that the research-teaching nexus is recently gaining grounds in the academic landscape because active researchers do not necessarily translate into the practice of effective research-based teaching because the link between research and teaching is explicitly and intentionally created for the advancement of students' learning.

In building up a connection among research and teaching, Marsh and Hattie (2002), through a developed model, reveal that the connection between research and teaching is near zero that connotes the non-existence of the relationship. The implication is that though, there may exist excellent faculty and researchers, yet, this excellence may not enhance a better nexus. The zero relationship among teaching and research results in this model is a feature of the counterbalancing positive relationship among teaching and research skills and the negative relationship existing between the time needed for both teaching and research in order for a faculty to be successful. In spite of their relentless effort in coming out with a model, they had critics.

In seeking to respond to their critics, Marsh and Hattie (2002) had access to different research publication metrics and multiple teaching efficacy indicators, such as scholarly self-ratings of their own productivity as teachers and scholars. The relationship between the overall teacher rating and the maximum number of articles published reaching zero ($r = .03$) is defined. An effort was made to distinguish between the construction of basic teaching methods (by the variables within the teaching assessment) and study (by form or standard of publication). There is no connection between research and teaching at the departmental level, in comparison to recommendations by Ramsden and Moses (1992).

It is noteworthy that several universities' vision and mission statements underscore the premium placed on research at the detriment of teaching. For instance, the mission statement of University of Cape Coast espouses that "*It is an equitable opportunity for universities to deliver quality education through robust, liberal and technical programs that challenge students to be imaginative, inventive and socially responsible people* (University of Cape Coast Statute, 2016, p. 12). To achieve this goal, the University has established a consultancy known as the Directorate of Research, Innovation and Consultancy (DRIC) unit to help achieve the research agenda of the University with its mission statement being:

"to oversee consultancy services engaged in by individuals and groups in the University; implement the University's research agenda; and create conducive environment to nurture creativity and innovation" (University of Cape Coast Statute, 2016, p. 3).

A cursory look at Ghana's premier university's (UG) mission statement revealed their mandate as to:

“create an enabling environment that makes University of Ghana increasingly relevant to national and global development through cutting-edge research, as well as, high quality teaching and learning” (University of Ghana Statute, 2010, p. 5). To be more emphatic and elaborative, the University of Ghana Business School's vision states that they want: *“to get to be a global business school that produces global leaders, whereas the mission statement is to build worthwhile human capital capability and leaders by offering global management curriculum and appropriate cutting-edge analysis to address national and global growth needs.”* (University of Ghana Statute, 2010, p. 6). Many other universities throughout the world hold similar vision and missions, especially, with emphasis on research.

Perusing through the various mission and vision statements by the universities, it could be inferred that implicitly or explicitly, each of the universities, in one way, or the other, places much emphasis on the role of research in education than teaching. Validating this assertion, Anderson (2012) noted the lack of literature on university success assessment systems. There is enough proof, however to imply that research is regarded most than teaching. (Brew, 2007; Healey, 2005; Schapper & Mayson, 2010), and that countless universities put growing emphasis on research success metrics for the purposes of advancement, tenure, pay and performance assessment. (Gerschwind & Brostrom 2015; Taylor, 2007, 2008). For example, observable data in the United States shows that research is respected most often than teaching by university pay schemes. For example, Taylor (2007) showed that perhaps the

key determinant of faculty compensation was the sum of publications in top-tier journals in the USA. They also suggest, in particular, that teaching efficiency is a predictor of faculty income and offer observational evidence of a favorable link between teaching efficiency and pay. While this influence applies only for the faculty section with excellent academic results, where a certain research output level is met, superior teaching success is only expressed in a higher wage.

The question left unanswered now is, to what extent are these universities embarking on, or promoting research and how does that reflect in their teaching and learning processes? And more specifically, what conscious efforts are being made by faculty members in effectively integrating these researches (their own and that of others) in their teaching with the view to improving students' learning outcomes. In a nutshell, the effective integration of research into teaching is a conscious effort by faculty because recent researches (Borg & Liu, 2013; Ellis, 2010; Kumaravadivelu, 2011, Biesta, 2007; Vanderlinde & van Braak, 2010) have shown that a positive link among research and teaching is conceivable and can happen, yet they must be purposefully and intentionally, made by individuals, subject groups, institutions and national systems (Jenkins, 2000).

Statement of the Problem

In spite of a wide range of research-focused programmes developed by universities to generate knowledge within the teaching and learning landscape, many academic commentators argue that the role of research evidence in teaching remains limited, insignificant and blur (Goldacre, 2013). This is attributed to the contradictory empirical evidences found on the research-teaching nexus. Some of these empirical evidences (Brew, 2010; Robertson &

Bond, 2001) indicate a constructive partnership between teaching and research that is mutually reinforcing; others identify them as independent companies (Benton & Cashin, 2010; Marsh & Hattie, 2002; Neumann, 1994; Jenkins, 2004), and under several conditions, the two practices tend to develop into antagonistic activities in dispute (Coate, Barnett & Williams, 2001; Hacker & Williams, 2001).

While the requirements of the knowledge economy support a symbiotic connection among research and teaching, counter-pressures as globalisation, competition and marketisation of advanced education, rather set research and teaching apart (Arimoto, 2015; Beerkens, 2013). This is as a result of the worldwide competition among universities as reported in university rankings and promotions of faculty members. These rankings and promotion of faculty members seem to advance a solitary model for a university as either, a teaching university or a research one: a model that to a huge degree, can be decreased to just research greatness (Dill & Soo, 2005; Marginson & van der Wende, 2007) to the neglect of teaching. This has led to the creation of research havens through different activities at the national level (Shin & Kehm, 2013) in order to fill the research and teaching void.

However, these havens appear to further set research and teaching apart. This could be alluded to the fact that the created research havens ensure conducive and stimulating research environments such as travel allowances, funding for attending conferences, office space, summer remunerations, workshops and academic writing trainings. However, due to scanty resources, most faculty members tend to compete for these provisions by focusing on research at the detriment of teaching. Bettinger and Long (2010) conclude in

favour of this argument that the conflicts surrounding the mixture of tasks in research and teaching influence not just the reputation of institutions, but also the portfolio of duties of specific faculty members. There is however a growing trend in several nations to utilize research funds to "buy out" teaching activities (Bak & Kim, 2015; Smith & Smith, 2012) because of the higher emphasis imposed by many universities on research at the cost of teaching.

A cursory analysis of the job specification of faculty members showed that they must possess both research and teaching skills. If indeed, faculty members possess these skills, the effective integration of these skills to augment the research-teaching nexus is likely to be problematic for most of these faculty members (Shin & Kehm, 2013). A plethora of researches (Bazeley, 2003; Star, 2004; Griffiths, 2004; Baldwin, 2005; Healey, 2005; Weert and Beerkens, 2009; Brew, 2010; Ellis, 2010; Wright, 2010; Borg, 2011; 2013; Nassaji, 2012; Arimoto, 2015) have indicated the significant role played by research in the teaching and learning process. For instance, Baldwin (2005), Nassaji, (2012) and Wright (2010) reveal that the active engagement of learners in academic activities, other than mere transmission of content knowledge such as the engagement in inquiry-based teaching and learning would develop in learners, a sense of creativity and innovation that would enable them embark on critical thinking to confront challenges in their daily lives and at the world of work.

Contrary to the latter assertions, and in support of the widened gap, an anecdotal observation of the Ghanaian economy reveals that we are in an era where stakeholders complain about a mismatch between academia and industry. The implication is that university graduates are not able to demonstrate problem-solving skills and a sense of creativity, innovation, as well as, critical

thinking skills to meet the challenges at the workplace to the satisfaction of their employers. Prior studies (Dill & Soo, 2005; Marginson & van der Wende, 2007; Beerkens, 2013; Shin & Kehm, 2013; Arimoto, 2015) have indicated that there is a grievous disconnection amongst research and teaching attributed to the evidence that most tertiary institutions have increasingly sited research at the forefront of their operations (Nassaji, 2012) at the expense of teaching. Renowned faculty members were hired and a wide array of scholarship programs and research opportunities were given, thereby implicitly de-emphasizing the teaching activity through policies and practices. To further worsen the situation, international rankings of institutions are mostly based on high-impact factor generated through research activities. Appraisal techniques tend to overstate research, and to utilise research output as a metric for the importance of an organisation. Therefore, institutions put in place research awards instead of teaching awards.

In Ghanaian universities, the major criteria for faculty promotion are the quantity and quality of research papers in reputable journals. This has triggered the popular dictum “*publish or perish*”. This dictum means that faculty members who do not strive to publish more will not progress in their career as academics. Therefore, most faculty members, desirous not to perish (stagnate in career) and wish to be promoted, spend substantial amount of their time working on their research interests, but they seem not to integrate these researches into their teaching, and that is likely to create a disconnection between research and teaching. This seemingly disconnection amongst research and teaching activities in the universities in light of research for promotion has the tendency to lead to inequity in striking a balance between the two critical roles of the

faculty member. The overall consequence is that this seemingly disconnection between research and teaching is likely to adversely affect students' learning outcomes and experiences. Thus, as successful researchers utilize their teaching skills, the best teaching takes place, whereas research concepts and methods are encouraged and improved by encounters with learners. (Shin & Kehm, 2013). Therefore, being research active and sharing those research outcomes in class take the learning experience to the next higher level (Brew, 2010).

Adding to the complex and challenged nature of the research-teaching nexus, faculty members, as per Seyyed, Al-Haji Umar, and Al-Hajji (2004, p. 16), “face perplexing choices in balancing their workload among teaching, research, and service activities to maximise educational outcomes”. Such a decision can be the consequence of blended signals regarding how best to use energies across the three core mandates of faculty members (Austin & Gamson, 1983) likely to lead to workload strain contributed by inadequate time.

After a rigorous review of the extant literature, there were several gaps identified that warrant this study. These gaps are that most studies (Borg; 2010; De Vries & Pieters, 2007; Korthagen, 2007; McIntyre, 2005) focused on the Natural Sciences including Physical Sciences and Mathematics. There were few from the Social Sciences including Business Education. These studies have also focused on a one-way process, thus, how research informs or influences teaching to the neglect of how teaching informs research, all geared towards ensuring effective learning. Previous studies (Borg, 2011; Ellis, 2010; Kumaravadivelu, 2011, Biesta, 2007; Korthagen, 2007; Pieters & De Vries, 2007; Vanderlinde & van Braak, 2010) focused on either lecturers or students, but not both: a few combined lecturers and students. In addition, the scout for

literature failed to identify studies that compared students across all levels regarding their research experiences and conceptualisation of the nexus. Notwithstanding, it is somewhat, evident that the degree of education or students' level of study is critical and an important element when it comes to the research-teaching nexus.

Geographically, the researcher is yet to chance on a study about the link among research and teaching and its influence on students' learning outcomes in Ghana. Also, it seems both faculty and students struggle to come out with a conceptualisation of the link among research and teaching (Robertson, 2007). This research espoused the conceptualisation through a factor analysis. Previous studies have also ignored determining whether a statistical difference exist among the gender, rank and age of faculty members measured against their level of integrating research into teaching, as well as, their conceptualisation.

Furthermore, the presumed link or connection between research and teaching, be it symbiotic and desirable or disjointed, has not been confirmed by any considerable quantitative examination. These studies adopted either the quantitative or qualitative approaches, and not the adoption of the mixed methods. It is, therefore, appropriate to use the mixed method to establish the link for purposes of triangulation, thick description and complementarity (Creswell, 2013). Empirical evidence suggests that the critics (Brew & Boud, 1995; Colbeck, 1998) questioned whether relationships or qualitative examination designs were generally suitable to address the research-teaching nexus. It seems obvious that the choice of either quantitative or qualitative separately is probably not going to determine these issues, and that both

quantitative and qualitative (mixed methods) can give alternate points of view in establishing a clearer link within the context of Business Education.

Conclusively, the justification for this current study is that if members of faculty are to be encouraged and supported to align their research expertise and experiences to their teaching for the benefits of their students, more information would be needed on how the link among research and teaching can be facilitated and sustained at the institutional, departmental and practitioner levels. Consequently, the necessity for this investigation.

Purpose of the Study

The main thrust of this study was to inquire into the connection among research and the teaching of Business Education in public universities in Ghana so as to determine the degree to which faculty integrate research into their teaching, and how this integration translates into students' learning outcomes.

Assumptions of the Study

1. For every teaching activity, there is an element of research.
2. Great research is vital for acceptable teaching.
3. Teaching and research are correlated.
4. The connection among research and teaching is intentionally and consciously created and implemented.
5. Learning is improved when students are made to take active part in the teaching and learning process.
6. The relationship between research and teaching will be enhanced if faculty believes in a stronger nexus.

7. Faculty members who accept that they have high abilities as researchers will be extra inspired to do research, and will therefore, commit more resources on research, and eventually, become better researchers.
8. Quality teaching is functionally associated to quality research.
9. Research productivity is likely to lead to teaching effectiveness.

Research Objectives

Specifically, the study sought to:

1. assess how faculty and students conceptualise the link between research and teaching in public universities.
2. determine the level at which faculty integrate research into their teaching in public universities.
3. examine how students experience research in public universities.
4. analyse the factors affecting lecturers' integration of research into their teaching in public universities.
5. assess the perceived impact of research-teaching nexus on teaching and learning outcomes in public universities.
6. find out if there is a statistically significant effect of research productivity on faculty's teaching effectiveness.
7. ascertain if there is a statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus.
8. examine if there is a statistically significant difference in the conceptualisation of research-teaching nexus with respect to the ranks of faculty.

9. examine if there is a statistically significant difference in the conceptualisation of research-teaching nexus with respect to students' academic levels.
10. determine if there is a statistically significant difference in the level of integration of research into teaching among the ranks of faculty.
11. establish if there is a statistically significant difference in the level of research integration into teaching regarding the gender of faculty.
12. establish if there is a statistically significant difference in the research experiences of university students with respect to their level of study.

Research Questions

The study sought to find answers to the following questions:

1. How do faculty and students conceptualise the link between research and teaching in public universities?
2. What level of integration do faculty engage their students in research activities in the teaching and learning process in public universities?
3. How do students experience research in public universities?
4. What are the factors affecting lecturers' integration of research into teaching in public universities?
5. What are the perceived impact of the research-teaching nexus on teaching and learning outcomes in public universities?
6. What is the effect of research productivity on faculty's teaching effectiveness?

Research Hypotheses

1. **H₀:** There is no statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus.

H₁: There is a statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus.

2. **H₀:** There is no statistically significant difference in the conceptualisation of the research-teaching nexus across the ranks of faculty.

H₁: There is a statistically significant difference in the conceptualisation of the research-teaching nexus across the ranks of faculty.

3. **H₀:** There is no statistically significant difference in the conceptualisation of the research-teaching nexus among students with respect to their academic levels.

H₁: There is a statistically significant difference in the conceptualisation of the research-teaching nexus among students with respect to their academic levels.

4. **H₀:** There is no statistically significant difference in the level of integration of research into teaching regarding the ranks of faculty.

H₁: There is a statistically significant difference in the level of integration of research into teaching regarding the ranks of faculty.

5. **H₀:** There is no statistically significant difference in the level of research integration into teaching regarding the gender of faculty.

H₁: There is a statistically significant difference in the level of research integration into teaching regarding the gender of faculty.

6. **H₀:** There is no statistically significant difference in the experiences of research among university students with respect to their academic level.

H₁: There is a statistically significant difference in the experiences of research among university students with respect to their academic level.

Significance of the Study

The outcome of this study is of immense benefit to several stakeholders including university authorities and management, faculty members, as well as, students and researchers. The specific benefits attributable to each stakeholder is espoused as follows: The findings of the study may allow university authorities in Ghana to make more conscious efforts in encouraging an effective incorporation of research into the teaching and learning procedure from the scratch.

Also, the study could enable university management to create the enabling environment that encourages faculty to incorporate research in their lessons and allow learners to engage in knowledge production and not only in knowledge consumption. It might also help university management to re-define and properly emphasise the role of research in academic work. Adding up, the study would serve as a basis on which further research could be carried out. Thus, contributing to the generation of further scholarly knowledge and literature regarding the research-teaching nexus.

The outcome of the study may also inform faculty members of the need to integrate research into their teaching with the view to improving and reinforcing teaching and learning effectiveness since the study established a constructive affiliation between research efficiency and teaching

effectiveness. The findings of the study are also likely to assist students with valuing the estimation of research in their learning process, thereby, sensitising them on the role of research on their learning. This examination plans to give some helpful data into the significance of research roles in educating advanced education teaching and learning, as evidenced by the results of the study; and it will be important to add to literature on advanced education research and teaching ties in Ghana.

The findings of the study might also provide some insights on how faculty members would integrate research into teaching and how such practices could be enhanced since the study outlines some principles and guidelines to be followed when implementing the research-teaching nexus since there are demonstrable evidences to show the value of research-based teaching. This may be important for strategy implementation at the institutional level and the advancement of techniques to improving the research-teaching nexus at the individual, departmental and national levels.

This examination may demonstrate significant in adding to the immature area of research related with the research-teaching nexus, and in offering various relevant questions to direct subsequent studies. The primary noteworthiness of this examination lies in the way that no current investigations have studied the research-teaching nexus in Ghana, especially, employing the mixed methods design in providing insights into the nexus in Business Education.

Furthermore, this examination may yield important outcomes because of the mixed methods research design. The requirement for both qualitative and quantitative examination to decide the degree to which teaching and research

are disjointed or intricately entwined as established by literature. This study would take a stride further by joining both quantitative and qualitative approaches inside one study. This coordination would give a more profound understanding into the issue of building up a more clear connection among research and teaching, and, at that point, by investigating the participants' perspectives with respect to the statistical discoveries in more depth.

Delimitation

This study was restricted to public universities in Ghana (University of Cape Coast and University of Education, Winneba) that offer Business Education. By extension, the study involved only faculty members teaching Business Education students, as well as, Business education students. It was also restricted to the integration of research into teaching and its perceived benefits on the teaching and learning process.

Limitations

The definition of research productivity, as used in measuring research output of faculty members in this study is limited in scope. Research productivity was limited to, and measured through the publication of books, and articles, as well as, thesis supervision. While this makes for an easy valuation of the performance of a faculty member, such a view also limit research to output only, at the expense of the research process. This is because it ignored the fact that the creation of knowledge takes time to reach fruition and cannot always be measured by an output.

Also, the operationalisation of research experience was limited in scope. This is because research experience is defined to include any form of research exposure. However, this study's definition of research experience of students

was geared towards academically-related research activities. There is the tendency that the student might have acquired some research experience apart from those enumerated for the current study. This is likely to affect the validity of the study's findings. Moreover, the utilisation of straightforward, quantitative estimates such as students' ratings of lecturers and lecturers' self-rating, and publication counts respectively.

There are several other factors that militate against the validity of the findings of the study, hence, affecting its generalisability. Commenting on the population and sample of this study, the sample consisted of faculty members and students from only Business Education. Therefore, focusing on only Business Education is likely to affect the generalisability of the study's findings and conclusions since there are several disciplinary spaces with different characteristics peculiar to such disciplines.

Furthermore, since the survey was confined to only Business Education students and lecturers, it is therefore, not known whether their perspectives and reactions would have been comparative or unique in relation to those external the area of Business. The extent of the use of this current study's outcome might be confined and restricted, consequently, influencing generalisation of the investigation's discoveries.

In addition, the two universities used for the study, though, offer similar programmes, but one did not have postgraduate students in Business Education at the time of data collection. The other university had Business Education students up to the doctoral level. Undergraduate students also dominated throughout the study which had the tendency to affect the results of the study.

Another limitation concerns the dependency on faculty's self-reports and even students' rating of lecturers. Previous research suggests that faculty members' beliefs and students' opinions are not easily assessed. be because of the implicitness and affectability of numerous conceptions and the readiness or reluctance to report socially undesirable conceptions and opinions.

Operational Definition of Terms

Business Education: The offer of Teacher Education that gives learners the opportunity to be trained to teach Business courses at all levels of education.

Curriculum oriented conceptualisation: The notion that the research teaching nexus is able to enhance the development of the curriculum.

Faculty/Faculty members: University lecturers or academics.

Knowledge currency conceptualisation: The notion that the research-teaching nexus is able to enhance the update of knowledge.

Levels of Study: In the context of this study, refers to the various stages in university education such as undergraduate (Bachelors), non-research masters (M.Ed- sandwich), research masters (M.Phil) and Doctoral (PhD).

Pedagogic research: Refers to discovering more about how learning happens so that teachers can coordinate their efforts in ensuring meaningful learning.

Research Productivity: Research publications in journal articles, conference proceedings, writing a book or chapters, and working with postgraduate students especially PhD supervision and mentoring.

Research: The process of knowledge discovery in order to impart unto students.

Research-teaching nexus/linkage: How faculty integrate research into the teaching and learning process to enhance students' learning outcomes. It also signifies the link, connection and synergy between research and teaching.

Scholarship oriented conceptualisation: The notion that the research-teaching nexus compels teachers/faculty members to embark on reflective practices by subjecting their teaching activities to scrutiny.

Scholarship: The act of embarking on reflective teaching practices whereby lecturers subject their teaching practices to intense scrutiny and review.

Teaching Effectiveness: Measures lecturers' teaching performance in terms of students' evaluation and lecturers' own self-assessment of their teaching.

Teaching: The art and science of imparting knowledge to students in order to encourage lifelong learning.

Organisation of the Study

Chapter One sets the context for the study through the background to the study, statement of the problem, purpose of the study, significance of the study, limitations and delimitation of the study, as well as, operational definition of terms. Chapter Two comprised of a review of related literature to the study which was organised into three sub-sections including the theoretical framework (the scholarship of teaching and learning, the four modes of the research-teaching nexus and the experiential learning cycle); conceptual framework (the concept of research-teaching nexus, conceptualisation of the nexus, levels of integration, students' research experiences in the university, factors affecting the nexus and impact of the nexus), as well as, empirical review of related literature organised based on the research questions. Chapter Three discusses the methodological framework comprising the research methods and

procedures for conducting the study. These include the research design, population, sample and sampling procedure, the research instrument, data collection procedure and analysis of data. Chapter Four provided results and discussion of the study. Chapter Five then drew the conclusions and summary to the findings of the study and made recommendations for future study.



CHAPTER TWO

LITERATURE REVIEW

Introduction

This study examined the link between research and teaching in public universities in Ghana within the context of Business Education. The core mandate of this study was to establish how faculty members integrate research into their teaching in higher education, especially, in the context of Business Education. This review adopted the selective approach that focused on articles and journals of particular relevance to the study. Results from these works were analysed and synthesised to inform this review. Literature was organised under theoretical review, conceptual review and framework, empirical review based on the research objectives and ended with a chapter summary.

The theoretical review included the four modes of the research-teaching nexus model, the Scholarship of Teaching and Learning (SoTL), as well as, the Experiential Learning Theory (ELT). The conceptual review elaborated the themes such as conceptualisation of the research-teaching nexus, levels of integrating research into teaching, students' research experience in higher education, factors and impact of the nexus, as well as, faculty development for research, teaching and community service. The empirical review is organised based on the research objectives, and were organised chronologically by year while the chapter was climaxed with a chapter summary. The theoretical review is provided as follows:

Theoretical Review

It is important to indicate that three major theories/models underpinned this current study. These theories/models are:

1. The Four modes of the research-teaching nexus model (adopted from Healey, 2005, p.70).
2. The Scholarship of Teaching and Learning (SoTL) (Boyer, 1990)
3. The Experiential Learning Theory (ELT) (Kolb, 1984)

Research-Teaching Nexus (RTN) Model (Main theoretical framework)

The model of the research-teaching nexus, technically, known as the *four modes of the research teaching nexus* (adopted from Healey, 2005, p. 70) is the main model underpinning this study. The model is relevant to this current study because faculty members' and students' understanding, perceptions, conceptualisation and the extent to which they integrate research into teaching would be reflected by any or a combination of the concepts in the four quadrants (research-led, research-oriented, research-based or research-tutored) as depicted by the model. The implication is that faculty members' act of linking research to teaching in the quest to promoting effecting learning could either be research-led, research-oriented, research-based or research-tutored based on their responses about the nexus which is informed by the extent and way of exposing students to research in the teaching and learning process.

Healey (2005) developed a model that differentiates two major components dichotomised on a quadrant reflecting the relationship between research and teaching. The first emphasises either research product or process, while the second explains students as either participant (student-centered) or students as audience (teacher-centered) in the learning process. Figure 1 shows four quadrants that depict the levels of integration of research into teaching.

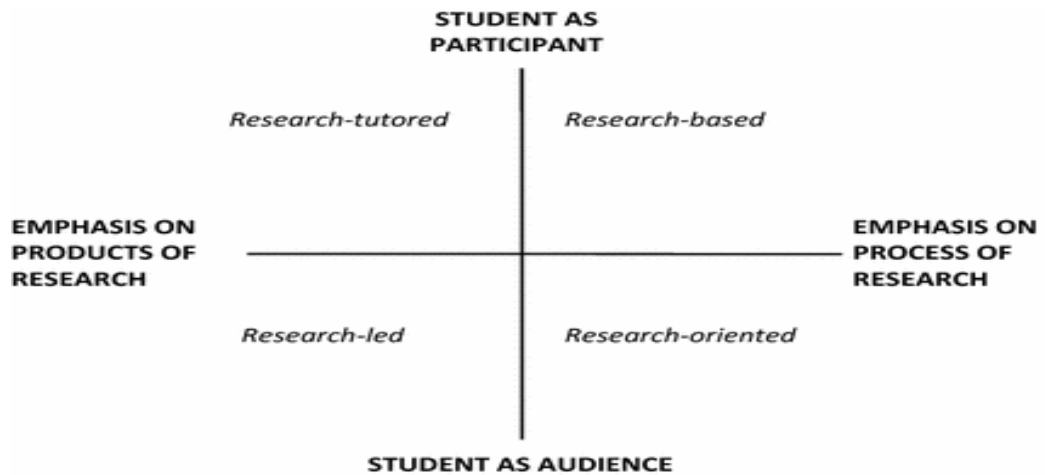


Figure 1- Four modes of the research–teaching nexus

Source: *Four modes of the research–teaching nexus (adopted from Healey, 2005, p.70)*

Four quadrants from Figure 1 can be clearly differentiated in the definition of the model, which are translated as four separate methods of incorporating research into teaching within the curricula of the university that reflect the level of integration of research into teaching. They include research-led teaching, which may be defined as teaching that focuses on research outcomes or findings without students engaged in research or research practices. Students still have no direct engagement in research in research-oriented education, but the educational targets are based on research issues and procedures rather than research products, so students concentrate on learning research methods in this quadrant in the sense of their discipline.

Students regularly engage in study or investigation in research-based teaching, with concentration on research methods and topics. Students often play an instrumental role in research-tutored education by factually examining and debating the findings of empirical research, while, teaching is primarily

centered on research-related activities. On this basis, it is possible to discern four distinct ways of forming the research-teaching nexus: research-led (research data against students as audiences), research-tutored (research data versus students as respondents), research-based (research procedures against students as respondents) and research-oriented (research processes against students as audience).

While this model offers a framework for faculty's integration of research into teaching, it is not clear as to the extent to which students respond to research within the teaching and learning process. Therefore, the framework served as a blueprint in establishing the conceptualisation, levels of integration, students' experience of research that capture the expectations of research integration of students in their university learning and teaching. Hence, the basis of involving the students' points of view in this study.

It is imperative to indicate that the major contribution of this model to this study is the determination of the level of integration of research into teaching. These levels are espoused as follows:

Level 1: *Research-led teaching*: Emphasises a scenario where students hear about research discoveries in which the curriculum material is governed by faculty research priorities, and knowledge delivery is the main teaching method.

Level 2: *Research-oriented teaching*: Emphasises a circumstance wherein students learn about research processes in which the program emphasises the processes through which information is created and faculty attempts by their teaching to develop research ethos.

Level 3: *Research-based teaching*: Emphasises a situation where learners study as researchers in which the educational plan is to a great extent

planned around inquiry-based exercises, and the detachment of parts between the teacher and learners is limited or invisible.

Level 4: *Research tutored*: Emphasises a scenario where students hear about research outcomes and criticism through small group conversations with an instructor (Healey, 2005). These levels were used to measure the extent to which faculty integrated research into teaching within the context of Business Education in this study.

Scholarship of Teaching and Learning (SoTL) Model

Scholarships of Teaching and Learning comprises the scholarships of *Discovery, Integration, Application and Teaching*. Boyer (1997) as found in Nibert (2011), proposes an extended meaning of “scholarship” inside the professoriate dependent on four capacities that underlie the Profile of a Quality Faculty Member including disclosure, coordination, application, and teaching. He believes that a wide range of scholarship ought to be accepted and compensated within this system, and that this would contribute to more individualised and versatile standards for academic tenure. He further suggests that faculty members quite often deal with competing responsibilities that leave no time for them to reflect on their position in teaching. Boyer, however, proposes using “creativity contracts” that emphasise excellence in teaching and individualised professional development. He advises that this model should be focused on both the individual and professional life of the academic.

Boyer (1997) further explicates the four unique elements underpinning the scholarship of teaching and learning as follows:

The Four Modes of the SoTL Model

Boyer (1997), as cited in Hofmeyer, Newton and Scott (2007) propose that in the milestone publication titled, “Scholarship Reconsidered”, Boyer disputed the research and teaching arguments by upholding for scholarship of discovery, teaching, integration, and application. The scholarship of discovery regards publications and research as the benchmark in the scheme of legitimacy, advancement and tenure worldwide. That notwithstanding, this limited portrayal of the scholarship does not adequately embrace universities’ commitments to serve global. Figure 2 therefore, demonstrates how these four modes of scholarships of teaching and learning are connected to inform teaching and learning in higher education.

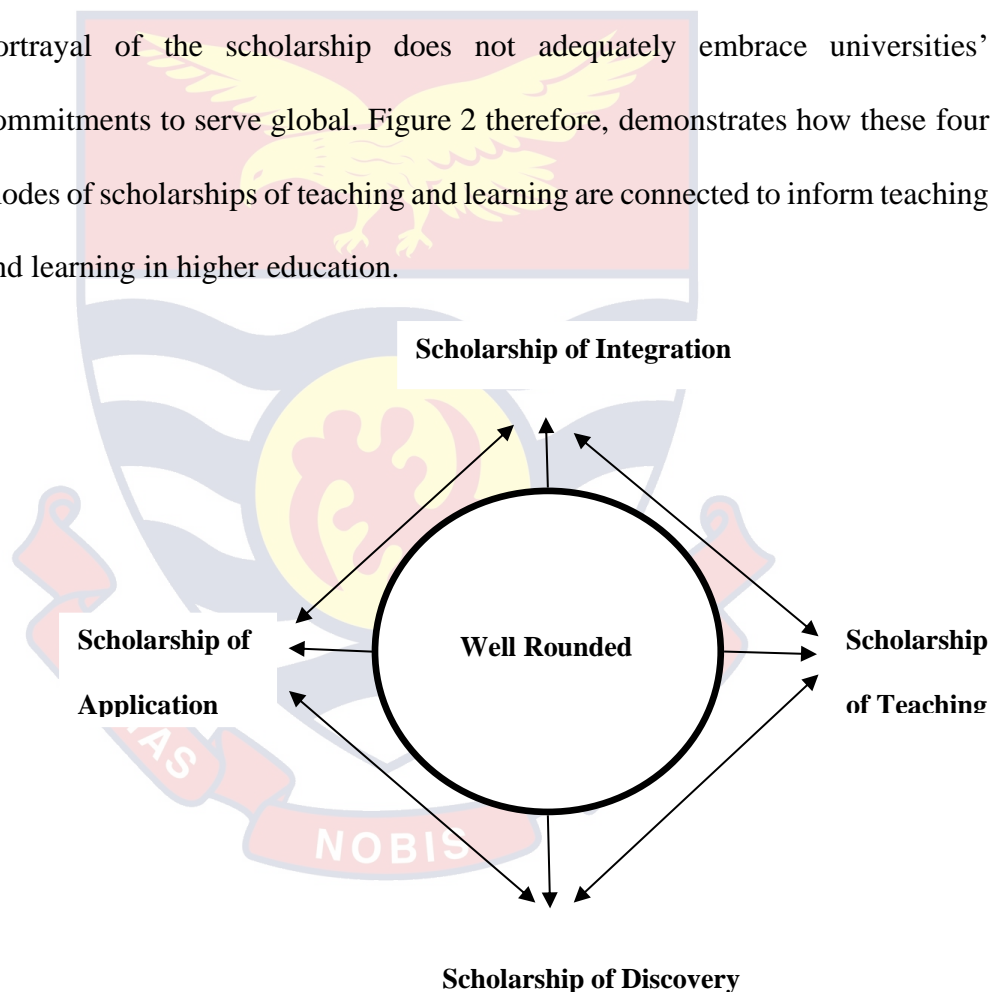


Figure 2- Four modes of the scholarship of teaching and learning.

Source: *Four modes of the scholarship of teaching and learning (Adapted from Boyer, 1997)*

The components of Figure 2 are elaborated as follows.

Scholarship of discovery

In the context of a field like Business education, the discovery scholarship is understood as original study that extends or contradicts existing awareness. Boyer (1997) describes discovery as the development of knowledge for knowledge, and its aim is to add not only to knowledge, but also to the intellectual environment of academic institutions. Some questions posed by discovery scholars constitute: What can be understood? And what is still to be discovered? Nibert (2011) argues that discovery adds not only to the human stock, but also to higher education's academic climate. He emphasises that the vitality of the learning community is essential to new scientific contributions, and that his model does not minimise the importance of the scholarship of discovery.

In addition, McCarthy and Higgs (2005) suggest that once the scope of knowledge and original scholarship have to be taught, the scholarship of invention is correlated with so many more pedagogical and realistic discoveries. The scholarship of discovery must become interactive and competitive until the student joins the scene. The implication created here is that through this scholarship, faculty members are likely to transform, rather than just inform their students.

Scholarship of integration

Integration scholarship is strongly linked to inter-professional debates. It includes making interdisciplinary ties and forming a more cohesive and integrated application of knowledge (Hofmeyer, et al., 2007). Integration scholarship is about innovative interconnectivity, knowledge perception and

synthesis. It is also closely related to discovery scholarship, although, in terms of context and effect, it raises very different questions. According to them this method of scholarship describes significance of isolated information and provides different insights that can address questions that could not be answered initially. To be able to incorporate expertise from various fields to generate unique and diverse viewpoints on critical concepts and theories, researchers engaging in integration need creative thought. These scholars seek information that need careful thinking and explanation, such as asking what the research outcomes indicate and whether it is possible to explain what has been found in ways that offer a wider, more detailed understanding (Hofmeyer, et al., 2007).

The integration scholarship is now key, recently found on the periphery of academic effort, since it is certainly ideally positioned to respond to current challenges at both individual and societal levels. Moreover, as a means of creating awareness and innovative approaches, funding agencies are gradually promoting strategic, interconnected collaborations and teams. Integration depends on connecting through fields (Nibert, 2011). Therefore, a faculty member may contextualise his/her own research in order to contribute to knowledge in the broader spectrum. Hence, McCarthy and Higgs (2005) assert that the integration scholarship is a significant practice in education that aims to analyse, pull together and add new knowledge to the existing one. The implication is that both formal and informal platforms should be created to enable faculty share their expertise among themselves.

Scholarship of application

In the scholarship of application, Hofmeyer, Newton and Scott (2007) state that scholars in one discipline build connections and synergistic connections across different disciplines and draw implications about real life situations. The scholarship of application straightforwardly, connects different types of scholarship with training. This cycle includes the dynamic commitment and the interpretation of new knowledge that take care of issues or improve the challenges experienced by people and society. They further express that this academic activity considers dynamic imagination in overcoming any issues between theory and practice. This creates the impression that researchers engaged in applied scholarship look to see how knowledge can capably and morally be applied to important issues and how it tends to be useful at the micro (individual), meso and macro levels (society, government, institutions). The scholarly implication is that the scholarship of application centres around utilising research discoveries and advancements to cure cultural issues. It has therefore, been advocated that regular seminars and workshops should be organised in order to create the enabling environment for shared knowledge among faculty members, as well as, students.

Scholarship of teaching

The scholarship of teaching goes beyond merely distributing knowledge to a mechanism that is both shaping and expanding the learning of students and scholars. In this way, the teaching scholarship requires the encouragement of constructive learning, critical thought and a dedication to continuous learning (Hofmeyer, Newton & Scott, 2007). It is important to remember that the

academic community tends to prioritise the role of faculty members in tasks other than teaching (Royeen, 1999). According to McCarthy and Higgs (2005), teaching is also a complex endeavour, which includes all the analogies, symbols, and pictures that construct bridges between the comprehension of the teacher and the learning of the student.

Pedagogical practices must be thoroughly prepared, constantly reviewed, and explicitly linked to the topic taught as part of undertaking on a teaching scholarship. This, therefore, enables the faculty member to create a common ground for intellectual commitment and knowledge sharing. They promote active, not passive, learning and motivate students to be analytical, innovative thinkers with the opportunity to pursue learning at the conclusion of their college days. In addition, McCarthy and Higgs (2005) propose that effective teaching suggests that as scholars, faculty are also learners. This creates the impression that faculty's act of transmitting knowledge does not suffice, but transforming and extending knowledge with the quest to keeping scholarship alive.

Critiques of the Scholarship of Teaching and Learning (SoTL)

The educational and procedural emphasis of SoTL's third wave is also the baseline of much of the field's criticisms. This is validated by Stierer and Antoniou (2004), who note that:

much, if not most, pedagogic research in UK higher education is carried out by practitioners with a disciplinary and research background other than education. These practitioner-researchers are mainly concerned about issues within their own disciplinary and professional contexts,

rather than with the nuances of educational research methodology (p. 283).

As such, faculty members in most disciplines have no formal training in teaching itself (Huber & Hutchings, 2005). Therefore, campuses need to create the enabling environment through services, systems, and incentives through the mobilisation of the teaching commons where SoTL can effectively take place. It is important to indicate that the differences of opinions and expectations on what constitutes valid evidence make it difficult for SoTL to be regarded across all disciplines. However, the effective integration of research into teaching is likely to augment the lessons learnt (Huber & Hutchings, 2005; McKinney & Jarvis, 2009).

Davis and Chandler's (1998) criticism of Boyer's (1990) definition of scholarship typically suggests that it lacks the meaning of the university's socio-economic background and organogram in the context of higher education. SoTL analysts must answer concerns about what is most highly valued and by whom and for what reasons in the modern marketing of higher education (Davis & Chandler, 1998). This conflict is not a recent one between institutional frameworks and academic ideals.

Taking into consideration a foreign context, within the North American educational context, the theorisation of SoTL took place. The North American/European divide is illustrated by Parker (2008), referencing the numerous models from the paradigms. Parker (2008), therefore, suggests that "rather than fighting to be recognised as a separate discipline with an established research base and theoretical frame, SoTL should concentrate on being an

effective community of practice by generating and disseminating the emergent disciplinary knowledge that is made in teaching” (p. 171). In spite of the criticisms, SoTL model is still relevant education especially, regarding how lecturers integrate research into teaching since it is able to offer an evidence-based vision of transformation within a discipline or organisation of operation (Gilpin & Liston, 2009; Hubball & Clarke, 2010).

Experiential Learning Theory: Kolb (1984)

Experiential learning is Kolb’s pedagogical philosophy that represents how to transform students’ learning outcomes through experience, assessment, and reflection (Kolb 1984; George, Lim, Lucas & Meadows, 2015). In order to complement the conventional teacher-centered pedagogy, faculty members from many backgrounds have embraced student-centered pedagogy. Those areas comprise nursing education (Warnke & Thirwell, 2014), engineering for medical education (Gugliucci & Weiner, 2013). Company (Winsett, Foster, Dearing, & Burch 2016) and juvenile justice services (Durkin, 2016) (George et al., 2015; Cromwell & Birzer, 2012; Sims, 2006; Stichman & Farkas 2005; Sgroi & Ryniker 2002.), as well as, Education (Healey, 2005, 2014; Baldwin, 2005). It is therefore, essential to know that the idea of “discipline to learn” is based on the Experiential Learning Theory (ELT) propounded by Kolb (1984), which offers a paradigm shift for addressing the tension between how data is obtained (prehend) and used (transformed) (Kolb, 1984).

Experiential Learning is any learning that allows students to extend their experience and intellectual awareness to challenges in the natural world or a scenario where learning is guided and encouraged by the teacher. This is facilitated through coordinated exercises such as case studies and problem-

based studies, guided investigations, simulations or tests, the classroom or laboratory may serve as a framework for experiential learning (Wurdinger & Carlson, 2010) that makes it applicable within the context of Business Education. Four steps are included in the Kolb Experiential Learning cycle; *concrete experience, reflective observation, abstract conceptualisation and active experimentation.*

Impliedly, the human experience can better be understood as a constant attempt to negotiate across experiential meanings, because life poses transition. Students ought to objectively rely on conclusions that they might have reached a course and verify that sense by analysing the justification for the new information and experiences. A theory of learning that is uniquely adult, abstract, idealised, and grounded in the essence of human communication provides transformative learning, derived from experiential learning theory. It is a theory that is partially a continuum of development; learners recognise that questioning past beliefs or interpretations will lead to a reconstruction of the original definitions of one's knowledge to direct potential behaviour (Mezirow, 1996).

It is laudable to point out that experiential learning can be an extremely effective teaching tool, particularly for adults, as it involves the learner by discussing the person's interests and desires at a more personal level. Attributes such as self-initiative and self-evaluation are necessary for the process (the scholarship of teaching and learning emphasising reflective teaching practices). To be successful, the whole learning process should be used from target setting, experimenting and analysing, evaluating, and finally planning action. This full

method encourages new talents, new habits and even new forms of thought to be taught (Kickul, Griffiths, & Bacq, 2010).

In order to build new models, Smith (2011) explains the theory of Kolb as a method of taking information (prehension) and two distinct processes are involved in the process of using the information (transformation). The first dialectic component, “prehension”, requires learners who negotiate two epistemological extremes, either the analytical absorption of knowledge by Concrete Experience (CE) or the theoretical absorption of information by abstract conceptualisation (AC). The second component (transformation) entails learners navigating between what to do with the expected (internalised) knowledge and focusing on alternative interpretations and viewpoints (Reflective Observation [RO]) or take action on the basis of the predicted knowledge (Active Exploration (AE)?

A student stimulates their senses at the Specific Experience (CE) level, gains a greater awareness; at the Analytical Observation (RO) section of the cycle, persons begin to explore alternative meanings of the CE along with their sufficient individual experience to value the CE; the Abstract Conceptualisation (AC) means that learners have access to ideas that will allow them to make sense of the CE; and the final step, Active Experimentation (AE), is where the student focuses on and/or takes action with regard to their capacity to focus on the initial Concrete Experience. It is necessary for trained educators/trainers to be accessible during the AC such that psychological, affective, and mental improvements are controlled (Smith, 2011). This awareness has contributed to frameworks that provide students with resources for learning that stimulate more of their five natural senses. Students are given prompts that reach into

cognitive science and their “processes of memory, perception, problem solving, creativity and critical thinking” by interacting with data obtained by tasting, touching, smelling, listening, and seeing (American Psychology Association, 2013).

Throughout the most recent thirty years, the academic community has examined learning styles as a way to improving the instructional plan of courses. The ways to deal with seeing how we learn informed by the experiential learning cycle have been portioned into four classes: personality, data preparing, social collaboration and instructional inclinations (McCarthy, 2010). It is an emphasis on personality that contributed to the development of the Jungian psychology-based Myers-Briggs Type Indicator (MBTI), which explores how the person sees the environment and makes judgments, and the eventual outcome was the development of the Learning Style Inventory (LSI), which focuses on the information-processing aspect of student learning. Two major assumptions were formulated based on the LSI. These assumptions include: at every point, learners can join the cycle; as well as, poorer preferences can be reinforced to help the learner respond to different forms of teaching (McCarthy, 2010). A brief explanation of each of the learning styles is as follows:

1. *Divergers* tend to address learning through direct interactions and through insightful reflection to process knowledge. From multiple perspectives, they are excellent at seeing current circumstances. As they seem to have wide cultural preferences, and feel focused, their power lies in creative capacity.
2. *Assimilators* tend to address awareness through abstract conceptualisation and through reflective evaluation, process awareness.

They are better at interpreting a vast spectrum of data and bringing the data into a succinct, coherent context. Assimilators are less people-centered and more interested in thoughts and concepts.

3. *Convergers* often use abstract conceptualisation to address information, but they navigate it through aggressive experimentation. Instead of having social and relationship problems, they tend to struggle with technological activities and problems. Their power lies in the solution of challenges, decision-making and the rational implementation of thoughts.
4. *Accommodators* are able to benefit mainly from interactions that are hands-on. In cases where they have to adapt to fulfill urgent conditions, they appear to do well and their power lies in their capacity to carry out strategies containing fresh tasks.
5. *Observers*; a broad variety of information is better interpreted by observers and the information is placed into a succinct, coherent context. However, assimilators are less people-centered and more involved in thoughts and concepts.

Figure 3, therefore, demonstrates the experiential learning cycle.

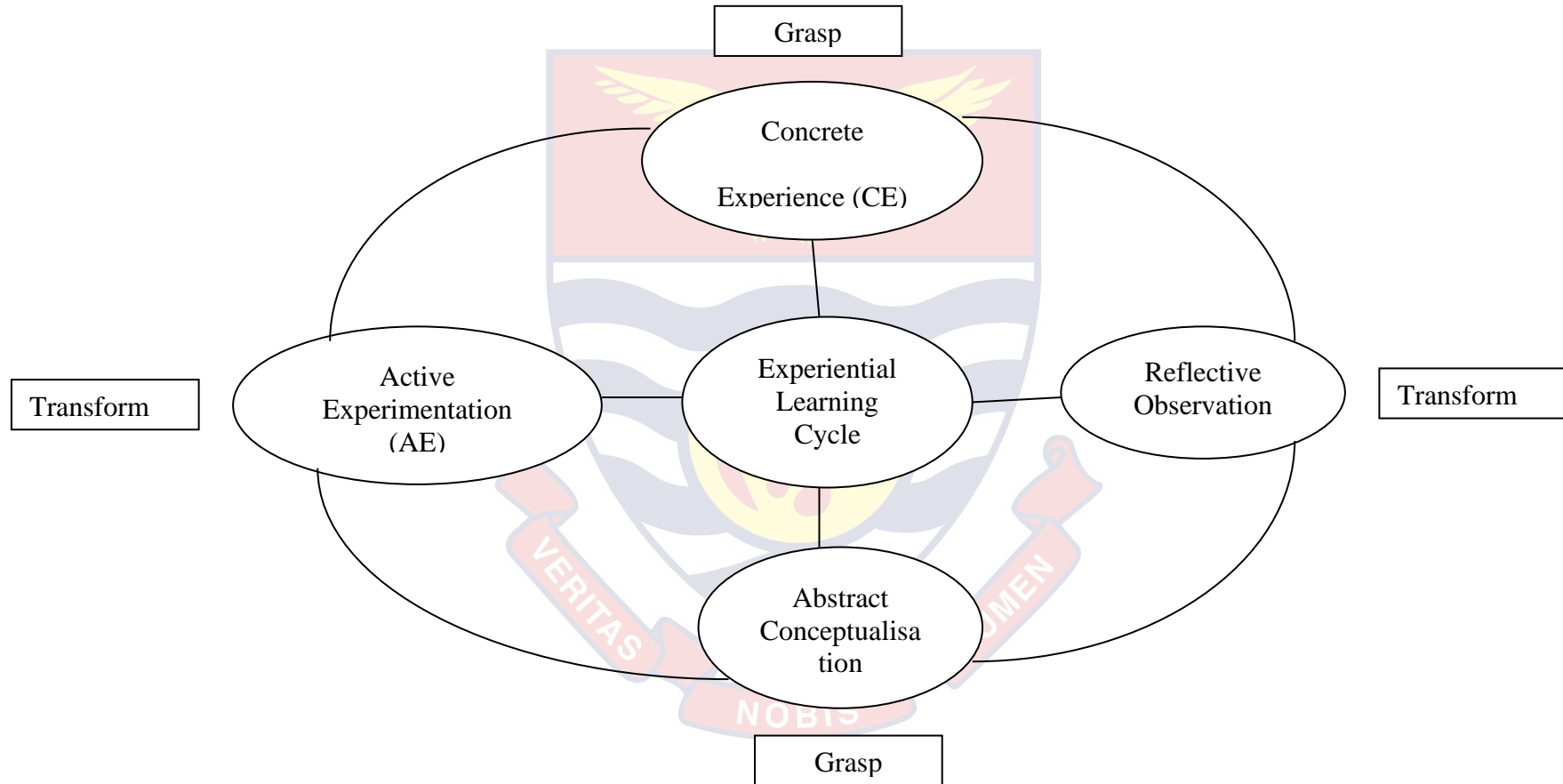


Figure 3- Experiential learning cycle

This cycle depicted in Figure 3 is utilised to coordinate students' learning styles to complex topics to comprehend singular inclinations for certain learning encounters, and to propose the appropriation of various teaching approaches which suit different learning styles (Akella, 2010). All these teaching and learning elements are emphasised by the research-teaching nexus, making the theory relevant for this current study. For instance, the level of integration of research into teaching (research-led, research-oriented, research-based and research-tutored) is informed by the pedagogical orientation (methods of teaching) adopted by a particular lecturer. The theory has acquired critical significance lately, as "faculty members affirm that students carry little competence and knowledge from one course to the next, from one semester to another, and from college to the workplace" (Smith, 2011). Building an awareness and effective practices of the research-teaching nexus that serves learners and faculty well needs specialized skills, conflict management ability, and openness to research and theories, such as ELT that are pertinent to the always-changing educational dispensation.

The significant contributions made by the experiential learning theory further reveals that the theory creates an interior exchange which permits the student to advance clearness considering new data. Through the nexus, partnerships are often created that promote substantial reflective dialogue with those subject to the same experiences. They should be positive, compassionate and have an atmosphere of confidence that is imperative for debate (Piercy, 2013). To fabricate an atmosphere of sensitivity and confidence, students are able to share their emotions with each other by encouraging them to share diverse viewpoints on topics of concern. These conversations "provide

opportunities for the learner to examine the strengths and weaknesses of their personal” (p. 33) convictions and those of others in the travel community (Piercy, 2013).

Expanding the argument, students exposed to the research-teaching nexus forge a great deal of partnership with their lecturers in the knowledge creation process. Thereby, establishing a climate where the teacher and learner collaborate as co-creators of knowledge (Piercy, 2013). The fusion of experiential learning in the research-teaching nexus creates opportunities that can create a fresh or enhanced learning method aimed at disruptive social and environmental capacity (Breunig, 2014, Breunig, 2008a, Wickett, 2000, Warren, 2002). In a single lesson, a teacher does not pledge transformation, but it is the duty of the instructor to create an atmosphere in which change can occur (Stover, 2016).

Experiential Learning at the Core of Business Education

Within the context of Business Education, students portray that a more dynamic experiential learning methods allow for a comprehensive view of their usefulness. Experiential learning techniques go beyond supplying students with inspiration and epiphanies, thus, enhancing particular and established areas of knowledge in students that inform both their perception and knowledge. In order to ensure that Business learners remain successful in the world of work, experiential learning has a significant role to play as a way of offering and establishing new insights in learning that can be implemented and reapplied life-long. This feedback loop of continuing learning will move unsurprisingly into business settings, providing rewards for those granted access. When

experiential learning approaches are applied, analytical reasoning capabilities have been shown to develop, as well as, the utilisation of case analysis, online classes, thorough interviewing, and peer review, especially, within the context of Business Education (DeSimone & Buzza, 2013).

The use of technology-based experiential methods (Huang & Behara, 2007) helps students in Business Education to expand their understanding of technology as they take on management challenges. As social applicability of experiential learning inspires students in a series of interactions that they will experience in the business world, domestically and internationally, this dual skill set is critical. In a dynamic, global economy, Business undergraduate students can benefit immensely from the experience of how partnerships across diverse departments can be established and sustained. The social and personal lives of Business Education students can be influenced by learning how teams are built and maintained, hence, promoting a sense of co-operative learning.

Fourcade and Go (2012) indicated that a different collection of thoughts and feelings is created by revisiting and reconsidering one's behaviour as a child by engaging with other children, which can nevertheless, be useful in the current disposition of the individual as a student and in their perception of how they can behave as managers. Undoubtedly, in this context, experiential learning is able to create experiences that expands their mindfulness, that can upgrade their self-idea, that can convert into self-awareness, and that help them start to address the inquiry, "who am I?" (Li et al, 2007).

Business Education students are offered an ability to focus on their actions through self-reflection and conversation, to create perspectives that enhance their self-awareness. In the Business Education sense, Kickul et al.

(2010) used experiential approaches to teaching creativity and entrepreneurship. Due to the challenge of teaching subjects that are complex, deeply contextual and not readily transferable by lecture and conversation, this was an especially unique context.

Reflexive writing has also been used to teach Business Ethics and other Business-related topics, a subject that in the face of an actual problem will evoke an intellectualised debate that bears no relation to execution. To Baden and Parkes (2013), the perspectives of the students offered space for emotional and thinking speech as business students grappled with sustainability, ethics and social responsibility concerns. In addition, Experiential learning, enables students in Business School to show that they have the skills they need to master, which makes them a better likelihood of being recruited. Experiential learning helps the student to find prospective jobs more important to their education.

Moreover, experiential learning provides learners in strategic thought, problem solving and decision-making in Business Education in ways that are directly important to them (Bevan & Kipka, 2012). This approach to learning often includes generating opportunities through input, reflection, and the application of these ideas and skills to new contexts, notably in the sense of business education, for debriefing and consolidating ideas and skills. If you pair the above with a solid business base, strong technological capabilities, a broad global outlook, and a dedication to a higher level of ethical behaviour and corporate social responsibility, the outcomes are that students from undergraduate business schools are able to go out and invest in the business world (Kolb and Kolb, 2005). The deliberate and selective introduction of these

components into experiential experiences is a way of encouraging a specific set of cognitive processes and level of awareness, a base for critical thinking skills (Hamilton & Klebba, 2011).

Drawing from the three theories underpinning the study, Figure 4 shows a synchronised theoretical framework by synthesising all the three theories underpinning the study and drawing commonalities among them. The synchronisation is depicted on Figure 4 as follows:



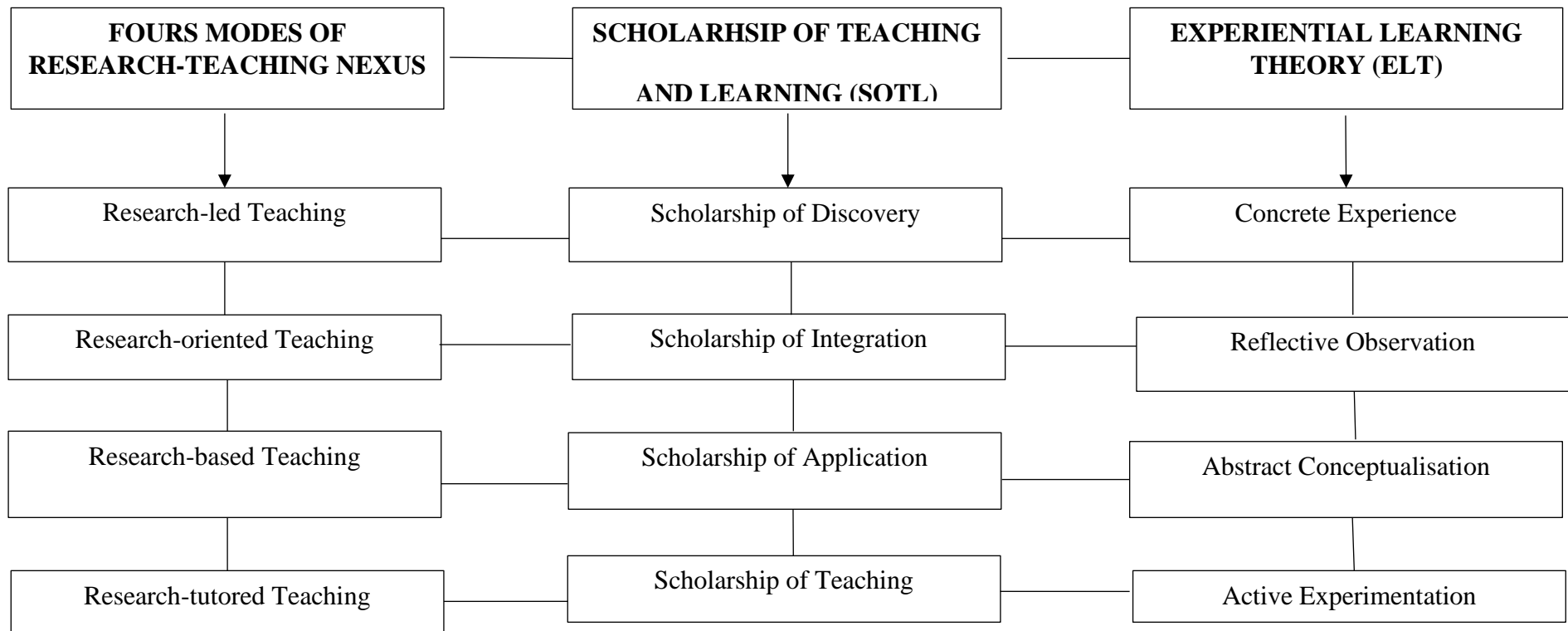


Figure 4- Synchronised theoretical framework

Figure 4 shows a synchronised theoretical framework by synthesising all the three theories underpinning the study while drawing commonalities among them. Synchronising these three theories underpinning this study, all these theories have four typologies or modes underlining them in the form of a continuum. Coincidentally, all these typologies under each theory is organised according to four levels and they are cyclical in nature. For instance, under the Scholarship of Teaching and Learning, the first typology is the scholarship of *discovery* described as original research that advances knowledge or searching for knowledge with the quest to disseminating such knowledge. The corresponding first element under the four modes of the research-teaching nexus is research-led teaching which emphasises the dissemination of research findings: either lecturers' own research or that of other scholars. The first corresponding component of the experiential learning theory is concrete experience which emphasises a lecturer's maiden encounter with research through discovery. These first three elements emanating from these three theories have some commonalities or similarities among them forming the first level of research integration into teaching.

On the second element, the scholarship of *integration* that involves synthesis of information across disciplines, across topics within a discipline, or across time. It therefore, involves how the discovery of knowledge would be utilised within the context of the field of study. Research-oriented teaching is the second level of the research-teaching nexus model which emphasises exposing students to the knowledge development process by integrating the “how” and rationale behind certain models, theories and concepts within their field of study. Likewise, the second component of the experiential learning

theory is reflective observation which implies how someone such as a faculty member can reflect on the knowledge experienced and is able to integrate that knowledge within the context of the discipline or area of expertise. These second three elements emanating from these three theories have some commonalities or similarities among them forming the second level of research integration into teaching.

The *application* scholarship, also referred to as the involvement scholarship, goes beyond a faculty member's service duties to those inside or outside the institution and requires the rigor and application of disciplinary knowledge for outcomes that can be communicated and/or assessed by peers. This scholarship of engagement relates to research-based teaching where students are enthusiastically involved in the knowledge creation procedure. This level of students' active engagement is validated by abstract conceptualisation as a tenet of the experiential learning theory. These third elements emanating from these three theories have some commonalities or similarities among them forming the third level of research integration into teaching.

Last, but not least, is the scholarship of teaching and learning (SoTL) which connotes the systematic study of teaching and learning processes through reflective teaching practices. This highest form of scholarship is related to research-tutored teaching which forms the highest level of integrating research into teaching. These levels are congruent to the active experimentation phase of the experiential learning theory that explains the phase at which the knowledge experienced has been reflected upon and properly integrated within the context of the discipline. Conclusively, it is

my strong conviction that all the three theories underpinning this study: scholarship of teaching and learning (Boyer, 1990), four modes of the research-teaching nexus (Healey, 2005, p.70) and the experiential learning theory (1984) are highly connected and can be integrated to inform the knowledge creation process. These models/theories may inform the level at which faculty members integrate research into their teaching.

The initial or entry conceptual framework for the study is displayed by Figure 5 as follows based on the background and assumptions of the study.

The Entry Conceptual Framework

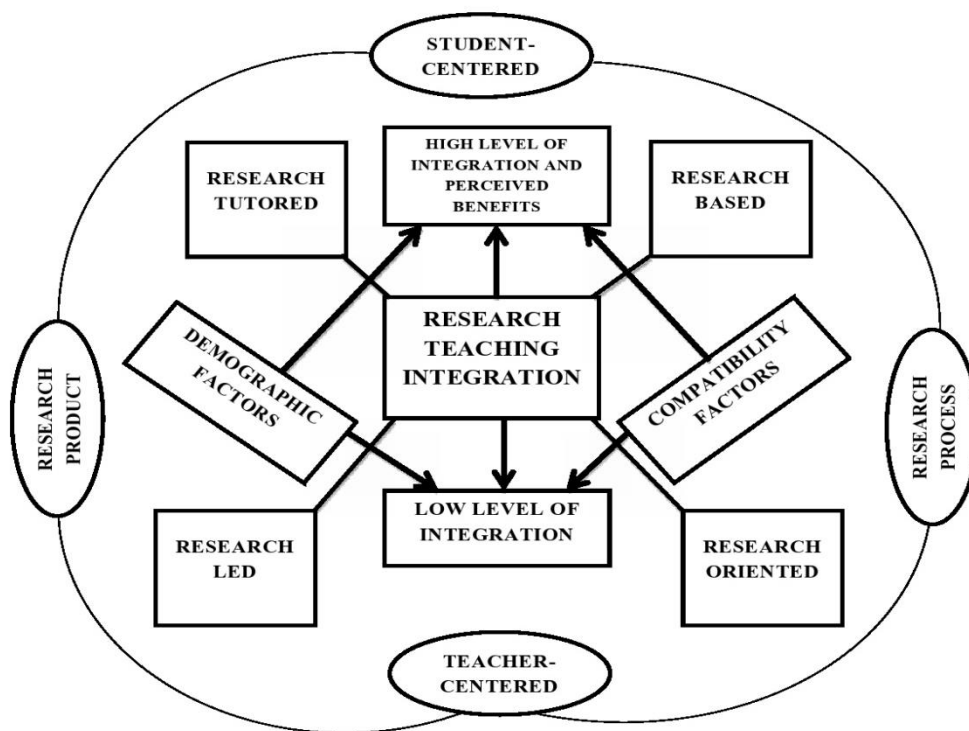


Figure 5- Research-teaching Nexus in Business Education
 Source: Author's Construct (2019)

This framework, dubbed “the research-teaching nexus in Business Education” displayed by Figure 5 is a comprehensive framework that seeks to project the highly contested and dynamic nature of the relationship between

research and teaching in Business Education. This conceptual framework is grossly informed by the major model underpinning this study known as the four modes of the research-teaching nexus propounded by Healey (2005, p.70). This conceptual framework simply reflects the idea that the level of integration of research into the teaching of Business Education is partly informed by the conceptualisation, beliefs and understanding of that individual on the research-teaching nexus. This level of integration of research into teaching can be dichotomised into teacher-centered pedagogies (research-led and research-oriented teaching), as well as, student-centered pedagogies (research-based and research-tutored), where an emphasis can either be on research process or research product depending on the disposition of the faculty or students in question.

The conceptual framework also demonstrates that the implementation of the research-teaching nexus is influenced by certain compatibility factors sandwiching between research and teaching, coupled with some demographic factors attributed to some biological features from the key players of the nexus. That notwithstanding, if these factors are managed well, has the tendency to lead to the realisation of some benefits in the teaching and learning process. On the contrary, if these factors are not managed well, then risk abound. Therefore, this framework should guide faculty members in their quest to effectively integrate research into teaching, especially, in the teaching of Business in Higher Education.

Conceptual Review

Concept of Research-teaching Nexus (RTN)

Several terminologies have been attributed to the umbrella term, “research-teaching nexus”. This is because this umbrella term has undergone metamorphosis and has been referred to by different scholars as research-based teaching, research-engaged teaching, research-intensive learning, pedagogic research practices, inquiry-based learning, and students as researchers’ pedagogy (Aditomo, et al., 2013; Kinkead, 2003).

Conceptualising the research-teaching nexus and the other overarching concepts calls for conceptualisation of three concepts in simple questions such as: what constitutes teaching? And what connotes research? (Schouteden, Verburch & Elen, 2016; Turner, et al., 2008), and when would we be able to talk about a ‘nexus’ between the research and teaching? (Brew, 2003; Griffiths, 2004; Healey, 2005) which forms the foundation for this study as indicated in the earlier chapter of this study. It is, therefore, relevant to indicate that the review of literature in this study did not bother on the concepts ‘research’ and ‘teaching’ in isolation since the focus of the link between research and teaching, hence, the ‘nexus’.

Moreover, the research-teaching nexus may be described in several forms to include conditions where students can learn *from*, *about* and *through* research (Hodson, 1992). Learning from research connotes a situation whereby students within a particular discipline gain knowledge of major ideas and research within that discipline. Learning regarding science implies that in research classes, methods and techniques and/or in research laboratories, students acquire knowledge of research methods and techniques. Learning by

study suggests that by conducting research themselves, students gain knowledge of their discipline (Levy & Petrusis, 2012). It is worthy of note that students' perspective of the research-teaching nexus reflects the fourfold distinctions among 'research-led', 'research-oriented', 'research-tutored', and 'research-based' teaching that formed the basis for measuring the levels of integration of research into teaching.

Different Conceptualisations of Research-teaching Nexus (RTN)

University research and teaching have been conceptualised by faculty members in several ways (Robertson & Bond, 2001). Healey (2000) and Brew (2003) express that the manner in which faculty members decipher the terms research, scholarship and teaching can have impact on the research-teaching nexus. Therefore, illustratively, some scholars see research as outcome-oriented (external), while others see it as learning-oriented (internal). Brew (2003) asserts that a lot of faculty members see scholarship as the manner in which they esteem their professionalism. Teaching is similarly operationalised as a scholarship after Boyer (1990). Healey (2000) contends that research into teaching ought to be incorporated as a critical component of the scholarship of teaching.

Badley (2002) synthesises the relations between research and teaching based on these different conceptualisations and interpretations: including, "an impending divorce"; 'a marital relationship'; 'a holy alliance; 'a scholarly relationship'; and, 'a really useful link". In an imminent breakup, independent research and teaching institutions exist. As an example, the presence of research institutions and teaching-only or all-teaching institutions in the USA; and in the UK, the identification of divisions headed by research and teaching. Study is

regarded as the male partner in a romantic partnership, and teaching as the female partner. In the perspective of a holy alliance, analysis is seen as a generator of confusion; and this uncertainty must be resolved by teaching. Research and teaching are distinct but overlapping academic practices in a scholarly partnership. In order to approach 'a very useful link' (Badley, 2002) or a symbiotic partnership' (Robertson & Bond, 2001), most faculty members agree that effective research is important for good teaching in research-informed teaching, in particular.

Teaching informed by faculty's own research ought not interfere with the role played by the research-teaching nexus in higher education. However, faculty should endeavour to go the extra mile to embark on reflective practices by reviewing their own teaching. In fact, Brew (2003) argues that all faculty members need not be good researchers, however, recommended the sharing of faculty knowledge among colleagues.

It is worthwhile to note that the connection between research and teaching does not occur automatically, but intentionally created (Jenkins & Zetter, 2003). Therefore, Elton (2001) describes the strategies for linking research to teaching and indicates that it depends on different factors, for example, the unit of appraisal (individual, departmental, institutional); level of skill (educating or research); viewpoints of educational stakeholders (faculty, learners, administrators, funding bodies); and, cultural elements (various nations, global dimension). Prominent among these factors are the sort of department, discipline and level of study.

Students' Research Experiences in Higher Education

Prior literature (Van der Rijst, Visser-Wijnveen, Verloop, & Van Driel, 2013) suggest that for faculty members to effectively and successfully integrate research into teaching, students' experiences are pre-requisite. In another vein, the research experience of students is a prerequisite for the efficient incorporation of research with teaching. Therefore, strengthening the research-teaching integration to benefit students' learning outcomes through research experiences in universities remains a challenge that needs to be addressed in the context of higher education (Brew, 2010).

In order to ensure an effective integration of research into teaching, faculty members are expected to integrate research into their teaching across all levels of study. Particularly, this can be undertaken at the undergraduate level to serve as a foundation for their study, while recognising the enormous contributions played by research within the teaching and learning landscape (Prosser & Trigwell, 2014). Speculatively, it could be cumbersome to consider research incorporated into teaching for first-year students, so fostering student expectations of the university as a research-inclined learning atmosphere is an integral part of the transition to higher education (Brew, 2010).

It is claimed that students' expectations and impressions coupled with their characteristics affect their learning outcomes within the framework of higher education with special regard to teaching and learning (Prosser & Trigwell, 2014). In support of this assertion, the results of an observational analysis by Lizzio, Wilson, and Simons (2002) validate the suggestion that students' expectations of teaching impact their learning outcomes through the role of research in teaching, indicating that positive perceptions held by these

students not just to explicitly affect academic performance, but also increase the consistency of learning outcomes

Prior studies (Brew, 2010, Prosser & Trigwell, 2014, Spronken-Smith, Miroso, & Darrou, 2014) revealed that students' perception of research was linked to undergraduate research experiences, as well as, related to institutional issues. Some studies also revealed that faculty need to be reinforced in order to immerse students into the research culture. This pre-supposes that a wide range of students' research experiences in the university is likely to augment their learning outcomes.

As part of the justification for this study, several research have centered on the interpretation of teaching research by undergraduate students and its association with the learning results of students (Levy & Petruilis, 2012). It emanated from those few studies that their view of the university as a research environment is one of the significant elements in fostering student learning regarding research. And that regardless of students' level of study, they can provide positive effects of a research culture within their learning processes. It is therefore, important to acknowledge that students' research experiences in the university have implications for the level at which faculty integrate research into teaching, especially, within the context of Business Education.

Faculty Development for Research, Teaching, and Service in Higher Education

The standard of a university or college, while determined by many variables, is closely linked to faculty's work (Sorcinelli, Austin, Eddy, & Beach, 2006). Faculty members' expertise, and commitment contribute to students' success, shape the nature of research, and impact the community in and out of

the institution (Sorcinelli et al., 2006). Kezar and Maxey (2014) explain that faculty members demonstrate a significant amount of influence on their students' interest and engagement in their studies, partly, because of their passion for their fields of study. The impression created is that it is the ultimate role of faculty "to bring the most honest and intelligible account of knowledge to all learners" (Boyer, 1991, p. 24).

That notwithstanding, good teaching does not happen overnight; it requires knowledge, skills, and effective preparation and training. This preparation in the form of professional development is necessary to support faculty's professional and personal advancement in higher education (Eaton, Osgood, Cigrand, & Dunbar, 2015). They demonstrate the rationale behind linking learning to the career of learners. For instance, within the context of General Education, Haviland, Turley, and Shin's (2011) empirical study of the impact of a four-part series of workshops in Spring 2008 uncovered the positive effect of ongoing, focused expert advancement on faculty participants' attitudes, confidence, and understanding related to programme assessment.

In the context of higher education, faculty development is a form of organised support on campuses to help faculty members develop professionally, as teachers, scholars, and citizens (Sorcinelli, 2007). It ranges from general orientation sessions to formal and informal workshops, as well as, online training on pedagogy, research, and more. Faculty development is also referred to as educational development, instructional development, and academic development in higher education (Amundsen & Wilson, 2012). Educational improvement defines activities designed to enhance instruction, organized and performed by faculty members themselves or by those associated with faculty.

For Elliot (2014) and Haviland et al. (2011), professional development is a continuous, systematic, and integral process to improving learning and practice. Faculty development has had different meanings at different times and there is not a universal definition of the term (Allen, 1988). This is the result of educational leadership changing over time to better serve the organisations in which faculty work.

Faculty development for teaching

Boyer (1990) attempted to widen the scope of the concept of scholarship in his article, *Scholarship Reconsidered: Professorial Goals*, to cover all areas of scholarly work. Scholarship for Boyer meant “stepping back from one’s investigation, looking for connections, building bridges between theory and practice, and communicating one’s knowledge effectively to students” (Ochoa, 2012, p.56). Faculty development programs that demonstrate effective methods of engaging students in the learning process can lead more faculty members to connect with students in and out of class, utilise active learning, and teach students specific strategies for mastering the course content (Shreiner, 2012).

Faculty development programmes for teaching differ in form and purpose since they depend on critical success factors such as financial support, human resources (staff support, faculty time), campus resources (other faculty development programmes within the institution, internal grants), and local expertise (faculty or staff members with interest or relevant background) (Lancaster, Stein, Garrelts MacLean, Van Amburgh, & Persky, 2014). This

developmentally-oriented concept places premium on teaching, learning and assessment tasks (Lancaster et al., 2014).

Even though, lecturing remains the dominant teaching method in universities (Pascarella & Terenzini, 2005, as cited in Cox, McIntosh, Reason, & Terenzini, 2011), many of the universities have put forth unique attempts to expand the viability of their academic programmes by advancing pedagogical innovations, setting up learning-centered policies that include peer-audit of teaching, peer-coaching programmes, creating teaching portfolios, mentoring, and developing bigger and better-resourced habitats for teaching and learning (Cox, et al., 2011; Kelly, 2015). Faculty members' input and feedback on what is useful to their everyday work in the classroom is very critical to develop workshops and meetings convenient and relevant to their teaching (Corrigan, 2015).

It is interesting to note that administrators on many campuses use extrinsic rewards to increase faculty involvement in professional development in an effort to meet accountability demands and raise faculty productivity (Hardré, 2014). Kezar and Maxey (2014) espouse that faculty members who have limited opportunities for professional development, mentoring, and interaction with colleagues will in general utilise less learner focused and dynamic teaching approaches. They also use less high effect teaching practices, for example, learning communities compared to tenure-track faculty who utilise more student-centered and engaging practices (Flores & Sprake, 2013). Research suggests that when non-tenure-track faculty are provided with promising circumstances for professional development and mentoring, there is

a positive impact in student outcomes that are comparable to those of tenure-track faculty members (Kezar & Maxey, 2014).

In order for faculty to meet the learning needs of a diverse student body in post-secondary institutions, they need to keep informed with latest developments within their fields of study and the features of their students, the diverse strategies for teaching by adopting multiple learning styles, effective teaching, and the facilitation of learning offered by technology (Ambrose, Bridges, Lovett, DiPietro, & Norman, 2010; Sorcinelli, 2007). Research also shows that there is a strong association among faculty development, completion rates, and student outcomes due to the information, skills, and contacts that learners acquire from their experience on campus and in the lecture hall (Brock, 2010; Condon et al., 2015). Therefore, faculty becomes key in disseminating new skills for facilitating their students' learning outcomes.

Prior studies (Elliot, 2014; Gillespie et al., 2010; Sorcinelli et al., 2006; Steiner, Mann, Centeno, Dolmans, Spencer, Gelula, & Prideaux, 2006) have been conducted to evaluate faculty members' experiences and needs at establishments of advance education; more recently in the areas of distance/online education and the health science programs. Online teaching has now been critical since it has been found to promote effective learning, especially when blended with the face-to-face approach (Terosky & Heasley, 2015). Jones (2013) stresses the institutional support for new faculty members as part of making them more effective teachers as they advance through the different stages in their careers.

Faculty development for research

Research in higher education has established that productivity, scholarship, collaboration, and publication are central to the work of every faculty member in institutions of higher learning (MacLeod, Steckley, & Murray, 2011; Royal, Akers, Lybarger, & Zakrajsek, 2014). Scholarly work is considered for tenure and promotion, compensations, and other merit decisions, and it varies across rank, discipline, and institutions (Girardeau, Rud, & Trevisan, 2014; Price & Cotton, 2006; Royal et al., 2014). Prior researches show that among faculty members, the first priority is research, followed by teaching, and service (Chen, 2015).

Chen (2015) points out that the paramount justification for the assertion is that the reward system for these faculty members reflect their research output. Therefore, even though, research training starts before doctoral students enter the field of education, academic departments and centers within institutions of higher education have been established to produce research, and support faculty that are engaged in scholarly research at their respective universities (Rumbley, Stanfield, & Gayardon, 2014).

Originally, faculty development in higher education meant developing expertise within the context of one's discipline (Lewis, 1996). Many of these early programmes focused on increasing the research expertise and supporting faculty members' continuous professional development as scholars within the context of their disciplines (Eaton et al., 2015; Gillespie et al, 2010; Sorcinelli et al., 2006). Sorcinelli et al. term this period the "*Age of the Scholar*" because faculty members perceived the support for scholarship as the only way to further their career progression. The oldest support for faculty development to help

faculty members keep updated in their fields began at Harvard University in 1810 with the sabbatical leave which was the model of faculty support for the next 150 years (Gillespie & Robertson, 2010; Lewis, 1996; Macdonald, 2009; Sorcinelli et al., 2006).

During the twentieth century, as part of ensuring faculty professional development, most academic institutions have created packages such as sabbatical leave, traveling grants and conferences, as a means to help faculty remain updated within the context of their discipline (Lewis, 1996). Today, faculty development centers in research universities that offer opportunities for faculty members to do original creative research, not only in their discipline, but also, on their own teaching by promoting the Scholarship of Teaching and Learning (SoTL). In the early years of faculty development, the emphasis on research meant that faculty members were expected to be professionals in their discipline, but not necessarily professionals in teaching (Sorcinelli et al., 2006). In the Scholarship of Teaching and Learning, faculty have the opportunity to test hypotheses about their own classroom practices, reflect on the results, share them with colleagues, and then make teaching improvements (Cambridge, 2004 as cited by Gillespie et al., 2010; Slapcoff & Harris, 2014).

Teaching and learning units support faculty members who want to participate in SoTL projects (Gillespie et al., 2010). As a result, faculty members are expected to use their teaching to enhance their research or use research to enhance their teaching, however, a constant challenge for university administrators across the ranks and files is to adopt means of helping their junior colleagues to be productive researchers in addition to their teaching and service responsibilities (Girardeau et al., 2014; Hardré, 2014; Price & Cotton, 2006).

Generally, research is only undertaken during the spare period of a senior faculty member following completion of compulsory teaching and work (Chen, 2015). Different studies suggest that junior faculty and non-tenure track faculty do not receive proper assistance with their research (Girardeau et al., 2014; Ott & Cisneros, 2015; Rush & Wheeler, 2011); although, experienced senior faculty mentorship has shown to be crucial for junior faculty and non-tenure track faculty to increase research productivity during the early-career period.

Mentoring services allow seasoned faculty members with research knowledge to share their experiences with others who need support to improve research effectiveness (Rush & Wheeler, 2011; Holmes & Kozlowski, 2014). In addition, interdisciplinary research among faculty has been encouraged by federal and state agencies in attempts to improve learning and collaboration among faculty from different disciplines (Novak, Zhao, & Reiser, 2014). Nowadays, there are opportunities available in higher education to support faculty members in their research journey. These opportunities range from mentoring programmes to faculty learning communities.

Advocates (Elbow & Sorcinelli, 2006; Girardeau et al., 2014; Hardré et al., 2014; MacLeod et al., 2012; Singh, 2012; Wittman, Velde, Carawan, Pokorny, & Knight, 2008) also recommended for writing retreats as part of augmenting faculty's research productivity. In addition to this advocacy, Boud and Lee (2005) revealed that writing groups are strong mechanisms for research development within a peer learning framework. In contemporary times, institutions of higher education offer faculty members research development

services tailored to their mission and needs tailored towards achieving both individual and institutional goals.

Faculty development for service (Community service)

Decisions on advancement and tenure are typically focused on teaching, research, and support. Still, service is not a prime factor in earning tenure because this is greatly influenced by research and publication. Expectations for scholarly service vary across institutions, disciplines, and the policies and practices of the university (Gentry & Stokes, 2015). Within the higher education landscape, research found that faculty who are women embark on community services relative to their male counterparts, “making women and men experience their work environment differently” (Guarino & Borden, 2017, p. 1). Nevertheless, faculty members in general are expected to adjust to the academic life of the institution they serve by performing service such as advising, serving on committees, collaborating with colleagues, mentoring and, providing service to external organisations (Whitfield & Hickerson, 2013).

Ward (2003) identified two different forms of service in higher education: Internal service, which refers to service that is tied to shared governance, and External service, which is a means for institutions to inform people outside academia about what they do to meet societal needs. Internal service involves sitting on internal commissions and advisory councils, mentoring and counselling students, and managerial responsibilities, while consultancy, service learning and cultural and public learning are part of external service (Ward, 2003). Research demonstrates that the variability in the positions of internal and external services depends on the form, specialization,

rank, gender and race of the organisation (ASHE-ERIC Higher Education Report, 2002; Ward, 2003).

Internal service by faculty members

Faculty members who participate in internal campus service are sometimes referred to as academic or institutional citizens and their participation is in three areas: Academic oversight (program review or accreditation, faculty evaluation), institutional governance (budget oversight, strategic planning), and institutional support (student recruitment, alumni relations) (ASHEERIC Higher Education Report, 2002). Service to the university is likely to go unrewarded for many faculty members when they are evaluated for retention, promotion, or tenure because they are judged often by their research productivity: presentations, publications in journals, grants obtained, books, and so forth (ASHE-ERIC Higher Education Report, 2002; Ward, 2003).

However, very often, faculty members contribute to their respective departments by doing administrative or quasi-administrative service in conjunction to their research and teaching (ASHE-ERIC Higher Education Report, 2002). Research shows that faculty members often receive little department guidance by administrators when considering service loads (Bensimon, Ward, & Sanders, 2000, as cited in ASHE-ERIC Higher Education Report, 2002, p. 51). According to Austin and Sorcinelli (2013), leadership development is now an important professional development option in many institutions because it connects administrative decisions and interests to faculty work and perspectives. In this regard, they further indicate that the preparation,

training, and ongoing support of department leaders and administrators are important institutional challenges identified by over one-quarter (27%) of professional developers at research universities, comprehensive institutions, and community colleges.

In addition to faculty's contribution to their department, they need to serve their disciplines by getting involved in disciplinary service including membership committees, program committees, and reward committees, which most of the time gives faculty a foundation for their expertise in research (ASHE-ERIC Higher Education Report, 2002, Pfeifer, 2016). The latent services to students is also part of the responsibilities of all faculty members and it does not stop with teaching. These services include advising, counselling, and issuance of letters of recommendations (ASHE-ERIC Higher Education Report, 2002). Advising in higher education is important and research shows that student retention, persistence, and success are improved when institutions can establish a strong connection with students (Williamson, Goosen, & Gonzalez, 2014).

External service by faculty members

There are a number of external services rendered by faculty members in higher education. A faculty member can serve as a participant, a presenter, or a consultant in external organizations, and these responsibilities increase as faculty progress through their career. Many universities encourage their faculty to engage in external services to their communities and to their students as well. However, graduate students and new faculty members are generally discouraged to do a lot of service in the beginning of their careers since all their

time should be directed to research and teaching (Pfeifer, 2016). This is the same for junior or pre-tenured faculty, “who are generally encouraged to focus more heavily on research” (Guarino & Borden, 2017, p. 2). Nevertheless, Guarino and Borden (2017) point out that external services often generate more value to a faculty’s career advancement since it can bring recognition to their peers, thereby, guaranteeing better external job offers and enhanced status.

In today’s higher education institutions, “community-engaged service has become increasingly important over the past three decades” (Pfeifer, 2016, p.245). Therefore, community engagement is a topic that should be on every teaching and learning center agenda. For instance, when faculty decides to design a course for service learning, research agrees that support is critical for faculty members that teach academic experiential learning courses (Banerjee & Hausafus, 2007; Darby & Newman, 2014; Lambright & Alden, 2012).

In the study conducted by Lambright and Alden (2012) about faculty perspective on help for supporting service-learning, the researchers intimate that there is limited availability of financial incentives for service-learning; only 41% of review respondents had gotten financing to help their service-learning exercises and only 12% had gotten discharge time. Despite this lack of financial support, 95% of study respondents concurred or emphatically concurred that service-learning was a significant pedagogical tool. Darby and Newman (2014) suggest that advice from colleagues, professional conferences, institutional faculty development opportunities, professional journals, and access to community service offices can assist faculty members in addressing the challenges that come with the implementation of academic service-learning.

Levels of Integration of Research into Teaching

Several disciplinary-specific studies regarding the level of research integration into teaching have been conducting including Accounting (Lubbe, 2015), the assembled climate (Durning and Jenkins, 2005; Griffiths, 2004), Dentistry (Kieser and Herbison, 2001), Education (Lucas, 2007), Engineering (Stappenbelt, 2013), Geography (Jenkins, 2000; Le Heron, Baker, and McEwen 2006; Speake, 2015), History (McLean and Barker, 2004), Hospitality Management (Ball and Mohamed, 2010; Thomas and Harris, 2001), Information Systems/Management (Grant and Wakelin, 2009), nurse and teacher education (Lopes et al. 2014), Politics and International Relations (Lightfoot and Piotukh, 2015) and Sport History (Johnes, 2004).

The distinction among research-led, research-oriented, research-tutored, and research-based teaching, all of which come together to explain the levels of research integration into teaching. Therefore, Healey (2005) clearly differentiated among the four separate methods of incorporating research into teaching within university curricula, representing the extent of integration of research into teaching throughout the context of this analysis. This distinction is also applicable within the context of the school's curricula. This is alluded to the fact that the research-led dimension reflects recent research within their field of study, including studies conducted by these faculty members themselves. The core focus of research-oriented dimension is on "developing students' knowledge of and ability to carry out the research methodologies and methods appropriate to their discipline(s) or profession" (Healey, et al., 2014, p. 42).

The research-tutored curricula connote a design whereby students and faculty members critically discuss research within their discipline, while

research-based curricula targets “guaranteeing that however much as could be expected, the student learns in research or potentially inquiry mode” (Healey, et al., 2014, p.42). Research-based and research-tutored curricula are favoured due to the reason that both are regarded as the most advanced levels of integrating research into teaching, and that these levels enable universities to treat knowledge as composite and not disjointed or absolute (Healey & Jenkins, 2009). Therefore, all students should be exposed to some level of research at all levels.

Extant review of literature helped with the identification of aspects and dynamic roles played by key stakeholders in enriching the nexus. Four of such roles are espoused as follows:

1. advising how to improve or reinforce the research-teaching nexus;
2. reviewing the behaviors of faculty members and students to the research-teaching nexus;
3. debating how articulating the research-teaching nexus is or operates; and
4. ensuring that the research-teaching nexus may be better studied or connected to other fields of expertise (Healey, 2005).

As part of ensuring the effective integration of research into teaching, Douglas (2013), through a qualitative study, revealed recommendations from some professors as part of enhancing the nexus to include: teaching as an aspect of research ; using this research during lectures; becoming a versatile researcher and adjusting the research priorities while promoting the research constructively; and participating in research as a collaborative endeavor. Several other journals contain a related litany of suggestions (Elsen, Visser-

Wijnveen, & van Driel, 2009; Jenkins, Healey, and Zetter, 2007; Lucas et al., 2008; Trowler & Wareham, 2008; Willcoxson et al., 2011; Zamorski, 2002). If handled cautiously, such practices have consequences for systemic and operational management at the institutional level (Locke, 2004).

Various universities have responded to the call to propose ways and levels at which faculty may integrate research into teaching. For example, at the University of Melbourne in Australia in 2005, this is how research could be seen as educating and developing learning and teaching. They indicated that faculty members build the research-teaching nexus through approaches that include:

1. drawing on individual research and building them into courses;
2. placing the most recent research in the field within its context;
3. designing learning exercises around contemporary research issues;
4. teaching research strategies, methods and abilities unequivocally within subjects;
5. building small scale research exercises into undergraduate activities;
6. involving learners in departmental research projects;
7. encouraging learners to take active part in departmental research culture;
8. infusing teaching with the values of researchers; and
9. conducting and drawing on research into teaching and learning (Baldwin 2005, p.4).

Another plan was to define and lobby for the implementation of a new teaching and learning approach intended to strengthen the research-teaching nexus. A number of scholars has also promoted research-based teaching or research-led teaching (Brew, 2003, 2010; Kreber, 2006; Rowland, 1996;

Simons, 2006) or research-enhanced advanced education (the terminologies correlate and are synonymous pretty much): In the present sense, a paradigm that sees teaching, studying, research and scholarship as relational mechanisms within inclusive intellectual cultures can better be used to direct how research and teaching can be brought closely together to improve both.

Through a broad survey of literature, it came to light that various propositions have been made by several scholars (Brew, 2003, 2010; Kreber, 2006; Rowland, 1996; Simons, 2006; Healey & Jenkins, 2009; Healey, et al. 2013, 2014; Walkington, 2015, 2016) regarding the adoption of research-based teaching in study programmes and individual courses. The Office of Undergraduate Research of the University of Illinois at Urbana-Champaign has planned, illustratively, a continuum of undergraduate research inside a Bachelor's Degree programmes. These authors profess that learners start as purchasers of information and move towards the stage on the continuum as information makers in eight stages. These steps include:

Step 1: Students are furnished with a diagram of the essential facts, terms, and thoughts identified with the discipline.

Step 2: Students find out about research discoveries in the (sub) field through class and readings devoted to latest research.

Step 3: Students talk about and scrutinize research discoveries and approaches in the discipline or (sub) field; tasks incorporate literature reviews or synopses.

Step 4: Students gain proficiency with some research methodologies, participate in restricted utilizations of those methodologies in course assignments, for example, statistical analyses.

Step 5: Students learn in a course committed to the research methodologies, take part in broad uses of an assortment of approaches.

Step 6: Students take part in faculty planned and led original (to the learner) research, for example, replications of present research.

Step 7: Students take part in faculty planned and led original research, for example, research identified with personnel projects as well as led in faculty labs.

Step 8: Students take part in student planned and led original (to the discipline) research, for example, a senior thesis or capstone project (Office of Undergraduate Research, 2015, p. 3).

Still on the levels of research integration into teaching, Visser-Wijnveen, et al. (2010) intimate that an ideal research-teaching nexus inside personal courses comprises of five teaching exercises as per scholastics who were met about their perspectives on a perfect research-teaching nexus as follows: training research results; making research known; indicating being an analyst; assisting with directing research; and giving research experience. It is indicative to note that the last two activities fall under the domain of 'research-based' teaching and curricula, which is the third level of integration of research into teaching as described by the research-teaching nexus model highlighted by Healey (2005).

In addition, some universities, as part of enriching the research-teaching nexus, offer nearby societies the chance to hand in questions and contributions for undergraduate research (resulting in a triple nexus, i.e. a research - public engagement - teaching nexus; Stevenson and McArthur, 2015). In the context

of Ghana, some professional associations liaise with some educational institutions to make input into their curriculum and to moderate their examination questions in order to ensure that professional training is being given out to these students to enhance meaningful learning outcomes. Many universities now offer a special module for students and other faculty members on “real” academic research tasks. In the United States, numerous bodies, such as the Council on Undergraduate Studies, support universities and individual researchers plan their research-based curriculum. Undergraduate scholars are given financial assistance by several national organisations.

To give learners an ability to develop and improve their own learning environments, faculty members and students should be collaborators and work collectively, not simply in the research segment of teaching, but also in the other aspects of teaching and teaching planning. Teachers and students are fully involved in both a learning and teaching relationship and seek to benefit from the experience of learning and working collectively. Therefore, “engaging students and staff effectively as partners in learning and teaching is arguably, one of the most important issues facing higher education in the 21st century” (Healey, et al., 2014, p.7).

Factors Affecting Effective Integration of Research into Teaching

There are several factors that affect the link between research and teaching as espoused by the extant literature. According to the faculty, the first reason is that it is not reasonable to spend extra time in teaching since research, not teaching, is at the center of many universities and research efficiency in reality, and not quality teaching, is the key element in tenure and advancement (Elen, et al., 2007). This view is confirmed in 2015 through a trend analysis of

the European University Association which revealed that a majority agrees with the statement that “Research plays a more important role than teaching for the career development of young academics” (‘yes’: 54%). Most notably – more than 75% - was the answer ‘yes’ in Norway (91%), France (83%), Portugal (79%), Spain (78%) and Switzerland (78%).

Then again, a greater number of the respondents additionally endorses the explanation that 'There is a growing acknowledgment of the significance of teaching' (59%). Most prominently is the appropriate response positive in the Netherlands (89%), the United Kingdom (87%), Denmark (86%), Turkey (76%), Belgium (75%), and Finland (75%). The significance of teaching appears to be irrelevant to the institutional profile: likewise respondents in the organizations which characterise themselves as 'principally research based' report that the significance of teaching is developing (European University Association, Sursock, 2015, p. 80/81; Zhang, 2016).

A second factor is that research-based teaching which places higher discipline-related and pedagogical demands on faculty members as experienced researchers, being now engaged in research may have positive attitude toward students’ research, and may have the requisite competencies to expose students to research in their lessons (Gresty, et al., 2013). This creates the impression that faculty members believe that it is a great advantage as researchers because they have sufficient insights in research methodologies and are well-equipped to guide students through the teaching and learning processes by way of exposing them to research, thereby, increasing their level of enthusiasm (Elen, et al., 2007).

To further extend the discussion on disciplinary variations, the discipline is a significant logical factor to understanding the research-teaching nexus. In the natural sciences, where it is so much popular to operate inside research clusters and with various stages of researchers, it may be simpler to encompass students in the research development (Hajdarpasic et al., 2015). Arguing further, the dominant mode of research is strongly personal in the Humanities, and it is fairly exhausting to engage students. On the other hand, in the Arts, chances to discuss research results with students can be simpler than in the natural sciences. This may be because the linear, accumulated nature of natural science knowledge poses a challenge for the incorporation of the current research results into undergraduate classes (Healey, 2005).

In addition, because of its generic academic orientation, connecting research to teaching is relevant throughout all domains (Ozay, 2012), but the nature of the connection is likely to vary across domains. In addition, over time, disciplinary gaps have declined in terms of communication, networking and publishing patterns. Several modes of work that were initially exclusive to the natural sciences have expanded quickly to the social sciences and other areas of study. Thus, research is gradually steered in groups, and in combined authorship of articles, as well as, networking processes such as conference attendance and similar proceedings have gotten more comparative across several fields of study (Kyvik, 2013).

Another critical success factor of the research-teaching nexus is faculty members' attitude and self-identity towards the conceptualisation of the research and teaching task (Brew and Boud, 1995; Griffiths, 2004; Robertson and Bond, 2005), their demeanor and convictions with respect to teaching, the

topic, and learners (Hativa, 2000; Remmik and Karm, 2013; Kember 1997; Prosser and Trigwell, 1999), yet additionally faculty members' involvement with being an educator and assumptions to the part as an instructor (Akerlind, 2004). Therefore, the link between faculty members' own research and their teaching is not straightforward and automatic, it is however, intentionally created. Indeed, research projects seem to influence teaching, more so than teaching influences research, but the connection is generally limited to the transmission of research outcome (Grant & Wakelin, 2009).

The mindset concerning teaching is also strongly important in establishing the connection, in addition to the mindset towards research. Moving from weakly integrated research to highly integrated research on the continuum often suggests a shift in teaching from a teacher-centered strategy to a student-centered strategy. While the teacher-centered/content-oriented concept focuses on knowledge transfer, the learner-centered/learning-oriented approach centers around the learning cycle (Kember, 1997). The selection of a teaching method and related teaching practice is profoundly influenced by the attitude and values of a teacher about teaching, the subject matter and students (Hativa, 2000; Remmik & Karm, 2013; Kember, 1997; Prosser & Trigwell, 1999).

Teaching that is relevant to research can also require teachers to turn their conception of teaching and research as strictly separate practices to enhance the learning outcomes of students (Brew & Boud, 1995; Griffiths 2004; Robertson & Bond, 2005). The teaching experience of faculty members must therefore be seen as aspect of their greater teaching experience, specifically in terms of their fundamental desires to pursue professional development as a

teacher, perceptions of the essence of teaching in their discipline and their position as teachers (Akerlind, 2004). When teachers see that their own comprehension of content is theoretically expanded by the teaching process, it is possible that research will benefit from time spent on teaching.

In another vein, going past the powerless connection of communicating research content to the class and attempting to draw in students in research-based teaching may connote exiting their comfort zone. The risk includes incorporating a research-related teaching practice, such as the process's complexity and unpredictability (Badley, 2002; Gresty et al., 2013) and having to take advantage of opportunities as they increase (Grant & Wakelin, 2009), can lead teachers to adhere to the conventional approaches they are equipped for and accustomed to and recognizable to students. Therefore, it is worth pointing out that successful researchers are likely to be more reluctant to respect the research process as well as the principles and values inherent in the process. Various research activities are however, likely to lead to different teaching practices as an example of different research orientations.

Perceived Impact of the Research-teaching Nexus

Positive impact of the nexus

In favour of the concept that doing research will enhance the teaching of a faculty member, many claims have been developed. Therefore, Friedrich and Michalak (1983) claims that openness to an individual who is effectively occupied with research has the tendency to result in students acquiring the “qualities of mind” of a scholar. In support of this assertion, Neumann (1994) states that the nexus provides students with the enthusiasm within the context

of their area of study that a number of faculty members pass on when they allude to their own work during lessons that has the tendency to positively impact students' inspiration to learn. Learners can likewise acquire direct insight of the research climate and, in some disciplines, are allowed to take part in research works in any form (Jensen, 1988). In addition, Learners see clear advantages from staff research, including staff eagerness and the believability of staff and their respective institutions (Neumann, 1994). This creates the impression that when faculty members are not associated with research, they are perceived to be basically, not at the fore-front of their study area thereby, impacting adversely, on their students' learning outcomes.

The advocates of research-based education appeal to its multiple advantages (Simons & Elen, 2007). The idealistic perspective explains that the importance of university education for its own good is the universal quest of knowledge, and that involvement in research is validated on normative grounds. More often than not, a practical explanation accompanies the argument for research-based teaching. This is due to the fact that unique competencies for example, limit with regards to autonomous idea, basic reasoning, and comprehension of the mechanism of knowledge formation are needed for a learning society and the knowledge economy; and all of this presupposes some exposure to the study process. Therefore, Brew (2010) notes that when the program is structured to involve students in a range of study-based practices and/or induce them into the research culture, education is strengthened.

As demonstrated by advanced learner fulfilment (Jenkins, 2004) and increased enthusiasm, learning in a research-active atmosphere seems to directly support students (Durning & Jenkins, 2005; Healey, 2005). Trigwell

(2005) suggests that students show a higher-quality learning experience in a research-led environment and are therefore bound to take a deeper insights into their learning instead of a surface approach. The effects of professional development research programs have been well established in prior literature (Justice et al., 2007; Pascarella & Terenzini, 2005) and a research-based approach to teaching has been shown to improve the learning outcomes of students (Brew, 2010; 2013; Healey, 2005; Ozay, 2012).

Elaborating further, Breen and Lindsay (1999) report possible constructive outcomes of research on teaching when teachers remain updated on new procedural slants and on present turns of events within the context of their discipline. They found two constructive outcomes of teaching on research that include researchers maintaining a familiarity with the area of study which enabled them to conceptualise issues better within the context of their discipline, as well as, stimulating their enthusiasm and passion for their discipline. Dekker (2016) also adds that research-based teaching leads to problem-solving abilities, critical thinking skills, as well as, a strong sense of creativity and innovation. This and other advantages of student participation in research-based teaching are recorded in many publications (Bauer & Bennett, 2003; Hensel, 2012; Kinkead, 2011; Spronken-Smith & Walker, 2010; Walkington, 2015).

Illustratively, while depicting the benefits of the research-teaching nexus, a professor of English wrote “the higher education literature confirms that students who engage in undergraduate research receive numerous benefits including improvement and refinement of their researching, writing, revision, and collaborative skills. Undergraduate research promotes creativity and alternative ways of thinking and sharpens students’ ability to analyse, interpret,

and synthesise, and gives them the opportunity to understand research ethics, particularly, in the context of their disciplinary community” (Kinkead, 2011, p. 21-22). It is therefore better to empower and uphold our learners to create information as partners through research-based teaching and learning (Hoskins & Mitchell, 2015).

The Association of American Colleges and Universities (2009) suggested that “universities are established to assist learners with accomplishing the types of learning that serves them best, in the economy, in civil society, and in their very own and family lives” (Association, 2009, p. 17). Seven high-impact teaching strategies were espoused to include activities that have been extensively validated and found to be useful to students from multiple backgrounds.

Different scientific motivations for research-based instruction come from educational research. According to the National Commission on Educating Undergraduates at the Research University in the USA (later known as the Boyer Commission, 1998), “the currently accepted undergraduate culture of recipients be turned into a culture of queriers, a culture in which faculty, graduate students and undergraduates share an experience of discovery” (Boyer, 1998, p. 16). This pre-supposes that each course can offer a chance for a student to excel by research-based approaches in an undergraduate curriculum (Boyer, 1998, p.17). It would then be able to be contended that teaching and learning focused on research matches well with more modern inspiration and learning philosophies, like the principle of self-determination (Deci & Ryan, 1985, 2012; Martens & De Brabander, 2014).

In furtherance, the League of European Research Universities (LERU) presents research-based teaching and learning more or less as self-evident by indicating that “research-intensive universities that couple world class research and education provide the most efficient means of providing this combination of basic research and research-based education’. LERU asks the EU ‘to support the vital interaction between basic research and education in research universities” (League of European Research Universities, 2002, p.1). It is interesting to note reports from individual universities in Europe show that a close entwining of teaching and research is significant for these universities since this connection reinforces their way of life as a university. For universities, thus, research-based teaching and learning is also relevant because it allows universities to fulfil their mission of inspiring, encouraging and helping students to acquire the expertise, perspectives, attitudes and skills they are likely to need in follow-up studies and professional occupations (Giller, 2011).

Furthermore, faculty members often anticipate that profoundly esteemed capabilities, for example, a basic demeanour, an unassuming mentality will be best established by involving students in research because researchers agree that there is nothing like the' facts, to think separately, and to communicate thoughts clearly (Elen, et al., 2007). The most essential thing for me is to make the students skeptical of anything they do by not accepting anything as the fact or valid knowledge. This is likely to promote a sense of adaptability in students.

Research-based teaching may also be influential in the teacher’s own research as students explore research carried out and possible research plans especially when they aid in gathering and evaluating data. Illustratively, a professor emeritus of English and Rhetoric of the University of Chicago wrote:

“My books would have been quite different—and to me less valuable—if I had produced them in solitude or after talking only with professional colleagues. It was not just that thinking about how to teach students to read responsibly led me to ideas that I would otherwise have overlooked. Rather, responding to students’ rival readings actually changed my opinions about how to appreciate a given novel or work of criticism. For these and other reasons, teaching and publishing have always been deemed absolutely inseparable” (Boyer, 1998, p.16). Correspondence is a quality of research-based teaching, implying that academics gain from learners when they pose great inquiries.

In a nutshell, while in recent years the essence and advantage of research-based teaching has attracted much attention (Malcolm, 2014), its position in advanced education strategy practice still continues to be unclear. Faculty members can also benefit from a closer relationship between research and teaching. The fusion of research and teaching seems to be recognised by these faculty members (Jensen, 1988) and they understand that even under a high strain on research results, together they are something beyond the sum of the parts (Smith & Smith, 2012). Even so, it does not imply that any research-active teacher will immediately bring into their instruction their research experiences. It is maybe, not important to be a functioning researcher to effectively implement research-based teaching, it demands a conscious effort with respect to the individual faculty member and receptibility on the part of the student.

Negative impact of the nexus

Educational rewards and the disparity in staff remuneration for research and teaching in higher education have caused tensions among faculty members (McLernon & Hughes, 2003). Also, seeking rewards, funds, and career development has compelled faculty members to center more on research at the expense of the teaching since they believe research is more rewarding by their institutions. This in turn, according to Turell (2003), has affected the quality of education.

Neumann's work (1994) indicates that learners' apparent shortcomings from staff inclusion in research unavailability of staff to attend to students' needs coupled with the notion that they never benefitted from staff research. To be more elaborate on the adverse implication of the nexus on teaching and learning outcomes, Breen and Lindsay (1999) also cite that research action deters faculty's devotion from teaching tasks like contact with students. This contrasts with the findings of Friedrich and Michalak (1983), who denied the common complaint that there is not sufficient opportunity to be a decent researcher and a decent educator. They imply that good research should be accomplished without greatly detracting from the time and effort committed to teaching, and they say that coordinating or handling time efficiently is the secret to reconciling the needs of both. Therefore, Friedrich and Michalak conclude that there are two restricting perspectives, to be specific either a compromise or a synergetic connection between research and teaching. In addition, Baker, Bates, Garbacik-Kopman, and McEldowney (1998) reiterate an alert that research exposure will apparently produce a slenderness that diminishes the

wide based skill that learners see from their faculty as an essential aspect of successful teaching.

Development of the Research-teaching Nexus

The research-teaching nexus was first introduced in the literature in the 70s (Jauch & Gentry, 1976) and has since continued to gain popularity, particularly in research on the Australian University system (Cherastidtham et al., 2013; Geschwind & Brostrom, 2015; Horta et al., 2012; Neumann, 1994; Stappenbelt, 2013). The main point of difference between work on the research-teaching nexus and other research on the relationship between teaching and research is that studies focusing on the teaching-research nexus tend to ask questions associated with whether or not engaging in research and teaching simultaneously improves the quality of teaching. The limited empirical data that exist point to the notion that researchers do not make better or worse teachers. (Norton, 2013; Stappenbelt, 2013). Given the understanding that faculty members do not necessarily make better teachers, it is essential that educational researchers investigate ways to support research-based teaching.

Neumann (1992) was one of the pioneers seeking to explain the various methods of connecting science to teaching. An interview analysis between university administrators with diverse institutional backgrounds was undertaken and three distinct methods of connecting learning and teaching were distinguished: the tangible connection, the intangible nexus, and the global nexus. The tangible nexus reflects on the transfer to the students of existing information in the context of recent findings of study by the faculty. The intangible nexus reflects on shaping the understanding of knowledge status by students and on their outlook of information. The global nexus is at a new level,

focused on the personal level, where emphasis is drawn to the departmental level, specifically the curriculum effect of the research program of the department. The point is by implication, that the global dimension is nearer to the physical compared to the intangible nexus, since both are content-focused.

Griffiths (2004) paid close attention to numerous relationship attributes. He was highly inspired by Boyer's concepts in his endeavours to understand the various forms the relationship between study and teaching could take Boyer's (1990) ideas. Griffiths defined three dimensions afterwards. Firstly, the partnership may be precise, explicitly connected to the teacher's concrete projects, or then again diffuse, comprising of a more broad method of thought focused on the research experience of the academic. Second, research may be pitifully rooted in the instruction or deeply incorporated. Research findings are simply an input to the program in the first instance, whereas the approach to instruction is often impacted in the second case. Thus, more focus is given to the information creation process, with students being more or less study collaborators.

The third and last factor is the relationship's route; it is either unidirectional, moving from research to teaching, or relational, with each other benefiting from research and teaching. Griffiths (2004) defined four distinct aspects of the research-teaching nexus in light of these aspects: research-led, research-based, research-oriented, and research-informed. He does not clarify, though, how these four shapes were connected to the dimensions previously presented.

By placing these various aspects of the research-teaching nexus into a paradigm, Healey (2005) drew on Griffiths' ideas (2004). He distinguishes

between three dimensions from a curriculum viewpoint. The dimensions were either student-focused or teacher-focused within his design, paired with learners as members or learners as one pivot crowd, and focus was put on research material or procedures. On this basis, it is possible to discern four distinct ways of forming the research-teaching nexus: research-led (research material versus students as audiences), research-tutored (research content versus students as participants), research-based (research processes against students as participants) and research-oriented (research processes against students as audience).

Reflections from the Categorisations

From all the various thoughts, these nexus scholars present issues worth commenting about. As a researcher, my observation would rely on discipline-based studies, thereby missing the term research-informed by Griffiths. The entity and the department level are clearly differentiated only by Neumann (1992). Many scholars adhere to the individual level, whereas the inadequate definition of the nexus by Robertson (2007) may be viewed as referring to the worldwide level, specifically to hold research and teaching apart. The subsequent factor of Griffiths (2004) also concerns this thought, as he defines the feeble link as the contribution of study results in the curriculum, while the robust connection also affects the way of teaching. His factor includes two dimensions, the first being the difference between students as an audience getting the test findings, and students as research subjects, a manner in which the way of teaching is profoundly affected by research. Healey introduces this difference (2005). The other component of the second dimension of Griffiths (2004) is the foundation for a differentiation listed by both researchers, namely

the research production emphasis, recognizable in the measurable nexus and the data-led, research-tutored, transmitting, and hybrid classes, as opposed to the research process emphasis, recognizable in the research-oriented, research-based, symbiotic, and integrated classifications. This dimension is also part of the Healey's (2005) design.

Robertson (2007), nevertheless, emphasizes that the idea that a certain epistemological perspective is included in the research process is relevant in symbiotic and incorporated. The gap Neumann (1992) gives in her tangible and intangible nexus encompasses this part. She uses the process talents in the tangible nexus of her recent research (Neumann, 1994), rendering it a layer that is more than just another representative of the dimension of the result process. The basic vs diffuse component of Griffiths (2004) is slightly overlooked by the other scholars, as many of them concentrate on specific ways of connecting teachers' own research to teaching. However, since it does not specifically apply to individual research ventures but to the wider notion of becoming a researcher, one may contend that the intangible nexus is diffuse. The only scholar to pay close attention to the third dimension of Griffiths (2004) is Robertson (2007), i.e. the disparity between a unidirectional relationship and a relational one.

The two-way communication, by extension, decreases the separation of the position between a teacher and a student, and makes an information production collaboration. In their rigorous empirical analysis, Visser-Wijnveen et al. (2010) developed these definitions and suggested five profiles of the science-teaching nexus, focused on the orientation of teachers (for research or teaching), methodology, curriculum and the teacher's perceived position. Teachers teach research findings according to these five profiles, make research

public, explain being a researcher, help perform research and/or have research experience.

It is critical to take note of that different teaching activities associated to research therefore vary in the degree to which they concentrate on communicating the substance of research or on the research itself, but they often vary on whether they see students in this phase more as subjects or as an audience. Therefore, I described the use of research-based teaching to represent the forms of teaching and interaction with students who use the research experience of teachers themselves. There are different concepts from the literature that sometimes express a specific type of research-related teaching and are sometimes utilized interchangeably with the same general concept: ‘research-enhanced teaching’ (Brew 2010), ‘research-led teaching’ (Mayson & Schapper, 2012, p.3), ‘teaching-research partnership’ (Jenkins, 2004), ‘teaching-research nexus’ (Neumann, 1994), and ‘research-based learning’ (Brew, 2013).

Concept of Pedagogic Research in Business Education

Pedagogic research is conceptualised as the examination of learners studying and how this is influenced by instructing and appraisal practices. For some, *“Pedagogical research simply means finding out more about how learning takes place so that faculty can direct their energies into approaches which are more likely to be successful”* (Reid, 2003, p. 3). Therefore, it is possible to consider pedagogic research when it affects the method of studying as opposed to the topic being learned. Hence, if the primary objective of a paper is management, it is definitely not pedagogic analysis under this description. In the other hand, if a paper is mainly an analysis of learning management

methods, then even if the medium for that learning is management, it is pedagogical study.

Closer ties are characteristic in Higher Education among staff research, staff teaching and student learning. By utilising management research skills in pedagogical settings (Jenkins, 2003), they may be rebuilt in ways that are more efficient for management learners, thereby leveraging the immense overlap between the research approaches adopted by management lecturers and those hired by education practitioners for the good of the business discipline.

The link between disciplinary research and teaching has subsequently been a significant subject inside Business Education, particularly in the United Kingdom, the United States and the rest of the world, where the concept was promoted as one of the significant changes in the undergraduate curriculum championed by the 1998 Boyer Commission of the United States (Healey, 2005; Jenkins & Healey, 2009). Even so, teaching and learning research, the practice of pedagogical research, has become a mild topic in a development that presently concentrates more on empowering learners through a kind of apprenticeship to create new business-related research (Hill, et al., 2011; Walkington & Jenkins, 2008).

There are several pitfalls in this method, of course, others associated with different sorts of issue based and request based learning (Spronken-Smith & Walker, 2010). This involves over-concentration on local and minutiae, and less savoury issues - such as the likely manipulation of learners to advance the market study of their tutor, thus posing a risk of concentrating energy at the detriment of others on 'best performing' pupils, and the development of unquestioning 'Mini-me' mimics of current experience.

Business Education's Contribution to Pedagogic Research

Universally, several prior researches have highlighted the degree to which Business scholars import philosophies from instruction and different areas of study, for example, Psychology and Anthropology to further explain and clarify concepts. For instance, Theories X Y and Z emerged from Organisational Psychology, although, it has been recommended to the Business endeavour due to its focus on human behaviour where it is said to “dovetail with the interpretive and cultural turn in Business theory development processes and is a powerful tool for anti-essentialist approaches to subjectivity and for constructivist inquiries into categories of nature, form and scientific activity” (Robbins & Kruger, 2000, p 638; Eden et al. 2005). Wright (2013), moreover, uses the method to map a set of learners' self-assessments on a subject in view of degrees of agreement, and to evaluate the effect using Factor Analysis, thereby, measuring the range of points of view.

In a related development, Smith et al. (2012) analyse the introduction of the principles of role theory for optimising group practice by Belbin Team Management Theory, which is as prevalent as it is controversial for Business Education learning and teaching. After an initial encounter had established such challenges, Belbin was used to help students recognise their own group-work issues: inadequate coordination, unequal engagement and involvement, poor or missing leadership, and behavioral issues. In Business, Belbin Team Roles are used to build gainful working connections and high-performing groups, to assemble individual mindfulness and self-viability, and to develop trust and comprehension between each another.

It is critical to perceive that many Business Pedagogic Research are committed to 'methods', often involving the capability of new advancements that as a secondary consequence, facilitate better pedagogical understanding. These incorporate the utilization of online media and audio-visual technology as ways to understand learners' thinking processes and to engage them in deeper critical introspection.

Similarly, by presenting business-related documentaries and photographs, making video documentaries will help students develop their media literacy because the method makes them to appreciate business-related problems (Dando & Chadwick, 2014). France and Wakefield (2011) report on practical problems with the use of digital stories in teaching and learning, particularly in the context of business education, noting the potential that many business students already have for such an approach to harnessing skills, while also stressing the requirement for ethical considerations in the utilization of video recording. Despite this, Wee, DePierre, Anthamatten and Barbour (2013) have shown the importance of visual approaches as a tool of pedagogical research to help explain the 'sense of place' of learners and the interpretations that learners relate to business concepts. This, thusly, supports educators layout curricula that promote meaningful learning outcomes for business students.

Slinger-Friedman and Patterson (2012), making inference from previous studies suggested that many Business students are more pleasing with visual pictures that go with textual data. They distinguish between communication writing and learning writing, which requires reflective thinking, constructive participation and the effort to explain ideas, as in the strategy of the learning journal (Cook, 2000; Mc Guinness, 2009). Reading, on the other hand, is

‘transactional’ and nearer to the surface than profound learning for conversation. Using a model-controlled, objective, study design, Slinger-Friedman and Patterson (2012) examine the impact of ‘writing to learn’ approaches on two grades, finding that half to two-thirds concluded that their composition to learn experiences enhanced their awareness and participation, resulting in slightly greater enjoyment of business courses. However, the interference has no major effect on the outcome of the test based on multiple choice assessments, which presumably do not measure mechanisms of higher order thinking.

The benefits of utilising capstone portfolios to test learning results was evaluated by Mossa (2014). Here, learners were asked to choose 4-6 samples of their finest work in their Business curriculum and to explain the selection as embodied in their program paper in terms of improving the Department’s learning results on basic reasoning and communication abilities. The variety of resources permitted extends to include maps, graphs, data analysis samples, Powerpoint presentations, web sites, videos, technical blogs, and so on, well beyond the traditional measured text. These portfolios were commonly valuable for the students who utilized the portfolio in discussions with prospective employers and teachers who utilized their portfolio appraisal experiences to change their distribution and instruction (Mossa, 2014). Healey (2012, p.242) discusses the importance of discussions not just as a functioning learning approach to help students consider the cases on two sides of a contentious subject, but also as a forum for students to enhance critical thought. Business students’ engagement in a discussion in the form of co-operative learning allows learners to embark on collaborative learning. However, the method shows a

powerful way of engaging learners, particularly at the introductory stage (Livingstone, 1999), and Healey (2012) maps a number of ways in which the methodology can be used to strengthen business education and to make learners to understand the importance of critical thinking skills.

Exploring the Business Learners' Experience through Pedagogic Research

In fostering reflection and vital self-awareness in Business learners, Anderson (2012) assesses the importance of reflective journals. The intent was to promote contemplation on the challenges and prospects for accomplishing sustainability at the individual level through the use of autoethnography to relate the ecological issue to the individual cultural, social and political one. Auto-ethnographic learning, of course, is useful as it moves the attention from the within to the outside quadrants, from looking outside and looking inside and the author participates in forming his own story. Dyson (2007, p.38) notes: *“the style was ... the only way to present, in a meaningful and mindful way, the cultural phenomenon that I was living and researching. In stepping back, I also realised that I was changing as an individual and a researcher...”* before hesitantly receiving the research venture as an analogy and talking about an individual scene of change (Haigh, 2014). Likewise, Anderson (2012) observes that such journals frequently appear as a place for the learner to transform self-education, liberation, and empowerment, while also supplying the pedagogical researcher with powerful insights. Of course, another good way to investigate the emotions and expectations of success of the learner at all stages is through interviews, and the autoethnographic strategy will show encouraging outcomes once again. Adriansen and Madsen (2014) suggest that questioning students is an efficient way for teachers to facilitate reflexive activity. They discuss the

ethics of such cases, recognizing the issue of the power dynamics concerned, and propose Kvale's visual co-construction approach as a way of establishing co-ownership of the experience (1996). Adriansen has already used this timeline-based approach for life-history analysis (Adriansen, 2012).

Healey et al. (2010, p.1) stress the desirability of student participation and the reshaping of the curriculum's 'learning environments' around the learner to foster and improve their personal imagination and problem-solving abilities. In recent years, the theories of Biggs (Biggs and Tang, 2011) that teaching and evaluation can be constructively associated with other dimensions of the educational system (Biggs, 2001), have had a significant effect on Business Studies.

In short, there is a lot of work that might and should be undertaken through Pedagogic Research in Business in Higher Education to investigate and question the essence of the null curriculum, the embedded cultural patterns and theories that include the secret curriculum, and the full role and importance of the non-formal curriculum in the growth of business learning and the profound participation of learners. Of course, the importance of learning in non-formal settings has been recognized by many scholars in Business Studies, particularly where it influences the success of active learning and fieldwork techniques. However, in the sense of the teaching-research nexus, much more should be done to measure the full effects on the growth of learners and their skills in Business Studies.

Divergent Views on Research Productivity and Teaching Effectiveness

For most faculty members, their essential loyalty is straightforwardly attached to their field of study or calling; the establishment they work for is regularly viewed as optional (Healey, 2005). As rivalry and interest for teaching positions expands, significant public and private universities have been mentioning faculty members who dominate in research (Prince et al., 2007). Yet, as learners take on enormous universities for their reputation and brand name, some inquire the nature of guidance they are getting, perceiving faculty members have gotten excessively excited with the research viewpoint and have ignored classroom teaching and student learning. Some scholars describe the nexus between research and teaching as negatively related, while, others perceived the relationship as positive or zero. These divergent views are elaborated as follows:

Negative relationship

A long-standing discussion exists relating to whether “research productivity in the faculty incentive and reward system is often justified by the claim that research enhances teaching” (Prince et al., 2007, p. 283). Feldman (1985) looked for an association between research efficiency or academic achievements of faculty members and their teaching viability as surveyed by their learners. Feldman found that the connection between research profitability and instructional quality is minuscule, on the off chance that it exists by any means. Furthermore, numerous researchers accept there is an undesirable relationship related with research and teaching.

Moore (1963) communicated the scarcity model that “given the scarcity of time and energy, the probability of role conflict for the multiple joiner is somewhat more than abstract and hypothetical” (p. 108). Following this rationale, the connection between academic research and nature of guidance is negative or possibly disconnected. Since senior faculty members who lead research invest a lot of energy delivering important research, they consequently invest less time on classroom guidance and teaching obligations than they would have had they not been associated with research. Some even ventured to state that research and guidance are totally unique and separate from each other and are even at chances with the other (Fox, 1992).

Callaghan and Coldwell (2014) directed an exploratory quantitative cross-sectional research investigation of a university in South Africa to decide the fulfilment levels of professors. They found that professors who determined their essential occupation fulfilment from teaching were considerably less gainful in the research labs when contrasted with professors who were more fulfilled from research. Faculty members, who get salary increments and advancements in the academic chain of command on account of their research, are considerably more prone to direct more research (Callaghan and Coldwell, 2014; Trice, 1992).

The *Differential Personality Model* likewise proposes an adverse connection between academic research and nature of guidance. The model features the character attributes of a powerful instructor as one who searches out organisation, handles pressures, disregards interruptions, inclines toward correspondence with learners, and appreciates controlling thoughts (Arif, Rashid, Tahira, and Akhter, 2012). On the other hand, researchers are more

inclined to want to work alone; become effectively disturbed from interruptions; create dissatisfaction with outer pressing factors; and favour thoughts, facts, and materials of an area of study instead of working with learners or teaching classes (Arif et al., 2012). This model indicates that educators cannot embrace to a character that requires requests from both the research and classroom areas.

The *Divergent Reward System Model* recommends that research and teaching are clashing parts with remarkable assumptions and commitments. The part of the educator and the job of the researcher are in consistent strain that includes a fearful division of work, requiring compromises to the detriment of the other (Fox, 1992; Hattie and Marsh, 1996).

Positive relationship

While a few models exist that affirm a negative connection between scholarly research and instructional quality, a few models state a positive connection between the two domains as follows:

The *Conventional Wisdom Model* contends that teaching and research are decidedly connected and the connection between the two are commonly improving (Neumann, 1992). Teaching and research, regularly converge in the university climate and encourage accomplishment in the two areas. The relationship works as the “tangible connection relating to the transmission of advanced knowledge, the intangible connection relating to the development in students of an approach and attitudes towards knowledge and a stimulating and rejuvenating milieu for academics, and the global connection relating to the interaction between teaching and research at the departmental as well as the individual level” (Hattie & Marsh, 1996, p. 511). Jauch (1976) additionally

found the connection among researching and teaching to be connected a touch in an unexpected way.

Moreover, the “G” Model proposes a positive connection between academic research and a high calibre of guidance (Hattie and Marsh, 1996). The “G” model reasons that the positive link between research and teaching lies in the natural capacities one should have to succeed. Impliedly, a high performing researcher will have qualities looking like elevated levels of responsibility, diligence, commitment, hard work, and other positive scholarly research ascribes. In like manner, a high performing educator will have comparable qualities (Hattie and Marsh, 1996).

No (Zero) relationship

The past two dimensions of the relationship have accepted that a relationship exists between educators leading scholarly research and the impact their research has on their nature of guidance. While a few models exist by one or the other supporting or contradicting a positive or negative connection between the two areas, other models indicate that no connection exists as follows:

The *Different Enterprises Model* contests that research and teaching are completely unlike undertakings that bear no impact on each other (Hattie & Marsh, 1996). “Research relates more to the discovery of knowledge usually by normative means within various disciplines; whereas, teaching involves imparting information leading, it is intended, to student learning” (Hattie & Marsh, 1996, p. 513). Rugarcia (1991) discussed how researchers are respected for what they find, while educators are valued for what they encourage their students to discover.

The *Unrelated Personality Model* likewise recommends that no relationship exists between the two unique domains. This model depends on the conviction that researchers and teachers are various kinds of individuals, and not many character ascribes cover (Hattie and Marsh, 1996). Researchers are bound to be serious, industrious, authoritative, predominant, forceful, free and unsupportive, while instructors are more liberal, enthusiastic, outgoing, cool, evenhanded, empathetic, intellectual and stylishly open (Hattie and Marsh, 1996).

Brew and Boud (1995) kept on clarifying how a more noteworthy assertion that the missing connection between scholarly research and any positive or negative impact it might have on teaching because of the varying originations of the two domains and how immeasurably unique they are from each other. Instructional nature of learning are the domains that are significant. The point of convergence of their investigation was to show the missing connection between academic research and any positive or negative impact it might have on teaching because of the varying originations of the two domains and how immensely extraordinary they are from each other (1992).

Empirical Review

This sub-section is organised based on the research objectives organised chronologically by theme, as well as, in terms of years as follows:

Conceptualising the research-teaching nexus

Investigation of the traditional concepts of the research-teaching nexus from the point of view of Accounting Academics from two South African universities by Lubbe (2015), the study illustrated various kinds of research

behaviours, as it is believed that new expertise in the field of accounting (applied science) is developed and renovated mainly outside of the university. The results reveal tensions in the synthesis of two contradictory' logics, that of the university involving dynamic academics, and that of the accounting career, as an existing challenge. Contrary to the views of academics from other fields of study faculty members spend “most of their time and energy on teaching and the development of pedagogy, instead of research. Time spent on research is also not perceived as informing teaching, rather, research is undertaken for its own benefits, such as the promotion of further studies.” (Lubbe, 2015, p. 1104).

The author believes that the notion of faculty members functioning as “knowledge agents” is chastising the conventional thinking of a dichotomy of research and teaching, with a worry about the learning and possibilities of lecturers and students in which one group’s learning can influence the other. Consequently, she recommends the likelihood to take part in the “scholarship of integration, application and teaching” in order to augment the “understanding of new and existing knowledge, its transformation and transmission into pedagogy” (Lubbe, 2015, p. 1104).

Blomster, Venn, and Virtanen (2014) explored whether at a research-intensive university, teachers and researchers in the field of biosciences had common ideas about the teaching of scientific methods. The study authors find three distinct types of ideas using qualitative content analysis from a set of 58 instructor surveys; dichotomised into either teacher-centered, or student-centered or on pedagogical studies.

Zimbardi and Myatt (2014) built types of undergraduate study after reviewing 68 research undergraduate research programs in 26 discipline-based

schools in Australia in order to uncover the ambiguity and variety associated with the conceptualization of the research-teaching nexus. Five distinct typologies were suggested: apprenticeship, where learners work on a project similar to the ambitions of that person under the direct supervision of a lecturer, where students focus only on elements of the discipline-specific research processes; and *mixed models*, where two or more others have been merged. In terms of the hard-pure, soft-applied categorisation, they also analysed these different models for undergraduate study and found that as a rule, the different forms are functional through different disciplinary categorisations. This indicates that a potential metric that examines student engagement in study should be adequately huge to take these differences into account.

Another illustration of discipline-specific dimensions for the connection between study and teaching is the ART-nexus, Bennett (2010) examined the thought and behavior of faculty members in the arts (e.g., music, media, visual art, theatre and ceramics), based on the interview data of 14 arts professionals, all of whom were effective teachers and researchers, the authors point out that by unpacking creative methods, such an ART-nexus may overcome the shortcomings of conventional study modes, since traditional research modes do not seem to have an appropriate model for a wide range of research and specifically creative activity.

Neumann (1994) interviewed 28 students to assess their understanding of the existence of the research-teaching nexus. The research-teaching nexus at work in academic was established by most students in this sample, but no mention was made as to the impact this had on learning. It is interesting that the

learners participating in this analysis did not consider all successful participants as effective teachers. This study identified many factors influencing the perceived advantage inherent in the bond between research and teaching such as building student's capacity and motivation, and the potential for engaging with scientific enquiry. It was found out that students' level positively influenced their understanding and knowledge of the nexus between teaching and study.

In Australia, Neumann (1992) performed a qualitative analysis by semi-structured interviews with senior institutional officials, comprising all the principal officers of the institution to investigate the understanding of the connection among research and teaching. The results revealed the link between research and teaching at three levels, including tangible nexus, the intangible nexus, and the global nexus. The tangible nexus relates to the transition to the students of the information that is from the results of the study of the academic. The intangible nexus refers to the growth of an ideology and behaviour towards information among students. At the department level, the global nexus relates to the link among teaching and research.

Levels of integrating research into teaching

In the UK, Dekker (2016) compared students' perceptions about the incorporation research into teaching regarding performances in courses without learner research with the insights and exhibitions in the course with about similar goals yet now with student research in the next year. The questions this study sought to answer were to find out whether courses taught with research integration were better than those without integration. Using the descriptive

survey design with a population of 156 students, it emanated from the study that more learners imagined that adequate consideration was paid to scientific turn of events and scientific aptitudes. The scores on the 18-item test indicated that written abstracts received higher grades from the students. In terms of students' research experience, the scores were likewise higher for awareness with recent research. Also, educational objectives can be accomplished in the most elevated levels of intellectual and emotional taxonomies, including problem-solving, basic reasoning, and inventiveness, especially, by adopting a research-based pedagogy. Several publications record these and other advantages for students' active engagement.

Jiang and Roberts (2011) measured the effect of two techniques to incorporating research into teaching in the sense of two undergraduate university courses in Business from Australia: *research-led* and *research-based* teaching on the learning and comprehension of research among students. The first method dealt with the professor using own research as the basis for design designing a case study (*research-led*); the next approach, in the form of a literature review, students were requested to conduct their own research (*research-based*). Conclusion was drawn that students' understanding was enhanced through the practice of *research-based* approach. They raised the question of a lack of comprehension of research by students. The authors proposed having realistic considerations for curriculum design to educate students more specifically about the *intent* of the research-based learning. This is likely to augment their comprehension and involvement in research (Lightfoot & Piotukh, 2015).

In order to address knowledge production by RTN, Griffiths (2004) undertook a theory-based analysis in the UK. The research identified in three dimensions, the relationship between research and teaching. Second, the connection can be concrete (when academics incorporate research into teaching) or diffuse (when the connection is disjointed). Secondly, research can be poorly incorporated into teaching activities or heavily integrated into teaching activities. The trajectory of the connection may be either unidirectional or reciprocal. Griffiths (2004) categorised the research-teaching nexus into four major models within this dimension, including *research-led* (teaching that is informed by the teacher's own or the research of others), *research-oriented* (teaching that emphasises research skills and processes), *research-based* (teaching that includes students in research and research-based activities), *research-informed* (based on "systematic inquiry in the teaching and learning process").

Likewise, Healey (2005) directed a hypothetical audit on the connection among research and teaching to profit students. Healy (2005) used Griffiths' first three models and introduces the fourth one to characterise teaching "focused on students writing and discussing papers or essays" as "research-tutored" (p.71). Healey (2005) stressed that research-tutored and research-based are predominantly student-oriented, while the other two appear to be teacher-focused where students are an audience (i.e., research-led and research-oriented). Research-tutored and study-led approaches emphasise research material, according to Healy (2005), while research-based and research-oriented approaches emphasise the method and issues of analysis.

Robertson (2007) expanded her thesis in response to her first paper with Bond in 2001 by conducting a qualitative analysis investigating the complexity of academic interactions. Robertson interviewed nine scientists from diverse fields of study, especially, from the natural sciences from the University of Canterbury, New Zealand. Such respondents were scholars who in reaction to the meta-analysis of Hattie and Marsh, shared their strong opinion of the connection between research and teaching (1996). In addition to this survey, Robertson interviewed a further 17 scholars from the same university in her subsequent studies in 2007. The result established five linkage groups among research and teaching based on the experience of academics. Group A is referred to as a 'bad relationship' that refers to a very minimal or non-existent connection between teaching and research. Due to the complexities of integrated study at undergraduate level, the partnership is hardly made manifest. Group B is classified as a 'transmission relationship'. In this context, faculty prefer to use their research or the research of other people in this group to give students explanations or to place them on the reading list. Group C is connoted as a 'hybrid partnership', which stresses the value of actively engaging students in research. As research and teaching are closely associated, but can be defined separately, category D is classified as 'symbiotic partnership'. Faculty members are exposing students to think within the context of their discipline, which is a means of thought, being and living (ontological, as well as epistemological). The 'integrated partnership' in which research and teaching are inseparable is classified as Category E. Lecturers and their students carry out research as a way of augmenting their teaching and learning respectively.

Arguing further, the nexus could be poor or strong. Griffiths therefore indicated that the connection among research and teaching/learning is poor when research findings are used passively in teaching. This may also be established from the tangible nexus of Neuman (1992), and from Group A and B of Robertson (2007). Healy (2005) acknowledged this partnership as based on teachers when students behave as passive viewers. In addition, Griffith stresses that the adoption of an effective integration of research into teaching has the tendency to help improve students' skills and level of thinking, the connection may be clear. This definition coincides with the intangible nexus of Neuman (1992) and the Groups C, D and E of Robertson (2007). Because information is generated by students, this relationship is recognized as student-focused by Healy (2005). Another recurring thread going through the Griffiths (2004) and Robertson's (2007) research espouses that "poor partnership" focuses on the research direction against teaching, while the more balanced relationship also involves the teaching direction against research. The other writers tend to concentrate on the unidirectional correlation.

Research experiences in the university

By using case study methodology, Lapoule and Lynch (2018) analysed the nexus based on a survey of 1,057 university academics in terms of the research experiences of academics. They discussed the degree to which the adoption of this approach would lead to bridging the gap between research and teaching as encountered by higher education. Five European teachers-researchers were sampled. It emerged from the interview that the connection

between learning and teaching has enabled academics to explain their methodological approaches to teaching in both teaching and research.

In the UK, Gresty, Heffernan, Pan and Edwards-Jones (2015) investigated how to minimise the risk of research-informed teaching regarding their students experience research in the university. Using a single case study methodology at one UK university using various data points across three fields of discipline. The three different fields of Biological Sciences, Business Administration and Environmental Building were chosen to produce a wealth of data that could be restricted if a single area of discipline was studied. Three disciplines contributed to extend the study's accessibility to multiple students and lecturers and thereby theoretically enriched the risk evaluation, learning effect and mitigation techniques in a broader sense. They, therefore, reported benefits of research-informed teaching including enhanced students' experiences and engagement, as well as, produces graduates who are better prepared for employment in an uncertain world. The findings of this empirical study identified two risk categories associated with the link including biases associated with the curriculum and its associated effects on students' experiences.

Tavakoli and Howard (2012) reported the findings of 60 questionnaires in a survey investigating the perspectives and views of teachers on the correlation among teaching and research in England, claiming that, notwithstanding of the context in which the teachers served and the amount of expertise they possessed, they were sceptical about the outcome of the study. It was concluded that it is important to remember that although teachers in

England did not discuss action research as a research task in the sense of this report, they were involved.

An “unusual and experimental” analysis (p. 413) was carried out by Zamorski (2002) on research-led teaching (RLT) and higher education learning. The aim of this research was to achieve a healthier and deeper understanding of what university implies by RLT and learning. 12 final year undergraduate students were selected to participate in the study and were required to conduct a series of small-scale qualitative analysis activities over a two-month span. The duties involved attending research seminars, interviewing eight undergraduate fellow students, taking interview and transcript records, sustaining a blog, putting down their own opinions and perspectives on RLT and studying, and collecting 12 university research photographs along with the written image commentary. In addition, data were also gathered 16 academics. The research addressed a broader variety of problems than had previously been foreseen. That notwithstanding, only one aspect of the analysis was recorded in the study: the perception and knowledge of RLT and learning by academics and students. The results revealed that lecturers and students interpreted RLT and learning as teaching informed by research from several stakeholders.

Robertson and Bond (2001) paid attention to the significance of science and teaching and their potential inter-relationships in their study in New Zealand. Driven by a phenomenological approach, nine researchers were interviewed about their own understanding of the interaction between research and teaching after the findings of Hattie and Marsh (1996) on a zero relationship were found. Robertson and Bond (2001) ended up with the five distinct experiences of the relationship between the two events by drawing a more

nuanced portrait. This involves the experience of teaching and research as symbiotic practices among educators and students in a learning environment, endorsed, for instance, by Brew (1999, 2003); the experience of teaching as a way of communicating new research results (*research-led teaching*); and the experience of teachers explaining and encouraging research-based learning (*research-based teaching*).

In the area of social sciences, the connection controversy is often linked to a broader international debate on evidence-based education in professions. Deem and Lucas (2006) analysed the perspective of students teaching (research-oriented) research methods in a postgraduate university in the UK, building on qualitative evidence from a case study. It emanated from the study that educational stakeholders are aware of the transmission model (*research-oriented/-led*) as well as research-based teaching. The authors claim that the effective integration of research into teaching has the tendency to trigger meaningful learning outcomes.

Compatibility factors of the nexus

In Ethiopia, in relation to contextual considerations, Melese (2013) explored the research-teaching nexus in Ethiopian higher education institutions by choosing Jimma University as a case point. A survey research design was used to sample professors, department heads, and students gathered data through questionnaires interviews. The findings revealed that faculty members are not interested in disciplinary research, they have not allotted research time, the department and college climate is not supportive for undertaking research, except that small-scale tasks are included, literature is checked in their classes,

teachers have not used alternative approaches to connect research to teaching, such as involving students. Similarly, except for reading academic papers or reviews written by faculty members, students have little history of participation in research. Furthermore, there is no clear consensus on the relationship between study and instruction by students and teachers. Students agree that the participation of their teachers in research have both positive and negative consequences on the learning of students.

In Cambodia, Moeung (2013) investigated the factors and impact affecting research-led practices in the Cambodia University and one from the New Zealand. The aim of the study was also to define the advantages and disadvantages for academics of Research-Led Teaching (RLT) as well as to explore what academics regarded the key supports and challenges faced by academics when practising RLT. For this study, a qualitative single-case study was employed. Semi-structure interviews were used to gather the perspectives and opinions of twelve researchers from the above-named university. For paper research purposes, official records such as university policies, job descriptions of staff and course outlines or syllabi from each individual were gathered. This research offered a comprehension of RLT and the existing activities of scholars.

Four conceptualisations of RLT arose with respect to the result of the study: teaching influenced by lecturers' inquiry; teaching informed by recent research by other scholars; teaching that encouraged student participation in research and teaching influenced by achievement research by academics. The results showed that the positives of RLT overshadowed the disadvantages. The biggest obstacle for the Cambodian participants was the lack of resources. Some participants, however, indicated that significant factors promoting RLT include

crucial factors such as personal engagement and systemic responsibility. Perceptions and perceptions of RLT activities by researchers in Cambodian and NZ tertiary education provide a valuable framework for considering future changes and how those changes should be introduced. Suggestions for strengthening RLT's practice in the report included RLT's focus on job descriptions and methods to facilitate the application of RLT in institutions to ensure that student learning is strengthened. There is also a need for student career advancement and university funding to enhance RLT activities.

A Delphi research undertaken by Osborne, Collins, Ratcliffe, Millar, and Duschl (2003) was one of the most prominent studies in this field. The 23 participants in the study signified a broad range of science experts, from scientists to philosophers of science. They were tasked with identifying key elements of the nature of inquiry that should be taught in schools.

The connection between learners' impression of teachers' research and student inspiration was explored by Breen and Lindsay (1999) in the United Kingdom with specific reference to contextual factors affecting the link. Examining the factors affecting the research-teaching nexus using the descriptive cross-sectional survey design with a sample of 362 students and 46 academics of the Oxford University. The study showed that the skill of lecturers and the intrinsic motivation of students seem to be the key reasons for the positive expectations of students about the research-teaching nexus.

Impact of the research-teaching nexus

Hajdarpasic, Brew, and Popenici (2015) have examined the viewpoints of 200 undergraduate students from a research-focused university in Australia,

analysing the viewpoints of students on the relation. The aim of the inquiry was to inquire into how undergraduates felt they would profit from being trained by researchers rather than by non-research personnel. In this manner, they seek to discuss the basic importance of the value of research in teaching as implemented by academics. Their findings suggest that the involvement of staff in research was critical to the understanding of material by students and had a significant impact on their passion for studying with the view to creating meaningful learning outcomes.

Mägi and Beerkens (2015) in Estonia is a large-scale study that goes above any of these problems. They discussed the effect of the engagement of research-active team members on how students experience research and its impact on their learning, especially, concerning “how, and whether at all, a research-intensive environment offers a better learning experience for students” (Mägi & Beerkens, 2015, p. 1). It was found that lecturers who were committed researchers were more likely to incorporate research findings into teaching, as well as, involve their students in research and co-publish with them. In addition to the research strength of faculty members, the research-teaching nexus also hinges on methodology. The analysis also shows that discipline-based and institution-based dimensions were also impactful.

The link between research and teaching within academia was also discussed in a study by the British Educational Research Association (BERA, 2014) and the Action and Research Centre (RSA). The BERA-report examines the facts by questioning if research could increase the standards of the teaching career as well as the quality of the learning experiences of teacher learners. Drawing on a more extensive meaning of research involving enquiry-based

learning, commitment with inquiry, and research proficiency, the survey distinguished among some procedures in which inquiry may add to the nature of instructor training including the establishment of professional development programs on research-driven information from a scope of areas of study; the utilisation of research to configure teacher education programs; and to prepare educators and to draw in research while teaching; and finally, to help educators to direct their inquiry towards meaningful learning outcomes.

The effect of inquiry-based instruction on the accomplishment of students in physics at secondary level was investigated in Pakistan by Khan, Muhammad, Ahmed, Saeed and Khan (2012). For this analysis, thirty (30) lessons were chosen from 9th Class Physics. The population was mostly science students from Khyber Pakhtunkhwa High Schools, learning physics in the 9th grade. We randomly picked a sample of 50 students from Government Secondary College. For this research study, the Pretest-Posttest Control Group Configuration of laboratory research was chosen. As testing instruments for data collection, two Multiple Choice Questions style achievement assessments were used. The study group was trained for six (6) weeks with the aid of exercises, while the control group was shown similar exercises by conventional teaching techniques. The data was evaluated using T-tests. The findings revealed that activity-based instruction is more successful in improving students' higher-order skills. Learning exercises often allow learners to translate expertise or facts into meaningful outcomes, which they can incorporate in various contexts, that is contingent on real life experiences.

In the UK, Healey (2005) examined the benefits of the research-teaching nexus towards learning. It emanated from the study the nexus may take several

dynamics contingent on institutions of higher education. This scholarly work sought to establish the ambiguity and disputed dynamics of the indifferent national and institutional backgrounds of the link between research and teaching. And thus, the nexus creates obstacles for workers across the industry, not least because they will contribute to discovering innovative avenues for employees and students to collaborate together.

Research productivity and teaching effectiveness

The correlation between research output and teaching quality was explored in Slovenia by Cadez, Dimovski and Groff (2017) by differentiating between research and teaching quality and quantity metrics (productivity). Although the quantity of research (productivity) was determined by the number of publications, the quality of the research was calculated by the quantity of papers published in high-impact journals. Using a large cross-disciplinary sample of 223 lecturers in a research-focused institution, the study employed the survey to find out the connection between research performance and teaching quality. The study showed that research efficiency is not linked to teaching quality, in line with prior data, while research quality is positively linked to teaching quality. The report also found that two key tasks are included in the workload of most scholars: research and teaching. However, balancing these activities posed a serious challenge to academics. Career development typically depends primarily on research success, considering the dual existence of the position. As educators are logical actors, warnings are starting to arise that existing performance appraisal frameworks that are largely research-based can be counterproductive to teaching imagination and innovation.

A study that reviewed the correlation between research and teaching was reported by Elken and Wollscheid (2016). An assessment of the interrelationships between the two in Norwegian higher education is being developed jointly by the Research Council of Norway. The Council conducted a literature review on the nexus between research and teaching, as well as, the creation of a collection of metrics used in order to inform this study through international state-of-the-art research. The study finds that literature is inconclusive in this area. The constructive partnership among research and education in Humboldt's tradition is sponsored, but often taken for granted, by academic workers. Multiple experiments at the same time indicate no connection. The literature, however, widely indicates that involving students in student-active learning types has beneficial impacts on the results of student learning.

It should be predicted that these advantages would be much more prominent at the graduate stage. Horta, Dautel, and Veloso (2012) investigated the positive relation at the graduate level in a recent study in the United States, where teaching can also have a positive impact on research production. They developed a typology in which both employers and students became collaborators in the learning process and used this model to reprocess a range of current empirical evidence. They utilise large-scale cross-sectional data from the US to analyse lecturer performance publication measures (dependent variable) and teaching function-related explanatory variables including teaching assistant, number of students, percentage of time on research, and time allocated for research with students. Their reports suggest that conventional teaching practices show a poor correlation to the outcomes of study. And that creating

the research enabling environment has a positive influence on the development of research in universities, thereby, engaging in research practices for both undergraduate and graduate students, resulting in a positive impact on research output.

Another instance in South Korea is a study by Shin (2011) that answers the enquiry of how the connection between research and teaching actually differs by contextual variables, including the career stage and academic capability of workers, disciplines and trends of research publication that includes book, domestic journal as well as international journal. Based on the survey results from the Research University of South Korea, the analysis revealed proof that according to various research productivity metrics, the research-teaching connection was not reliable and differed across faculty job phases and disciplines, thus providing support for both positive and adverse link claims. The connection was demonstrated to be encouraging when research execution was estimated by book and domestic journal publications, and undesirable when estimated by international journal publications. This would indicate that it might be important to investigate not just the quantity of publications, but also the form of publication.

A report on the correlation between research efficacy and teaching effectiveness was published by Marsh and Hattie (2002). Through performing a meta-analysis of 58 studies based on defining the connection among research and teaching. They took a weighted average of the marginally positive association among teaching efficiency and research ($r = .06$), less than 1 percent of the overall general variability. It emanated from the study that the relationships as manifested from the meta-analysis revealed a null relationship.

The misperception of the overall finding in extant literature led them to conclude that research and teaching are not linked, and therefore, should be separated for funding purposes. There have been no distinctions within and across all fields of specialisation in the university. They figured out that -.17 was the average connection between teaching time and research time. On certain premise of this discovery, they suggested that an enduring myth is the widespread belief that research and teaching are inextricably related. Good researchers are a little likely than non-researchers, to be good teachers.

In response to their numerous criticisms regarding their efforts in establishing the connection among research and teaching, In order to ascertain these potential solutions, Hattie and Marsh (2009) compiled all the critiques and proposed a report. They accomplished this by looking for new reconciling and moderating variables: comprising context variables like willingness to learn and teach, fulfillment, personal ambitions, extrinsic incentives, limits, beliefs; teaching and research departmental ethos; resource challenges, the most popular time for teaching and research; and the actual tasks that lecturers perform in realising the full benefits of the nexus. In order to test these potential moderators and mediators, they spent considerable time developing instruments and prescribing them to a group (N=182) from one university. They have had access to numerous research publication metrics and different instructional performance indicators, like scholarly self-ratings of their own efficiency as teachers and researchers. It emerged from the analysis that disparities in departmental ideology (or any other departmental feature) may have little or no bearing on the efficacy of teaching, research publications, or the correlation between teaching and research. There is no research and teaching collaboration

at the departmental level in comparison to assertions by Ramsden and Moses (1992).

Gap Analysis of the Empirical Review

1. Most of the prior studies, either adopted the qualitative or quantitative approaches to investigating the various aspects of the research-teaching nexus. This did not allow for deeper insights into the issues investigated in these previous studies since it was narrowed to fewer data collection procedures. However, to address this issue, this current study adopted the mixed method approach, specifically, the sequential explanatory design, to investigate the nexus to ensure a comprehensive collection of data to respond to the research questions and effectively test the hypotheses.
2. It can be realised that most of the empirical studies collected data from either lecturers or students. This did not allow for divergent perspectives from different stakeholders in one particular study to corroborate the findings. To address this gap, this current study used data from both faculty members and students by taking into consideration, their various ranks and students' level, taken cognisance of their levels of study (undergraduate, non-research masters, research masters and PhD students).
3. Most of the studies focused on the “hard subjects” such as the physical sciences, mathematics, architecture and engineering of which the extant literature has established that it is relatively difficult to integrate research into teaching since these subjects are hierarchical in nature. That notwithstanding, this study sought to venture into Business Education,

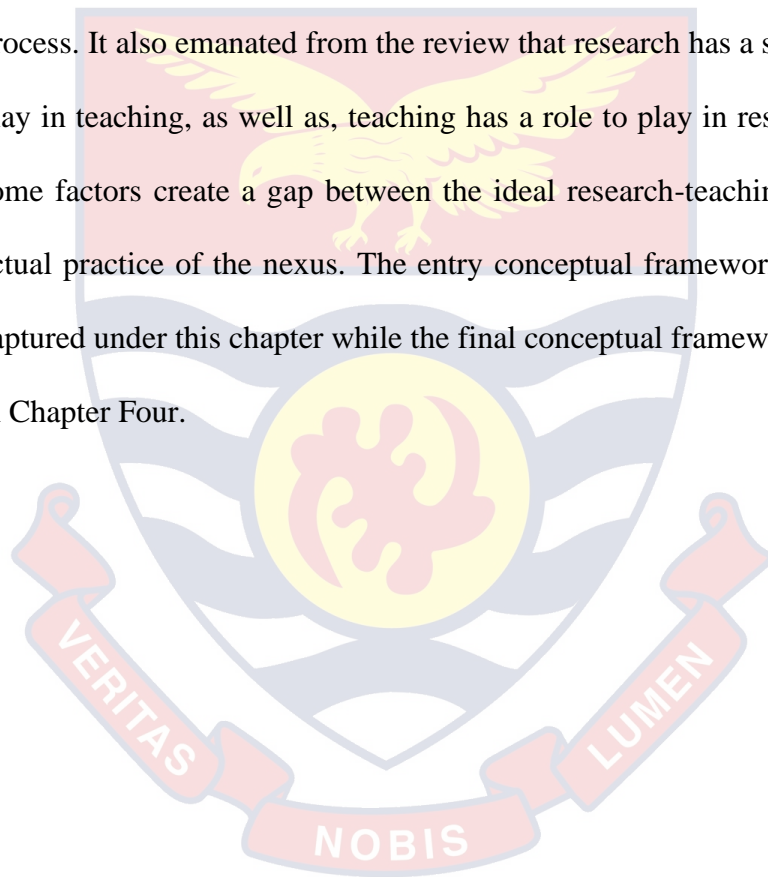
which is deemed a “soft discipline” by many scholars. It is assumed by these scholars that it is easier to relatively integrate research into teaching in the soft disciplines compared to the hard disciplines.

4. It is intriguing to take note that couple of studies considered the demographic characteristics of respondents of which this study hypothesised the demographic characteristics of both lecturers and students against critical nexus variables such as conceptualisation of the link between research and teaching, levels of integrations, as well as experiences of the nexus.
5. Geographically, almost all the studies identified were internationally-based. I am yet to identify one in Ghana. Hence, to bridge the geographical gap, this current study was undertaken in public universities in Ghana.
6. The empirical studies reviewed used a relatively lesser population and sample for their investigation. However, this study increased the sample size, especially, of the students to address the research-teaching nexus since a relatively, larger sample size plays a significant role on the results of quantitative studies.

Chapter Summary

This chapter was organised into three major sub-sections. The conceptual review dealt with the concept of research-teaching nexus, levels of integration, students’ experiences of research at the university, the relationship between research productivity and teaching effectiveness, as well as, factors and impact of the nexus. The study was grounded in three theories that were synchronised into a theoretical model by combining the scholarship of teaching

and learning, the research-teaching nexus model and the experiential learning theory. The chapter was climaxed with a comprehensive empirical review that confirmed the highly contested nature of the relationship between research and teaching. The overall impression created from the extant literature reviewed was that the exact relationship between research and teaching is inconclusive, and that knowledge from the various fields of study were created outside institutions of higher learning, rather than engaging students in the knowledge development process. It also emanated from the review that research has a significant role to play in teaching, as well as, teaching has a role to play in research. However, some factors create a gap between the ideal research-teaching nexus and the actual practice of the nexus. The entry conceptual framework (Figure 1) was captured under this chapter while the final conceptual framework was captured in Chapter Four.



CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents the systematic process of investigation used for the study. The chapter, specifically, explores the philosophical underpinnings and the decision of research methods and cycles used for the study. It also looks at how members were chosen coupled with how the research instruments were developed and utilized for information gathering, without neglecting ethical issues. The point of this research was to investigate the link between research and teaching in the context of Business Education.

The chapter provides a suitable justification for the arrangement to basic realist philosophies since it permits this kind of research to investigate an agreement from the perspectives of both faculty and students' regarding their conceptualisation, experiences and practices of the link between research and teaching. I adopted Ploywright's (2011) Extended Framework for Integrated Methodologies (FraIM) which enabled me to provide sound establishment for the assortment and investigations of mathematical and narrative information to answer the research questions. This framework allowed for the blending of different approaches in collecting data in order to ensure triangulation of the results. The research questions focused on conceptualisations, relationships and impact of the link between research and teaching in public universities in Ghana from the perspectives of both faculty and students.

Research Paradigm

This sub-section addresses the philosophical stance (paradigm) of the study. Two key analysis approaches have been proposed: qualitative and quantitative. In the other hand, the qualitative approach is interpretative and naturalistic, providing space for the meanings of the topic under analysis by the researcher. In the other hand, where the explanations of the researcher are not very important, the quantitative approach is positivistic, with the emphasis being on research instruments and statistical analysis. This study, therefore, combined both the quantitative and qualitative approaches to form a mixed methods study which falls under the Pragmatist paradigm. However, as Pragmatism is not related to one continuum of philosophy (Creswell, 2014), but a combination of many strategies, the research could be defined as grounded in a pluralistic philosophical view. As a result, both quantitative and qualitative approaches were used to collect data in order to adequately answer the research questions of this current study.

The conceptualisation of research philosophy is an elaboration of the experience of the creation of knowledge of an assumption, principle or theory against how the world considers and recognises knowledge of the same belief, notion or theory (Bryman, 2012; Saunders et al., 2012; Deleuze & Guattari, 1994). Research philosophy is frequently created on nonconcrete origins. Creswell (2013, p.16) defines philosophy as *“the use of abstract ideas and beliefs that inform our research.”* Philosophical debates have evolved over the years because there is no such a thing as one-philosophy fits- all (Guba & Lincoln, 2005).

This research is philosophically focused on the pragmatist domain, and is consistent with the views and values of critical realists (Bhaskar, 1997; Mingers, 2004; Smith, 2010). Dobson (2002) argues that “a critical realist’s position is that our knowledge of reality is a result of social conditioning and thus, cannot be understood independently of social actors involved in the knowledge derivation process.” In this study, the interplay of personal conceptualisations among actors (faculty and students) about the link between research and teaching cannot be understood through the lens of a single reality. This is attributed to the fact that reality is subjective, intrinsic and cannot be known. Even though, being unknown, multiple realities may exist but can only be revealed through many viewpoints by participants and respondents (faculty and students) in this study.

This pre-supposes that the link between research and teaching cannot be conceptualised in a single direction and must, therefore, assume numerous realities (Deleuze & Guattari, 1987; Cormier, 2008). Essential realism both portrays, but not the universe itself, representations of the actual world. Hence, with the synthesis of quantitative and qualitative methods, this analysis is biased towards causal research for in-depth findings (Saunders, Lewis & Thornhill, 2014, p.136). The relation among teaching and research has taken different dimensions. In the contemporary system of higher education, students’ personal learning and how faculty involves them in research activities in the teaching and learning process have been characterised by varied approaches to learning and described in diverse ways.

The philosophy underpinning this study is based on the beliefs of the pragmatists. The pragmatists are of the view that the world should not be seen

as a single unit but a multiplicity of units and hence, the use of multiple approaches to collect and analyse data (Hall, 2013; Pearce, 2012; Biesta, 2010; Tashakkori, & Teddlie, 2010; Morgan, 2007; Johnson, & Onwuegbuzie, 2004). The founders of pragmatism all believe that “ideas are not ‘out there’ waiting to be discovered, but are tools – like forks and knives and microchips– that people devise to cope with the world in which they find themselves” (Snarey, & Olson, 2003, p. 92). They believe that ideas are social constructs which are delivered not by people, but rather by gatherings of people. They posit that ideas that are generated are entirely influenced by human carriers and the environment. This results from their use of multiple sources of information (Cohen, Manion, & Morrison, 2007; Morgan, 2007).

These authors assume that their success relies not on their immutability but on their adaptability, because concepts are transient responses to real and unreproducible situations (Snarey & Olson, 2003). It is believed that for the purpose of this study, a particular phenomenon should not be investigated using only one source of data hence the use of the mixed methods. Again, in my opinion, by the use of multiple data sources (questionnaire administration and interview conduct) it will help in understanding the connection among teaching and research from the perspective of both Business Education faculty and students.

Pragmatism is the philosophical debate that forces the merging of qualitative and quantitative research methods into a single sample. Simply placed, the confidence in doing what is best to obtain the intended outcome is pragmatism. As an overarching research philosophy, pragmatism allows

researchers to choose amongst various research styles, as research questions that are answered eventually determine the approaches are better adapted (Morgan, 2007). That is, utilizing qualitative analysis, some research problems are better answered, while others use quantitative approaches. The pragmatic philosophy underlying this analysis required suitable qualitative and quantitative methods to be implemented systematically to meet each particular goal.

Research Design

In seeking to establish the extent to which faculty integrate research into teaching, the present study adopted the sequential explanatory mixed methods design for purposes of comparison to ensure cross-validation, corroboration, expansion, complementarity and triangulation (Creswell, 2014). The sequential explanatory mixed methods design as employed in this study consisted of two distinct phases. The quantitative (numeric) data was gathered during the first phase. The objective of the quantitative stage was to recognize potential predictive power of designated items converged to explain a particular variable on the research-teaching nexus and to allow for the selection of participants for the interview.

A qualitative methodology was used during the second phase to gather text data from individual semi-structured interviews which help illuminate important analysis and teaching nexus. The rationale for adopting this approach to this current study was that the quantitative information and results provided an overall image of the interplay between research and teaching, while the qualitative information and their examination would refine, explain constantly those statistical outcomes by investigating members' perspectives in more

profundity, making room for thick description regarding the link between research and teaching.

It is worthy of note that there are two variations of sequential explanatory mixed methods design: these discrepancies were due to the relation between the use of qualitative approaches and the previous quantitative findings. If researchers are focused in using quantitative knowledge to screen and involve subjects in a more comprehensive qualitative analysis, the sample selection model is being used. In my study, the selection of the participants for the interview was based on some critical findings from the quantitative results. For instance, I found out from the survey results through the tested hypotheses that faculty members at the lecturer rank embark on reflective practices more than senior lecturers. So, there was the need to probe further to investigate the actual activities they engage in. The model of follow-up interpretations is being used in the quantitative stage to clarify and describe group variations or statistical associations. In order to better understand these discrepancies, this can be achieved by selecting sample subjects who fall into the corresponding groups and using qualitative approaches. For the purpose of this study, the two models were adopted since the survey data informed the choice of participants for the interview, and was also interested in offering a thick description of the relationship between research and teaching by adopting this design.

The design requires that data analysis is done in a sequential manner, where the qualitative data from the interview were used to further explain the quantitative data to clarify the link between research and teaching. In terms of priority in this research, since most of the research questions and hypotheses were susceptible to both inferential and descriptive statistics which fall under

the jurisdiction of the quantitative domain, a greater emphasis was placed on the quantitative analysis phase, yielding a quantitative-dominant mixed analysis (QUAN-qual).

The justification for applying the mixed method in this study is for purposes of development and expansion. This is to enable me interpret the quantitative data, supported by the qualitative results in order to enhance, expand, illustrate, or clarify findings derived from the quantitative strand regarding the teaching-research nexus. Also, to achieve the *development* purposes, the quantitative data were collected first and the findings from the quantitative analysis informed the data collected and analyzed during the qualitative phase (second phase) of this study. For purposes of expansion, since it has already been established in the gap analysis of the problem statement that most of the previous studies adopted either the quantitative or qualitative approach separately, in this current study, quantitative and qualitative analyses were utilized to increase the examination's scope and core interest (Creswell, 2013), Thus, bridging the gap.

The mixed design offers a premise for the scope in which this study is carried out. In this research, combining approaches is epistemologically appropriate. Different information sources may give different facets of truth to the same problem when solving a research problem (convergent and divergent findings). Studying about the teaching-research nexus in advanced education climate requires changed ways to deal with understanding the complex nature of the association existing amongst research and teaching.

One major justification for the choice of the mixed method for this study is that new bits of knowledge and discoveries from one technique may improve

the other strategy (Creswell, 2013), hence, providing a complete set of data to fully address the relation between research and teaching. For instance, the interviews uncovered certain examples when I was dissecting the responses of lecturers touching on their strong believe in the nexus, despite the different levels and approaches of implementing the nexus revealed by the lecturers through the survey and the interview. This pattern made the discussion very interesting because of the different perspectives due to the heavy reliance on multiple methods. In simple terms, utilization of these two techniques “allows meanings and findings to be elaborated, enhanced, clarified, confirmed, illustrated or linked” (Saunders et al., 2012, p.169). The narrative approach is utilized for comprehensive explanations of observations from a statistical model and the other way around, as the two approaches have their own strengths and limitations. This method makes it possible for this research to generalise the effects to the population. Findings from the narrative approach were corroborated with those of the quantitative survey and assisted in making inferences and transfers to different settings with comparative states of this investigation (Creswell & Miller, 2000). The specific reasons that prompted the option of the mixed method are espoused as follows:

Data from the numerical quantitative phase complemented the results from the qualitative approach and vice versa. This provided more insight on the link between research and teaching. This technique also allowed for orderly checks on the approval or consistency of discoveries between the quantitative and qualitative phases of the examination. Apart from descriptively (i.e. frequencies, percentages, means and standard deviations) deciphering designs found in the nexus, figures from inferential statistics (i.e. One-way MANOVA,

Chi-square, regression analysis) on the nexus were created for certification (Merriam, 2009; Patton, 2002). Investigations from the survey were supported by data from the interviews. Evidence from the findings of the two data sources were then captured and corroborated to give meaningful insights into the research-teaching nexus (Yin, 2014, p.121). For tenable discoveries without improper verdict, numerical and narrative approaches were utilized to complement and corroborate each other. Describing the research-teaching nexus using the statistical figures on the nexus alone may not be enough to reflect the reality. However, the use of follow-up explanation of the quantitative results with the qualitative results ensured an extensive clarification into the dynamics of the research-teaching nexus and gave a thick description and rigorous insights into the nexus.

Population

The population for this study comprised all Business Education students and faculty in two public universities in Ghana for the 2018-2019 academic year. The total students and faculty population are 1071 and 71, respectively. The students were made up of postgraduates and undergraduates from the regular and sandwich streams of education. Specifically, the postgraduate students are from two-year groups making up the 2018-2019 academic year. These students are those reading Doctor of Philosophy (PhD) in Management and Accounting Education, Master of Philosophy in Management and Accounting Education (research masters [RM]), Master of Education in Management and Accounting (non-research masters [NRM]). The undergraduate students were those in their final year reading Management and Accounting education. These categories of students at different levels of

education may come with varied experiences in terms of how they have encountered research from their universities and faculty. The total numbers of faculty teaching these students in UCC and UEW are 42 and 29, respectively. It should be noticed that at the hour of the examination there were no postgraduate Business Education students in UEW. The choice of these two public universities was informed by that at the time of this study, they were the only two public universities renowned in the training of Business Educators in Ghana. Table 1 presents the population distribution of the student respondents.

Table 1: Population Distribution of Student Respondents

Institution	Student	Programme	Number
UCC	PhD	MGT	13
		ACCT	15
	RM	MGT	26
		ACCT	37
	NRM	MGT	33
		ACCT	32
		<i>Sub-total</i>	<i>156</i>
UEW	Undergraduate	MGT	246
		ACCT	197
	Undergraduate	MGT	263
		ACCT	209
			<i>Sub-total</i>
Grand Total			1071

Source: SRMIS, UCC (2019) & Students' Records, UEW (2019)

Sampling Procedures

Quantitative phase

The samples for the students and faculty were 400 and 71 respectively. The student sample was obtained with recourse to the sampling guidelines

provided by Bartlett, Kotrlik and Higgins (2001). According to Bartlett et al., a population of between 1000 and 1500 should conform to minimum sample size range between 106 and 110 under 5% level of confidence for continuous data. The population of 1,071 falls within the sample range of 106 and 110, implying that a sample of 110 selected is representative of the population. However, to further increase external validity, the sample was increased to 400. The increment from 110 to 400 was informed by Glenn’s (1992) assertion. Glenn indicates that when the population has a number of sub-groups, and several comparisons will be made among the sub-groups, it is necessary to expand the sample so as to adjust for the sub-group comparisons. Following this guidance, the sample was increased from 110 to 400, which translates into 37.3% of the population. Amedahe and Asamoah-Gyimah (2015) indicated that 5% to 20%, minimum of the population is adequate for generalisations. Table 2 presents the sample distribution of the student respondents.

Table 2: Sample Distribution of Student Respondents

Institution	Student	Programme	Sample
UCC	PhD	MGT	13
		ACCT	15
	RM	MGT	26
		ACCT	37
	NRM	MGT	33
		ACCT	32
UEW	Undergraduate	MGT	66
		ACCT	52
	Undergraduate	MGT	70
		ACCT	56
Total			400

Source: SRMIS, UCC (2019); Students’ Records, UEW (2019)

To choose the sample for the research, the multi-stage sampling approach was employed. Multi-stage sampling, as indicated by Ogah (2013), is a type of sampling technique which employs more than one sampling procedure at various levels within the population. First, the disproportionate stratified sampling technique was utilized to decide the sample from the various stratum such as sample for institution and programmes. All the postgraduate students numbering 156 were engaged in the study, due to their relatively small number, and more importantly, was made up of three categories of postgraduate students (research masters, non-research masters and doctoral students). In validating this notion, Glenn (1992) indicates that when the population has a number of sub-groups, and several comparisons will be made among the sub-groups, it is necessary to increase the sample in order to adjust for the sub-group comparisons. Whereas, the remaining 244 for the undergraduate students were proportionally stratified into *institutions* and *programmes* (stratification variables). The stratification of the undergraduates was to ensure a fair representation from both institutions and programmes. To be more elaborate, the stratified proportionate sampling method was used to select 118 and 126 Business Education undergraduate students from UCC and UEW respectively as shown in Equation 1.

Institutional Sample

$$= \frac{\text{Population in Each Institution}}{\text{Total Population in Institutions}} \times \text{Overall Sample}$$

Equation 1- Proportionality based on institutions

Therefore, for UCC, the sample was calculated as follows:

$$UCC \text{ Sample} = \frac{443}{915} \times 244$$

$$UCC \text{ Sample} = \mathbf{118}$$

Also, for UEW, the sample was calculated as:

$$UEW \text{ Sample} = \frac{472}{915} \times 244$$

$$UEW \text{ Sample} = \mathbf{126}$$

The institutional sample for the undergraduate students was categorised into the various programmes, namely: Management and Accounting Education. Using the programmes as stratification variable, the proportionate stratified sampling was used to determine the sample for each programme in each institution following the stated formula in Equation 2:

$$\begin{aligned} & \textit{Programme Sample} \\ &= \frac{\textit{Population in Each Programame}}{\textit{Total Population in Programmes}} \\ & \times \textit{Institutional Sample} \end{aligned}$$

Equation 2- Proportionality based on institutions

Hence, the sample for the management and accounting programmes in UCC was calculated as follows:

$$\textit{Management Sample} = \frac{246}{443} \times 118$$

$$\textit{Management Sample} = \mathbf{66}$$

$$\textit{Accounting Sample} = \frac{197}{443} \times 118$$

$$\text{Accounting Sample} = 52$$

Again, for that of UEW was computed as

$$\text{Management Sample} = \frac{263}{472} \times 126$$

$$\text{Management Sample} = 70$$

$$\text{Accounting Sample} = \frac{209}{472} \times 126$$

$$\text{Accounting Sample} = 56$$

Following the sample for each programme, the sample unit (individual respondents) was chosen through the *systematic sampling technique*. This technique functionally works with a sample frame where a sampling interval is determined for the selection of the first respondent through to the last respondent to make-up the sample required for that programme. Mathematically, the formula for determining the sampling interval is stated as follows:

$$\text{Sampling Interval} = \frac{\text{Programme Population}}{\text{Programme Required Sample}}$$

Following this formula, the sampling intervals for the management and accounting education programmes in UCC were 3.7 and 3.8, respectively; UEW were 3.8 and 3.7 respectively. Rounded to the nearest whole number gives a sampling interval of 4 in each case. Hence, the first student respondent was selected, followed by the next fifth respondent, followed by the next ninth respondent till the sample for each programme was attained. Finally, in selecting the faculty, the census method was used to include all of them (N = 71) who taught the business education students.

Qualitative phase

The sampling of the cases for the qualitative aspect was done in such a way to document diverse variations which helped in the identification of common patterns that cut across the diverse groups within the population to ensure maximum variation (Creswell, 2011). The selection of participants for the interview depended on the collective outcomes that emanated from the quantitative phase of the study since the study was a sequential explanatory design-based. Regarding the qualitative sampling technique, the study adopted criterion (typical case) sampling technique in which the use of quantitative techniques preceded the use of qualitative techniques. In criterion sampling, the results on the quantitative portion of the study were used to initiate a criterion sampling strategy. Criterion sampling, according to Koshy (2010), is a kind of purposeful sampling of cases on preconceived criteria, such as scores on a specific construct important to the examination. Specifically, the typical case criterion sampling technique was adopted. The choice of this sampling technique was informed by its ability to allow the researcher to select participants based on cases that typify the average score on variables related to the research-teaching nexus. The selection of the criterion sampling method, according to Koshy, was to decide if a normal, extraordinary, or serious instance of something on a standardised test is additionally a regular, outrageous, or extreme case utilizing other techniques for data collection, as well as for the intent of complementarity: that is, to find out more about what makes a case typical.

Stemming from the criterion sampling technique, both faculty and students took part in the interview as a complement to the quantitative results.

Illustratively, in this study, the assortment of contributors for the interview was grounded on some critical findings from the quantitative results. For instance, I found out from my survey results that faculty members at the lecturer rank embark on reflective practices more than senior lecturers. So, there was the need to probe further to investigate the actual activities they engage in with specific reference to faculty of these ranks. Eight students and eight lecturers were interviewed from each of the four categories of both the faculty and student groups. This was based on Descombe's (2007) and Wong's (2008) indication that for qualitative studies, six to twelve participants may be appropriate to reach saturation. Also, PhD students were also interrogated during the interview since the quantitative results revealed that they rarely attended workshops and seminars.

Data Collection Instruments

Quantitative phase

A self-created questionnaire was the essential instrument for the gathering of quantitative data. The personally-developed questionnaire instruments were developed to conform to literature encompassing things of various formats: multiple choice, enquiring either for one alternative or all that apply, dichotomous answers such as "Yes" and "No", and self-assessment items. These questionnaires were made up of a 5-point Likert-type scale of Strongly Agree-5, Agree-4, Uncertain-3, Disagree-2, Strongly Disagree-1 with the mid-point of 3 utilized as the benchmark for examination. The implication is that, a mean value over 3 demonstrated that the vast majority of the respondents were in accordance to the statement. Conversely, a mean value

under 3 demonstrated that the vast majority of the respondents were not in accordance to the assertion.

The lecturers' questionnaire (see APPENDIX A) was organised into five sub-sections labelled sections A to E. Section A made up of nine items on the demographic characteristics of respondents such as gender, rank, teaching experience etc. The section B labelled conceptualisation and made up of 10 items which sought to find out how lecturers understood the link between research and teaching measured on a five-point Likert-type scale. The reliability for the actual data collected on the conceptualisation was (α)=.799 for faculty.

Section C of the lecturers' questionnaire sought to find out the degree to which lecturers mix research into their teaching or measure how lecturers expose their students to research in the course of their teaching. This level of integration was measured by 26 items segregated into the four levels of integration (research-led, 5 items; research-oriented, 8 items; research-based, 9 items; and research-tutored, 4 items) measured by a five-point Likert-type scale. The reliability for the actual data collected on the levels of integration was (α)=.853.

Section D solicited for information on issues that influence the connection between research and teaching on a five-point Likert-type scale. This sub-section was measured by a 22-item scale. The reliability for the actual data collected on the factors that affect the link between research and teaching was (α) = .803 for faculty. The last Section E measured the perceived influence of the link on teaching and learning by 22 items The reliability for the actual data collected on the perceived impact of the nexus was (α) =.812 for faculty.

In all, the lecturers responded to an 84-item questionnaire regarding the teaching research-nexus.

The students' questionnaire (see Appendix B) was also organised into five sub-sections labelled Sections A to E. Section A solicited information on gender and level of students' study. The section B was labelled conceptualisation and measured on a 10-item scale on a five-point Likert-type scale sought to find out how lecturers understand the link between research and teaching. The reliability for the actual data collected on students' conceptualisation for this sub-section was (α) =.767.

Section C of the students' questionnaire sought to find out how students experience research in the university. This was measured by 11 research exposure indicators that students are likely to encounter in the course of their university education. Students were expected to indicate whether they partook in these research activities or not by indicating Yes or No to each of the research activities. The reliability for the actual data collected on students' research experiences in the university was (α) =.822.

Section D solicited information on issues that affect the connection among research and teaching on a five-point Likert-type scale. This sub-section was measured by a 22-item scale. The reliability for the actual data collected on the factors from the students' perspectives was (α) =.876.

The last Section E measured the perceived influence of the link on teaching and learning by 18 items. The reliability for the actual data collected on the perceived impact of the nexus from the students' perspectives was (α)

=.773. In all, the students responded to a 63-item questionnaire regarding the teaching research-nexus.

Qualitative phase

The second, qualitative phase in the investigation zeroed in on clarifying the consequences of the statistical tests, acquired in the principal quantitative phase. In this study, the data collection and analysis filled the need of “illuminating a particular issue” (Creswell, 2002, p. 485) regarding the research-teaching nexus, thereby giving more insights into how research informs teaching. The primary technique adopted to collect the qualitative data was detailed semi-structured face-to-face interviews with lecturers and students.

The Interview Protocol for the lecturers (see Appendix C) comprised nine open-ended questions and four dichotomous questions. The discoveries of the quantitative process were the reason for the content of the protocol questions. The questions focused on the issue of conceptualisation, level of integration, experiences, compatibility factors of the link and the overall impact on lifelong learning and about the subtleties of the members chosen on maximal variety guideline. The students’ interview protocol (See Appendix D) only centered on their experiences of research in the university revealed by three questions. The protocol was pilot-tested on two students and two lecturers selected from the same target population, but then excluded from the actual qualitative in-depth interview. The choice of the selection of the two participants each of faculty and students was informed by Wong (2008) who indicated that participants between one and four could be used establish the trustworthiness of an interview prior to the actual interview. Participants were

briefed to gain information on the clarity of the interview questions and their importance to the intent of the research resulting from the statistical findings. Permission was sought from the interview participants to forward the content of the interview protocol for them to acquaint themselves with the content of the interview protocol. Prior to the planned call time, the interview questions were received by the participants and their consent was requested to document their answers. After it was transcribed to member-check, participants had the ability to analyse and amend the content of the interview to ensure the trustworthiness of the qualitative findings.

Reliability and Validity of Instruments

Quantitative phase

A pilot-test of the questionnaire and interview was conducted in the University for Development Studies (UDS) on 58 Business Education students and 21 Business Education lecturers. The pilot testing was conducted in the UDS due to the similar characteristics in terms of the mandate they have in offering Business Education just like UCC and UEW. This number was selected because according to Baker (1994), 10% of a study's sample can be used to establish the reliability through pilot testing. In establishing the face validity of the items on the questionnaire, the items were strictly designed to conform to the literature reviewed after which the questionnaires were further handed over to the researcher's supervisors and other colleagues who went through and offered their suggestions. Feedback from the pilot test was used to refine the questionnaires before the final data collection commenced.

Reliability and validity of the instrument are very critical in quantitative analysis for minimizing errors that may result from measuring concerns in the research sample. Reliability refers to the precision and accuracy of a measuring process (Bazeley, 2003). Internal consistency reliability analysis of the sub-dimensions on the Likert-type scale was determined using Cronbach's alpha. This helped determine how well the different items seem to represent the characteristic under study in a measure. The study offered details about which objects needed rewording or even total elimination from the scale.

Validity denotes the degree to which the particular definition or construct that the researcher is aiming to test correctly describes or tests a sample (Bazeley, 2003). The validity of the substance and construction of the survey instrument has been properly identified. The validity of the material demonstrated the degree to which all the potential questions regarding the relationship between research and teaching were descriptive of the sample items and the scores from these questions. The wording of the survey items was examined by experts in teacher education and curriculum (my supervisors and peers) in the University of Cape Coast. This helped me to determine whether the questions from the survey were applicable to the issue it was intended to measure, whether it was a rational way to collect the information required, and whether it was well-designed.

Construct validity demands consensus between a theoretical definition and a particular device or method for measuring. To guarantee the construct validity of the self-developed questionnaire, a principal component analysis (PCA) was conducted. An oblique, specifically, the promax rotation was used, where the eigenvalue-greater-than-one rule was utilized to decide a fitting

number of variables to hold. Thus, just variables with a value of 1.0 or greater are maintained for further study (Kaiser, 1958). In order to better illustrate, a factor's own value reflects the sum of the overall variation described by that factor. For instance, a factor analysis was conducted on all the survey items in order to identify the underlying phenomenon in each of the research questions. The least Kaiser-Meyer-Olkin (KMO) measure of sampling capability was .64, which is deemed adequate as established by the criteria. Also, Bartlett's Test of Sphericity indicated that the correlations between variables are different from each other, $p < .001$. And that several factors emerged, which cumulatively explained an average amount 70% of the variance measured by the items. The components of the factor analysis were restricted to 0.4. The outcome of the factor analysis and its effect of pruning down the number of items on the questionnaire are summarised on Table 3.

Table 3: Item Pruning by Principal Component Analysis (PCA)

Section	Lecturers' Items		Students' Items	
	Original	Reduced to	Original	Reduced to
A: Demographics	9	9	2	2
B: Conceptualisation	12	10	12	10
C: Level of Engagement/ Experience	26	26	11	11
D: Factors	37	22	37	22
E: Perceived Impact	26	18	26	18
Total	110 items	84 items	88 items	63 items

Source: Field Data (2019)

Through the principal component analysis (PCA), the items on the lecturers' questionnaire were pruned down from 110 items to 84 items, while

that of the students' questionnaire were reduced from 88 to 63 items for the final collection of the quantitative data. The following tables present the AVEs and Cronbach alpha values of the components obtained from Principal Component Analysis (PCA). Table 4 presents the Average Variance Explained (AVEs) from the principal component analysis on the conceptualisation of the research-teaching nexus.

Table 4: AVEs of Conceptualisation of the Research-Teaching Nexus

	Loading	AVE	α
Curriculum-oriented conceptualisation		0.69	.788
Promoting lifelong learning in students through research improves practice.	0.892		
Making explicit the nature of research for knowledge development.	0.812		
Researching about teaching and learning that informs curriculum development.	0.793		
Scholarship-oriented conceptualisation		0.50	.726
Visiting researchers inside the local area of training acting as resource persons.	0.839		
Encouraging and motivating students to do research.	0.812		
A community of scholars including students invited to join on-line discussion.	0.598		
The scholarship of teaching integrated into research supervision.	0.544		
Knowledge currency conceptualisation		0.54	.711
Lecturers' specific research intrigues educating the improvement regarding teaching materials.	0.815		
Lecturers being contemporary and directing optional research to stay side by side of current disciplinary information.	0.707		

Lecturers integrating their own research into their teaching to give currency to knowledge.	0.681
Overall	.773

Overall Reliability (α) = .773 (10 items)

In order to explore the dimensions of items under the conceptualisation of the link between research and teaching from literature, a principal component analysis (PCA) was conducted. In the initial analysis, the items with loadings less than 0.5 and cross loadings above 0.4 were deleted. After, PCA was done, the KMO value (.650) and Bartlett test result (Approximate χ^2 (df = 55) = 446.088, sig. = 0.000) show that the test was valid and significant. Three factors which represent 64% of the variance were extracted. The loadings are rotated by the Promax method. The result showed in Table 4 reveals a clear three factor structure including Knowledge currency conceptualisation, Scholarship-oriented conceptualization and Curriculum-oriented conceptualisation. Table 5 presents the AVEs from the principal component analysis on the levels of integration.

Table 5: Average Variance Explained (AVE) of Levels of Research Integration into Teaching

	1	2	3	4
Component	Research-led	Research-oriented	Research-based	Research-tutored
A	.842	.831	.784	.760
AVE	.75	.71	.64	.62

Overall (α) = .801 (26 items)

Table 5 reveals the determination of the dimensions of items underlying the levels of integration of research into teaching, a principal component

analysis (PCA) was conducted. Per the criteria established from Table 4, the KMO value (.806) and Bartlett test result (Approximate χ^2 (df = 257) = 6243.550, $p < .000$) showed that the test was valid and significant. Four factors were, therefore, retrieved which represented 79% of the variance extracted. As shown in Table 5, it reveals a clear four factor structure including research-led teaching, research-oriented teaching, research-based teaching and research-tutored teaching. Table 6, however, presents the AVEs from the principal component analysis of the compatibility factors affecting the link between research and teaching.

Table 6: AVEs of Factors affecting the Research-Teaching Nexus

Component	1	2	3	4	5	6	7
Reliability	.845	.840	.841	.728	.693	.524	-
AVE	.68	.58	.69	.53	.56	.54	.68

Overall Reliability (α) = .780 (22 items)

Note:

- 1 - Research Productivity Stimulation
- 2 - Research Teaching Tension
- 3 - Empirically Based Learning
- 4 - Research Premium Factor
- 5 - Research Active Curriculum
- 6 - Time Oriented Factor
- 7 - Responsive Curriculum Factor

To explore the underlying constructs of items underpinning the factors affecting the link between research and teaching stemming from literature through a principal component analysis (PCA), the KMO value (.640) and Bartlett test result (Approximate χ^2 (df = 300) = 1385.273, sig. = 0.000) showed that the test was valid and significant. Seven factors sprang from the principal component analysis representing 72% variance extracted. Table 6, then reveals

a clear seven factor structure including research productivity stimulation, empirically-based learning, research-active curriculum, time-oriented factor, responsive curriculum factor, research-teaching tension and research premium factor. Though, it appears the last two components are not factors as revealed by their mean values. Their mean scores were below 3 per the set criteria. Table 7 shows the AVEs extracted from the principal component analysis on the impact of the nexus.

Table 7: AVEs of Impact of the Research-teaching Nexus

Component	1	2	3	4	5
Reliability	.885	.820	.831	.760	-
AVE	.55	.62	.56	.69	.65

Overall (α) = .927 (18 items)

Note:

- 1 - Intellectual Development
- 2 - Heightens research and employability skills
- 3 - Students' Interest and Knowledge Development
- 4 - Promotes relevant and functional curriculum
- 5 - Highly differentiated university

Table 7 projects the dimensions underlying the perceived impact of the nexus between research and teaching. Considering the established benchmark, the KMO value (.908) and Bartlett test result (Approximate χ^2 (df = 253) = 6282.330, sig. = 0.000) showed that the test was valid and significant. Five factors were then derived from the analysis which represented 68% of the variance extracted. Implying that all the items converged to explain 68% the underlying constructs. Table 7 reveals a clear five factor structure named as meaningful learning outcomes, employable skills outcome, university mandate outcome, pragmatic learning outcome and learning improvement outcomes.

Qualitative phase

Trustworthiness of the Interview

The trustworthiness of qualitative data is measured by the believe that the data obtained could be trusted (Lincoln & Guba, 1985 cited in Merriam 2009). In order to set up the dependability of a research, Lincoln and Guba (1985) recommended four primary models for establishing the trustworthiness of the results that includes credibility, dependability, transferability, and confirmability. These measures recognize the unchangeable intricacy of the qualitative data that is intended to complement the quantitative results regarding the research-teaching nexus coupled with the viewpoints and implications drawn from the request by both faculty members and students which should be mirrored in the research plan and strategies of this current study. Since this study included examining the perspectives of faculty members and students about the research-teaching nexus, there was the necessity to guarantee that the report and its substance were as real as could be expected under the circumstances stemming from ensuring the application of these criteria. The criteria are explained in detail below.

Credibility

Reliability alludes to the degree to which the study narrative is accurate and relevant in the sense of qualitative studies (Gibbs, 2007). In this way, the credibility of the results obtained was focused on evaluating if the conclusions from the viewpoint of the study, the participants and the targeted audience were correct (Creswell & Miller, 2000). Adopting triangulation and member checking were the techniques implemented to ensure this degree of legitimacy. There are several forms of triangulation: triangulation by data base, research

methods, researcher, theory (Miles & Huberman, 1994). I triangulated the data with the end goal of this analysis with the utilization of two separate information collection methods: survey and interview. This ensured overcoming the weaknesses associated with a solitary strategy and helped in gaining proof of the region being considered (Johnson & Christensen, 2008; Yin, 2003). To further ensure triangulation, data was also obtained from both lecturers and students based on the research questions of the study.

Member checking

Member checking or respondent validation is “the process whereby a researcher shares preliminary data analysis and interpretation with study participants to determine whether they agree or disagree with the researcher’s analysis” (Hinchey, 2008, p. 97). Participant reviews were carried out to ensure the credibility of the interview data obtained. I used member checking to guarantee that there was absence of inconsistency between my understanding of both lecturers’ and students’ conceptualisation and practices in response to and the meaning they ascribed to the research-teaching nexus by bring back the records of the meetings to participants so they could survey the information for vital adjustments in order to ensure a verification of the recorded responses (Cohen, Manion & Morrison, 2000). Thus, the participants get updates on the consistency of the categories and themes listed. To Cohen et al., there is often the misconception on the part of the interviewer of what the interviewee says and misunderstanding on the part of the interviewee could affect the validity of the interview.

Dependability

Dependability in qualitative studies suggests that the methodology adopted by a particular study is reliable within multiple researchers and programs (Gibbs, 2007). Reliability can be discussed in many ways in qualitative studies. According to Creswell (2013), to create inter-rater continuity, reliability can be increased by comprehensive field notes (by utilising a decent recorder to report the interview), the record of interview and the validating of code by various researchers. The researcher attempted to achieve reliability by performing pilot interviews and cross-checking the recording, translation and coding for the intent of this present analysis, as the origins of partiality frequently originate from the qualities of the interviewer, the attributes of the respondent and the verifiable content of the inquiries (Cohen, et al., 2007; Breakwell, 2000).

In conducting the pilot study to ensure dependability of the results, four pilot interviews, each for both lecturers and students were conducted. This is in accordance with Wong's indication that between one and four participants could be used to ensure the trustworthiness of qualitative data. First of all, the initial pilot was finished with one of my supervisors while another supervisor went about as a spectator to give criticism. Subsequent to having input on the principal preliminary, the researcher reformed the manner in which questions were presented. Afterwards, the second trial was conducted with a postgraduate student and subsequently, an undergraduate student. The attempt was meant for me to become conversant with the interviewing processes and master the techniques involved in order to obtain reliable data.

As this helped me to develop improved hearing, explaining and learning interview abilities dependent on the feedback of my supervisors, the interview trial was very helpful. Besides that, during the interview, I knew about the phonetic fluctuation that could emerge. For this intention, as participants wanted them to mean, I tried to interpret the words and meanings, regardless how members said them. This knowledge helped me with utilising the data in a legitimate and reasonable manner and not to use the data in an exploitative manner. Using a digital voice recorder and my own cell phone as a back-up, all test and real interviews were recorded. In order to make my data more accurate, using both gadgets helped me to extract comprehensive information from the interview.

To further ensure dependability of the qualitative results, a vivid transcription of the interview data was done. The data from the interview were duly transcribed and the transcripts were double-checked by the researchers. Duplicates of the worded transcripts were then transmitted back by email to participants to validate and add any required responses. Some transcripts were approved without revisions as a valid and correct document, although some participants made a few remarks and slight changes. In general, during their interviews, participants did not alter the point of view they shared, but rather added feedback about how they viewed them and made minor changes to the use of words.

An inter-rater reliability was developed in addition. Two kinds of inter-rater dependability are inter-coder dependability and intra-coder dependability, thus according Johnson and Christensen (2008). Reliability of inter-coders alludes to the consistency obtained between or across multiple coders, while

reliability of intra-coders alludes to the consistency inside a solitary entity (Jonhson and Christensen, 2008). I utilized similar method and similar key themes and sub-topics to analyse information from the 16 records in order to gain intra-coder reliability for my coding. In addition, inter-coder understanding was utilized to calculate the reliability of the coding to minimize errors attributable to inconsistencies in my coding. Another word used by Creswell (2009) to allude to at least two coders deciding on codes utilized for a similar entry in the document is inter-coder agreement.

As per this my supervisor and I conducted the coding from similar two records. To start with, depending on the research questions, we did the coding independently and then we matched our coding. On 43 out of 56 code assessments, we decided. Approximately 75% consensus on the coding was the result of our coding comparison. It is suggested that coding accuracy be accepted with strong qualitative reliability at least 80 percent of the time (Mile & Hurberman, 1994). Because our coding per the specified standard did not reach the degree of reasonable reliability, we conducted two additional coding from two other distinct transcripts. In addition, we eventually settled on 53 out of 59 code judgments for all transcripts, which was nearly 95% of the coding arrangement. For me, this approach was really effective as it helped increase the consistency of my coding for future coding.

Transferability

Transferability alludes to “the extent to which the findings of one study can be applied to other situations” (Merriam, 2009, p. 223). Schwandt (2007) believed that transferability works with problems of summing up the case-to-case results. The transferability of a solitary contextual investigation is,

however, restricted (Flyvberg, 2006). A case study may not provide transferability other than that accepted by the reader as important to their circumstance. I then undertook in-depth interviews with 16 participants in order to encourage readers to examine the transferability of this research as a development to the quantitative outcomes aimed at offering a thorough explanation of the topics that are essential to my observations so that the reader could estimate the level at which the conclusions are drawn pertaining to the research-teaching nexus.

Confirmability

Confirmability or objectivity, according to Denscombe (2007), means the degree to which the researchers derive the conclusions of a research sample and not the bias, incentive, or desire of the researcher. In the present analysis, I used reflexivity, triangulation of data across various methods of data processing, and sharing my initial results with my superiors to minimize the impact of my bias. Schwandt (2007) proposed that providing other individuals reviewing the data and conclusions in addition to the researcher may be a tactic to encourage confirmability.

In summary, to secure the internal validity of the interview, bracketing, member checking, thick description, external audit and triangulation were conducted to guard against biases that negatively affect validity. Regarding bracketing, since I am a faculty member and a PhD student, and that there could be the tendency for me to harbour some pre-conceived notions about the research-teaching nexus, it was reasonable to set aside all my biases and immerse myself with the data objectively without influencing the outcome of

the results. I immersed myself with the data by extensively listening to the recorded responses from the participants and reading the transcripts in order to develop deeper insights into the research-teaching nexus. In order to ensure its dependability and validate the findings from the qualitative data by way of establishing the validity of the facts and if it reflects authenticity (Merriam, 1988), some principal strategies were adopted. These were triangulation, where my study converged different sources of information from the survey and interviews. Likewise, a rich, thick depiction of the research processes was given to serve as a guide for all stakeholders of this research. Finally, external audit was conducted by asking an expert (qualitative analyst) to comb through the thesis to direct an intensive audit of the examination and report back (Creswell, 2003; Creswell & Miller, 2000). All these ensured the trustworthiness of this study.

Data Collection Procedures

Quantitative

An ethical clearance (see Appendix I) was granted by the Ethical Review Board of the Directorate of Research and Consultancy (DRIC), University of Cape Coast, after the proposal was successfully defended and an application for ethical clearance was submitted and approved by the Board. Thereafter, an introductory letter was obtained from the Department of Business and Social Sciences Education in the University of Cape Coast, and presented to the various Registrars of the Universities associated with the investigation for their permission to give out the questionnaire and conduct the interview. This was necessary to ensure that the lecturers and students were pre-informed about the

data collection. A follow-up was done to arrange for time and date convenient to the participants for the data to be collected. Based on the consent by the Registrars of the various universities, the questionnaires were distributed to the lecturers to solicit for their responses regarding the research-teaching nexus. The questionnaires were given to students to be completed in the lecture theatres while the lecturers completed theirs in their offices or any other place convenient to them.

Collection of data commenced on May, 2019 with the undergraduates first, since they were on the verge of completing their four-year study. After collecting the survey data from the undergraduates, the next was research masters and PhD students. I had to wait till July, 2019 for data to be collected from the Non-research masters' students since they were sandwich students. The data from the lecturers were gathered concurrently, alongside with those of the students. In all, three months were used in collecting the survey data. In each lecture hall, an opportunity was seized to disclose to the class the reason for the investigation just as the need to conduct the study (Creswell, 2012). However, it was clarified to the respondents that their support in the study was deliberate (Neuman, 2017) and thus, they were encouraged to provide accurate and honest information if they were willing to participate. I explained to the participants, they reserved the privilege to pull out from the examination anytime (Creswell, 2012), but this right ended after their instrument had been submitted. This was because of the difficulty of tracing back their questionnaire for it to be taken out of the analysis. Respondents were made mindful that the investigation was liberated from any psychological or physical maltreatment (Neuman, 2007). They were also assured of confidentiality.

The respondents were told that they were not needed to give names or index numbers. The questionnaires were collected in a random manner such that responses provided could not be traced to any specific individual. This ensured anonymity (Leedy & Ormrod, 2010). I further sought for the consent of the participants by signing the consent declaration section on the questionnaire.

Qualitative

Semi-structured interviews

Since the examination embraced the sequential explanatory mixed methods design, and used the participant selection variant of the model, it was imperative to wait for the investigation of the survey information before proceeding with the collection of the qualitative data using the interview guide. This was to enable me analyse and synthesise the analysed quantitative data to inform which participants should be involved in the interview. The interviewing commenced on October, 2019 and since it was a qualitative data, analyses were done concurrently.

A one-on-one interview with 16 participants was performed for this research utilising a semi-structured model of open-ended questions to accumulate a detailed comprehension of the conceptualisation, perspectives and real activities of the research-teaching nexus. Eight faculty members, two each from the ranks of faculty were interviewed on their conceptualisation, levels of integration, factors, impact and the relationship between research productivity and teaching effectiveness. Meanwhile, eight of the students (two from each level of study) were interviewed in light of their research encounters and their

conceptualisation of the research-teaching nexus (Wong, 2008). Every member was given a pseudonym to guarantee obscurity and secrecy.

A semi-structured interview was considered as an appropriate technique for information assortment for this investigation as it empowered the members to communicate all the more unreservedly without the interviewer dominating the interaction (Johnson & Christensen, 2008). This allowed the interviewees to go as much detail as they chose while the interviewer served as a mere facilitator of the interaction. In essence, this interviewing process empowers the researcher to accomplish rich and thick information (Mason, 2002). In comparison, as opposed to other approaches such as the focus groups, the choice to use one-on-one interviews was that the technique is easy to organize and manage. Then again, it was not easy to organize a scheduled meeting that satisfied them all, the participants of this study comprising lecturers and students. I also considered it much more efficient to find and transcribe unique suggestions while the interviews were centered on one interviewee (Denscombe, 2007). The research was, however, participant-based.

Until the actual interview took place, main topics for the interview protocol (See Appendices C & D) were submitted to participants. I found out that the participants had a clear grasp of the subjects and questions being posed during the interviews, thus minimising distortion among the interviewer and the participants. This also made the participants learn about the issues more thoroughly. Based on the study objectives and queries, the interrogations for the interview were created. During the interview, the interviewer also used an interview protocol (see Appendixes C & D) to monitor the interaction and to remember crucial reactions, outward appearances and the feelings of the

participants during the interview expressions that the recorder was unable to catch. For both faculty members and students, the interviews were performed. Questions and responses were frequently replicated during the interview process for clarity in order to prevent confusion or misinterpreting.

Interviews were conducted in a position that was suitable and relaxed, in fact, depending on the consensus between all sides, for the interviewer and participants and meeting times were scheduled. Therefore, the lecturers were interviewed in their respective offices while the students were interviewed at any convenient places devoid of distractions. The interview for the lecturers lasted between 40 and 55 minutes, while that of the students lasted between 25 and 40 minutes and was recorded with a computerized voice recorder to catch the subtleties of the interview. Voice recording is the safest way to collect all the data listed by the participants, as indicated by Johnson and Christensen (2008). It encouraged me to return to the original interview by using the recording device, which note taking does not do. Eight weeks were used in total to capture the results.

Data Processing and Analysis

Quantitative data analysis

The data inspection at the univariate and multivariate levels was done prior to the systematic analysis of the quantitative survey findings (Kline, 1998; Tabachnick & Fidell, 2000). Since multivariate analyses are susceptible to extraordinarily high associations between predictor variables, data screening helped detect possible multicollinearity in the data. Often omitted from the study were outlying cases. This may contribute to the poor fit of the model

(Tabachnick & Fidell, 2000). Descriptive statistics for all variables, incomplete data information, linearity and homoscedasticity, normality, multivariate outliers, multicollinearity and singularity were encompassed in the information screening. For the survey items, descriptive statistics were outlined in the text and published in tabular form. In order to identify the percentages of the answers to all the questions in the study, frequency analysis was steered.

The outcomes of the analysis were comprehensively discussed at the discussion section of the write-up. The eigenvalues presented details on the percentage of variance compensated for by the discriminant function. To demonstrate the statistical importance for the discriminant role, the Wilks' Lambda test generated the chi-square value. The uniform discriminant function coefficients showed how much relative special contribution the predictor variables give to the party differences. Based on the linear relationship formula, the discriminant variance that better discriminates against the groups was described. The connection between the reaction variable and the discriminant work was seen by the structure coefficients. Group centroid functions gave the discriminant ratings for each group or category on the discriminant parameter, indicating that they would explain how the groups vary depending on the Principal Component Analysis on the discriminating variable. With the aid of Statistical Product for Services Solution software (SPSS), all statistical analysis of the quantitative findings was carried out.

The closed-ended questionnaire items were analysed statistically by means of descriptive statistics (frequency counts, percentages, means, and standard deviations) and inferential statistics (Chi-square, MANOVA, and multiple linear regression) was also used to examine statistical effects and

differences between and among variables (Field, 2009). Inferential analysis was done using a confidence interval of 95% and an alpha level of .05. Effect sizes were also calculated to establish the useful meaning of the results that showed statistical significance to determine the extent of the impact of the independent variable on the reliant variable.

On the other hand, responses from the interview were fully transcribed, coded (axial coding) categorised, and investigated utilizing the reflexive thematic analysis (Braun & Clarke, 2006) supported by the use of constant comparison qualitative analysis (Glaser & Strauss, 1967). Newby (2010) stated that to do this process successfully, the researcher should carefully read through the transcription in order to identify key themes that would enable the researcher to organise these themes into a set of broader categories and narrate them along these themes. The use of the sequential explanatory mixed methods design enabled the researcher to compare and further elaborate on the findings. This assisted in drawing rational conclusions and inferences from the two perspectives (from both questionnaires and interviews, as well as, from academics and students). With qualitative examples, the technique aimed to explain quantitative findings and to provide a more meaningful interpretation of why respondents responded individual questionnaire items the way they did.

The data gathered were checked one after the other to guarantee their completeness. Questionnaires that had more than 10% of the responses unanswered were eliminated (Martin & Bridgmon, 2012). The questionnaires were then numbered from first to the last number based on each category of respondents. The information were, at that point coded and put into the

Statistical Product for Service Solution (SPSS, version 23) computer software. The information were screened for entry errors and outliers.

In testing for the normality, multiple indicators were used since only one analysis cannot suffice. In some cases, the mean and the median were also compared. This was necessary because Pallant (2010) argued that data with large samples are likely to yield a significant result using the Shapiro-Wilk test. After testing for statistical significance, the practical significance (effect sizes) was likewise processed to discover the size of the distinctions. Below is a brief description of how each of the research questions and hypotheses were analysed and tested respectively.

Analyses based on research questions

Research Question One sought to find out how lecturers and students conceptualise the link between research and teaching. To find out the conceptualisation of the link, means and standard deviations were utilized to break down the information gathered. In light of a five-point Likert-type scale (Strongly Agree-5, Agree-4, Uncertain-3, Disagree-2, Strongly Disagree-1), a mid-point of 3 was utilized as the benchmark for examination, implying that, a mean value greater than 3 indicates that the majority of the respondents were in concurrence with the assertion. Conversely, a mean value below 3 shows that the vast majority of the respondents were in divergence with the assertion. This benchmark was applicable to all the other research questions measured on a five point Likert-type scale. Based on the results, most of the respondents were in agreement with most of the items on conceptualisation.

Research Question Two sought to find out the extent to which lecturers involve or engage their students in research activities in the course of teaching and learning as a way of integrating research into their teaching. Means and standard deviations were utilized to analyse the information accrued grounded on a five-point Likert-type scale with a mid-point of 3 as the baseline for comparison. To determine the exact level of incorporation of research into teaching, *mean of means* for each of the four levels (research-led, research-oriented, research-based and research-tutored). The level with the highest mean of means indicated the predominant level of integration.

Research Question Three sought to find out how students experience research in the teaching and learning in their university life. To find out these research experiences, students were asked to indicate against each of the research exposure indicators YES or NO, the applicable description. Research experience was treated as a composite whole (continuous variable). Thus, all the research experience indicators coming together to define the level of research experience by a particular student. Frequency counts and percentages were used to interpret the results so that the indicator with the highest frequency count or highest percentage was deemed to have contributed more to students' research experience.

Research Question Four sought to find out from both lecturers and students the factors that affect the connection amongst research and teaching. To find out these factors affecting the link, means and standard deviations were utilized to analyse the information accrued measured on a five-point Likert-type scale with 3 established as the mid-point. Research Question Five also sought to find out from both lecturers and students the perceived impact of the link

between research and teaching. To find out these perceived impact of the link, means and standard deviations were used to analyse the data collected gauged on a five-point Likert-type scale used with 3 as the benchmark.

Research Question Six sought to measure the effect between research productivity and teaching effectiveness, *teaching effectiveness* was gauged using students' assessment of lecturers administered by the universities under investigation for the 2018/2019 academic year, as well as, lecturers' self-assessment of their own teaching effectiveness, whilst, *research productivity* was assessed using publication counts for these lecturers. The publication counts included the number of publications in journals including articles, books, book chapters, conference papers, and thesis supervised. The effect was established through the performance of a simple linear regression.

Measures of research productivity and teaching effectiveness

Research productivity

Research productivity was assessed using publication counts of faculty members in Business Education. The measure conveyed included the quantity of publications in journals including articles, books, book chapters, conference papers, and thesis supervised (Sabharwal, 2013). All these research output indicators are used to measure research productivity in this study because according to Auranen and Nieminen (2010), the utilization of a solitary database decreased the subjectivity troubled about the appraisal of a person faculty member's research productivity, hence, it is ideal for measuring a holistic research output. Therefore, benchmarked research productivity was determined

by isolating every lecturer's publication tally by the normal number of publications per lecturer.

Teaching effectiveness

Teaching viability was surveyed with learners' assessments of teaching adequacy dependent on the standard university structure of the universities involved in the study (Scriven, 1980, 1981, 1988, 1994). The assessment structure included by and large appraisals of the faculty members and the estimation of the course from the perspective of students. The scores obtained from the students' were proposed to be of indicative worth that would reveal the performance of faculty members from their students' perspectives. For reasons for the current examination, I focused on the general faculty rating that was proposed to be the essential summative assessment from this instrument for each faculty member.

Research outcomes

The normal number of publications was 3.73 ($SD = 5.74$) per staff member, principally comprising of journal articles (8.83), conference papers (2.13), chapters in books (0.48), articles reviewed (4.58), and authored books (1.21), M.Phil thesis supervised (2.46) and PhD thesis supervised (.27). The basic number of publications and the weighted average (authored books = 6, edited books = 4, book chapters = 2, journal articles = 4, conference papers = 2) is identical in comparison to teaching effectiveness. Thus, in several analyses, a basic unweighted amount of the summed number of publications is utilized, while outcomes for the different segments and the weighted normal are often taken into account.

Testing of hypotheses

Hypothesis One sought to determine the statistical differences in the conceptualisation of the research-teaching nexus between faculty and students. To test this hypothesis, a one-way between groups MANOVA was performed to compare the mean scores of the conceptualisation of the teaching-research nexus between faculty and students. The predictor variable was respondents' status (either, faculty or student). The criterion variable was conceptualisation comprising knowledge currency conceptualisation, scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

To test for the normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no breaches observed, initial assumption testing was performed. For instance, visual examination of the normal Q-Q plot for the conceptualisation suggests that the data was normally distributed (See Appendixes E & F). In light of these outcomes, it tends to be reasoned that the data on conceptualisation were regularly dispersed. Notwithstanding the normality assumption, homogeneity of variance-covariance matrices was tested. In calculating for the practical significance, Cohen's *d* was used for the computation. In interpreting the result, Cohen (1988) indicated that values around .01 show little effect, values around .06 demonstrate a moderate impact whereas estimations of .14 and above show huge impact. Also, separate univariate ANOVAs were performed on each of criterion variables using Bonferroni's adjusted alpha level of .017 since the criterion variables were three ($0.05/3=.017$). A post hoc analysis was not necessary due to the non-statistically significant results.

Hypothesis Two also sought to determine the statistical differences in the conceptualisation of the research-teaching nexus with regard to the ranks of faculty. To test this hypothesis, a one-way between groups MANOVA was performed to compare the mean scores of the conceptualisation of the teaching-research nexus regarding the ranks of faculty. The predictor variable was *ranks of faculty*. The criterion variable was conceptualisation comprising knowledge currency conceptualisation, scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

In order to search for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, initial assumptions were also performed, without any violations noted. In calculating for the practical significance, Cohen's *d* was used for the computation. Moreover, a separate univariate ANOVAs were performed on each of criterion variables using Bonferroni adjusted alpha level of .017 since the criterion variables were three ($0.05/3=.017$). A post hoc analysis performed to determine differences in scholarship-oriented conceptualisation regarding ranks of faculty since the univariate test showed a statistically significant difference in scholarship-oriented conceptualisation in terms of ranks of faculty.

Hypothesis Three further sought to determine the statistical differences in the conceptualisation of the research-teaching nexus with regard to students' academic level. To test this hypothesis, a one-way between groups MANOVA was completed to compare the mean scores of the conceptualisation of the teaching-research nexus regarding students' academic level. The predictor variable was students' academic level. The criterion variable was conceptualisation comprising knowledge currency conceptualisation,

scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

To search for normality, preliminary assumption analysis was also performed. On the basis of these observations, it can be inferred that the conceptualisation information are ordinarily distributed. In addition to the normality assumption, homogeneity of variance-covariance matrices was tested. In calculating for the practical significance, Cohen's d was used for the computation. The analysis showed a Bonferroni adjusted alpha level of .017 since the criterion variables were three ($0.05/3=.017$). A post hoc analysis performed to determine differences in curriculum-oriented conceptualisation regarding students' academic level since the univariate test showed a statistically significant difference in curriculum-oriented conceptualisation regarding students' academic level.

Hypothesis Four sought to determine differences among the ranks of faculty with regard to their *level of integration* of research into teaching. To test this hypothesis, one-way MANOVA was performed to liken the mean scores of ranks of faculty with regard to their *level of integration* of research into teaching. The predictor variable was ranks of faculty, which has four levels: Assistant lecturer, Lecturer, Senior lecturer and Professor. The criterion variable (levels of integration) is made up of research-led, research-oriented, research-based and research-tutored.

In light of these outcomes, it very well may be reasoned that the data on levels of integration were normally distributed. Separate univariate ANOVAs were performed on each of criterion variables using Bonferroni's adjusted alpha level of .013 since the criterion variable had four levels ($0.05/4=.013$). A post

hoc analysis performed to determine differences in research-based and research-tutored levels of research integration into teaching since the univariate test showed a statistically significant difference in research-based teaching in terms of ranks of faculty.

Hypothesis Five also, sought to determine differences among the gender of faculty with regard to their *level of integration* of research into teaching. To test this hypothesis, one-way MANOVA was performed to liken the mean scores of gender of faculty with regard to their *level of integration* of research into teaching. The predictor variable was gender of faculty, which has two levels: male and female. The criterion variable (levels of integration) is made up of research-led, research-oriented, research-based and research-tutored. A post hoc analysis was not performed due to the non-statistically significant results.

Hypothesis Six used chi-square to find out whether differences exist in students' research experience across levels of tertiary education. In other words, the analysis was done to examine how students' research experience is influenced by their level of study. Four levels (Undergraduates, Research masters, Non-Research masters and Doctoral students) were involved. The dependent variable was students' research experience, which was dichotomous and continuous. It is important to establish here that students' research experience is the composite of all the activities that gives the student research exposure, hence, conceptualised as one variable, however, because the responses were treated dichotomously (YES or NO), and both the dependent (research experience) and independent (students' level of study) variables were

categorical, Chi-square analysis was appropriate. The chi-square utilised a 2 by 2 comparison matrix where the research experiences of undergraduate students were compared with that of non-research masters students, while a comparative analysis was also made between PhD and research masters students (M.Phil).

Qualitative data analysis

In qualitative research, data interpretation includes translating raw interview or documentation data into conclusions by assembling sense of text or pictures (Creswell, 2009; Patton, 2002). Even so, qualitative data analysis does not have a single right way, but the need to be rigorous is one of the essential aspects in making efficient information scrutiny (Koshy, 2010). For the purpose of this study, information were investigated utilizing the reflexive thematic analysis (Braun & Clarke, 2006) grounded in the deductive approach. The most effective method for interpretation of the data for this research was called a deductive approach as information from the interview were coded dependent on the foreordained themes produced from literature review. As per Menter, Elliot, Hulme, Lewin and Lowden (2011), the initial codes would depict research aims, questions and relevant principles if a researcher tries to investigate and evaluate theories (deductive) (p. 145). The response to the research questions may thus be achieved by using a deductive method.

The coding method is very important for deductive analysis because comparisons, categorisations, explanations, definitions and integration define patterns and concepts in the data (Ezzy, 2002; Copper, 1998). Such a method produces meaning by analyzing codes for overlaps from text data, as decreasing and crumpling codes into large themes (Creswell, 2008) and thereby narrowing

data into smaller and more reliable themes (Creswell, 2008) (Creswell, 2003). For this situation, to code each interview transcript thematically, the deductive method was used.

For this study, I used the guidelines made available by Braun and Clarke (2006) to undertake reflexive thematic analysis. As used in this research, the steps for coding and reviewing interview details and documentation are depicted as follows:

Preparation of data: In this initial stage, for the unprocessed information to be manageable to analysis, I extensively listened to the raw data and eventually transcribed them.

Familiarity with the data: In this stage, after going through all the 16 transcripts many occasions, I engulfed myself with data to obtain an overall understanding of the material and to understand its general impression. To ensure that I received correct data and transcripts, I also corroborated those transcripts with the field notes I took during the interview phase.

Interpreting the data: I coded the themes thematically for this stage by constructing tree nodes from the interview transcripts with hierarchical structures. Initially, I created initial codes reliant on themes drawn from the general notions of the research-teaching nexus defined from a deductive point of view in the study's literature review and research questions. I then selected one transcript of choice, found its significance and coded it as per the original codes. In the process of perusing the transcripts, I have also inserted fresh codes arising from transcripts that contribute to the study emphasis. At this point, I was open to the prospect of addressing the research questions under review about the nexus that was potentially important. By establishing another level of

node for sub-themes, repeated patterns of individual instances, whether a name, an expression or a sentence, were critically analysed and coded and applied to the tree node. For all the 16 transcripts, the method of coding by defining text fragments and giving a code word was used the same way. The codes were then clustered into examples to give a response to questions about the theme. This included the recognition of data and the generation of data codes leading to research questions.

Verifying the data: I cross-checked the coding with my superiors of all the 16 transcripts for the purpose of data coding authentication. Also, to acquire the validity of the examination, I put a great deal of consideration on research truthworthiness by member checking, bracketing and triangulating the data.

Representing the data: Caution was taken not to mix up the data. I made sure data collected on a particular research question or hypothesis supported that particular research question. Thereby, avoiding data misrepresentation. Detailing the process, the data reduction techniques (Miles & Huberman, 1984) employed in this qualitative analysis involved matrix construction and concept clusters which were utilised to build a complete picture of the beliefs expressed and views held by the participants. In order to create a composite image without compromising the essence of each individual interview, the research tried to distinguish main 'themes' by clustering the thoughts and problems shared. Interrelationships, parallels and distinctions were then sought. Possible trends pertaining to managerial level and/or broad disciplinary membership were investigated for any discrepancies. An effort was made in the review to prevent relying on, or overweighting, the one-off, novel or drastic view. The opinions expressed and those cited were chosen to be reflective of the opinions of the

participants. To ensure confidentiality, all participants were identified by pseudonyms such as L1, L2, L3 for lecturers and RM 1, RM 2 for research master's students; UGD 1, UGD 2 for undergraduate students; and PhD 1, PhD 2 for Doctoral students. I used the steps proposed by Creswell (2002) in qualitative data analysis such as: Via reading through transcripts and drafting memos, tentative exploration of the data; coding the data by segmenting and marking the text; utilizing codes to create themes by aggregating related codes together; linking and interrelating themes; and creating a plot.

The information examination likewise elaborate developing an in-depth account of each of the thematic areas under investigation. During the analysis, I situated the research-teaching nexus within its context to enable me describe the themes identified with the particular exercises and circumstances associated with the link between research and teaching (Creswell & Maitta, 2002). This analysis was rich and thick in the unique circumstance or setting wherein the nexus introduces itself (Merriam, 1998). I presented a thorough narration of the relation on the basis of this study, using either an intricate viewpoint on certain occurrences, chronology, or significant events accompanied by a thick up-close description. The latter approach was used in this case to provide further clarity into the connection among research and teaching in Ghana's Business Education context.

The research was conducted at two stages depending on the study design: both within each case and through the cases (Stake, 1995). Analysis of these data may be a comprehensive analysis of the whole case or an integrated analysis of a single feature of the case (Yin, 2003). First, each case of the chosen participants was analysed for themes in this analysis. Then, for themes that are

either popular or distinct, all the cases were examined. This demonstrated the degree to which the recognized latent and observed patterns have comparable or distinctive impact on the investigation participants as identified with their conceptualisation and practice of the research-teaching nexus. Finally, I deciphered the importance of the derived themes and patterns and reported the “lessons learnt” (Lincoln, & Guba, 1985).

Ethical Considerations

Ethical clearance was sought from the Institutional Review Board (IRB) of the University of Cape Coast. As part of the process leading to the data collection, issues about educated consent, accessing and acknowledgment in the research setting, protection, obscurity, and classification arrangements were submitted to the IRB for clearance in order to enable me go on ahead with the actual data collection. A cover letter was attached to the instrument to furnish the participants with the vital data needed to respond to the items. To ensure that no participants felt coerced, they were given the chance to indicate their willingness to participate in the research.

Further, as Saunders, Lewis and Thornhill (2007) suggest, the participants were pre-informed that the research report would be published and could be accessed in the public domain. However, the identity of each participant would never be revealed, hence, no risk in taking part in the study. Lastly, voluntary participation was assured in this study and that the data collected from the participants were treated with the utmost confidentiality and anonymity to help protect respondents’ identities. Also, member check was done to ensure that the true record of the qualitative data was actually captured and analysed.

To gain access to the various public universities in Ghana selected for the study, an introductory letter attained from the Department of Business and Social Sciences Education, University of Cape Coast, was presented to the various Offices of the Registrar of these universities to seek permission to administer the questionnaire and conduct the interviews as well. The purpose and intent of the research was indicated in the letter. Individual faculty members were contacted for their consent through a follow-up to the introductory letter.

As part of guaranteeing data security, the raw data were kept in a locker with a key for safety, and for the processed data, they were stored on a google drive with a password. Only myself and my supervisors have access to the data. Data would be saved for some years after culmination of this examination and would then be subsequently shredded.

Chapter Summary

This chapter deliberated the methodological perspectives required to complete the study. The research paradigm for the study was the pragmatism which allowed for the combination of several approaches for research inquiry in investigating a phenomenon. The sequential explanatory design used for the study was comprehensively dealt with in this chapter where every aspect of this chapter was organised sequentially. In addition, the chapter justified the use of the chosen instruments which helped in collecting both qualitative and quantitative data. The various processes of analysing the data were also discussed coupled with how factor analysis was conducted to strengthen the self-developed questionnaire. Last, but not least, indicators for measuring research productivity and teaching effectiveness were provided.

CHAPTER FOUR

RESULTS AND DISCUSSION

Overview

The study investigated the research-teaching nexus in terms of research integration into teaching within the context of Business Education in public universities in Ghana. The purpose was to establish how Business faculty members integrate research into their teaching in the universities. The study adopts the sequential explanatory mixed methods design for purposes of development and expansion. It is worthy of note that the point of interface for the quantitative and qualitative results occurred at the discussion of results section, where the qualitative findings were used as a follow-up to explain and substantiate the quantitative results in this chapter. The connecting strategy of data integration was used to link the two datasets.

The population for the study constituted all Business Education students and faculty members in two public universities in Ghana (UCC and UEW) for the 2018-2019 academic year. The number of students and faculty members (those who teach the business education students) is 1071 and 71 respectively. The multi-stage sampling strategy was applied in selecting a suitable sample for the study. First, the disproportionate stratified sampling technique was used to determine the sample from the various strata of which the stratification variables were institutions and programmes. However, all the postgraduate students in Business Education were engaged in the study due to their relatively small number. In all, a sample of 400 Business Education students, comprising 244 undergraduates and 156 postgraduates were selected for the study.

Nevertheless, a valid quantitative data was obtained from 367 Business Education, constituting a 92% ($367/400*100$) response rate for the students and a 73% ($52/71*100$) response rate for faculty members. During the qualitative phase, the criterion sampling (typical case) technique was used to select eight faculty members across the ranks and eight students across all levels.

Construct validity was established through Principal Component Analysis (PCA). In terms of data analyses, the quantitative data were analysed using inferential statistics (i.e. one-way repeated measures ANOVA, MANOVA, Chi-square) and descriptive statistics (i.e. means and standard deviations, as well as, frequencies and percentages), while the qualitative data were analysed thematically using the reflexive thematic analysis. In addition, the questionnaire was substantiated with semi-structured interview for both lecturers and students across all ranks and levels of study respectively.

This section is organised systematically by presenting the demographic characteristics of respondents (both faculty members and students), followed by the main results of the study which were presented within the doctrines of the sequential explanatory design. To be more precise, the quantitative results were first reported and were immediately followed by qualitative results using the connecting strategy of data integration. This was then followed with the discussion where the two datasets were integrated. The penultimate sub-section of this chapter was the chapter summary.

Results of the Study

This sub-section presents the demographic characteristics, as well as, the main results organised based on research questions and hypotheses. The characteristics of the respondents are presented as follows:

Characteristics of Respondents

The characteristics of respondents were in terms of sex, rank, job type, qualification, and level of study. Table 8 displays the characteristics of both faculty members and students.

Table 8: Characteristics of Respondents

Variable	Subscale	Freq.	%
Sex of Lecturers	Male	40	76.9
	Female	12	23.1
Rank of Lecturers	Assistant lecturer	7	13.5
	Lecturer	26	50.0
	Senior Lecturer	17	32.7
	Professor	2	3.8
Job Type of Lecturers	Full-time	49	94.2
	Part-time	3	5.8
Qualification of Lecturers	MPHIL	23	44.2
	PHD/DED	29	55.8
Sex of Students	Male	201	54.8
	Female	166	45.2
Level of Students	Undergraduate	211	57.5
	Research Masters	63	17.2
	Non-research Masters	65	17.7
	PhD	28	7.6

Source: Field Data (2019)

Table 8 reveals that more than three-quarters of faculty members involved in the study are males (n = 40, 76.9%) relative to their female (n = 12, 23.1%) counterparts. The implication is that Business Education faculty members is male dominated which reflects the relatively, larger number of male faculty members compared to their female counterparts in higher education. In addition, men dominate the teaching of Business courses in institutions of

higher learning than their female colleagues as the extant literature reveals. Supporting this assertion on the gender disparity, Taylor (2007) claims that males are noted to have more years of schooling leading to reaching the upper levels of education relatively to their female counterparts. Though, this could not be universally applicable. However, within the context of this study, it could, to a larger extent, explain the relatively higher number of male Business faculty members relative to their female counterparts.

Out of the various ranks of faculty, a half of them ($n = 26, 50.0\%$) are at the rank of lecturer, followed by the rank of senior lecturers ($n=17, 32.7\%$). Assistant lecturers ($n=7, 13.5\%$) were marginally lower than senior lecturers in terms of number. However, the least among the ranks of faculty who participated in the study were professors ($n=2, 3.8\%$). Most of the faculty members who participated in the study are in their earlier career stages preparing themselves to soar higher in their career. This revelation corroborates Taylor's (2007) assertion that a chunk of the academic staff is in their mid-career in terms of age and experiences yearning to progress to their peak. He further indicates that many of the working force are in the middle age group known as their youthful stage.

From Table 8, the majority ($n = 49, 94.2\%$) of the faculty members are full-time lecturers. However, few 3(5.8%) of the faculty members execute their task on part-time basis. Therefore, the disposition of the faculty members on the research-teaching nexus is likely to be a true state of affairs since almost all the members are full-time workers obliged by institutional policy framework to commit much time to researching and teaching. This creates the impression that most faculty members have committed and devoted their entire career towards

teaching at the higher level. Commenting on this, Brew (2013) postulates that most academics are full-timers and that they devote their time, effort and competencies to their professional development, as well as, the reputation of the institutions they serve. On the other hand, part-timers are more likely to have diverted allegiances and loyalty since they serve more than one institution.

The majority (n = 29, 55.8%) of the faculty members involved in the study have the ideal qualification (PhD) required of faculty members to teach in higher education, with less than half (n = 23, 44.2%) having only the bare minimum qualification (M.Phil). Each faculty member has therefore, undertaken some research-related programme (at least, an M.Phil). which had given them some level of exposure and experiences about research to enable them integrate these research experiences into their teaching expectedly. It was from this point of view that Buckley (2011) intimates that every institution of higher learning has its own appointments and promotions criteria that stipulate that any academic who is appointed to assume a faculty position must meet the minimum qualification requirements as enshrined in that institution's policy document. And that every academic who is appointed must be made to undergo a rigorous appointment process in order to establish the credibility of such faculty member. A cursory scan through the qualification of most university lecturers confirms that most of them had met the minimum requirements for the appointment as an academic.

In terms of sex of students, more than a half (n = 201, 54.8%) of the students who took part in the study were males, while less than a half (n = 166, 45.2%) were females. These numbers reflect the specific gender of students who are interested in Business programmes as shown in prior studies. Some earlier

studies found that more male students are interested in reading Business programmes relative to their female counterparts who preferred other subject disciplines other than Business studies. Brock (2010), therefore, opines that more male students are interested in reading Business programmes than their female counterparts which reflect the density of males in the corporate world relative to their female counterparts.

Regarding the level of study of students, twice (n = 211, 57.5%) the figure for students who took part in the research were undergraduate students. Almost the same number of research masters' (n = 63, 17.2%) students who partook in the study were the same as non-research masters' (n = 65, 17.7%) students. Obviously, fewer (n = 65, 17.7%) PhD students partook in the study since there are relatively fewer PhD candidates studying in the Ghanaian universities. This is attributed to the recent developments in Business Education in Ghana, and the fact that there are fewer Business Education programmes coupled with the relatively, fewer number of Business Education programmes at the postgraduate level in Ghanaian public universities. It is important to point out that since most of the faculty members who took part in this study teach at the undergraduate level, it is expected that these undergraduate students would be better positioned to provide accurate responses on the link between research and teaching within the context of Business Education in Ghanaian public universities. The main results of the study are presented as follows:

Main Results

The main results of the study are presented based on the research objectives and questions. Essentially, the Research Objectives/Questions One to Five were analysed using frequencies, means and standard deviations. These

analyses were done based on a five-point likert-type scale used in the survey and interpreted as follows: Strongly Agree-5, Agree-4, Uncertain-3, Disagree-2, Strongly Disagree-1. These calibrations are interpreted as a mid-point of 3 which is used as the baseline for comparison implies that, a mean value above 3 indicates that most of the respondents were in agreement with the statement. Conversely, a mean value less than 3 shows that most of the respondents were in disagreement with the statement. The results based on each research objective is presented as follows:

How Students and Faculty Conceptualise the Relation among Research and Teaching in Public Universities

Research Question One sought to assess how lecturers and students conceptualise the relation among research and teaching. The justification for this research question stems from the numerous and divergent meanings ascribed to the relation among research and teaching by several scholars and the fact that previous studies demonstrated and prescribed different interpretations attributed to the research-teaching nexus by faculty members, students and other stakeholders in academia. This has led to varied interpretations and representations of the link between research and teaching.

Quantitative Results

In order to find out the conceptualisation of the relation among research and teaching, means and standard deviations were used to analyse the data collected, after a principal component analysis had been performed and three components extracted to symbolise the conceptualisation (knowledge currency, scholarship oriented and curriculum oriented conceptualisations). Table 9

shows the quantitative results for the conceptualisation of the research-teaching nexus from the perspectives of both lecturers and students.

Table 9: Students' and Lecturers' Conceptualisation of the Link between Research and Teaching

Conceptualisation	Students		Lecturers	
	Mean	SD	Mean	SD
Knowledge Currency	3.88	.66	3.85	.76
Scholarship Oriented	3.72	.69	3.71	.66
Curriculum Oriented	4.07	.69	4.11	.44
Conceptualisation	3.87	.55	3.87	.48

Source: Field Data (2019)

NB: The breakdown for these constructs in terms of the mean and standard deviation figures for individual items forming the constructs have been provided at the appendix section of this thesis (see APPENDIX G).

From Table 9, both lecturers ($M=4.11$, $SD=.44$) and students ($M=4.07$, $SD=.69$) had high curriculum-oriented conceptualisation of the relation among research and teaching. However, regarding this conceptualisation, the lecturers' responses were more homogeneous compared to those of the students. Homogeneous implies that the responses are closely similar. This is manifested when these lecturers indicated that they understood the relation among research and teaching as promoting lifelong learning in students through research to improve practice ($M=4.17$, $SD=.80$). The lecturers further indicated that they understood the link as researching about teaching and learning that informs and evaluates curriculum development ($M=4.07$, $SD=.94$), as well as making explicit the nature of research for knowledge development ($M=3.97$, $SD=.67$). It appears, therefore, that lecturers tend to agree more on the fact that the relation among research and teaching is more associated with the curriculum than any other educationally-related matter. In another vein, lecturers' efforts of linking

research to teaching focuses more on addressing issues related to the curriculum than any other educational matter.

Also, both lecturers ($M=3.85$, $SD=.76$) and students ($M=3.88$, $SD=.66$) had strong knowledge currency conceptualisation of the link between research and teaching. Under knowledge currency conceptualisation, they described the research-teaching nexus as lecturers being updated and conducting research to remain abreast of current disciplinary knowledge ($M=4.06$, $SD=.81$). They further described the nexus to be a situation where lecturers integrate their own research into their teaching to give currency to knowledge ($M=3.94$, $SD=.88$), as well as, a practice whereby lecturers' research interests inform the development of teaching and learning resources ($M=3.63$, $SD=.90$). This high knowledge currency conceptualisation appears to stem from the fact that the research-teaching nexus, from the perspective of lecturers and students, ensures the update of existing knowledge since research findings augment the development of new knowledge discovered through research.

As shown in Table 9, lecturers ($M=3.71$, $SD=.66$) and students ($M=3.72$, $SD=.69$) described the connection between research and teaching to be scholarship oriented. Based on this conceptualisation, these lecturers described the nexus as encouraging and motivating students to do research ($M=4.35$, $SD=.73$), thereby, promoting lifelong learning in students through research to improve practice ($M=4.17$, $SD=.80$). They further conceptualised the nexus as the scholarship of teaching integrated into research supervision ($M=3.69$, $SD=.94$) coupled with visiting academics within the community of practice acting as resource persons ($M=3.61$, $SD=.95$). Thus, the research-teaching nexus is likely to be enhanced, thereby, promoting reflective practices in

teaching to augment meaningful and lifelong learning. It is interesting to find out that there was a relatively higher level of homogeneity for the lecturers' responses on the overall conceptualisation than students. This indicates that lecturers tend to agree more on the conceptualisation of the link than the students. It is my strong conviction that the strong conceptualisation by both lecturers and students implies that both lecturers and students have strong beliefs that there is some level of interconnection and symbiotic connection between research and teaching and that both are capable of influencing each other to promote meaningful and effective learning outcomes.

Qualitative Results

The themes derived from the interviews on the conceptualisation of the relation among research and teaching are espoused below:

Knowledge currency conceptualisation

The qualitative results obtained from the interview resonate in many respects with the quantitative results on the conceptualisation of the research-teaching nexus. This is attributed to the fact that the vivid descriptions given by the participants (both lecturers and students) manifest their strong conviction about the research-teaching nexus. For instance, one of the lecturers intimated that:

If not for research, teaching wouldn't have been possible. The reason for saying this is that research informs content, methods, and even resources for teaching. I, for instance, constantly update my lecture notes through researches in my subject discipline and likewise, other lecturers, I believe so. So, I strongly believe that research has a great deal of role to play in teaching (L2).

A research master's student had this to say:

I believe research has a link with teaching because, our lecturers update their lecture notes through literature. Through this, the curriculum is updated. Secondly, they refer us to several authors linked to the content they are teaching us. At times, they even give us assignments to critique some of the research findings of some authors (RM 2).

Related to this assertion, a PhD student echoed that:

My understanding of the link is simple: research complements the update of existing knowledge. Lecturers get their lecture notes from compiled literature findings. Also, research informs some of the methodological basis of teaching. To me, research promotes effective teaching and teaching also informs research (PHD 1).

In all, the views expressed by the lecturer and students give a clear manifestation of knowledge currency conceptualisation obtained from the quantitative phase of this study. These evidence from the interview participants explicitly demonstrate that the research-teaching nexus is conceptualised by both lecturers and students as knowledge currency as a way of updating knowledge to enhance curriculum content.

Scholarship oriented conceptualisation

Scholarship oriented conceptualisation emerged out of the interview when the lecturers indicated that they research about teaching and learning with the view to modifying their teaching techniques to suit learners. Therefore, they embark on what is technically known in the teaching parlance as reflective teaching. Illustratively, one of the lecturers opined that *"I normally embark on reflection after every lecture to see how best I can augment students' learning*

processes and understanding” (L1). This scholarly-oriented conceptualisation can be explained as a situation whereby faculty members review their practices with the view to modifying these practices in the learning context.

Subject disciplines influence the teaching-research nexus

The research-teaching nexus appear easy for certain subject disciplines. These subject disciplines cannot be ignored in relation to the research-teaching nexus. One of the lecturers intimated that “...*practically-oriented subjects are more prone to linking research to teaching than liberally-oriented subjects. So, the link is not easily applicable in all subject areas... (L3)*”

This, therefore, suggests that faculty members in certain subject areas relatively incorporate research into teaching than others all because of the nature of the subject discipline within which they find themselves and how they have described the research-teaching nexus over the years based on their experiences and level of exposure.

Uncertainties of the research-teaching nexus

In expansion, the qualitative results revealed some uncertainties regarding their conceptualisation. These uncertainties were made manifest in the interview when one faculty member indicated that:

My understanding of the link between research and teaching is not so clear, though I believe the link exists. However, until there is an intentional and voluntary effort and commitment to link the two most important roles of an academic the goal of the link is not likely to be realised. The reason is that the core mandate of an academic is to teach, research and engage in community service, but not a combination of these activities. The university’s policy does not specify a blend (L1).

Buttressing the same point, one of the students expressed the sentiment that

at times, I hear of my research!, my research! mentioned by some of my lecturers, but do not really understand what it means. Others also refer us to books written either in the bookshops or in the library. So, I believe research has something to do with teaching and learning, if not, our lecturers wouldn't be mentioning them in their teaching (UGD 2).

The qualitative findings on the conceptualisation validate the results and notion that several stakeholders have different connotations and representations when it comes to their conceptualisation of the link between research and teaching. In sum, it was found that both lecturers and students conceptualise the research-teaching nexus to be knowledge currency, scholarship oriented and curriculum oriented.

Faculty's Level of Integration of Research into Teaching

Research Question Two sought to determine the extent to which lecturers integrate research activities in the course of teaching and learning in the university. The justification for this research objective is that universities want their lecturers to effectively integrate research into their teaching to a higher extent across all levels of study due to the inherent benefits research has on teaching. However, it appears this proposition is not apparent in the universities' policy documents. Similarly, some studies on the nexus have indicated that some faculty members are at the level of research-led and research-oriented, while others are at the research-based and research-tutored levels of integration. Consequently, different faculty members integrate research and teaching in the manner they deem fit and in varying degrees

according to available resources and capabilities. Hence, there is the need to examine the level of integration of research into teaching in Business Education and offer suggestions to enhance their level of integration.

Quantitative Results

In order to find out the level of integration, mean and standard deviation were used to analyse the collected data based on a five-point likert-type scale already established above. To further establish the exact level of integration of research into teaching, mean of means for each of the four levels (research-led, research-oriented, research-based and research-tutored) was extrapolated. The level with the highest mean of means score indicated that that was the predominant level of integration. Table 10 projects the various levels of integration exhibited by faculty members.

Table 10: Level of Integration of Research into Teaching

Integration Level	Lecturers		Level
	Mean	SD	
Research-led	3.99	.78	High
Research-oriented	3.59	.82	High
Research-based	3.56	.99	High
Research-tutored	3.54	.89	High

Source: Field Data (2019)

NB: The breakdown for these constructs in terms of the mean and standard deviation figures for individual items forming the constructs have been provided at the appendix section of this thesis (see APPENDIX G).

Table 10 reveals the levels of research integration into teaching. Prominent among these levels is research-led teaching ($M=3.99, SD=.78$). Thus, faculty members highly engage students at the research-led level of research integration into teaching. Under research-led teaching, the faculty members

indicated that they design learning activities around useful contemporary research findings ($M=4.31$, $SD=.47$), and place the latest research findings in the context of their respective disciplines ($M=4.29$, $SD=.57$). The results also indicated that the second level of research integration into teaching was research-oriented teaching ($M=3.59$, $SD=.82$). Under research-oriented teaching, the lecturers indicated they place emphasis on the processes by which knowledge is produced during lessons ($M=4.06$, $SD=.73$), coupled with the act of infusing teaching with the values of researching ($M=4.00$, $SD=.63$).

Also, the third level of the nexus adopted by the lecturers of Business Education was research-based teaching ($M=3.56$, $SD=.99$). Lecturers indicated they practice research-based teaching by designing their lessons to encourage active engagement of students as problem solvers ($M=3.96$, $SD=.84$). On research-based teaching, the lecturers further indicated they encourage their students to undertake independent projects as a part, or whole of a course ($M=3.79$, $SD=.98$) and they design their lessons to enable students carry out research to facilitate their learning processes in the university ($M=3.62$, $SD=1.03$).

The last and most advanced level of integration of research into teaching was research-tutored. Lecturers' practice of research-tutored teaching was reflected by lecturers engaging their students in critical examination of any knowledge they come across ($M=3.71$, $SD=.98$). They also encourage their students to contribute to research papers and conference posters ($M=3.73$, $SD=1.16$), and they also give students the opportunity to critique research findings presented to them ($M=3.44$, $SD=1.16$).

To delve deeper into the level at which faculty members integrate research into teaching within the context of Business Education, a one-way repeated measures ANOVA was conducted to ascertain the differences in the mean scores of the levels of integration of research into teaching among faculty members. The results are presented in Table 11.

Table 11: Tests of Within-Subjects Effects for Levels of Integration

Source		df	Mean Square	F	Sig.	Partial Eta Squd.
Levels of Integration	Sphericity Assumed	3	4.930	19.392	.000	.275
	Greenhouse-Geisser	2.539	5.825	19.392	.000	.275
	Huynh-Feldt	2.683	5.512	19.392	.000	.275
	Lower-bound	1.000	14.789	19.392	.000	.275
Error	Sphericity Assumed	153	.254			
	Greenhouse-Geisser	129.480	.300			
	Huynh-Feldt	136.830	.284			
	Lower-bound	51.000	.763			

*Significant, $p < .05$; Source: Field Data (2019)

As shown in Table 11, Mauchly's test indicated that the assumption of sphericity had been violated, $\chi^2(3) = 4.930, p < .001$. Hence, the Greenhouse-Geisser statistic or Huynh-Feldt statistic can be used to correct the degrees of freedom. The epsilon statistic of sphericity was greater than .75; therefore, Field (2009) recommends that the Huynh-Feldt statistic in the tests of within-subject effects should be used to establish statistical significance. Using the Huynh-Feldt corrected estimates of sphericity ($\epsilon = 5.512$), the results show that the differences in the levels of integration are statistically significant, $F(2, 68) = 19.392, p < .001$. The magnitude of the partial eta squared (.275) was moderate following the guidelines provided by Cohen (1988). A post hoc multiple

comparisons were then conducted through the Bonferroni’s test. The results are presented in Table 12.

Table 12: Pairwise Comparisons for Levels of Integration

(I) Integration Level	(J) Integration Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	.589*	.095	.000	.399	.780
	3	.617*	.101	.000	.414	.819
	4	.638*	.117	.000	.403	.872
2	1	-.589*	.095	.000	-.780	-.399
	3	.027	.087	.755	-.147	.202
	4	.048	.110	.663	-.172	.268
3	1	-.617*	.101	.000	-.819	-.414
	2	-.027	.087	.755	-.202	.147
	4	.021	.079	.793	-.138	.180
4	1	-.638*	.117	.000	-.872	-.403
	2	-.048	.110	.663	-.268	.172
	3	-.021	.079	.793	-.180	.138

*Significant, $p < .05$
 Source: Field Data (2019)

As revealed in Table 12, the pairwise comparison results show that differences among the various levels of integrating research into teaching is statistically significant. Specifically, research led ($M = 4.18$) was statistically higher than research oriented ($M = 3.59$), research based ($M = 3.64$) and research tutored ($M = 3.54$). No significant differences were found among research oriented ($M = 3.59$), research based ($M = 3.64$) and research tutored ($M = 3.54$). The possible conclusion is that faculty mostly integrate research into teaching at the level of research-led teaching as compared to the other levels of integration.

Qualitative Results

The qualitative results corroborated the survey results in that all the observations made by the lecturers interviewed, in one way, or the other, described the activities they engaged in to integrate research into their teaching. Most of the items outlined fell under the domain of research-led teaching, which serve as the first level of integration. The views provided by the lecturers about the level at which they integrate research into teaching have been presented under the themes as follows:

Dissemination of research findings

Dissemination of research findings is where lecturers merely communicate their research discoveries to students. There is no actual involvement of the students in the research process. This means that students merely get to know such findings during the teaching process. Some of the lecturers indicated that:

I involve my students in research by trying to relate contemporary findings in Business Education to the specific courses they teach by citing relevant examples using recent events in the world of business (L2).

...students also benefit from updated lecture notes from current literature in Business (L5).

The lecturers obtained most of the information from Business journals and articles. These obtained information facilitated the teaching and learning process, though, the research-teaching nexus is observed at the research-led.

Undergraduate students' unpreparedness for higher level of the research-teaching nexus

In an attempt to substantiate the lower level at which faculty integrated research into teaching, the faculty members indicated that undergraduate students were not ready. This seems to prevent them from involving undergraduate students in the actual process of the research-teaching nexus.

This was made manifest when some of the faculty members revealed that:

I only teach at the undergraduate level. For them, there is nothing like research until they are in their third year to take Research Methods as a course, and subsequently, as a partial fulfilment for the award of the Bachelors' Degree, they undertake a mandatory project work. Apart from this, the only way I expose my students to research is asking them to find some information and come and make some presentation as part of their assessment (L4).

I recently taught Money and Banking in one of my courses. So, I had to research the recent minimum capital requirement for banks, insurance and investment brokers to make sure am updated in my delivery of lessons. Sometimes, I also teach research methods, techniques and skills implicitly within courses by including small scale research activities into assignments, as well as, exposing students to the processes underpinning certain theoretical constructs (L2).

The alignment of the curriculum content to current knowledge was important to the faculty members. Therefore, involving the students could impede the rate at which they wanted to update the curriculum. Hence, searching for their (faculty members) own information to augment the

curriculum was their priority. This explains why research-led dominated the level of integration. Most of these lecturers teach at the undergraduate level. At the level, research is detached from students. This was noted in the words of one participant that

for the undergraduates, nothing like research exists in their dictionary. At certain times, I indirectly involve some of my postgraduate students in conducting my personal research. At other times, I design my lessons to motivate my students to learn through direct involvement in research and self-directed reading (L7).

Where research-based level of integration is observed, it occurred at the postgraduate level. The postgraduate students were considered ready for the high level of research-teaching nexus. This seems to suggest that research is for the postgraduates, not for undergraduates. As intimated by some faculty members,

I teach and assess students' methods resembling research procedures in their disciplines. For instance, I expose them to some of the highly reputable journals in Business. I also give them practical hands-on assignments in the form of case studies. Last 2 years, I remember I asked them to go to any renowned Business enterprise and collect some data to enable them write mini-projects as a term paper (L8).

I extensively engage the postgraduate students, including both M.Phil and PhD in research activities such as critiquing articles, writing empirically-based term papers and actively engage my PhD students in critical thinking on some contentious issues in the discipline (L3).

Even though, research-led was mainly the strategy employed by most faculty for the integration of research into teaching, it does not mean that faculty never operated at the research-based level of integration. Few exceptional faculty members operated at the research-based level. Though, the quantitative phase of this study generally exposed a relatively low level of integration of research into teaching. However, some of the faculty members, through the interview, indicated they practise different levels of integration of research into teaching. Arguably, these faculty members might be teaching at the postgraduate levels such as the masters and PhD levels.

Linkages between conceptualisation and the level of integration

The level at which the lecturers integrated research into teaching was influenced by students' conceptualisation of the link between research and teaching. It is, therefore, not surprising when one of the faculty members indicated that:

.....they might think I am introducing foreign concepts into the content I am delivering. I believe it has to be done indirectly and intelligently for students not to be confused. (LI).

This pre-supposes that the role of research in the teaching and learning process, rather than enhancing the teaching and learning process, may distort the process if not handled properly. Therefore, faculty members would have to intentionally and tactically plan the integration process to render it more effective and beneficial with the view to promoting meaningful learning outcomes, thereby, promoting lifelong learning.

Students' Research Experience

Research Question Three sought to examine how students experience research in their learning process in the university. The justification is that students, irrespective of their academic level, experience research in varying degrees and ways. These experiences come together to give students some needed exposure to research. These research experiences are precursor to enhancing the implementation of the link between research and teaching. In other words, the students are at the receptive side of the nexus. Therefore, their experiences in research is a critical success factor in applying the research-teaching nexus to promote lifelong learning. Previous researches have also indicated that students experience research in different ways.

Quantitative results

Therefore, to find out these research experiences, students were asked to indicate against each of the research exposure indicators with either YES or NO, the applicable description. Research experience was treated as a composite whole (continuous variable). Thus, all the research experience indicators come together to define the level of research experience by a particular student. Frequency counts and percentages were used to interpret the results so that the indicator with the highest frequency count or highest percentage was deemed to have contributed more to students' research experience. The analysis was done across students' level of study (undergraduates, research masters, non-research masters and PhD students) as revealed in Table 13.

Table 13: Students' Experiences of Research in the University

Statements	Response	UGD n (%)	RM n (%)	NRM n (%)	PhD n (%)	Overall n (%)
Lecturer discuss research work	Yes	106(50.2)	18(28.6)	40(61.5)	15(53.6)	179(48.8)
	No	105(49.8)	45(71.4)	25(38.5)	13(46.4)	188(51.2)
Guest lecturer discuss research work	Yes	50(23.7)	29(46.0)	7(10.8)	8(28.6)	94(25.6)
	No	161(76.3)	34(54.0)	58(89.2)	20(71.4)	273(74.4)
Reading a research paper	Yes	120(56.9)	47(74.6)	31(47.7)	18(64.3)	216(58.9)
	No	91(43.1)	16(25.4)	34(52.3)	10(35.7)	151(41.1)
Examining Artefacts	Yes	21(10.0)	18(28.6)	13(20.0)	10(35.7)	62(16.9)
	No	190(90.0)	45(71.4)	52(80.0)	18(64.3)	305(83.1)
Attending research seminar	Yes	28(13.3)	46(73.0)	27(41.5)	16(57.1)	117(31.9)
	No	183(86.7)	17(27.0)	38(58.5)	12(42.9)	250(68.1)
Attending research conference	Yes	14(6.6)	33(52.4)	8(12.3)	13(46.4)	68(18.5)
	No	197(93.4)	30(47.6)	57(87.7)	15(53.6)	299(81.5)
Attending an exhibition	Yes	28(13.3)	22(34.9)	16(24.6)	11(39.3)	77(21.0)
	No	183(86.7)	41(65.1)	49(75.4)	17(60.7)	290(79.0)

Table 13- Continued

Participant in a research project	Yes	49(23.2)	25(39.7)	29(44.6)	14(50.0)	117(31.9)
	No	162(76.8)	38(60.3)	36(55.4)	14(50.0)	250(68.1)
Research assistant during data collection	Yes	49(23.2)	26(41.3)	13(20.0)	8(28.6)	96(26.2)
	No	162(76.8)	37(58.7)	52(80.0)	20(71.4)	271(74.9)
Contributing to a research project in anyway	Yes	77(36.5)	36(57.1)	47(72.3)	28(100)	188(51.2)
	No	134(63.5)	27(42.9)	18(27.7)	0(0.0)	179(48.8)
Contributing to a research paper	Yes	35(16.6)	17(27.0)	6(9.2)	7(25.0)	65(17.7)
	No	176(83.4)	46(73.0)	59(90.8)	21(75.0)	302(82.3)

(*UGD*-undergraduates, *RM*-research masters, *NRM*-non-research masters and *PhD students*); Source: Field Data (2019)

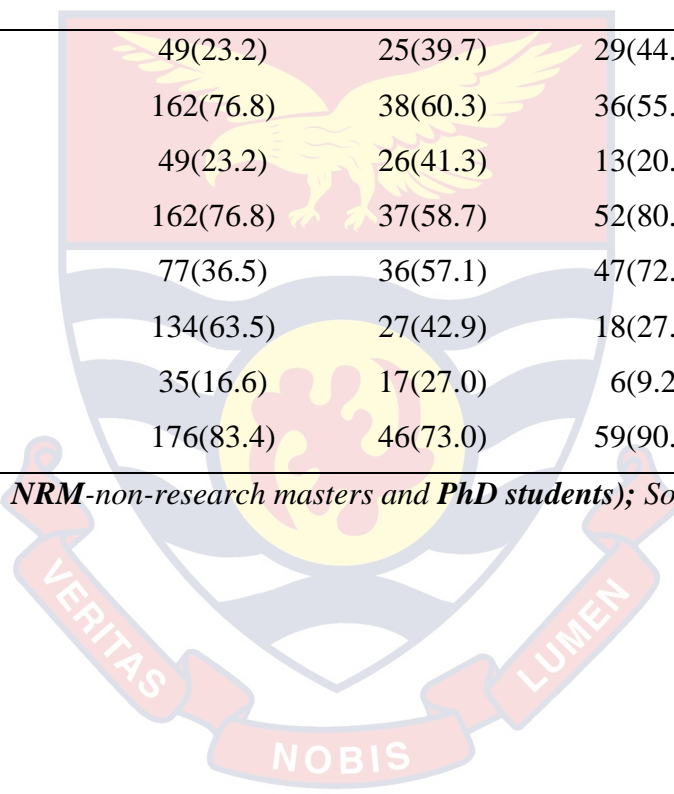


Table 13 illustrates that students across various levels reported mixed engagement with research exposure across the various levels of students' study. Mixed because they were more engaged in some of the research exposure activities than the other activities. Regarding how undergraduates (UGD) encountered research in the university, Table 13 revealed that they normally experience research through research work discussed with them by their lecturers (n=106, 50.2%) and reading research papers (n=120, 56.9%). Research Masters (RM) students' most evident encounter with research is by reading research papers (n=47, 74.6%), attending research seminars (n=46, 73.0%) and conferences (n=33, 52.4%) and contributing to research (n=36, 57.1%).

Non-research masters (NRM) students experienced research through research work discussed with them by lecturers (n=40, 61.5%) and contributing to research (n=47, 72.3%). Finally, PhD students experienced research through lecturers discussing research with them (n=15, 53.6%), reading research papers (n=18, 64.3%), attending research seminars (n=16, 57.1%), participating in research projects (n=14, 50.0%) and contributing to research in anyway (n=28, 100%).

Interestingly, all the students had divided perspectives regarding hearing their lecturers discussing about research. A little below average (n=179, 48.8%) indicated they did, while a little above average (n=188, 51.2%) indicated they did not. The least reported research exposure by the students was attending exhibitions [YES: (n=77, 21.0%), NO: (n=290, 79.0%)]. In addition, only a few (n=62, 16.9%) of the students indicated they examine artefacts as part of gathering some research experience. A vast majority of the students (n=305, 83.1%) indicated they do not attend exhibitions.

Qualitative results

Students' experience of research in the university varied across the student type (research students and non-research students). Evidence gathered from the students are presented under the theme, nature of students' research experience.

Nature of students' research experience

The qualitative results of this study revealed that both undergraduate and postgraduate students had varied experiences as far as their research experience in the university is concerned. The obvious observation made was that the postgraduate research students (RM and PhD) had more and richer experiences than the non-research students (NRM and UGD). One undergraduate participant intimated that

I experienced research through the research methods we did in Level 300 and the project work we are doing. I also read some research papers sometimes. At times, I wish I could participate in some research activity, but I don't get the opportunity (UGD 1).

Emphasising the same point, one of the non-research masters' student said that

our sandwich study is not focusing on research, though we do research as a course. I believe that I will be doing my top-up and continue to PhD. So, I am doing my best to get exposed to research deeply before I get there. Currently, I am even working on an article with one of my lecturers so that I can gain the experience to prepare me for the top-up. The last time, I helped one of them to also collect data in my school where I teach (NRM 2).

Contrary to the experiences obtained by the non-research students, the postgraduate students had relatively richer research experiences. One postgraduate student indicated that

when I get time, I usually attend some research seminars and conferences. For reading of journal articles, I read them extensively to shape my doctoral thesis and to be updated in my discipline. I also consult my supervisors anytime I need a document related to research. Last three years, I partnered with my M.Phil supervisor to come out with an article, and we published together (PhD 1).

One M.Phil student also indicated that

one of our lecturers always encourages us to attend research seminars, workshops and conferences, but won't even hear of some, unless international conferences that are not easy to attend. Rarely, do you hear of local seminars and conferences. Except for the ones organised by GRASAG twice every academic year, which I believe are not enough for a postgraduate student (RM 2).

It is also important to indicate that since gaining research experiences is a continuous learning process, most of these students interviewed on their research experiences expressed the zeal and enthusiasm to get more exposure to research during and even after their university education. Probably, they are aware of the invaluable contribution of research in education. This manifested when one participant indicated that

I believe that I will be doing my top-up and continue to PhD. So, I am doing my best to get deeply exposed to research before I get there.

Currently, I am even working on an article with one of my lecturers so that I can gain the experience to prepare me for the top-up (NRM 2).

Yearning to get more exposed to research, another postgraduate student also revealed that

for me, because of busy work schedules, I don't get time to attend conferences and seminars. What I do is I normally read research books to acquaint myself with research issues I had forgotten. At times, I call some of my colleagues and lecturers to clarify some pertinent issues on research and statistics (PHD 2).

One of the research master's students, through the interview, who demanded much from their lecturers to assist them get more exposed to research had to say that:

We expect our lecturers to sometimes bring in new perspectives by inviting resource persons such as research fellows and guest lecturers to share their expertise with us. But throughout my studies up till now, I have not yet had such an exposure, neither do my colleagues. I also expect lecturers to frequently use their personal research to make illustrations, but they don't (RM 1).

It is important to indicate that students at different levels of their education have different research experiences and exposures in the university. It can therefore be inferred from these research experiences that students offering research-oriented programmes (PhD and M.Phil) garnered their research experiences from self-initiated activities, while those offering non research-oriented programmes (M.Ed and Undergraduate) garnered their research experiences from lecturer-initiated activities.

Factors Affecting Lecturers' Integration of Research into Teaching in Public Universities

Research Question Four sought to find out from both lecturers and students the factors that affect the link between research and teaching. The justification for this research objective is that just like any other educational endeavour, there are some critical success factors that either enhance or militate against the successful adoption of the research-teaching nexus as a teaching model. Setting aside these factors have the tendency to adversely affect the positive impact the research-teaching nexus has on teaching and learning. It would be a great deception to measure conceptualisation, experiences, level of integration and impact of the research-teaching nexus without paying attention to the factors that either enhance or militate against the effective integration of research into teaching. In addition, empirical evidence on the nexus have intimated that several factors affect the link between research and teaching. However, there has been no agreement on these factors.

Quantitative results

In order to find out the factors affecting the research-teaching nexus, means and standard deviations were used to analyse the data collected. Based on the results, most of the respondents agreed on the factors affecting the compatibility of the link between research and teaching. These factors are reflected on Table 14.

Table 14: Factors Affecting the Compatibility between Research and Teaching Integration

Nature of respondents		Descriptive Statistics		
		N	Mean	SD
Lecturers	Research Productivity Stimulation	52	3.87	.60
	Research Teaching Tension	52	2.72	.69
	Empirically Based Learning	52	4.32	.42
	Research Premium Factor	52	2.56	.98
	Research Active Curriculum	52	4.05	.36
	Time Oriented Factor	52	3.70	.77
	Responsive Curriculum Factor	52	4.35	.64

Source: Field Data (2019)

NB: The breakdown for these constructs in terms of the mean and standard deviation figures for individual items forming the constructs have been provided at the appendix section of this thesis (see APPENDIX G).

Table 14 indicates the factors that affect the compatibility between research and teaching. Prominent among the factors affecting the research-teaching nexus is the responsive curriculum factor ($M=4.35$, $SD=.64$). Under the responsive curriculum factor, the respondents believed that research activity is a contributing factor to updating the curriculum within a particular discipline. Research productivity stimulation ($M=4.19$, $SD=.49$) is another critical factor that affects the link between research and teaching. Based on this factor, it is believed that the art and science of teaching stimulates and influences research, thereby, enhancing research productivity. In addition to this factor, it was indicated that some of the best research ideas have emanated from the course of teaching in a specific discipline, hence, have the tendency to affect the link

between research and teaching. Therefore, subject discipline cannot be overlooked when talking about the research-teaching nexus.

Empirically-based learning ($M=4.16$, $SD=.66$) also affect the research-teaching nexus intensively. This is attributed to the fact that, when the planet is continually evolving, faculty members participate in research. Centered on real-world experiences from training, students also love learning tasks, research and creativity, thereby, creating meaningful teaching that promotes lifelong learning. Also, the research-active curriculum ($M=4.03$, $SD=.56$) is one of the compatibility factors affecting the link between research and teaching. Under the research-active curriculum factor, it was revealed that teaching and research are mutually beneficial to each other, and that lecturers who are research-active are likely to be updated in their professionalism which enables them to be more enthusiastic. The research-teaching nexus cannot be discussed without mention of without time-oriented factor ($M=3.70$, $SD=.77$). Time factor comes into the discourse since there is a trade-off between the time faculty spend on research and time spent on teaching seen as being antagonistic to each other.

That notwithstanding, the least among the factors indicated by the respondents is research-teaching tension ($M=2.83$, $SD=.79$) factor. Under this factor, it was portrayed that the profession's influence on the curriculum creates tension if linking research to teaching. This gives the impression that the act of including a faculty member's research activities worsens an already overloaded curriculum. Therefore, at the cost of topic coverage, researchers are prone to misrepresent the program for their own study.

Qualitative results

Insightfully, the faculty members, through the interview, indicated several factors they believed hindered the integration of research into teaching. These factors are couched under the following themes:

Inadequate time

The integration of research into teaching seems constrained by time on the part of lecturers. Some of the lecturers indicated that,

time for teaching and research can also not be overlooked. We are likely to spend more time on one activity than the other. At times, my sleep suffers (L2).

Some of our colleagues who are research-conscious lecturers do not have time for their students. When students are able to book an appointment with them to go and discuss something, they rush them so much that they forget what they went to ask them about (L1).

In an event where time is created to assist in the integration of research into teaching, then that must be done at the expense of the health of the lecturer. To the extent that they have to compromise sleep, eating habits and other critical life events that can lead to health-related and other social problems. In the words of one lecturer,

... they expect us to publish, if not, we “perish”. They also expect us to teach, meanwhile, we have fixed time at our disposal. What do they expect us to do? (L4).

Research is important than teaching

It also emanated from the study that faculty members prioritise research to teaching since they believe research is more rewarding in their institutions

than teaching as reflected by credits allocated to both activities. Stemming from this, one of the faculty members postulated that

the factors are so many. Institutional rewards preserved for both research and teaching can be a contributing factor. You know the extent to which promotional criteria place too much emphasis on research relative to teaching. Unless an equal balance is placed on both important activities of an academic, lecturers are likely to focus more on publishing than teaching since publishing is key, if one does not want to perish as an academic (L6).

To further buttress the argument raised, one of the lecturers revealed that,

I believe departmental research culture is a critical factor. The reason is that if the department is able to institutionalise regular research seminars, it's likely to bring both lecturers and students together to enhance their research knowledge and skills (L3).

Integration easily respects some disciplines

Referent to discipline (field of study) as a factor affecting the compatibility between research and teaching, some of the disciplines are more easily susceptible to engaging students in research-based teaching than other subject disciplines. For instance, *the nature of the discipline is likely to affect the link. More practically-oriented disciplines are likely to promote the link and vice versa (L3).*

Perceived Impact of Research-teaching Nexus on Teaching and Learning

Research Question Five sought to assess the perceived impact of research-teaching nexus. The justification for this research objective is that just

like any other educational endeavour, there are impacts that accrue to any activity undertaking in education. Therefore, the level at which lecturers will integrate research into teaching is likely to yield both positive and adverse effect on teaching and learning outcomes in higher education, especially, universities. The empirical evidence on the nexus have indicated a great deal of impact from the research-teaching nexus if implemented in higher education.

Quantitative Results

To find out the impact of the research-teaching nexus on teaching and learning outcomes, means and standard deviations were used to analyse the data collected. Based on the results, most of the respondents were in agreement with the factors affecting the compatibility of the link between research and teaching. Table 15 presents these compatibility factors affecting the intercourse between research and teaching.

Table 15: Perceived Impact of Research-Teaching Nexus on Teaching and Learning

Status	Students		Lecturers	
	M	SD	M	SD
Intellectual Development	4.25	.68	4.33	.64
Heightens research and employability skills	4.24	.74	4.35	.62
Students’ Interest and Knowledge Development	4.14	.67	4.12	.63
Promotes relevant and functional curriculum	4.32	.61	4.12	.63
Highly differentiated university	4.06	.72	4.56	.66

Source: Field Data (2019)

NB: The breakdown for these constructs in terms of the mean and standard deviation figures for individual items forming the constructs have been provided at the appendix section of this thesis (see APPENDIX G).

Table 15 reveals the perceived impact of the research-teaching nexus in higher education from the perspectives of both faculty members and students. Prominent among the impact is highly differentiated university as indicated by the lecturers ($M = 4.56, SD = .66$), as well as, students ($M = 4.06, SD = .72$). By this, both lecturers and students indicated that the research-teaching nexus highly distinguishes one university from the other by giving it a distinctive and unique identity. This implies that the manner in which the research-teaching nexus is implemented is a true reflection of teaching and learning in the university. The way the nexus is manifested tells whether it is a research-intensive university or not. This is likely to enhance the image of the university.

The impact of the nexus is also made manifest through the intellectual development of students ($M=4.33, SD=.64$) as indicated by lecturers, as well as students ($M=4.25, SD=.68$). By this, they indicated that the link between research and teaching promotes and supports learning and teaching as a process of intellectual enquiry. The intellectual development impact also creates an experience sharing avenue among students and faculty members coupled with deepening teachers' knowledge of the subject matter.

In addition to the impact of the nexus, they revealed that the nexus heightens research and employability skills as indicated by lecturers ($M=4.35, SD=.62$) and students ($M=4.24, SD=.74$). This is attributed to the fact that the nexus develops, in students, important graduate attributes such as research skills, data gathering skills and information synthesis skills.

In furtherance, the respondents indicated that the research-teaching nexus promotes relevant and functional curriculum ($M=4.32, SD=.61$). They indicated that the nexus bridges the gap between theory and practice and

increases the opportunity for inquiry and critique. The impact of the nexus is realised through the enhancement of students' interest and knowledge development ($M = 4.14$, $SD = .67$). They described this as a situation where the research-teaching nexus is perceived as stimulating the interest and enthusiasm of the students for a course where the nexus is applied. The nexus also increases students' awareness of research methodological issues, thereby increasing their understanding of the course taught.

Qualitative Results

One cannot run away from the fact that the research-teaching has some significant impact on teaching and learning in higher education despite the different conceptions held by many stakeholders about the link. This impact are made clear in the themes and sub-themes next.

Research-teaching integration approximate abstract knowledge

The research-teaching nexus assists in facilitating teaching and learning. Commenting on the impact of the nexus on teaching and learning, one of the lecturers intimated that:

I believe the integration of research into teaching practicalises the teaching and learning process by promoting concrete and meaningful teaching and learning (L2).

Research-teaching nexus ensures creativity

In engaging students in the nexus, they are likely to learn creative skills relevant for life. This is emphasised in the words of one of the lecturers':

I believe the link serves as an opportunity to instil creativity skills in students. It also sensitises the younger learners and prepares them for the future for both post-graduate studies and employment" (L4).

Research-teaching nexus fosters collaboration

Elaborating on the role of research in teaching in higher education, research is more likely to foster such one-on-one collaboration among key players in education. The interview captured one of the lecturers saying:

I agree it fosters partnership and closer academic relationship among faculty and their students. My working with some of the students I supervise helped fostered a closer relationship which led to us publishing together and even discuss other personal life issues (L7).

Complexity of the research-teaching nexus

It would be a great ruse for anyone to think that the research-teaching nexus bestows only positive consequences on teaching and learning. However, the nexus has some adverse repercussion on teaching and learning in higher education. These are captured in the sub-themes next.

The nexus creates confusion

The complex nature of research and teaching is not independent of students learning. However, it permeates into the difficulty students encounter in their learning. Students' involvement in the process is likely to create much difficulties for them if well guidelines are not given to them. This was confirmed by one of the students when he indicated that

when the lecturer introduces complex research in teaching some of the courses, it makes things so complicated that confuse us. Research matters should be reserved for Research methods as a course for postgraduate studies (UGD 1).

Intensive research limits teaching time

The balance between research and teaching seems to create problems for academics. This is because one is not likely to engage in intensive research and have adequate time for classwork. To buttress the negative effect of the nexus on teaching and learning, another student participant reiterated that *research-active lecturers don't have time for us because they are constantly engaged in their research than teaching us (RM 2)*.

This scenario suggests that in as much as some scholars indicate that faculty's active engagement in research is likely to culminate into teaching effectiveness, others believe research is likely to take more of faculty's time likely to adversely affect their teaching and academically-related activities. Most faculty members find it very difficult to balance their two core mandates (research and teaching). Only few are able to balance the two activities to derive the utmost benefit. To reinforce this notion, one of the students signposted that

"...This is likely to lead to diversion of attention since both activities are so demanding. There is likely to be a trade-off between research and teaching in terms of the time required to undertake those activities" (PHD 1).

However, there is the possibility for getting the two activities balanced through high perseverance. This is based on efforts and strategies employed by individual academics. One of the lecturers revealed that

though, there are both benefits and drawbacks, it all boils down to how the individual academic balances these activities to promote students' learning outcomes. The link will either be beneficial or soar depending on so many factors (L6).

Conclusively, several impact have been espoused by several stakeholders through both the quantitative and qualitative modes of the data collected.

Effect of Research Productivity on Faculty Members' Teaching Effectiveness

Research Question Six sought to establish the effect of research productivity on teaching effectiveness. The justification is that there is a contention among scholars as to how the exact relationship between research productivity and teaching effectiveness is, and ought to be. Some contend that the relationship is either positive, negative or zero. This has led to debates and controversies among scholars. Therefore, there was the need to investigate in order to further clarify the exact nature of the relationship between research productivity and teaching effectiveness using a simple linear regression.

Quantitative Results

To measure the relationship between research productivity and teaching effectiveness, teaching effectiveness was gauged using students' assessment of lecturers administered by the universities under investigation for the 2018/2019 academic year, as well as, lecturers' self- assessment of their own teaching effectiveness, whilst, research productivity was assessed using publication counts for these lecturers. The publication counts included the number of publications in journals including articles, books, book chapters, conference papers, and thesis supervised. The results are displayed in Table 16.

Regarding the indicators for gauging research productivity, the study revealed that the most dominant research activity undertaken by most lecturers is journal articles publication ($M=8.83$, $SD=8.48$) as displayed on Table 16, followed by a review of articles ($M=4.58$, $SD=7.12$) and conference papers

($M=2.13$, $SD=3.48$). It is however, interesting to know that the average authored books ($M=1.21$, $SD=1.80$) of these lecturers is relatively smaller in quantity, not to talk about contribution to book chapters ($M=.48$, $SD=.75$).

Table 16: Descriptive Statistics of Publication Counts of Faculty Members

Publication Counts	Mean	Std. Deviation
Journal articles	8.83	8.48
Articles reviewed	4.58	7.12
Conference papers	2.13	3.48
Authored books	1.21	1.80
Book chapters	.48	.75
M.Phil thesis	2.46	4.48
PhD thesis	.27	.91

Source: Field Data (2019)

From Table 16, the least among the research activities undertaken by lecturers is supervision of Doctoral (PhD) thesis ($M=.27$, $SD=.91$). The least could be accounted for by the fact that there were few professors who took part in the study and per the criteria for supervision at the PhD level, you should have obtained a professoriate status. In addition, most of the lecturers had supervised M.Phil thesis ($M=2.46$, $SD=4.48$) relative to those who have supervised PhD.

To establish the effect of research productivity on teaching effectiveness, a multiple regression analysis was undertaken where teaching effectiveness was treated as the dependent variable and research productivity was operationalised as the independent variable made up of several indicators

leading to the performance of simple linear regression. The model summary of the relationship is presented by Table 17.

Table 17: Model Summary of the Relationship between Research Productivity and Teaching Effectiveness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.348 ^a	.121	.103	.61812	1.785

$F(1, 50) = 6.88, p = .012$. *IV=Research Productivity, DV= Teaching Effectiveness*

The regression model containing research productivity and teaching effectiveness was statistically significant, $F(1, 50) = 6.88, p = .012$. The implication of this result is that research productivity explained 12.1% of the variations in teaching effectiveness. Therefore, research productivity of faculty members contributes a 12.1% upsurge in their teaching effectiveness. The coefficients of the relationship is presented in Table 18.

Table 18: Coefficients of the Relationship between Research Productivity and Teaching Effectiveness

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	6.664	.117		57.192	.000
PRODUC	.010	.004	.348	2.50	.012*

*Significant, $p < .05$

Source: Field Data (2019)

As shown by the findings in Table 18, a beneficial association (.01) signifies a good relationship among research efficacy and teaching effectiveness. The regression coefficient (.010) tells the nature of the relationship between research productivity and teaching effectiveness. It also

tells us the magnitude of change in teaching effectiveness as explained by research productivity. Thus, a unit increase in research productivity leads to .01 units increase in teaching effectiveness. The mathematical model for the impact of research productivity on teaching effectiveness have been illustrated in the following equation:

$TE = 6.664 + 0.010(ResProd) + \epsilon$, where the Independent Variable is Research Productivity (Res Prod), Dependent Variable is Teaching Effectiveness (TE).

From the equation, *TE* represents teaching effectiveness, which is the criterion variable in this case. The 6.664 in the model represents the intercept or constant. The 0.010 in the model represents the slope or the unstandardized regression co-efficient. This denotes the contribution of research productivity (*Res Prod*) to teaching effectiveness. This is the predictor variable in the model. The 'ε' in the model represents the residual, which is the difference between the predicted and the actual slopes. The results depicted by the equation shows that a unit increase in research productivity leads to .01 increase in teaching effectiveness.

Qualitative Results

In spite of the revelation made by the quantitative phase of this study that research productivity is a significant positive predictor of teaching effectiveness, most of the faculty members interviewed remain skeptical about the exact relationship between research and teaching. The excerpts next register the skepticism of faculty members about this relationship.

Confused scholars and observing lecturers

One cannot lose sight of the complexity between the research-teaching nexus. The scholars who had tried themselves to lay a clear foundation for implementers to follow seems confused themselves. Interestingly, one would regard lecturers as scholars since some have attained that height by significantly contributing to the creation of knowledge. However, the research-teaching nexus draws a clear distinction between the scholars and lecturers, where lecturers find faults with the scholars to exempt themselves from the complexity of the nexus. One of the lecturers, therefore, indicated that

Even the scholars themselves are confused about the exact nature of the relationship. How much more about us? I believe there is a relationship, but as to the extent, I can't tell (L3).

Another lecturer intimated that:

I know there is some form of relationship. But the exact direction, I can't tell, whether, the direction of the relationship is positive or negative, or intensive or mild; only statistics can tell. However, for a stronger relationship, lecturers would have to intentionally and consciously ensure a stronger link (L2).

To further confirm the scepticism on the part of the faculty members regarding the relationship between research productivity and teaching effectiveness, two of them postulated that:

Whether a strong connection exists between the two depends on the individual lecturer and the readiness level of their students. But in our part of the world, we don't normally realise the connection because of the way we teach. So, there is a variance between the actual practice

and ideal practice focused on the effective integration into teaching. So, I will say that ideally, there is a strong connection, but our implementation strategy is likely not to reflect this strong connection (L1).

The connection between research and teaching all boils down to proper management of the relationship. Personally, I believe that the way the lecturer manages it would tend to be positive or negative depending on the management strategy adopted by the individual lecturer (L7).

Contrary to the above findings from the interview about the skepticism of the relationship, and in confirmation to the quantitative findings that research productivity is a significant positive predictor of teaching effectiveness, most of the faculty members interviewed postulated that:

I strongly believe in a tight connection between research and teaching. My belief is informed by reading an article on this connection as well as my practice as an academic. In my view, both teaching and research are of mutual benefit. Thus, both benefit from each other: research affects teaching and teaching affects research. Therefore, there is a stronger relationship (L4).

Another lecturer indicated that:

To me, I believe there is a relationship, but my personal view is that the relationship is two-way directional. Meaning, research affects teaching and teaching also affects research. They have mutual impact on one another (L5).

These qualitative findings from the interview corroborates with that of the quantitative findings that suggest that a positive link exist between research productivity and teaching effectiveness.

Despite the positive relationship found between research productivity and teaching effectiveness through the regression analysis performed at the quantitative phase of this study, the follow-up interview also revealed a somewhat contrary relationship as some of the lecturers indicated that:

I believe there is a negative relationship between research and teaching. The reason why I am saying this is that both activities are seen to be antagonistic since both activities compete for the same resources such as time, skills, knowledge from the same individual academic (L6).

Another lecturer also intimated that:

“I just know there is a relationship, am yet to experience it since am a young academic, but I think the relationship is more likely to be inverse than positive, because both research and teaching are demanding”

(L8):

Based on the above findings, it is important to indicate that a number of comments based on personal knowledge and objective study of the academic position support the argument of a zero relationship recorded in some empirical studies.

All in all, research efficacy has been shown to be a strong positive indicator of teaching effectiveness.

Hypotheses Testing

The results of the hypotheses stated in the study are presented as follows based on the research objectives:

Difference in the Conceptualisation of the Research-teaching Nexus between Faculty and Students

Hypothesis One sought to determine the statistical differences in the conceptualisation of the research-teaching nexus between faculty and students. To test for this hypothesis, a one-way between groups MANOVA was performed to compare the mean scores of the conceptualisation of the teaching-research nexus between faculty and students. The predictor variable was respondents' status (either, faculty or student). The criterion variable was conceptualisation comprising knowledge currency conceptualisation, scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

To test for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations observed, initial hypothesis testing was performed. For instance, visual examination of the normal Q-Q plot for the conceptualisation suggests that the data was normally distributed (See Appendices E & F). On the basis of these observations, it can be inferred that the conceptualisation data are normally distributed. The homogeneity of variance-covariance matrices was also checked, in relation to the normality assumption. The result of Box's M test of equality of covariance violated the variance-covariance matrices assumption, $F = (6, 45220.55) = 4.58, p < .001, M = 28.09$. Because of this violation, Pillai's Trace multivariate test was performed. The results are presented in Table 19.

Table 19: Multivariate Tests for Differences in Conceptualisation between Faculty and Students

	Value	F	Hypothesis		Sig.	Partial Eta Squared
			df	Error df		
Pillai's Trace	.001	.178 ^b	3.000	415.000	.911	.001
Wilks' Lambda	.999	.178 ^b	3.000	415.000	.911	.001
Hotelling's Trace	.001	.178 ^b	3.000	415.000	.911	.001
Roy's Largest Root	.001	.178 ^b	3.000	415.000	.911	.001

Source: *Field Data (2019)*

The results from Table 19 show a no statistically significant difference in the linear combination of the conceptualisations of the research-teaching nexus between faculty and students, $F(3, 415) = .18$, $p = .911$; partial eta squared = .001; Pillai's Trace $V = .001$. Despite the non-statistically significant results, the data revealed that .1% of the variance in the combined criterion variable (conceptualisations) was explained by the status of the respondents (either faculty or student). Separate univariate ANOVAs were performed on each of criterion variables using Bonferroni adjusted alpha level of .017 since the criterion variable had three levels ($.05/3=.017$) and the results are presented in Table 20.

As presented in Table 20, the univariate test showed a non-statistically significant difference in any of the three typologies of conceptualisation between faculty and students. For knowledge currency, $F(1, 417) = .11$, $p = .741$, with a partial eta squared of $p < .001$. Referent to the partial eta squared, this result implies that the status of respondents explained less than 1% of the variance in conceptualisation of the link between research and teaching. The

results also revealed a no statistically significant difference in scholarship-oriented conceptualisation between faculty and students, $F(1, 417) = .02, p = .893$, partial eta squared $< .001$.

Table 20: Univariate Tests for Differences in Conceptualisation between Faculty and Students

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected	Knowledge Currency	1	.050	.110	.741	.000
Model	Scholarship Oriented	1	.009	.018	.893	.000
	Curriculum Oriented	1	.083	.189	.664	.000
Intercept	Knowledge Currency	1	2718.268	5994.896	.000	.935
	Scholarship Oriented	1	2514.666	5311.542	.000	.927
	Curriculum Oriented	1	3044.111	6949.568	.000	.943
Status	Knowledge Currency	1	.050	.110	.741	.000
	Scholarship Oriented	1	.009	.018	.893	.000
	Curriculum Oriented	1	.083	.189	.664	.000
Error	Knowledge Currency	417	.453			
	Scholarship Oriented	417	.473			
	Curriculum Oriented	417	.438			

Source: Field Data (2019)

The result implies that the status of respondents explained less than 1% of the variance in conceptualisation of the research-teaching nexus. A post hoc analysis was not necessary due to the non-statistically significant results. The non-statistically significant results show harmony in the views of both lecturers

and students concerning their understanding of the link between research and teaching.

Difference in Conceptualisation of the Research-teaching Nexus across the Ranks of Faculty

Hypothesis Two sought to determine the statistical differences in the conceptualisation of the research-teaching nexus with regard to the ranks of faculty. To test for this hypothesis, a one-way between groups MANOVA was performed to compare the mean scores of the conceptualisation of the teaching-research nexus regarding the ranks of faculty. The predictor variable was ranks of faculty while the criterion variable was conceptualisation comprising knowledge currency conceptualisation, scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations noted. For instance, visual examination of the normal Q-Q plot for the conceptualisation suggests that the data was normally distributed (See Appendices E & F). Based on these results, it can be concluded that the data on conceptualisation were normally distributed. In addition to the normality assumption, homogeneity of variance-covariance matrices was also tested. The result of Box's M test of equality of covariance violated the variance-covariance matrices assumption, $F(12, 1500.54) = 6.07, p < .001, M = 84.94$. Because of this violation, Pillai's Trace multivariate test was performed. The results are presented in Table 21.

Table 21: Multivariate Tests for Differences in Conceptualisation among Ranks of Faculty

	Value	Hypothesis			Sig.	Partial Eta Squared
		F	df	Error df		
Pillai's Trace	.375	2.284	9.000	144.000	.020*	.125
Wilks' Lambda	.631	2.598	9.000	112.103	.009	.142
Hotelling's Trace	.577	2.864	9.000	134.000	.004	.161
Roy's Largest Root	.562	8.988 ^c	3.000	48.000	.000	.360

*Significant, $p < .05$

Source: *Field Data (2019)*

The results from Table 21 show that there is a statistically significant difference in the linear combination of the conceptualisations of the research-teaching nexus among the ranks of faculty, $F(9, 144) = 2.28, p = .020$; partial eta squared = .125; Pillai's Trace $V = .38$. The statistically significant results imply that 12.5% of the variance in the combined criterion variable (conceptualisations) was explained by the ranks of faculty.

Separate univariate ANOVAs were performed on each of criterion variables using Bonferroni's adjusted alpha level of .017 and the results are presented in Table 22. As presented in Table 22, the univariate test showed a statistically significant difference in scholarship-oriented conceptualisation in terms of ranks of faculty, $F(3, 48) = 5.17, p = .004$, partial eta squared = .244.

Drawing from the partial eta squared, the rank of faculty explained 24.4% of the variance in scholarship-oriented conceptualisation. The results also revealed no statistically significant difference in curriculum-oriented conceptualisation regarding ranks of faculty, $F(3, 48) = 1.39, p = .257$, partial eta squared = .080. Despite the non-statistical significance, the result implies

that the rank of faculty explained 8% of the variance in curriculum-oriented conceptualisation of the research-teaching nexus.

Table 22: Univariate Tests for Differences in Conceptualisation among Ranks of Faculty

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Knowledge Currency	3	.325	.552	.650	.033
	Scholarship Oriented	3	1.823	5.170	.004	.244
	Curriculum Oriented	3	.265	1.392	.257	.080
Intercept	Knowledge Currency	1	336.332	571.669	.000	.923
	Scholarship Oriented	1	285.861	810.637	.000	.944
	Curriculum Oriented	1	364.322	1912.737	.000	.976
Ranks	Knowledge Currency	3	.325	.552	.650	.033
	Scholarship Oriented	3	1.823	5.170	.004*	.244
	Curriculum Oriented	3	.265	1.392	.257	.080
Error	Knowledge Currency	48	.588			
	Scholarship Oriented	48	.353			
	Curriculum Oriented	48	.190			

*Significant, $p < .017$ (Bonferoni's alpha)
 Source: Field Data (2019)

In furtherance, the results revealed that there is no statistically significant difference in the knowledge currency conceptualisation among the ranks of faculty, $F(3, 48) = .55, p = .650$, partial eta squared = .033. The result implies that the rank of faculty explained 3.3% of the variance in knowledge currency conceptualisation of the research-teaching nexus.

A post hoc analysis performed to determine differences in scholarship-oriented conceptualisation regarding ranks of faculty. Table 23 presents the results of the post hoc analysis. From Table 23 which demonstrated the post hoc analysis, there is a statistically significant difference between the mean scores

of the scholarship-oriented conceptualisation between lecturers and senior lecturers, $p = .002$. However, there is no statistically significant difference between the mean scores of scholarship-oriented conceptualisation among the other ranks of lecturers.

Table 23: Multiple Comparisons on Scholarship-oriented Conceptualisation (Games-Howell)

(I) Rank	(J) Rank	Mean Difference (I-J)	Std. Error	Sig.
Assistant lecturer	Lecturer	-.2047	.25286	1.000
	Senior lecturer	.5161	.26668	.353
	Professor	.2857	.47613	1.000
Lecturer	Assistant lecturer	.2047	.25286	1.000
	Senior lecturer	.7208*	.18522	.002
	Professor	.4904	.43575	1.000
Senior lecturer	Assistant lecturer	-.5161	.26668	.353
	Lecturer	-.7208*	.18522	.002
	Professor	-.2304	.44392	1.000
Professor	Assistant lecturer	-.2857	.47613	1.000
	Lecturer	-.4904	.43575	1.000
	Senior lecturer	.2304	.44392	1.000

*Significant, $p < .017$ (Bonferoni's alpha)
 Source: Field Data (2019)

The descriptive statistics is presented in Table 24. As reflected by Table 24 based on the results, it can be concluded that lecturers ($M = 3.99, SD = .55$) conceptualised the link between research and teaching to be more of scholarly-oriented relative to their colleague senior lecturers ($M = 3.27, SD = .66$).

Table 24: Descriptive Statistics on Conceptualisation in terms Rank of Faculty

	Rank	Mean	Std. Deviation	N
Knowledge	Assistant lecturer	3.7143	.98936	7
	Lecturer	3.7692	.90808	26
Currency	Senior lecturer	3.9608	.33087	17
	Professor	4.3333	.00000	2
	Total	3.8462	.75685	52
Scholarship	Assistant lecturer	3.7857	.26726	7
	Lecturer	3.9904	.54535	26
Oriented	Senior lecturer	3.2696	.66440	17
	Professor	3.5000	1.41421	2
	Total	3.7083	.66267	52
Curriculum Oriented	Assistant lecturer	4.0952	.25198	7
	Lecturer	4.2179	.41034	26
	Senior lecturer	3.9412	.53014	17
	Professor	4.1667	.23570	2
	Total	4.1090	.44143	52

Source: Field Data (2019)

Difference in the Conceptualisation of the Research-teaching Nexus among Students with respect to their Academic Levels

Hypothesis Three sought to determine the statistical differences in the conceptualisation of the research-teaching nexus with regard to students' academic level. To test for this hypothesis, a one-way between groups MANOVA was performed to compare the mean scores of the conceptualisation of the teaching-research nexus regarding students' academic level. The predictor variable was students' academic level. The criterion variable was conceptualisation comprising knowledge currency conceptualisation,

scholarship-oriented conceptualisation and curriculum-oriented conceptualisation.

To search for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations observed, initial assumption experiment was done. For instance, visual examination of the normal Q-Q plot for the conceptualisation suggests that the data was normally distributed (See Appendices E & F). On the basis of these observations, it can be inferred that the conceptualisation data are normally distributed. The homogeneity of variance-covariance matrices was also tested, in regard to the normality assumption. The result of Box's M test of equality of covariance violated the variance-covariance matrices assumption, $F(18, 50377.94) = 2.19, p = .003, M = 40.39$. Because of this violation, Pillai's Trace multivariate test was performed. The results are presented in Table 25.

Table 25: Multivariate Tests for Differences in Conceptualisation in terms of Students' Academic Level

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's Trace	.098	4.074*	9.000	1089.000	.000	.033
Wilks' Lambda	.905	4.099	9.000	878.730	.000	.033
Hotelling's Trace	.103	4.098	9.000	1079.000	.000	.033
Roy's Largest Root	.067	8.074	3.000	363.000	.000	.063

*Significant, $p < .05$

Source: Field Data (2019)

The results from Table 25 show that there is a statistically significant difference in the linear combination of the conceptualisation of the research-teaching nexus among students' academic level, $F(3, 361) = 4.07, p < .001$; partial eta squared = .033; Pillai's Trace $V = .098$. The partial eta squared

statistically significant results imply that 3.3% of the variance in the combined criterion variable (conceptualisations) was explained by students' academic level. Separate univariate ANOVAs were performed on each of criterion variables using Bonferroni adjusted alpha level of .017 and the results are presented in Table 26.

Table 26: Univariate Tests for Differences in Conceptualisation in terms of Students' Academic Level

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Knowledge	3	1.960	4.621	.003	.037
	Currency	3	1.440	3.062	.028	.025
	Scholarship Oriented Curriculum	3	1.051	2.251	.082	.018
Intercept	Knowledge	1	3481.364	8206.831	.000	.958
	Currency	1	3032.230	6447.900	.000	.947
	Scholarship Oriented Curriculum	1	3671.220	7859.219	.000	.956
Academic level	Knowledge	3	1.960	4.621	.003*	.037
	Currency	3	1.440	3.062	.028	.025
	Scholarship Oriented Curriculum	3	1.051	2.251	.082	.018
Error	Knowledge	363	.424			
	Currency	363	.470			
	Scholarship Oriented Curriculum	363	.467			
Total	Knowledge	367				
	Currency	367				
	Scholarship Oriented Curriculum	367				

*Significant, $p < .017$ (Bonferoni's alpha)

Source: Field Data (2019)

As presented in Table 26, the univariate test showed a statistically significant difference in knowledge currency conceptualisation in terms of students' academic level, $F(3, 363) = 4.62, p = .003$, partial eta squared = .037. Relying on the partial eta squared, students' academic level explained 3.7% of the variance in knowledge currency conceptualisation.

The results also revealed a non-statistically significant difference in curriculum-oriented conceptualisation regarding students' academic level, $F(3, 363) = 2.25, p = .082$, partial eta squared = .018 (Table 26). Despite the non-statistically significance, the result implies that students' academic level explained 1.8% of the variance in curriculum-oriented conceptualisation of the research-teaching nexus.

Moreover, the results revealed a non-statistically significant difference in Scholarship Oriented conceptualisation regarding students' academic level, $F(3, 363) = 3.06, p = .028$, partial eta squared = .025. The result implies that students' academic level explained 2.5% of the variance in Scholarship Oriented conceptualisation of the link between research and teaching. A post hoc study was then conducted to determine variations in the conceptualisation of Knowledge Currency with regard to the academic level of students. Table 27 presents the results.

Table 27, displays the post hoc analysis among the levels of students relative to their conceptualisation of the research-teaching nexus. From the post hoc analysis, there is a statistically significant difference between the mean scores of the Knowledge Currency conceptualisation between undergraduates ($M=3.79, SD=.64$) and research masters ($M=4.12, SD=.66$) students, $p = .003$.

Table 27: Multiple Comparisons on Knowledge Currency Conceptualisation (Games-Howell)

Dependent Variable	(I) academic level	(J) academic level	Mean Difference (I-J)	Std. Error	Sig.
Knowledge Currency	Undergraduate	Research masters	-.3318*	.09351	.003
		Non-research masters	-.0870	.09239	1.000
		PhD	-.2220	.13100	.546
	Research masters	Undergraduate	.3318*	.09351	.003
		Non-research masters	.2448	.11515	.205
		PhD	.1098	.14793	1.000
	Non-research masters	Undergraduate	.0870	.09239	1.000
		Research masters	-.2448	.11515	.205
		PhD	-.1350	.14723	1.000
	PhD	Undergraduate	.2220	.13100	.546
		Research masters	-.1098	.14793	1.000
		Non-research masters	.1350	.14723	1.000

*Significant, $p < .017$ (Bonferoni's alpha)

Source: Field Data (2019)

However, from Table 27, there is no statistically significant difference between the mean scores of research masters and PhD ($M=4.01$, $SD=.60$) and Non-research masters students ($M=3.88$, $SD=.69$) regarding Knowledge Currency conceptualisation of the research-teaching nexus. The descriptive statistics are presented in Table 28.

Table 28 displays the descriptive statistics of conceptualisation across the ranks of faculty. From prior analyses and the descriptive table demonstrated by Table 28, there is a statistically significant difference between the mean scores of the Knowledge Currency conceptualisation between undergraduates ($M=3.79$, $SD=.64$) and research masters ($M=4.12$, $SD=.66$) students, $p = .003$.

However, there is no statistically significant difference between the mean scores of research masters and PhD ($M=4.01$, $SD=.60$) and Non-research masters students ($M=3.88$, $SD=.69$) regarding Knowledge Currency conceptualisation of the research-teaching nexus.

Table 28: Descriptive Statistics on Conceptualisation across the Ranks of Faculty

	Academic level	Mean	Std. Deviation
Knowledge Currency	Undergraduate	3.7899	.64125
	Research masters	4.1217	.66479
	Non-research masters	3.8769	.69114
	PhD	4.0119	.59823
	Total	3.8792	.66090
Scholarship Oriented	Undergraduate	3.7690	.65574
	Research masters	3.8214	.71621
	Non-research masters	3.5038	.69946
	PhD	3.6518	.80029
	Total	3.7221	.69153
Curriculum Oriented	Undergraduate	4.0363	.67003
	Research masters	4.2381	.63762
	Non-research masters	4.0821	.65889
	PhD	3.8690	.90876
	Total	4.0663	.68696

Source: Field Data (2019)

Difference between Ranks of Faculty and their Level of Integration of Research into Teaching

Hypothesis Four sought to determine differences among the ranks of faculty with regard to their level of integration of research into teaching. To test for this hypothesis, a one-way MANOVA was performed to compare the mean scores of ranks of faculty with regard to their level of integration of research into teaching. The predictor variable was ranks of faculty, which has four levels: Assistant lecturer, Lecturer, Senior Lecturer and Professor. The criterion

variable (levels of integration) is made up of research-led, research-oriented, research-based and research-tutored.

To search for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations observed, initial assumption experiment was done. For instance, visual examination of the normal Q-Q plot for the levels of integration suggests that the data were normally distributed (See Appendices E & F). On the basis of these findings, it can be inferred that the integration level data are normally distributed. The homogeneity of variance-covariance matrices was also measured, in regard to the normality assumption. The result of Box's M test of equality of covariance violated the variance-covariance matrices assumption, $F = (20, 1243.93) = 3.61, p < .001, M = 89.65$. Because of this violation, Pillai's Trace multivariate test was performed. The results are presented in Table 29.

Table 29: Multivariate Tests for Differences in Levels of Research Integration among Ranks of Faculty

	Value		Hypothesis		Sig.	Partial Eta Squared
		F	df	Error df		
Pillai's Trace	.687	3.487	12.000	141.000	.000*	.229
Wilks' Lambda	.421	3.850	12.000	119.350	.000	.251
Hotelling's Trace	1.128	4.106	12.000	131.000	.000	.273
Roy's Largest Root	.855	10.045 ^c	4.000	47.000	.000	.461

*Significant, $p < .05$

The results from Table 29 show that there is a statistically significant difference in the linear combination of the levels of integration of research into teaching among the ranks of faculty, $F(12, 141) = 3.49, p < .001$; partial eta squared = .229; Pillai's Trace $V = .687$. Drawing from the partial eta squared,

22.9% of the variance in the combined criterion variable (level of integration) was explained by the ranks of faculty. Separate univariate ANOVAs were performed on each of criterion variables using Bonferroni’s adjusted alpha level of .013 since the criterion variable had four levels ($.05/4=.013$) and the results are presented in Table 30.

Table 30: Univariate Tests for Differences in Levels of Research Integration based on Ranks of Faculty

Source	Dependent Variable	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Research-led	3	.172	.719	.546	.043
	Research-oriented	3	1.509	3.590	.020	.183
	Research-based	3	2.555	7.464	.000	.318
	Research-tutored	3	6.029	11.290	.000	.414
Intercept	Research-led	1	386.278	1611.745	.000	.971
	Research-oriented	1	345.311	821.681	.000	.945
	Research-based	1	249.116	727.774	.000	.938
	Research-tutored	1	252.564	473.011	.000	.908
Ranks	Research-led	3	.172	.719	.546	.043
	Research-oriented	3	1.509	3.590	.020	.183
	Research-based	3	2.555	7.464	.000*	.318
	Research-tutored	3	6.029	11.290	.000*	.414
Error	Research-led	48	.240			
	Research-oriented	48	.420			
	Research-based	48	.342			
	Research-tutored	48	.534			

*Significant, $p < .013$ (Bonferroni’s alpha)

Source: Field Data (2019)

As presented in Table 30, the univariate test shows a statistically significant difference in research-based teaching in terms of ranks of faculty, F

(3, 48) = 7.46, $p < .001$, partial eta squared = .318. This result implies that the rank of faculty explained 31.8% of the variance in research-based teaching. The results also revealed a statistically significant difference in research-tutored teaching regarding ranks of faculty, $F(3, 48) = 11.29$, $p < .001$, partial eta squared = .414. The implication of the result implies that the rank of faculty explained 41.4% of the variance in research-tutored teaching as a level of integrating research into teaching. Further to this, the results reveal that there is no statistically significant difference between research-led teaching and ranks of faculty, $F(3, 48) = .72$, $p = .56$, partial eta squared = .043. The result implies that the rank of faculty accounted for 4.3% of the variance in research-led teaching as the first level of the research-teaching nexus.

A post hoc analysis performed to determine differences in research-based and research-tutored levels of research integration into teaching regarding lecturers' rank. Table 31 presents the results.

Table 31: Multiple Comparisons (Bonferroni) on Level of Integration in terms of Lecturers' Ranks

Dependent Variable	(I) rank	(J) rank	Mean Difference (I-J)	Std. Error	Sig.
Research-based	Assistant lecturer	Lecturer	-1.1679*	.24913	.000
		Senior lecturer	-.8077*	.26275	.021
		Professor	-.8730	.46909	.413
	Lecturer	Assistant lecturer	1.1679*	.24913	.000
		Senior lecturer	.3602	.18248	.325
		Professor	.2949	.42932	1.000
	Senior lecturer	Assistant lecturer	.8077*	.26275	.021
		Lecturer	-.3602	.18248	.325
		Professor	-.0654	.43736	1.000
Professor	Assistant lecturer	.8730	.46909	.413	
	Lecturer	-.2949	.42932	1.000	

Table 31, Continued

		Senior lecturer	.0654	.43736	1.000
Research-tutored	Assistant	Lecturer	-1.7637*	.31115	.000
		lecturer			
		Senior lecturer	-1.2479*	.32816	.002
		Professor	-1.9464*	.58588	.010
Lecturer	Assistant	lecturer	1.7637*	.31115	.000
		Senior lecturer	.5158	.22792	.169
		Professor	-.1827	.53620	1.000
Senior	Assistant	lecturer	1.2479*	.32816	.002
		Lecturer			
		Lecturer	-.5158	.22792	.169
		Professor	-.6985	.54625	1.000
Professor	Assistant	lecturer	1.9464*	.58588	.010
		Lecturer			
		Lecturer	.1827	.53620	1.000
		Senior lecturer	.6985	.54625	1.000

*Significant, $p < .013$ (Bonferoni's alpha)

From the post hoc analysis displayed by Table 31, there is a statistically significant difference between the mean scores of Assistant lecturers' practice of research-based teaching compared to Lecturers' practice of research-based teaching, $p < .001$. Apart from the afore-mentioned difference, there is no statistically significant difference between Lecturers' practice of research-based teaching and that of the other ranks: Senior lecturer, $p = .325$; and Professor, $p = .999$. Regarding the practice of research-tutored teaching, there exist a statistically significant difference between Assistant lecturers and the other ranks of teaching: lecturer, $p < .001$; Senior lecturers, $p = .002$; Professors, $p = .010$. However, there is no statistically significant differences between Lecturers and their colleagues in the senior ranks. The descriptive statistics is presented by Table 32.

Table 32: Descriptive Statistics on Levels of Integration in terms of Lecturers' Rank

	Rank	Mean	Std. Deviation	N
Research-led	Assistant lecturer	4.0000	.72111	7
	Lecturer	4.1615	.43458	26
	Senior Lecturer	4.2471	.47712	17
	Professor	4.5000	.14142	2
	Total	4.1808	.48549	52
Research-oriented	Assistant lecturer	3.8980	.93574	7
	Lecturer	4.3956	.40266	26
	Senior lecturer	3.7647	.82366	17
	Professor	3.9286	.10102	2
	Total	4.1044	.69591	52
Research-based	Assistant lecturer	2.6825	.58242	7
	Lecturer	3.8504	.58029	26
	Senior lecturer	3.4902	.60611	17
	Professor	3.5556	.31427	2
	Total	3.5641	.68735	52
Research-tutored	Assistant lecturer	2.1786	.42608	7
	Lecturer	3.9423	.62172	26
	Senior lecturer	3.4265	.91329	17
	Professor	4.1250	1.23744	2
	Total	3.5433	.92583	52

Source: Field Data (2019)

Based on the results depicted by Table 32, it can be intimated that lecturers ($M = 3.85$, $SD = .58$) practice more of research-based teaching than Assistant lecturers ($M = 2.68$, $SD = .58$). Similarly, based on the results, it can be concluded that Assistant lecturers ($M = 2.18$, $SD = .43$) differ in their practice of research-tutored teaching than the other ranks. Based on the results, it can be concluded that regarding the practice of research-tutored teaching, which is the highest level of research integration into teaching, Professors ($M=4.13$) demonstrated higher level of research integration into teaching relative to their

junior colleagues (Assistant lecturer: $M=2.18$; Lecturer: $M=3.94$; Senior lecturer: $M=3.43$)

Difference in the Level of Research Integration into Teaching among Faculty in terms of Gender

Hypothesis Five sought to determine the differences between the gender of faculty with regard to their level of integration of research into teaching. To test this hypothesis, a one-way MANOVA was performed to compare the mean scores of gender of faculty with regard to their level of integration of research into teaching. The predictor variable was gender of faculty, which has two levels: male and female. The criterion variable (levels of integration) is made up of research-led, research-oriented, research-based and research-tutored.

To search for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations observed, initial assumption test is performed. For instance, visual examination of the normal Q-Q plot for the levels of integration suggests that the data were normally distributed (See Appendixes E & F). On the basis of these findings, it can be inferred that the integration level data are evenly distributed. In addition to the normality assumption, homogeneity of variance-covariance matrices was tested. The result of Box's M test of equality of covariance violated the variance-covariance matrices assumption, $F = (10, 1870.79) = 2.26, p=.013, M = 26.40$. Because of this violation, Pillai's Trace multivariate test was executed. The results are presented in Table 33.

Table 33: Multivariate Tests for Differences in Levels of Research Integration and Faculty Gender

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's Trace	.139	1.891 ^b	4.000	47.000	.128	.139
Wilks' Lambda	.861	1.891 ^b	4.000	47.000	.128	.139
Hotelling's Trace	.161	1.891 ^b	4.000	47.000	.128	.139
Roy's Largest Root	.161	1.891 ^b	4.000	47.000	.128	.139

*Significant, $p < .05$; Source: Field Data (2019)

The results from Table 33 show that there is no statistically significant difference in the linear combination of the levels of integration of research into teaching among the gender of faculty, $F(4, 47) = 1.89, p = .128$; partial eta squared = .139; Pillai's Trace $V = .139$. The partial eta squared statistically significant results imply that 13.9% of the variance in the combined criterion variable (level of integration) was explained by gender of faculty. Separate univariate ANOVAs were performed on each of the criterion variables using Bonferroni's adjusted alpha level of .013 and the results are presented in Table 34.

As presented in Table 34, the univariate test showed a non-statistically significant difference in any of the four typologies of the level of research integration into teaching regarding the gender of faculty. For research-led, $F(1, 50) = .18, p = .673$, partial eta squared = .004. This result implies that the gender of faculty explained 0.4% of the variance in research-led teaching. The results also revealed a no statistically significant difference in research-based teaching and gender, $F(1, 50) = 2.62, p = .112$, partial eta squared = .050. Meaning, the influence of gender on research-based teaching is not statistically significant.

Table 34: Univariate Tests for Differences in Levels of Research Integration based on Gender of Faculty

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Research-led	1	.043	.180	.673	.004
	Research-oriented	1	.188	.384	.538	.008
	Research-based	1	1.198	2.615	.112	.050
	Research-tutored	1	1.750	2.085	.155	.040
Intercept	Research-led	1	651.065	2717.828	.000	.982
	Research-oriented	1	633.721	1292.769	.000	.963
	Research-based	1	443.852	969.218	.000	.951
	Research-tutored	1	433.394	516.375	.000	.912
Gender	Research-led	1	.043	.180	.673	.004
	Research-oriented	1	.188	.384	.538	.008
	Research-based	1	1.198	2.615	.112	.050
	Research-tutored	1	1.750	2.085	.155	.040
Error	Research-led	50	.240			
	Research-oriented	50	.490			
	Research-based	50	.458			
	Research-tutored	50	.839			

*Significant, $p < .013$ (Bonferoni's alpha)

Source: Field Data (2019)

The result implies that gender accounts for 5% variance in research-based teaching despite the non-significant difference. A post hoc analysis was not necessary due to the non-statistically significant result. The non-statistically significant results show consistency in linking research to teaching for both male and female faculty.

Difference in Research Experiences of Students with respect to their Level

Hypothesis Six sought to determine whether there exist differences in students' experiences in research, chi-square of independence test was conducted. The results are presented in Table 35.



Table 35: Difference in Research Experience in terms of Students' Academic Level

Research Experience	LEVEL				χ^2	df	p
	Undergraduate	Research Masters	Non-research masters	PhD			
	n (%)	n (%)	n (%)	n (%)			
listening to an individual from staff examine their research work in a module, textbooks or handout							
No	105 (55.9)	45 (23.9)	25 (13.3)	13 (6.9)	14.969	3	.002
Yes	106 (59.2)	18 (10.1)	40 (22.3)	15 (8.4)			
listening to an individual from staff examine their research work in a module or textbooks							
No	161 (59.0)	34 (12.5)	58 (21.2)	20 (7.3)	21.838	3	.000
Yes	50 (53.2)	29 (30.9)	7 (7.4)	8 (8.5)			
Perusing a research paper or report composed by an individual from staff.							
No	91 (60.3)	16 (10.6)	34 (22.5)	10 (6.6)	10.480	3	.015
Yes	120 (55.6)	47 (21.8)	31 (14.4)	18 (8.3)			
Basically analyzing art/artefacts, for example, a picture, execution, gadget or configuration created by an individual from staff.							
No	190 (62.3)	45 (14.8)	52 (17.0)	18 (5.9)	20.871	3	.000
Yes	21 (33.9)	18 (29.0)	13 (21.0)	10 (16.1)			
Going to a university research workshop (not as a feature of a module)							
No	183 (73.2)	17 (6.8)	38 (15.2)	12 (4.8)	93.759	3	.000
Yes	28 (23.9)	46 (39.3)	27 (23.1)	16 (13.7)			

Table 35, Continued

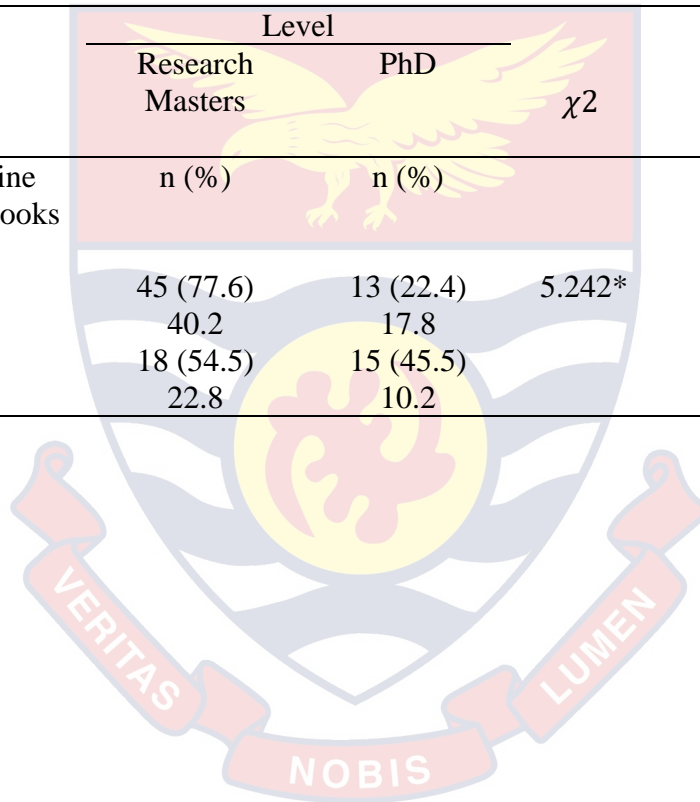
Going to a research meeting							
No	197 (65.9)	30 (10.0)	57 (19.1)	15 (5.0)	83.704	3	.000
Yes	14 (20.6)	33 (48.5)	8 (11.8)	13 (19.1)			
Going to a creative presentation or display connected to your subject area(s)							
No	183 (63.1)	41 (14.1)	49 (16.9)	17 (5.9)	21.128	3	.000
Yes	28 (36.4)	22 (28.6)	16 (20.8)	11 (14.3)			
Being a member in a research project run by an individual from staff.							
No	162 (64.8)	38 (15.2)	36 (14.4)	14 (5.6)	18.136	3	.000
Yes	49 (41.9)	25 (21.4)	29 (24.8)	14 (12.0)			
Acting as a research assistant during a data collection exercise.							
No	162 (59.8)	37 (13.7)	52 (19.2)	20 (7.4)	9.750	3	.021
Yes	49 (51.0)	26 (27.1)	13 (13.5)	8 (8.3)			
Contributing to a research project in anyway.							
No	134 (70.9)	27 (14.3)	18 (9.5)	10 (5.3)	31.607	3	.000
Yes	77 (43.3)	36 (20.2)	47 (26.4)	18 (10.1)			
Adding to a research meeting paper or banner.							
No	176 (58.3)	46 (15.2)	59 (19.5)	21 (7.0)	8.128	3	.043
Yes	35 (53.8)	17 (26.2)	6 (9.2)	7 (10.8)			

The hypothesis was that no significant difference among students' academic level with regard to their research experience exist. The contingency results shown by Table 35 espouse that differences exist among the levels of students with respect to their exposure to research. Differences were found in all the research experiences exposed to the various students. For example, in terms of students hearing a member of staff converse their research work in a module, textbooks or handout, a statistically significant difference was found among their levels, $\chi^2(3, 367) = 14.969, p = .002$. Also, a significant difference was found in students' experience of attending a university research seminar, $\chi^2(3, 367) = 93.759, p < .001$. Students' participation in a research project run by a member of staff significantly varied among them as well, $\chi^2(3, 367) = 18.136, p < .001$. To identify where the significant differences lie between the various levels of the students, a 2*2 crosstabulation post hoc analysis was conducted. Concentration was placed on identifying differences between non-research students such as undergraduates and non-research masters, as well as, research masters students and PhD students. The results are presented in Table 36.

Table 36: Comparative Analysis between Research Masters and PhD Students

Research Experience	Level		χ^2	<i>df</i>	<i>p</i>	Φ
	Research Masters	PhD				
Hearing an individual from staff examine their research work in a module, textbooks or handout	n (%)	n (%)				
No	45 (77.6)	13 (22.4)	5.242*	1	.022	.022
Expected	40.2	17.8				
Yes	18 (54.5)	15 (45.5)				
Expected	22.8	10.2				

*Significant, $p < .05$



From Table 36, in relation to students' exposure to hearing an individual from staff examine their research work in a module, textbooks or handout, 45 (77.6%) of the research master students did not experience it whilst 13 (22.4%) of the PhD students did not experience it. Further, 18 (54.5%) of the research masters students experienced it whilst 15 (45.5%) of the PhD students also experienced it. The difference observed was subjected to a chi-square independent test. The results show that there is a significant difference between research masters and PhD students' experience in hearing an individual from staff talk about their research work in modules, textbook or handout, $\chi^2(1, 276) = 5.242, p = .022, \Phi = .022$. A careful analysis of the expected count in each cells showed that the PhD students have had more of such experience than the research masters students. Differences between the undergraduates and the non-research masters are presented in Table 37.

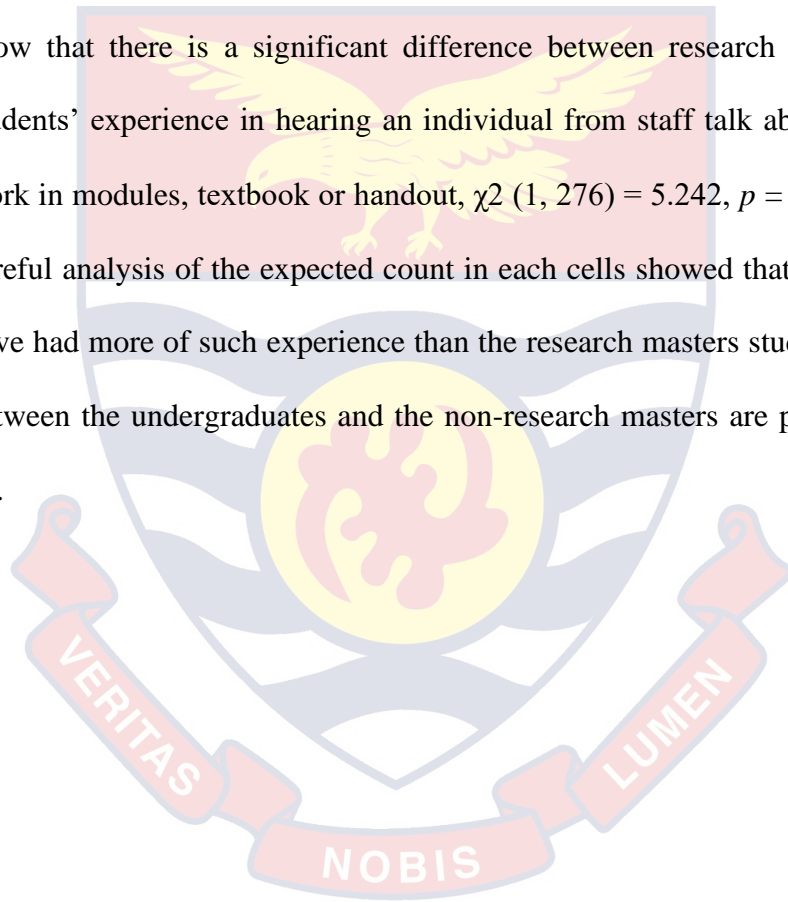


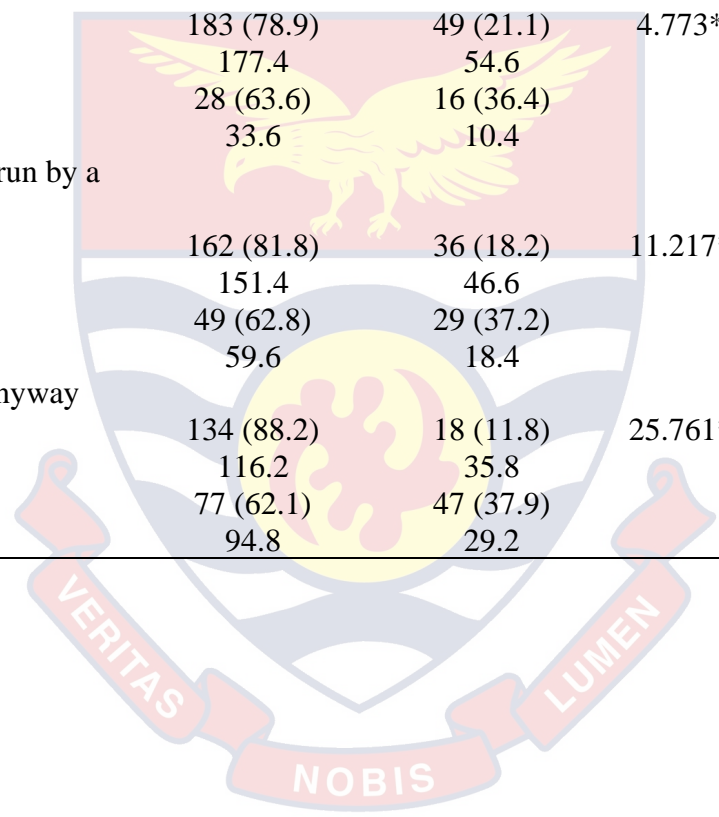
Table 37: Comparative Analysis between Undergraduate and Non-research Master Students

Research Experience	Level		χ^2	<i>df</i>	<i>p</i>	Φ
	Undergraduate	Non-research masters				
	n (%)	n (%)				
Hearing a visiting lecturer talk about their research work in a module or textbooks						
No	161 (73.5)	58 (26.5)	5.068*	1	.024	.024
Expected	167.4	51.6				
Yes	50 (87.7)	7 (12.3)	43.6	13.4		
Expected	43.6	13.4				
Basically analyzing art/artefacts, for example, a picture, execution, gadget or configuration created by an individual from staff.						
No	190 (78.5)	52 (21.5)	4.644*	1	.031	.031
Expected	185	57				
Yes	21 (61.8)	13 (38.2)	26	8		
Expected	26	8				
Going to a university research workshop (not as a feature of a module)						
No	183 (82.8)	38 (17.2)	24.886*	1	.000	.000
Expected	169	52				
Yes	28 (50.9)	27 (49.1)	42	13		
Expected	42	13				

Table 37, Continued

Going to an aesthetic presentation or display connected to your subject area(s)							
No	183 (78.9)	49 (21.1)	4.773*	1	.029	.029	
Expected	177.4	54.6					
Yes	28 (63.6)	16 (36.4)					
Expected	33.6	10.4					
Being a member in a research project run by a lecturer.							
No	162 (81.8)	36 (18.2)	11.217*	1	.001	.001	
Expected	151.4	46.6					
Yes	49 (62.8)	29 (37.2)					
Expected	59.6	18.4					
Contributing to a research project in anyway							
No	134 (88.2)	18 (11.8)	25.761*	1	.000	.000	
Expected	116.2	35.8					
Yes	77 (62.1)	47 (37.9)					
Expected	94.8	29.2					

*Significant, $p < .05$



From Table 37, the 2 by 2 post hoc test between undergraduates and non-research masters in terms of their research experience showed that the undergraduate students had heard more guest lecturers discussion their research work than non-research masters' students $\chi^2(1, 276) = 5.068, p = .024, \Phi = .024$. However, in the various research experiences, the non-research masters had experienced more research than the undergraduates: Basically, analyzing art/artefacts, for example, a picture, execution, gadget or configuration delivered by an individual from staff, $\chi^2(1, 276) = 4.644, p = .031, \Phi = .031$; Going to a university research workshop (not as a component of a module), $\chi^2(1, 276) = 24.886, p < .001, \Phi = .000$; Going to an artistic presentation or display connected to your subject area(s), $\chi^2(1, 276) = 4.773, p = .029, \Phi = .029$; Being a member in an research project run by a lecturer, $\chi^2(1, 276) = 11.217, p = .001, \Phi = .001$; and Contributing to a research project in anyway, $\chi^2(1, 276) = 25.761, p < .001, \Phi < .001$.

In sum, the results show that there is a significant difference between research masters and PhD students' experience in hearing an individual from staff examine their research work in module, textbook or handout. More specifically, the results show that the PhD students have had more of such experience than the research masters' students. Therefore, PhD students are well-exposed and advanced in research than the masters' students.

The study also showed that the undergraduate students had heard more guest lecturers discussing their research work than non-research master students. However, in the various research experiences, the non-research masters had experienced more research than the undergraduates, including

being a member in a research project run by an instructor, and adding to a research project in anyway. Therefore, since the undergraduates are always on campus, the tendency for them to be exposed to resource persons or guest lecturers through various platforms such as seminars, conferences and even lecture theatres is relatively high compared to the non-research masters' students who are sandwich students whose academic work is overloaded coupled with spending limited time on campus.

On the issue of non-research masters getting more exposed to research by being a member in a research project run by a lecturer, faculty members would be comfortable with involving non-research masters' students in their research more than undergraduates since these non-research masters' students had passed the academic stage of the undergraduates and it is expected that they can do better than the undergraduate students in terms of research.

Discussion of Results

Research question one

Research Question One sought to assess how lecturers and students conceptualise the link between research and teaching. The key finding from the quantitative phase of this research regarding the conceptualisation of the link between research and teaching is that both lecturers and students conceptualise the research-teaching nexus as knowledge currency, as well as, scholarship and curriculum orientations. However, lecturers tend to agree more on the conceptualisation of the link than the students based on the homogeneity of the responses despite the fact that both faculty members and students have strong conceptualisation of the nexus.

Regarding curriculum-oriented conceptualisation of the link between research and teaching, lecturers and students refer to this conceptualisation when they believe the link between research and teaching is about promoting lifelong learning in students through research to improve practice. Also, the curriculum orientation in terms of conceptualisation connotes a situation whereby faculty members conduct research about teaching and learning that informs and evaluate curriculum development, coupled with making explicit the nature of research for knowledge development. It can, therefore, be inferred from the findings that faculty members' efforts of linking research to teaching focuses more on addressing issues related to the curriculum than any other educational matter since they had a stronger agreement on curriculum-oriented conceptualisation.

Describing the knowledge currency as a dimension of the link between research and teaching, lecturers and students describe the link between research and teaching as a situation where faculty members update and conduct research in order to remain abreast with current disciplinary knowledge. It also implies that the nexus is deemed a situation where lecturers integrate their research into teaching to give currency to knowledge, as well as, a practice whereby lecturers' research interest informs the development of resource materials for teaching and learning. This high knowledge currency conceptualisation stems from the description given by stakeholders about the research-teaching nexus from the perspective of lecturers and students, indicating that the nexus ensures the update of existing knowledge since research findings augment the development of new knowledge.

Another description of the research-teaching nexus is scholarship-oriented conceptualisation. Based on this conceptualisation, lecturers and students describe the nexus as encouraging and motivating students so as to inculcate into students lifelong learning through research with the view to improving practice. Under the scholarship-oriented conceptualisation, the nexus is seen as the scholarship of teaching integrated into research supervision coupled with visiting scholars within the community of practice acting as resource persons. It can be inferred that the research-teaching nexus is also conceptualised as promoting reflective practices in teaching to promote meaningful and lifelong learning.

Remarkably, the qualitative results obtained from the interview resonate in many respects with the quantitative results on the conceptualisation of the research-teaching nexus to a larger extent. This stems from the semblance in responses from the perspectives of both lecturers and students. In emphasising the fact that the nexus is ensuring the currency of knowledge, most of the participants indicated that they constantly update their lecture notes through researches conducted by themselves, as well as, other scholars. This compelled them to emphasise that they believe research has an immense role to play in teaching by way of ensuring the update of knowledge. The term knowledge currency conceptualisation connotes the fact that the research-teaching nexus assures some level of knowledge update with the view to enhancing teaching and learning.

Furthermore, the acknowledgement from the interview participants explicitly demonstrate that the research-teaching nexus is conceptualised by both lecturers and students as curriculum-oriented. They believe that the nexus

is about researching into teaching and learning that augment the development of the curriculum, as well as, the development of relevant teaching and learning resources to facilitate lessons. Buckley (2011), in support of knowledge currency conceptualisation, indicates that conducting research can both augment faculty members' competency within the context of their subject discipline and keep them updated on the knowledge they are imparting on the students. Therefore, he recommended that faculty members should make good use of available researches for the benefit of their students' learning, as well as, themselves as learners.

Scholarship-oriented conceptualisation manifested in the interview when faculty members revealed that they research about their teaching and learning with the view to modifying their teaching techniques to suit learners, therefore, they undertake rigorous reflective practices by subjecting their teaching to review with the view to augmenting students' learning outcomes. It is therefore, insightful to indicate that this scholarly-oriented conceptualisation can be explained within the context of the Scholarship of Teaching and Learning (SoTL) model underpinning this study, which emphasises that faculty members have the opportunity to test hypotheses about their own classroom practices by subjecting their practices to intense scrutiny, reflecting on the results, sharing them with colleagues, and then making modifications to improve their practices (Cambridge, 2004 as cited by Gillespie et al., 2010; Slapcoff & Harris, 2014). According to the model, to become a true scholar as a faculty member, one needs to navigate through the scholarships of discovery, application, teaching, and integration in order to be recognised as a scholarly academic (Boyer, 1990).

The impression created from the discourse so far is that faculty members who have a relatively stronger conceptualisation have the conviction that any effort made by them to effectively integrate research into teaching is likely to influence teaching and learning outcomes positively. For instance, if faculty members believe research helps them to enrich their lecture notes and teaching resources, this strong knowledge currency conceptualisation is likely to compel these faculty members to commit to and spend time to enhance their teaching with the view to optimising students' learning outcomes.

This finding also validates Marsh and Hattie's (2002) observation that the research-teaching bond was peak for all those who invested a greater percentage of their teaching time, and almost none for all those who invested modest percentages of teaching time, and unfavourable for those who spend the smallest percentage of their teaching time. In addition to this, for those who have the more positive views that good teaching leads to good research or good research contributes to high-quality teaching, the correlation between research and teaching is not positive. This conceptualisation is likely to have effect on the manner and extent to which faculty members conceptualise and integrate research into teaching.

In the logical sense, the aforementioned definition appears to imply that faculty members who expend a maximum proportion of their time dedicated to teaching will formulate methods to add to their research productivity through their teaching efforts. Putting the assumptions underpinning this study into perspective, it is my strongest conviction that faculty members who believe teaching and research are less related are less likely to integrate their research into teaching. Therefore, the successful implementation of the research-teaching

nexus is contingent on the beliefs, assumptions and conceptualisation held by individual faculty members, as well as, students. This is likely to determine and affect the degree to which research can be incorporated into their instruction by these faculty members to maximize the learning outcomes of students.

An extensive review of the extant literature reveals that some subject disciplines easily lend themselves to the research-teaching nexus more than other disciplines that have the tendency to influence the way the research-teaching nexus is conceptualised and subsequently implemented (Marsh & Hattie, 2002). This could be attributed to the fact that some subjects are hierarchical in nature of which students are required to follow procedures in the manner they are sequenced. The implication is that there is no room for flexibility in terms of varying procedures since they are prescribed and has been generally accepted. Most of the interviewees espoused that practically-oriented courses are more susceptible to effective research-teaching integration than liberally-oriented subjects.

This seems to suggest that faculty members, in certain subject areas are more likely to inculcate research into teaching than others attributed to the nature of the subject discipline they find themselves in and how they have conceptualised the research-teaching nexus over the years. Thus, only at postgraduate level will the incorporation of research into teaching be enabled successfully in fields with a very hierarchical structure (Marsh & Hattie, 2002). At the undergraduate level, however, students have limited disciplinary structure to effectively participate in research-based teaching. In view of this, many stakeholders cynically consider the synergetic connection between research and teaching as mere illusion, rather than real.

Confirming the findings, Barnett (2005) postulates that the link between research and teaching is relatively cumbersome in terms of subject content to be applied in “hard” fields such as mathematics as well as science rather than in soft disciplines such as history, particularly because of the more centralized and cumulative creation of knowledge in mathematics and science. With this result, I developed the impression that, owing to the scope of some subjects compared to others, it is more difficult to adjust the current research results in mathematics than in history, and that it is easier to fit research with teaching at the postgraduate level than at the undergraduate level because of the unique nature of curriculum designs at these levels. Barnett, therefore concludes that stakeholders’ belief systems about the research-teaching nexus are likely to be influenced by the disciplinary spaces within which that individual is found.

Reiterating how the relation among teaching and research are conceptualised, Becher and Trowler (2001) describe the link as distinct ‘academic tribes’, while, Wenger (1998) saw the link as ‘communities of practice’. These diverse conceptualisation go a long way to affect the various understanding and conceptualisation of stakeholders in education, coupled with their attitude towards the integration by these various stakeholders of the research-teaching nexus. It is also necessary to show that the context of the university influence conceptualisation since the ability of the university in creating an enabling environment for practicalising the research-teaching nexus either facilitates or hinders the effective incorporation of research into teaching.

As already established in the statement of the problem in this study, many stakeholders, including students, teachers, lecturers, and scholars ascribe different connotations, descriptions and definitions to the relation among

teaching and research. This, from my viewpoint, has led to the complexity in the understanding, designing, implementing and integrating research into teaching among faculty members in universities. It is, therefore, not surprising when Robertson and Bond (2001) indicate that the linkage existing amongst university research and teaching has been viewed by faculty members from several perspectives. Also, Healey (2000) and Brew (2003) intimates that the means by which faculty members construe the terms scholarship, teaching and research is surrounded by a lot of controversies due to diverse perspectives informed by their belief systems and their level of exposure in academia. For instance, Brew views research as outcome-oriented (external), while Robertson and Bond see it as learning-oriented (internal). Brew further stated that most faculty members perceive scholarship as how they value their knowhow from their own perspective. Hence, influencing their conceptualisation of the research-teaching nexus.

It is also suggested that some of the nuances and disputed existence of the connections among research and teaching indicate discrepancies in the conceptualisation of teaching, research and learning, and also in the area of study in which the links are contextualised (Brew, 2010). That notwithstanding, the similar conceptualisation revealed by this study by both faculty members and students contradicts evidences demonstrated by prior studies on the research-teaching nexus. These contradictions are partly associated with the scepticism and uncertainties associated with the conceptualisation of some of the participants about the research-teaching nexus. These uncertainties emerged from the interview when some of the faculty members indicated they have no clear understanding of the connection amongst research and teaching, despite

their believe in the existence in the research-teaching nexus. However, they had the notion that until there is an intentional and voluntary effort and commitment to connect the two activities, the nexus' goals could not be attained. It is also interesting to state that these uncertainties were ascertained from the perspectives of both faculty and students.

The impression created is that several stakeholders have different connotations and representations when it comes to conceptualising the connection amongst research and teaching. In validating the findings, Badley (2002) analysed and synthesised the research-teaching nexus based on different interpretations by several scholars. The connection may be defined, according to these scholars, as either 'an imminent divorce'; 'a marital partnership'; 'a holy alliance'; 'a scholarly relationship'; and, 'a very helpful connection' (p.13).

The description of the research-teaching nexus as an impending divorce connotes that there exist distinct institutions for research and teaching. For instance, in the USA, there exists research institutions separate from that of teaching institutions; while, in the UK, one could easily identify research-led and teaching-led departments separately. With the metaphor of a conjugal partnership, research is regarded as the "male partner" and teaching as the "female partner". The definition of the Holy Alliance recognizes analysis as a creator of confusion and instruction as a remedy to the confusion. Research and teaching are independent, but corresponding intellectual practices in the scholarly partnership. Therefore, based on one's disposition, orientation, experiences and level of exposure on the research-teaching nexus, the individual's belief system and conceptualisation about the nexus is likely to be

influenced. After this exposure, the likelihood that one's conceptualisation of the connection amongst research and teaching would be influenced is highly probabilistic.

Contextualising the findings within the theories underpinning the study, Boyer (1990) incorporates research and teaching in his categorisation of scholarship, which includes knowledge exploration and convergence scholarships, through the perspectives of the Teaching and Learning Scholarship (SoTL); and, the application of knowledge scholarship. These different connotations of the SoTL inform the several conceptualisations held by stakeholders in academia such as faculty members and students about the research-teaching nexus.

In spite of the wide range of uncertainty surrounding how students and faculty conceptualise the research-teaching nexus, the interview results reveal a seemingly useful link of the research-teaching nexus. This finding also validates the findings of Badley (2002) who describes the research-teaching nexus as a 'really useful link' in the sense of an interactive relationship. This result creates the impression that the research-teaching link is valuable despite the challenges one may encounter when implementing it. Thus, the connection is seen from various perspectives dependent on the various translations given by several stakeholders.

Synthesising and analysing the discoveries of this investigation and juxtaposing them with the extant literature, it is reasonable to argue in the context of Business Education that both faculty and students have the notion that there is a stronger connection between research and teaching. Therefore, there is a sharp contrast between the ideal nexus and the reality, despite the

similar conceptualisation between faculty members and students. Juxtaposing the findings with the extant literature, I can contend that conceptually, Business students and faculty perceive the link between research and teaching as a ‘marital relationship’ that has a useful link. Nevertheless, the reality of its implementation could be seen as an impending divorce since the actual level of integration as revealed by this study is at the lowest level of integration (research-led teaching).

Pocklington and Tupper (2002) agree that people differ significantly in their views on the existence of the science-teaching nexus to contribute to the various conceptualisation of the relation among research and teaching. Many firmly agree that the standard of teaching is frequently skewed by university research, whilst others claim that classes offered by people at the forefront of research would have a beneficial effect on teaching. It is my strongest conviction that whatever be the case, if the nexus is managed efficiently, the benefits are likely to outweigh the cost depending on the management strategy. Henkel (2000), therefore, concludes that these several conceptualisation, in part, reflect the importance of linking research and teaching in policy frameworks of universities and their faculties.

Hattie and Marsh (1996) noticed no substantial association between research efficacy and teaching effectiveness when justifying the conceptualisation of the connection among research and teaching. However, Jenkins (2004) indicated that “there is clear evidence from a range of studies in different types of institutions of students valuing learning in a research-based environment” (p. 29). The assumption is that a variety of myths have also been formed regarding the existence of the research-teaching nexus, resulting from

the nuances and misconceptions assigned to the nexus, considering these differing views.

Synthesising and analysing the conceptualisation and the levels of integration, it would be a disservice if I fail to draw an attention to the fact that students' conceptualisation of the teaching-research nexus reflect the fourfold distinction among research-led, research-oriented, research-tutored, and research-based teaching. It is however, imperative to indicate that the research-teaching nexus continues to be an evolving phenomena with several different conceptualisations from different stakeholders of education (Levy & Petrulis, 2012). Despite the different conceptualisations among the various stakeholders, the lesson learnt from this study is that stakeholders from the same environment or context are likely to have the same conceptualisation of the link between research and teaching which is influenced by the same environmental context. No wonder this study revealed similar conceptualisation of the research-teaching nexus between faculty members and students as the tested hypothesis on conceptualisation revealed.

It is important to note that when seeking an explanation by faculty members of their professional conceptualisation of the connection between research and teaching, conceptual strains emerge within the research-teaching nexus. The primary allegiance for most faculty members is acknowledged as their discipline of specialisation or profession (Jenkins, 1996). Awareness in their specialty, though, is important to the professional status of persons, generally acknowledged by research and publications (Macfarlane, 2004; Gibbs, 2007). In addition, the need to build the next crop of experts is also part of the technical strategy, stressing research oversight (Pearson & Brew, 2002;

Knight & Trowler, 2001). It is the relationship between teaching, on one hand, and research on the other hand, that forms the discourse surrounding professional knowledge. This has the tendency to inform faculty members' conceptualisation about the research-teaching nexus.

In an effort to reconcile the rising tensions among teaching and research, Boyer (1990) proposed a re-categorisation of professional expertise theoretically, conceptually, practically and professionally, and postulated that “the moment has arrived to step beyond the conventional teaching versus research argument and give a wider and much more capacious definition to the common and honourable word scholarship” (p.xvi). In conclusion, it holds to argue that the conceptualisation of the research-teaching nexus by both faculty members and students is seen to be informed by their level of exposure and experiences of research and teaching and how the two are intertwined.

Research question two

Research Question Two sought to determine the extent to which lecturers integrate research activities into their teaching. The quantitative phase of this study revealed that faculty members engage students at the research-led level of integrating research into teaching. Thus, the dominant level of research integration into teaching is research-led. It appears the dominant level of integration is a true reflection of the dominant ranks of faculty who were involved in the study, coupled with the level at which they were teaching. Speculatively, the impression created is that a majority of the faculty members were teaching at the undergraduate level. That notwithstanding, irrespective of one's rank in academia, there should be the quest to effectively integrate

research into their teaching. The results seem to suggest that since faculty members are operating at the research-led level of integrating research into teaching, the research-led teaching epitomises a weakly embedded link between research and teaching. This becomes a mere information transmission whereby teaching is teacher-centered and therefore, unidirectional.

Elaborating on the levels of integrating research into teaching, research-led teaching, which is described as the first level of integration could be described as building and planning learning exercises around helpful contemporary research findings and placing the latest research findings in the context of their respective disciplines. Whereas research-oriented, which constitutes the second level of integration could be referred to as the cycles by which information is created during lessons, coupled with the act of injecting teaching with the estimations of research.

The third level of the nexus adopted by the lecturers of Business Education was research-based teaching which is referred to as the practice of designing lessons to advance dynamic commitment with issues a lot. Also, research-based teaching could be described as encouraging students to undertake independent projects as a part, or whole of a course and designing lessons to enable students carry out research to facilitate their learning processes in the university. It is interesting to indicate that the extant literature highly recommends the application of the last two levels of integration (research-based and research-tutored) since they form the highest levels of integration of research into teaching (Healey, 2005). In supporting this recommendation, Healey and Jenkins (2009) confirm that “research-based curricula is the preferred teaching orientation because it is expected that universities treat

learning as a problem solving endeavour and not just mere accumulation of knowledge” (p. 3).

The most advanced level of integrating research into teaching is research-tutored. Research-tutored teaching refers to practices whereby lecturers engage their students in critical examination of any knowledge they come across by encouraging their students to contribute to research papers and conference posters, as well as, giving students the opportunity to critique research findings presented to them. It is important to indicate that the Four modes of the research-teaching nexus as the major theoretical model plays a critical role in determining the level of integration of research into teaching in higher education.

In light of these levels of integration of research into teaching, it is very important to notice that different teaching activities related to research vary in the degree with which these practices rely on the dissemination of research content or on the research method and product. However, they also differ to the extent to which they regard students as participants or as audience (Healey, 2005). Therefore, Healey espoused the four modes of the research-teaching nexus which is the underlying model for this current study. For instance, this study reveals that majority of the Business Education faculty members are operating at the first level of integration technically known as research-led teaching. This finding, therefore, forms the impression that faculty members were involved in mere content transmission of research outcomes as prescribed by the lecture method. It is therefore, not amazing that the majority of these faculty members were operating at the research-led level since they were using the lecture method pedagogy prescribed by the universities.

Consistent with prior findings and authenticating with the model underpinning this study, Healey (2005) draws a distinction among the levels of integration of research into teaching by making reference to whether there is an emphasis on either research content or research product matched against students are regarded as audience or active participants in the teaching and learning process. These distinctions are necessary for a clear establishment of the level at which faculty members are integrating research into teaching. Consequently, in the light of the current findings, the research-teaching nexus model maintains that the integration of research into teaching within the context of Business Education is a true reflection of emphasis being placed on research content, while students are regarded as audience in the teaching and learning process, leading to research-led teaching.

Healey (2014), in relating the distinctions to curriculum design opined that it is imperative for faculty members to introduce their students to the dynamics and rationale behind theories and concepts within their field of study, and therefore, recommended research-based teaching in schools. Emphasising on this, he vehemently postulated that; “research-based teaching must be an integral part of the curriculum as it triggers students’ learning in research and places them in an inquiry mode” (p.42). In spite of the discoveries of this current study, Healey and Jenkins (2009), in their recommendation, intimate that “research-based curricula is the preferred teaching orientation because it is expected that universities treat learning as a problem solving endeavour and not just mere accumulation of knowledge” (p.3). They further recommended that advanced education students should encounter learning through research and request mode to enhance students’ learning processes and outcomes.

It is insightful to intimate that the qualitative results corroborated the quantitative results in the sense that all the faculty members who were interviewed confirmed that their level of integrating research into teaching were minimal. This could be attributed to the reason that most of these faculty members indicated that they involved their students in research as a way of trying to relate contemporary findings within the context of Business Education in teaching their students to facilitate the learning process.

Inferentially, it is obvious from the demographic characteristics of faculty that most of these faculty members were teaching at the undergraduate level. This has the tendency to influence the overall level at which faculty is likely to integrate research into teaching. This creates the impression that the tendency that faculty members teaching at the postgraduate level such as research masters and PhD candidates are likely to apply the higher levels of integrating research into teaching (research-based and research-tutored). This is due to the fact that by the nature of the undergraduate and post-graduate programmes, relatively, the post-graduate programme is more research-inclined compared to the undergraduate programme. Therefore, one would expect that faculty members teaching at the post-graduate level will integrate research more effectively into teaching than their counterparts teaching at the undergraduate level. It is, therefore, not startling to find out from this study that the prominent level of research integration into teaching is research-led, owing to the fact that many faculty members are teaching at the undergraduate level.

Moreover, a positive nexus cannot be something which emerges automatically, unless intentionally created. To successfully achieve a positive integration of research into teaching, pragmatic measures need to be

deliberately implemented at the individual faculty and institutional levels. Prominent among these pragmatic measures of integration is the adoption of a broader and a more inclusive definitions of teaching and research coupled with their possible interconnection. That notwithstanding, Hattie and Marsh (1996) posit that *“at best, teaching and research are very loosely coupled ... the fundamental issue is what we wish the relationship to be, and we need to devise policies to enhance this wish ... (and that to better ensure effective teaching research links) we need to increase the skills of staff to teach emphasising the construction of knowledge by students”* (pp. 529-533).

Discussing the levels of integrating research into teaching, the conceptualisation of students about the research-teaching nexus can never be taken for granted. Therefore, some of the faculty members indicated that their students normally perceive research introduced into lessons as alien or foreign, unless the faculty members go the extra mile to further explain these introduced concepts in relation to the lessons being taught. This suggests that research, rather than enhancing the teaching and learning process may misrepresent the content, if not handled with care. Therefore, scholars highly advocated that faculty members would have to intentionally plan and integrate their research into their teaching.

To further authenticate that most faculty members were operating at the lowest level of integration (research-led) of research into teaching, the interview results showed that some of the faculty members suggested that the only way they could expose their students to research is by asking them to find some information for presentation as part of their assessment.

Contrary to the discoveries of this study that faculty members are operating at the research-led level, Prosser and Trigwell (2014) reveal that research-based teaching is what is recommended in the higher education curriculum which involves education in which organised prospects are created for students to study through research and active enquiry. They also indicated that there is increasing evidence that learners benefit from participating in constructive and dialogic questioning, whereby the prior views and assumptions of each person are questioned by engaging actively with others and the object of research.

Nevertheless, Prosser and Trigwell (2014) agree that the solution to the related curriculum is not only about supporting a single pedagogy or a variety of alternative curriculum structures, as helpful as they can be. It is not also all about building stronger relations between the research of a department and its study programmes. Scholars are studying the universe from multiple perspectives in the higher education environment. For example, their emphasis may be to observe and examine the physical universe, to explain the human world, or to advance professional practice. Therefore, the development of a curriculum that more clearly and more creatively connects these complex landscapes of inquiry for students has the ability not only to increase the quality of education, but also to improve research itself, and to further improve the effect of research and scholarship on the teaching and learning process.

In authenticating the above findings, McLernon and Hughes (2003) discovered that this research-teaching integration is more problematic at the undergraduate level in comparison to the postgraduate level due to their perceived differences in their levels of research experiences and understanding

and their potential abilities to connect to their learning situations. Jenkins (2000) insinuates that complications in integrating research into undergraduate teaching come from particular frameworks, dynamism of research and limitations of syllabi. Thus, due to the nature of the curriculum design of postgraduate studies, it becomes easier for a faculty member to effectively integrate research into teaching at the postgraduate level. This notwithstanding, the case is different for the undergraduate level where the integration is relatively difficult.

Perhaps, this might have contributed to the low level of integration (research-led) by the faculty members suggested by the results of this study since most of this faculty members involved in the study teach at the undergraduate level. In the light of all these, it is fairly reasonable to argue that it is much easier to implement research-based and research-tutored practices at the post-graduate level (masters and PhD), while research-led and research-oriented teaching practices are more obvious at the undergraduate level without losing sight of the role discipline plays in the level of integration. This assertion is supported by the perceived limited research experience of undergraduate students compared to the postgraduate students.

Contrary to the above assertion, the researcher is of the opinion that the level of integration is not necessarily about the level of the student but the readiness, willingness and research exposure of both students and faculty members. Faculty members should initiate and encourage students to be actively engaged in research in their learning process in order to optimise the benefits of the research-teaching nexus.

In spite of the different levels of integration, it has emanated from the study that each faculty member demonstrated preference for integrating research into teaching. It is, therefore not amazing for Robertson and Bond (2001) to indicate that almost all faculty members interviewed “expressed a preference for integrating research into teaching, as opposed to concentrating exclusively, on one or the other” (p. 7). This current study, therefore, confirmed Robertson’s claim that all the staff interviewed, irrespective of their ranks, indicated preference for establishing a link between research and teaching but the actual practice of integration was contradictory.

Though, the quantitative phase of this study generally, reveals a relatively low level of integration of research into teaching, some faculty members, through the interview, indicated they practise different levels of integrating research into their teaching. Arguably, this could be attributed to the different levels at which they are teaching that suggest a mixed level of integration of research into teaching: some high (research-based and research-tutored) and others, low (research-led and research-oriented). Therefore, these faculty members might be teaching at the postgraduate levels such as the masters and PhD levels.

Jiang and Roberts (2011) examined the effect of two methods of research-led and research-based teaching on the learning and comprehension of research by students in attempting to ascertain the extent of integration of research into teaching by faculty members. They found out that students’ understanding of research was most reinforced by the research-based learning, rather than research-led teaching based on the continuum of the research-teaching nexus as presented to the students as an experience of doing research.

Consequently, most faculty members from prior studies, made good use of research-based teaching.

In substantiating their stance, Jiang and Roberts (2011) admit that inadequate awareness and understanding on the part of educational stakeholders such as students and faculty members about the effective implementation of integrating research into teaching. Therefore, highlighting the curriculum implications of research-based teaching, Lightfoot and Piotukh (2015) support the assertions made by Jiang and Roberts by stating that students must be told the essence of research-based teaching and its implication on teaching and learning in higher education to promote meaningful learning outcomes.

To further expatiate on the level of integration of research into teaching connected with their perceived impact on students' learning, several faculty members reported positively about their research-based teaching practices. For instance, in a study by Hoskins and Mitchell (2015), they indicate that the role of research-based teaching cannot be overemphasised. Therefore, from the above analysis, though different faculty members are operating at different levels of the nexus, intensive efforts are being made, through the conversations to further enrich the research-teaching nexus by practicing more of research-based and research-tutored teaching practices and not necessarily limit their operations at the initial stages of the integration such as the research-led and research-oriented teaching practices. Throughout extant literature, most of the scholars have highly recommended that it is important for faculty members to highly integrate research into teaching by way of practising research-based teaching in the higher education curriculum to augment the knowledge

production process, thereby, fostering partnership between lecturers and students in their teaching and learning expedition.

Faculty members also expect that by engaging students in research-based teaching, may stimulate their thinking capacity. This could easily be facilitated through research-based teaching which emphasises students' active involvement in research activities in the teaching and learning process in Ghanaian higher educational institutions. This, therefore, creates the impression that ideally, the integration of research into teaching is desirable for faculty members who are "lovers" of research. This could be alluded to the fact that they can easily integrate what they love (research) into their teaching to promote meaningful learning outcomes. Research-based teaching can also be contributory to faculty members' own research when students develop the necessary skills to assist these faculty members in conducting research.

As part of ensuring the effective integration of research into teaching, Douglas (2013) proposes that as part of integrating research into their teaching, faculty members should teach as part of their research activity, they should use their research when planning lectures, they should also adopt a flexible style and adapt their research interests to available opportunities. He further proposed that they should proactively promote their research, as well as, engage in research as a collective activity while actively engaging their students.

To conclude, as being one of the higher stages of incorporation, the related program originating from research-based instruction is obviously not structured to be a short-term strategy. It is never about checking boxes or following the new rhetoric and jargon. Nevertheless, throughout and across current research communities and teaching departments, it is about cultivating

spaces for legitimate constructive debate, through which the very questions that academics, professional staff and students have about institutions and opportunities can be addressed. The aim is never to limit classroom thought, but to loosen it up; not to establish further uniformities, but to leave practice free to become more flexible in order to encourage students to learn beyond the box and become research-based teaching-facilitated problem solvers.

Research question three

Research Question Three sought to identify students' research experiences in the university. The dominant research experience of students across all levels was hearing their lecturers discussing research issues during lessons. In addition, UGD students normally experience research through research work discussed with them by their lecturers and reading research papers. RM students also experienced research through reading research papers, attending research seminars and conferences and contributing to research. NRM students experienced research through research work discussed with them by lecturers and contributing to research. Finally, PhD students experienced research through lecturers discussing it with them, reading papers, attending research seminars, participating in research projects and contributing to research in anyway.

However, lecturers do not discuss their research in Research Masters' Class. Further results showed that students do not examine artefacts and attend exhibitions. More PhD students did not attend conferences. Students rarely participate in on-going project works. Students rarely serve as research assistants in research works. Students rarely contribute to research papers. In

summary, students rarely attend exhibitions, examine artefacts and act as research assistants during data collection as avenues of accumulating research experiences. Therefore, in terms of the number of research exposure activities, as expected, research postgraduate students (M.Phil and PhD) had a relatively more research exposure and experience than their non-research counterparts, as well as, undergraduates from the quantitative data analysis.

Confirming the quantitative findings with the qualitative results, the study revealed that research experiences of the students across all levels of their study were mixed experiences across the board. That is to say different students experienced different research exposures in their university life. This was made apparent when some of the students echoed that they experience research through the research methods as part of their course module. Some revealed that they also get their research exposure through reading research papers. However, some of the students also indicated they wish they could participate in some research activity, but are not given such opportunities.

Contrary to the above excerpts, some of their counterparts who have had a relatively much more research experiences, they revealed that they attend some research seminars and conferences as part of effort to augment their research experiences, coupled with reading of journal articles. The postgraduate students also indicated that they consulted their supervisors anytime they needed a document related to their research. These postgraduate students also indicated that their lecturers encourage them to attend research seminars, workshops and conferences. This confirms the varied research experiences and exposure encountered by students across various levels of study, coupled with different disciplinary spaces.

Consistent with the above findings from the study, Colbeck (2004) opined that in terms of research exposure and its integration into teaching, the connection between research and teaching is more difficult to implement as part of exposing students to research experience because of the more hierarchical and cumulative construction of knowledge in certain subject disciplines. Therefore, it is much more difficult to include the current research results in the undergraduate curriculum design compared to their seniors who are undertaking postgraduate studies due to the scanty research exposure of undergraduate students relative to their postgraduate counterparts.

It is also instructive to argue that since gaining research experiences is a continuous learning process, most of these students interviewed on their research experiences expressed the interest and enthusiasm to get more exposed to research during and even after their university education since they probably, are aware of the invaluable contribution of research in education. This is espoused within the tenets of Kolb's (1984) experiential learning theory undergirding this study.

These demands made from faculty members by some students as part of exposing students to research experiences to optimise the benefits of the research-teaching link compelled Robertson and Bond (2001) to develop different experiences of the relationship between research and teaching. These include the experience of research and teaching as interdependent activities in a learning community between faculty members and students. Brew (2003) also endorsed the claim by stating that teaching experiences, is a way of communicating new research discoveries (research-led teaching), and the

knowledge that faculty members show and promote inquiry-based learning (research-based teaching) are essential for contemporary education.

It is worthy of note that these revelations suggest a mixed engagement in terms of research experiences from these students across their levels of study. Overall, the students' mixed engagement with research exposure across the various levels implies that their research exposure was passive, rather than active. It is interesting to note that there are several influences that either militate against or facilitate students' exposure to research in the university. Prominent among these influences is the culture of the university that creates the platform or enabling environment for students to have significant level of research experience (Brock, 2010). There are also several ways through which students gain research experiences including attending research conferences and seminars, participating in research projects, reading research papers and other research-related activities.

In validating the findings on students' research experiences in the university, Horta, Dautel, and Veloso (2012) examined the research-teaching nexus in terms of the research experiences of students. They found a weaker link, especially, at the undergraduate level and a relatively stronger link at the post graduate level and concluded that postgraduate students are likely to have more research experiences than the undergraduate students. Their study indicated that the traditional teaching activities showed a weaker linkage to research outputs, especially, at the undergraduate level. This seemingly suggests that a positive effect of research experience could be realised on research production as a result of engaging in research activities for all manner of students in order to promote student-centered learning.

Among the different approaches to associate disciplinary research with teaching, extending the statement on the perspectives of students in research at the university includes students in the departmental research programme. Because engaging students in research is a means to improve their learning, encouraging them more. Then again, involvement in the thrill of research is what encourages vast numbers of faculty members. Putting together research and teaching is a way to increase the morale of both faculty members and students (Jenkins & Healey, 2009). The results of this report, however, make it clear that many of the students were not interested in departmental research. This is not shocking because the professors themselves are not regularly participating in research and do not have a departmental research initiative in which the students are supposed to participate. Likewise, Jenkins and Healey (2009) have observed that in later years of their report, students do not believe that they are players in their teachers' research so they do not consider the urge to be engaged. After all, they believe they would just be toiling for nothing since their active engagement in such research would benefit their teachers more than them or they are likely not to benefit at all. This gives me the impression that there is a perceived lack of awareness on the part of students to actively engage in research as part of their university experience.

Then again, field researchers such as Brew (2013) proposed that including undergraduates in research groups supervised by university personnel or research assistants would be helpful. The author also points out that they learn a lot from acquiring research experience while students are actually involved in creating interpretation or disseminating information. This approach to teaching is an important way for students to benefit from faculty study (Hensley, 2015),

especially, when they are actively engaged. Hensley also observed that more advanced stages of academic growth are established by students participating in research-based study. She considers such research as proactive pedagogy of innovations in which teachers design the process of developing expertise in their field, teach students the process, and provide students with possibilities to learn and become competent in it through adequate experience in learning.

Corroborating the above notion, Baldwin (2005) further indicates that students would obtain tremendous useful knowledge of studying on the job with seasoned peers by engaging in the departmental research project, and the task would be able to rely on a pool of exceptional talent to boost their excitement. In the other hand, however, scholars indicate that there are different ways of linking research to teaching, the results of the study show that faculty members attempted to use only approaches such as constructing small-scale research tasks in undergraduate assignments and presenting students with a small-scale literature analysis of the courses they are teaching.

On the opposite, they did not seek to use approaches such as planning and teaching courses centered on their subjective research, designing learning experiences on current policy problems, engaging students in departmental research projects, and performing and drawing on student learning studies to make evidence-based teaching decisions to strengthen the connection between research and teaching. This finding suggests that in educating their undergraduate students, faculty members did not use the different approaches of strengthening the research and teaching nexus of their classes. Nevertheless, Baldwin (2005) claimed that there are many aspects in which the research-teaching nexus is formed. Faculty members plan classes and learning

experiences around current research challenges on the basis of their individual research. This is facilitated by contextualising their research within their field of study with the latest research integrated into their teaching.

One of the advantages of research experiences that students gained as part of their university education is that they become acquainted with the essence of research and get to know the latest discovery and/or information made (Jenkins & Healey, 2009). It is evident that we are residing in an environment which is evolving rapidly. What is relevant today may not be relevant for tomorrow in academia. Scholars would accept that teaching the knowledge and skills of a particular discipline is not sufficient, but also that it is a smart thing for students to be trained on how to study in order to instil meaningful learning in them.

In other words, instead of fixing challenges for the students, by the lessons they take, show them how to tackle the challenge themselves. This means that teachers teach basic knowledge of content and neglect teaching the most critical life skills that will help students even further beyond graduation. Nevertheless, scholars like Hensley (2015) firmly indicate that if students are given research skills in each course, they will achieve a range of individual and professional benefits, such as enhanced confidence and academic growth in thought and acting as a researcher, including strengthened abilities to apply knowledge and skills. They are also committed to developing critical thought and problem-solving capabilities and a more comprehensive comprehension of how to develop scientific knowledge. Therefore, it is necessary to integrate some level of research experience in the teaching of courses in universities to enhance the nexus and to promote research-based teaching in higher education.

The suggestion of Brew (2010) eliminates concerns that students who are aspiring practitioners for the future will cultivate the capacity to analyse situations, make sound choices on the grounds of sound evidence and make reasonable choices. This has the tendency to augment students' research experiences, thereby, enhancing their sense of judgement.

Therefore, it is important to remember that research and investigation are not just for those who wish to undertake an academic career. It is central to the professional, career and holistic development of the student especially, in this 21st century. Sadly, students are less often interested in research in their final year. Perusing a research paper or article composed by an individual from staff and completing an individual project as part or all of a course was the most apparent communication with research they found. Whereas, they mention having little to no familiarity with tasks such as listening to a team member discuss their research work in a course, hearing a visiting guest examine their research work in a course, and analysing art/artifacts objectively. This indicates that the presence of students in the research operation is very limited during their stay at the university.

However, Brew (2013) perceives relating students in research-related actions by way of supporting them in developing more sophisticated ways of developing stronger conceptualisation and attitude towards the research-teaching nexus. Brew established in a review of an intense undergraduate summer research program that students who enrolled in the research program became more optimistic as learners, more likely to think objectively. Her research indicated that more complicated knowledge conclusions derive from

the participation of their various institutions in a coached autonomous research experience.

The participation of students in the departmental research program as part of helping them to obtain research experience is among the different ways of connecting disciplinary research with teaching. After all, what motivates a lot of the faculty members is their engagement in the excitement of research. Therefore, putting together research and teaching is a means of improving both faculty members and students' inspiration. It is also relevant to stipulate that the research-teaching nexus is dependent on the teaching methods adopted to engage students by faculty members.

Similar results have also been reported at the PhD level in the Norwegian educational context, as a stronger nexus is likely to be experienced for the research-related programmes (Chen, 2015). Therefore, when commenting on students' experiences of research in the university, one must not lose sight of the methods used in teaching. The reason could be that the method used by a faculty member is likely to inform whether students would be exposed to research or not.

In supporting this current argument, Deem and Lucas (2006) point out in their study that the methods adopted in the instructing of research strategies to instructive experts has pragmatic ramifications for the research-teaching nexus. The implication is that the nexus results explicitly to the growth of a teaching profession focused on research. They also demonstrate that all students are acquainted with the teaching research methods transmission model (research-led and research-oriented) and most students also have an understanding of cultural and learning models of teaching research methods;

many students have recognised a symbiosis among teaching and research (research-based teaching) (research-based teaching).

Furthermore, student-centered approaches foster deep learning regardless of the level of study. This encouraged Elton (2001, p. 43) to argue emphatically that “student-centered teaching and learning processes are intrinsically favourable towards a positive nexus, while more traditional teaching methods may, at best, lead to a positive nexus for the most able students regardless of their level of study.” Although the balance and form can differ, this appears to indicate that a stronger focus on effectively involving students in research may strengthen research-teaching ties and improve the learning outcomes of students.

These findings align with Lapierre's (2006) analysis that indicates that teacher-researchers use classroom discourse to improve their thought in the production of pedagogical case studies. These ties, of course, rely to a great extent on the form of student body involved (Taylor, 2007). Conversations with graduate students and MBA students vary from those with first-year students, who frequently lack the expertise needed to appreciate the scope of conversations and the opportunity to turn the outcomes of discussions into actionable insights, based on discovery and creativity. Therefore, students' level of research experience contributes to realising the research-teaching nexus goals.

Research question four

Research Question Four was meant to find out the factors affecting lecturers' incorporation of research into their teaching. The quantitative phase

of this study revealed that the factors affecting the compatibility between research and teaching integration among faculty are research productivity stimulation factor, empirically-based teaching factor, research active curriculum factor, time-oriented factor, and responsive curriculum factors which is the most dominant factor.

Several factors are likely to militate against or facilitate the compatibility among research and teaching. These include time, research and teaching abilities, institutional arrangements, students' abilities and the conceptions held by faculty members about the research-teaching nexus. It is interesting to point out that regardless of the research and teaching capabilities of a faculty member, there should be that intentional effort in linking these important roles of faculty members to promote effective teaching that leads to meaningful learning. The faculty members, in trying to connect research and teaching, should not lose sight of the potential factors likely to enhance the link or impede the progress of the link. Faculty members should be aware of these factors and rather devise strategies to manage them so as to enrich the research-teaching nexus.

Therefore, some of the faculty members, through the interview, corroborated the results from the survey conducted by revealing that some of their colleagues who are research-inclined hardly find to attend to the needs of their students. This response confirms the time-oriented factor that portrays time for teaching being antagonistic to, or competing with time for research. Elen (2007) also reports that it would not be very logical to spend additional time in teaching since research and not teaching is now at the heart of many universities

and research productivity in realistic terms, and the key factor in tenure and advancement is not teaching efficiency.

It is in this context that Boyer (1990) proposed that all types of scholarship should be accepted and awarded within the scope of the Scholarship of Teaching and Learning (SoTL) framework, and that this would contribute to more customised and versatile tenure requirements. He strongly intimated that, reflecting on this growth, faculty members very frequently struggle with overlapping responsibilities that offer less time to concentrate on their teaching position. Boyer recommends utilizing what he referred to as “creativity contracts” to emphasise quality teaching and individualised professional development. He, therefore, recommended that faculty members should reflect on the Scholarship of Teaching and Learning (SoTL) model to guide the practices and life patterns of the individual faculty member and their passions and aspirations.

Resonating with these findings, Lindsay et al (2002) indicated that faculty members’ concentration on research has the tendency to reduce contact hours with students, and also distort teaching time and curriculum since new research findings are likely to conflict with existing ones. The implication is that a balance between faculty member’s research and teaching activities are required to get faculty members involved in research in order to kindle research-informed teaching in the higher education landscape.

Still buttressing the same point, Brock (2010) believes that in order to undertake research and publications, unsatisfying classroom output could arise when faculty members ignore their teaching responsibilities. The time and resources needed to conduct research is constrained by teaching time

requirements, and vice versa (Marsh, 1996). This is likely to contribute to the imbalance priority given to one activity over the other which stem from incentive and reward systems and structures that support the two activities instituted by the institutions. Thus, research is normally prioritised over teaching by the reward system put in place in various institutions of higher learning. Referring to disciplinary spaces of faculty members as a factor affecting their integration of research into their teaching, some of the disciplines are more receptive to the research-teaching nexus than others. Therefore, most of the faculty members established that the nature of the discipline affects the research-teaching nexus. Implying that more practically-oriented disciplines are prone to effective integration of research into teaching.

In the Natural Sciences, where it is more popular to operate within study groups and with various grades of researchers, research findings have found that it can be better to include students in the research phase. On the contrary, the overriding style of research is strongly individualistic in the humanities and social sciences, and involving students is relatively cumbersome. In addition, it is suggested that chances to discuss research findings with students in social sciences and humanities could be comparatively simpler than in natural sciences. This may be because the sequential, accumulated essence of natural science expertise poses a barrier for the incorporation of the new scientific results into undergraduate courses (Healey, 2005). It is also worth noting that, due to its generic academic focus, the incorporation of research into teaching is valid across all domains (Ozay, 2012), but based on the essence of the discipline spaces, the manner of incorporating research into teaching is expected to vary throughout other subject disciplines.

Disciplinary gaps in terms of partnership, networking and writing practices have receded over time, widening the debate around disciplinary spaces. Several natural science-related practices have been increasingly applied to social sciences and other areas, indicating that research is being gradually carried out in groups. Joint authorship of publications is becoming more popular, and networking mechanisms throughout disciplines have become more comparable, like conference attendance (Kyvik, 2013). Thus, some fields of study lend themselves to group participation relative to others.

Regarding time, as a factor affecting the research-teaching nexus, most of the faculty members indicated that time is one of the most critical resources in realising the research-teaching nexus objectives. Time is an issue here because a faculty member will have to balance family, career (teaching, research and community service) and other social activities as an individual. Therefore, the possibility of a trade-off between research and teaching regarding time is highly probable. It is also possible that a faculty member who is able to balance the two activities is likely to compromise sleep, eating habits and other critical life events that can lead to health-related and other social problems. Reiterating striking a balance between research and teaching, some faculty members indicated that there is high expectation of them to effectively deliver both research and teaching as part of their career development agenda. However, they indicated that it would not be realistic to ensure such a balance due to the competing demands.

In line with this finding, a study by Elen (2007) recommends that several inhibiting factors confront research-based teaching in higher education. Prominent among them is that it is not really logical to spend additional time in

teaching as study is at the center of many universities in reality, when research is the key tenure and advancement requirement. Brew (2013) postulates that all research and teaching practices entail the commitment of time and effort, consistent with the same findings on time as a factor. Being engaged in one task, such as the study process, typically does not encourage time and effort to be spent concurrently on another task (the teaching process), unless one task benefits both research and teaching, such as reading a science article, which may lead to research insights and teaching planning at the same time.

This clearly suggests that faculty will need to balance the two core activities of the university in order to optimise teaching and learning outcomes. The repercussion is that until the university takes a closer look and review its position on its perception about research and teaching and a possible link, faculty members are likely to focus on the activity they believe is more rewarding than the other, which is likely to affect teaching and learning in higher education. Therefore, there is the likelihood for them to prioritise research over teaching as already established by the extant literature (Brew, 2007; Healey, 2005; Schapper & Mayson, 2010, Gerschwind & Brostrom 2015; Taylor, 2007, 2008).

Apart from time serving as a constraint for the effective integration of research into teaching, institutional rewards allocated to both research and teaching can be a contributory factor in the effective implementation of the research-teaching nexus. Supporting the above assertion, research shows that among faculty members, the first priority is research, followed by teaching, and service (Chen, 2015). Another of the factors for this, Chen (2015) points out, is that the compensation scheme for these faculty members in higher education is

often focused on research materials. So even though, research training starts before doctoral students enter the field of education, academic departments and centers within universities have been recognised to produce research, and support faculty that are engaged in scholarly research at their universities (Rumbley, Stanfield, & Gayardon, 2014) at the detriment of teaching.

Anderson (2012) notes a scarcity of research on success assessment schemes in universities to validate this finding of prioritising research over teaching. Even so, there is sufficient proof to indicate that research is regarded most highly than higher education teaching (Brew, 2007; Healey, 2005; Schapper & Mayson, 2010), and that several universities put greater weight on research success metrics for the purposes of advancement, tenure, pay and performance assessment (Gerschwind & Brostrom 2015; Taylor, 2007, 2008). In the US, for example, concrete proof is given by university pay programs that research is regarded much highly than teaching. Therefore, Taylor (2007) found that the key determining factor of faculty pay was the sum of publications in top-tier journals in the USA.

In particular, teaching effectiveness has also been examined as a predictor of faculty pay and offers objective proof of a favorable association between teaching effectiveness and pay, but this result only applies to the faculty section with excellent study records. Therefore, superior teaching efficiency is only expressed in a higher wage after a certain threshold of study output is met. These evidences create the impression that irrespective of the amount of effort put in by a faculty member in teaching, evidence of research productivity must be made manifest before this faculty member realises the

benefits from the investment in teaching. This emphasises the role of research in teaching in higher education.

Anderson (2012) also suggests that the period and efforts devoted to teaching and research are often influenced by academia's scheme of rewards. Research will be compensated by supporting the promotion agenda of universities most kindly than by teaching. There should then be a selective inflow into the field, else research will be prioritised above teaching by individuals in academia, and they would be most likely to develop a career in academia by conducting research. When that happens, teaching is regarded as “punishment”. Therefore, in any context, rational actors such as faculty members may quickly adapt to performance measures that has the tendency to enhance their career progression. In this context, faculty members are likely to choose research over teaching since they are assumed to be rational actors and would definitely go for the most rewarding activity by their respective institutions.

There is a likelihood of a department's climate and modus operandi impacting teaching efficiency, research efficiency, and the interaction among both in the departmental community. He suggested in Neumann's (1992) analysis that the teaching-research nexus operates both at the departmental level and at the personal academic level. The drive to undertake teaching and research practices can also be affected by departmental attributes. In the department, a departmental culture may cause faculty members to put higher focus on research, teaching, or the mixture of the two activities. In fact, if lecturers are dedicated to research and/or teaching, thus it is most probable that there will be inherent incentives and appreciation for success in that activity from colleagues.

Ramsden and Moses (1992) claim that strongly effective units are filled by workers who are less reliable educators in general.

An analysis and synthesis of several prior researches attempted as a component of the proof investigated shows that the research-teaching nexus is contingent on educators' needs, experience and abilities, coupled with the qualities of the school settings in which educators work, as well as the wider policy context stemming from the national level. The implication of this conjecture emanating from the extensive review of literature on the nexus attributed the unsuccessful implementation of research-based teaching to either systemic failure or the levels (individual, departmental, university-wide and the national level) of implementation of the research-teaching nexus.

However, Jenkins (2004) believes that students appear to differ in their behaviours concerning staff research based on their academic inclination towards their studies. He observed that in teaching-research partnerships that are formed by how disciplinary cultures conceive the essence of expertise, research and teaching, the modes of pedagogy and curricula in various domains, and the influence of professional associations and student preferences on the quality and activities of the disciplines for those disciplines, disciplinary inequalities appear to exist. Via a survey and interview of faculty members and students, it was within this diverse pedagogical environment that inspired me to explore the essence of the connection between study and teaching throughout the university.

Consequently, it can be inferred that the core of the dilemma is that two distinct skills (research and teaching) are combined into a sole work. Researchers are requested to teach and teachers are requested to do research,

but there appears to be nothing to engage with each other with these two skills. Therefore, faculty members should not lose sight of the compatibility factors that are likely to influence the effective integration of research into teaching to optimise students' learning outcomes.

Research question five

Research Question Five was created to gauge the impact of the research-teaching nexus. The survey data revealed the impact of the research-teaching nexus as including the promotion of intellectual development, heightened research skills and improved university image, promotion of relevant and functional curriculum, ensures a highly differentiated university, as well as, stimulation of students' interest and knowledge development.

Prominent among the impact is highly differentiated university. This implies that the research-teaching nexus highly distinguishes one university from the other by giving it a unique identity. No wonder some universities claim they are research-intensive, while others are hybrid. The impression created here is that the manner in which the research-teaching nexus is implemented is a true reflection of teaching and learning in the university. The way the nexus is manifested tells whether it is a research-intensive university or not. No wonder research-intensive universities are normally ranked higher than others when it comes to international universities' rankings. This enhances the image of these universities.

The impact of the nexus is also made manifest through the intellectual development of students. This impact could be described as the situation whereby the link between research and teaching that promotes and supports

learning and teaching as a process of intellectual enquiry, as well as, helps students learn techniques utilized to investigate in their disciplines. The intellectual development impact also creates an experience sharing avenue among students and faculty members coupled with deepening teachers' knowledge of the subject matter.

The nexus also heightens research and employability skills. This is attributed to the fact that the nexus develops, in students, important graduate characteristics, for example, research abilities, data gathering skills and information synthesis skills. This impact also portrays the idea that the link between research and teaching instils in students a sense of innovation and creativity, thereby, enhancing their chances of employability. They indicated that the nexus is likely to give credibility to the university and its faculty members.

In furtherance, the respondents indicated that the research-teaching nexus promotes relevant and functional curriculum. This impact means that the nexus bridges the gap among theory and practice and expands the 'opportunity for inquiry and critique. The impact of the nexus is also realised through the enhancement of students' interest and knowledge development. This impact is described as a situation where the research-teaching nexus is perceived as stimulating the interest and enthusiasm of the students for a course where the nexus is applied. The nexus also increases students' awareness of research methodological issues, thereby increasing their understanding of the course taught. Therefore, some of the lecturers indicated that they believe the integration of research into teaching practicalises the teaching and learning process by promoting concrete and meaningful teaching and learning, and also

believe that the link serves as an opportunity to instil in students, creativity skills. It is deceptive to think of the impact of the link between research and teaching as limited to the life of the student in school. This is because the repercussion the nexus has on students transcends beyond the years spent in school through to the lifetime of the student in all his or her life endeavour.

The finding resonates with a study by a group of research-inclined universities in the UK called the Russell Group (2009). The group endeavored to set up expressly why their research-excellent climate is gainful to undergraduate learning. The group revealed that the expected advantages of concentrating in a research dynamic climate incorporate, not just making provisions for research resources and encountering renowned researchers, yet additionally sending standards and ideals of systematic inquiry by drawing in students in an assortment of research based exercises, and applying diverse pedagogical orientations for more insightful learning (Brew, 2010). Caution should, however, be observed as it is valuable to establish that possessing active researchers is a guarantee for the presence of an effective research-based teaching. The link is, therefore, intentionally and explicitly created to optimise educational outcomes.

A surfeit of literature and the revelation from this study indicate that the nexus fosters closer collaboration and partnerships between students and their lecturers. This is attributed to the fact that teaching is less likely to bring lecturers and students closer together due to the large class size. That notwithstanding, some of the lecturers espoused that the research-teaching nexus fosters partnership and closer links among faculty members and their students through collaborative partnerships in research projects.

Healey (2014) emphasized that teachers and students should be allies and collaborate closely in validating this result, not just in the testing component of teaching, as well as in the other aspects of teaching. This helps to provide students the ability to form their own learning environments and improve them. Students are sure to voluntarily participate in such a relationship, and hope to benefit from the opportunity of operating in collaboration with their lecturers.

To further advance the argument on the benefits of the link between research and teaching, Hajdarpasic et al. (2015) intimated that students appreciate that their lecturers are also researchers and “believe that faculty members’ engagement in research deepens students’ understanding, increases enthusiasm for learning and teaching, encourages postgraduate study, develops skills useful for employment and enhances undergraduate research activities” (p. 644). That notwithstanding, my reservation is that it is by no means certain that good researchers are also good teachers since similar, but specialised skills are needed to execute the two major task of a faculty member.

Moreover, regarding the enhancement of students’ interest and knowledge development through the research-teaching nexus, it is clearly seen that the research-teaching nexus is perceived as stimulating the interest and enthusiasm of the students for a course where the nexus is applied. The nexus also increases students’ awareness of research methodological issues, thereby increasing their understanding of the course taught. Neumann (1994) concurs with this finding by showing that the nexus offers students the passion for their discipline that certain faculty members show when relating to their own practice and affects their motivation to learn positively. Students may also obtain specific experience in the scientific environment and are authorized to

participate in research study in certain disciplines (Jensen, 1988). In addition, students see significant gains from the research of workers, such as staff motivation and the reputation of employees and their organization. In my opinion, though, if faculty fails to undertake research, they are clearly not at the pinnacle of their field. The learners are, thus, disadvantaged. Students pursuing university education do so and, to guarantee significant impartation, they anticipate to see teachers that have reached above the average standard of experience.

One of the most essential impacts is widening the argument regarding the advantages of the research-teaching nexus, enhancing the motivation of students and developing awareness. In verifying this, Breen and Lindsay (1999) identified potential beneficial impacts of teaching research as teachers remained up-to-date on emerging methodological methods and on recent trends in their discipline. They observed two beneficial impacts of research on teaching, namely research that creates and retains knowledge of the curriculum of students as a whole, helping them to conceptualise narrower research subjects, and researchers were also inspired by the curiosity and concerns of new students, thereby enhancing their passion for the practice of teaching and learning.

To further illustrate, a professor of English wrote once indicated that “students who engage in undergraduate research receive numerous benefits. They improve and refine their research, writing, revision, and collaboration skills. Undergraduate research promotes creativity and alternative ways of thinking and sharpens students’ ability to analyse, interpret, and synthesise, and gives them the opportunity to understand research ethics, particularly in the

context of their disciplinary community” (Kinhead, 2011, p.21-22). Assessments of research-based teaching and learning by students are often generally favourable. Microbiology students illustratively claim that the consistency of the experience in an investigative laboratory was much higher than all of their prior experiences in the laboratory (Seifert, et al., 2009). In another survey, students established prospects to structure their own research lines and research experiences with a “open-ended orientation, knowledge-building, as especially empowering in their intellectual and personal development” (Levy & Petrulis, 2012, p.85).

It is important to indicate that the research-teaching nexus has its own infirmities. This is induced by the fact that some of the students postulated that when their lecturers introduce complex research in teaching some of the courses, it makes things so complicated that confuse them. And that research-active lecturers do not have time for them. The study of McLernon and Hughes (2003) resonates with this finding by revealing that funding mechanisms and the inequality of rewards instituted by universities for research and teaching have caused tensions among academics, making them research-focused than teaching-focused because of the unequal reward allocated to these two important activities of an academic. To further argue, Turell (2003) supported this assertion by arguing that finding incentives, grants, and career advancement has enabled academics concentrate increasingly on research at the cost of teaching, hence affecting the quality of delivery of education.

In addition to the contested nature of the research-teaching nexus, most faculty members find it very difficult to balance their two core mandates (research and teaching). Neumann's work (1994) reaffirmed this observation

that students viewed drawbacks from the presence of research as alien in teaching. Breen and Lindsay (1999) have noted that research behaviour distracts focus from teaching responsibilities, like student contact.

This contrasts against Friedrich and Michalak's (1983) findings, who denied the traditional argument that there is not sufficient time to be a successful researcher and a successful teacher. They stated that successful research can be achieved without greatly detracting from the time and effort committed to teaching, and they proposed that coordinating or handling time efficiently is the secret to reconciling the requirements of the two.

Arguably, the researcher believes time is a critical factor among the factors here. Friedrich and Michalak (1983) therefore concluded that two opposing points of view exist, namely either a trade-off or a synergistic partnership between study and teaching, and Baker, Bates, Garbacik-Kopman, and McEldowney (1998) reinforced a warning that involvement in research will evidently produce a shallowness that detracts information that students interpret as being a significant factor of good teaching.

It is important to indicate that implementing the research-teaching nexus right from the “scratch”, especially, with undergraduate students leads to high impact practices in higher education leading to meaningful learning outcomes. All of these ‘high-impact activities’ is undergraduate research. According to the paper, student-faculty research has a good association with many university educational priorities and with deeper learning (rather than surface-level learning). The aim of undergraduate research is to engage students with vigorously debated questions, scientific evaluation, cutting-edge technology,

and the feeling of enthusiasm that emerges from attempting to address relevant questions (Association, 2009, p.20).

Therefore, it is instructive and imperative to point out that research-related teaching supporters point to its numerous advantages (Simons & Elen, 2007). From an idealistic view, the importance of university study for its own good is the universal pursuit of understanding, and involvement in research is therefore validated on moral grounds. Very commonly, however, a practical explanation accompanies the argument for research-related teaching. Relevant capabilities, such as potential for independent thought, critical thinking, and comprehension of the mechanism of knowledge formation, are necessary for a learning society and knowledge economy, and all this assumes some exposure to the research process. Education is also strengthened where the program is structured to include students in a range of evidence-based practices and/or introduce them into the research culture (Brew, 2010).

Brew (2013) similarly postulated that teaching must lead to research. The approach of teaching a discipline's subject matter requires faculty members to explain the big picture that falls into their unique specialty in research. Disparities in the institutional information base can be elucidated by the planning of instructional materials. In a classroom setting, communicating the effects of one's research to students lets researchers explain their research. Consequently, feedback, comments, questions, and critiques from students will explain new avenues for research. Sharing with a supportive audience the effects of one's research activities offers encouragement for having completed the research and undertaking more analysis.

As demonstrated by higher student fulfilment (Jenkins, 2004) and increased motivation, learning in a research-active atmosphere seems to directly support students (Durning & Jenkins, 2005; Healey, 2005). Validating the aforementioned observations, Trigwell (2005) observed that students show a better quality learning experience in a research-led environment and are mostly likely to follow a deep instead of a shallow approach to their learning. The central conclusion of their analysis confirmed the results of this study, which showed a favourable association among teaching and research. Their findings suggest that the involvement of staff research was critical to the comprehension of material by students, had an effect on their passion for studying and teaching, inspired postgraduate study, played a significant role in undergraduate research and had an influence on the growth of skills relevant to work. There have also been related outcomes seen elsewhere. Healey and Jenkins (2011), for example, summarized current studies and concluded that students show significant benefits of participation in staff research.

In Activity-based learning (ABL) teaching method, in the words of Harfield, Davies, Hede, Panko Kenley (2007) exclaiming that “students actively participate in the learning experience, rather than sit as passive listeners”(p.42). Therefore, learning exercises allow students to translate awareness or facts into their individual knowledge, centered on practical life experiences, which they may implement in various contexts (Edward, 2001). Also, Churchill (2003) alluded to the fact that research-based teaching helps learners to “construct mental models that allow for 'higher-order' performance such as applied problem solving and transfer of information and skills” (p. 11). Therefore, all

stakeholders see the research-teaching nexus to be valuable to students' learning outcomes.

Research question six

Research Question Six was aimed at establishing the effect of research productivity on teaching effectiveness. Research productivity was found to be a positive predictor of teaching effectiveness. This result implies that a unit increase in research productivity leads to an upsurge in teaching effectiveness. In spite of this result, many stakeholders are skeptical about the exact relationship existing between research productivity and teaching effectiveness, including scholars of the research-teaching nexus. Notwithstanding the exposition realised from the quantitative phase of this study that research productivity is a significant positive predictor of teaching effectiveness, a relatively higher number of the participants still are not clear on the exact nature in reference to the connection among research profitability and teaching adequacy.

Some of the lecturers also attributed the nature of connection among research efficiency and teaching viability on the competences of the individual lecturer in handling the two activities. Therefore, some of them revealed that whether a strong bond exists between the two activities depends on the individual lecturer and the readiness level of their students. Therefore, they indicated that there is a clear difference between the actual practice and ideal practice geared towards the effective incorporation of research into teaching. This creates the impression that the way the lecturer manages the activities of

research and teaching would tend to be positive or negative depending on the management strategy adopted by this individual lecturer.

Authenticating the findings, Horta, Dautel, and Veloso (2012) indicated through their study that when there is a weaker connection among research and teaching, there is the tendency for faculty members and students to determine its nature which poses a challenge for the effective integration of research into teaching. Thus, a perceived weaker link is likely to affect the level of integration. Adding to the controversy on the assurance of the exact strength of the research-teaching nexus, Horta, Dautel, and Veloso examined the constructive connection on graduate level, where it was made manifest that that teaching can likewise positively affect research creation. In determining the relationship, they built a model where both faculty members and students were seen as cohorts in the learning and knowledge production process. Contrary to other research results it was indicated that the traditional teaching activities showed a weaker linkage to research outputs. However, their study indicated that faculty members having teaching assistants had a positive effect on research production.

Their analysis also revealed that, by participating in research practices for both undergraduate and graduate students, a beneficial impact on research production was observed, underscoring teaching methods where learners are completely associated with the research cycle. The thesis reveals how the relationship between teaching and testing relies on teaching techniques (Horta et al., 2012). Comparable effects on publications have likewise been documented previously in the Norwegian sense for the PhD stage of education,

where it was demonstrated that this may have a favorable influence on publishing trends (Kyvik & Smeby, 1994).

It is essential to recognise the way that the qualitative findings from the interview corroborates the quantitative findings that suggest that a constructive connection exists among research productivity and teaching effectiveness. The associations among research productivity and teaching effectiveness may consequently be defined mainly as either unidirectional, or they might have a clear two-way, reciprocal nature. The movement among research and teaching is conventionally assumed to act mostly, if not entirely, from the previous to the last mentioned. This, however, lacks the future advantages of staff research that may stream from teaching (Brew, 2010).

This provides the sense that teaching will allow members of the faculty to put their research in a broader analytical sense than would usually happen when research is highly technical in nature. This will bring up new ideas and interactions. Students may offer direct input on research proposals and test results that can nevertheless serve to locate shortcomings in the review, though not guided by the experience of their colleagues, as well as offer reassurance and inspiration. Therefore, being conscious of the ethical problems that can be created, including coercion, the learning experience of learners would itself be a means of research materials, particularly when this practice is 'research-based' or 'inquiry-based.' For example, student experiments may help evaluate the methodological structures developed by academic personnel, or offer the foundation for venturing on comparative research that can afterwards be more systematically, objectively and rigorously undertaken.

The current literature concerned with the connection among teaching quality and research efficacy in advanced education is also dynamic and conflicting. There are observational research, as mentioned above, that indicate that there is minimal or no connection. But, paradoxically, faculty members around the world tend to say that there is such a connection. Research that reveals a clear qualitative inter-play among the two confirms this view. Analysis indicating a nonexistence of correlation appears to come from quantitative studies and, quite lately, from meta-analyses. For starters, Feldman (1987) concludes in a meta-analysis of 43 experiments that research profitability is just marginally correlated with teaching skills, that the possibility that research efficiency directly supports teaching is exceedingly slim, and that the two are basically unrelated for all practical reasons. Hattie and Marsh (1996) likewise showed a zero association in their meta-analysis of 58 reports. They reason that "... the common belief that research and teaching are inextricably entwined is an enduring myth. At best research and teaching are very loosely coupled" (p. 529).

It is imperative to bring up that research may be weakly incorporated or more deeply implemented into teaching practices. The former happens when the research of faculty members is represented as research findings as used in reading lists. In the opposite sense, when research is more deeply incorporated, the learning tasks taken out by students are used purposely to form it. The research and scholarly work of the instructor becomes a structural feature in the learning cycle for students instead of being merely an item of knowledge. The students become partners in the process of generating information instead of becoming simply receivers of knowledge instilled by the teacher. By assisting

their teachers in the practice of advanced learning, they refuse to be solely an audience for research.

A plethora of studies attest to the fact that there is a relationship between research productivity and teaching effectiveness. The assumption is that there is a beneficial relationship between the capacity to be an efficient teacher and an effective researcher. This provides the idea that members of the faculty who feel that they are extremely capable teachers are most probable to be inspired to be effective teachers, to invest more teaching resources, and thus to be great teachers. Likewise, those who feel that they are extremely capable of doing research as researchers would be more driven to do research, invest more research resources, and therefore be stronger researchers. In a variety of places, such self-efficacy has been found to be a crucial factor for performance.

A tremendous number of faculty members in all of such 19 nations (including Norway) were identified as “in support of a nexus between teaching and research” to broaden the statement to validate the result (Teichler et al., 2013, p. 119). There are, however, both disciplinary and country-specific differences in the degree to which a prevalent research orientation within the academic personnel can be established. Among the countries included in the survey, this score ranged from 6 % to 52 %. The authors argue that while apparent tensions are documented, optimistic opinions on the relationship are reported by most scholars. A noteworthy observation is that there do not appear to be major administrative gaps overall with respect to staff perspectives on the compatibility of teaching and research (Teichler et al., 2013).

Despite the positive relationship found between research productivity and teaching effectiveness through the regression analysis performed at the

quantitative phase of this study, the follow-up interview also revealed a somewhat contrary relationship as some of the lecturers attested to the fact that They also believe there is a negative relationship between research and teaching. The reason alluded to this revelation is accounted for by the fact that both activities are seen to be antagonistic since both activities compete for the same resources such as time, skills, knowledge from the same individual academic.

Centered on the above observations, it is essential to note that an amount of reviews centered on personal knowledge and objective analysis of the academic position support the representation of a zero relationship recorded in some empirical studies. Therefore, the function of researcher and the function of instructor are regarded by Barnett (1992) and Webster (1985) as distinct companies that ask for various sets of achievements. To further worsen the situation, Romainville (1996, p.16) indicated that the belief in research-teaching nexus as complementarity is deemed somewhat “masochistic”.

It could be inferred from the various conceptualisations of the link between research and teaching that the way faculty members perceive the link between research and teaching has the tendency to either create a stronger, moderate or weaker link, as well as, either positive or negative link between research and teaching. Thus, one’s conceptualisation is likely to influence the level of integration and that would establish the nature of the link. This, therefore, influenced Badley (2002), in analysing and synthesising the research and teaching relationship based on these different interpretations of the research-teaching nexus including ‘an impending divorce’; ‘a marital relationship’; ‘a holy alliance’; ‘a scholarly relationship’; and, ‘a really useful link’. In an imminent breakup, independent research and teaching institutions

exist. Fox (1992) postulated that there was a tension among research and teaching in explaining an imminent breakup, in that scholars sell off one package of finances against another. Thus, teaching and research “*do not represent aspects of a single dimension of interests, commitments, and orientations, but are different dimensions that are at odds with each other*” (p. 301).

Research is regarded as the male partner in a romantic partnership, and teaching as the female partner. In the perspective of a holy alliance, analysis is seen as a producer of confusion; and this uncertainty must be resolved by teaching. Research and instruction are distinct but overlapping academic practices in a scholarly partnership.

It was thus not unexpected when Boyer (1990) included research and teaching in his scholarship typology: the exploration and introduction of knowledge scholarship; and the application of knowledge scholarship. Badley (2002) subsequently, adds a ‘really useful link’ by portraying the research-teaching nexus as having an interactive relationship. Thus, one’s conceptualisation is likely to influence the level of integration and that would establish the nature of the link between research and teaching.

Inferring from the mutual benefits realised from the previous research question, coupled with earlier studies, the core conclusion drawn from prior studies that found a positive link between research and teaching. Hence, validating the findings of this current study. Among these findings, Healey and Jenkins (2011) showed that the participation of staff research was critical for the comprehension of material by students, had an effect on their passion for studying and teaching, facilitated postgraduate research, played a significant

part in undergraduate research and had an influence on the growth of skills relevant to work. Similar results have also been shown elsewhere in other related studies, of which most concluded that both lecturers and students report positive impact of staff research involvement in research with the view to linking it to their studies.

Slovenia's Cadez, Dimovski, and Zaman Groff (2015) examined the correlation between research output and teaching efficiency by discriminating among research and teaching quality and quantity metrics (productivity). Although the quantity of research (productivity) was determined by the number of publications, the quality of the research was calculated by the proportion of studies published in high-quality journals. They discovered that research productivity was linked to teaching efficiency, which was calculated by the quantity of publications. On the other hand, the quality of testing was negatively linked to the quality of teaching assessed by student tests, consistent with prior data (Hattie & Marsh, 1996). This means that the level of fulfillment with a task can impact the sum of optional resources that an individual spends in a task (time, energy). Thus, the better the anticipated standard of teaching, the more pleasure an educator receives from teaching; likewise for research, and even for those who are dedicated to both teaching and research. In addition, one determining factor of the relationship between teaching and research results may be the connection between satisfaction resulting from research and teaching (Marsh, 1996).

The impact of the nexus may also promote co-learning. By co-learning, I mean a systematic and focused approach to optimizing the synergetic connections between research and teaching in such a way that their symbiotic

development builds on all participants' previous learning and interactions and ideally reflects back on the content of both research and teaching contexts. It can therefore, be ironed out that with co-learning, the development of Business Education can occur in a distinctive way that would not have been possible if research and teaching were deemed and treated as separate endeavours or in isolation.

Any drawbacks should be taken into consideration when evaluating the study's results. As noted earlier, perspectives on the use of publications and student reviews as proxies for the quality of research and instruction are controversial, although these indicators remain commonly used (Gerschwind & Brostrom, 2015; Lucas, 2007). Article numbers do not necessarily reflect the final objective of the testing operation, i.e. the development of information (Buckley, 2011); student grades do not necessarily reflect the final objective of instruction, i.e. student learning (Deem and Lucas, 2006). Despite this, the alternate teaching efficiency metrics suggested in recent research include student learning outputs (Healey, 2012; Malcolm, 2014) or their career development following completion of the curriculum (Healey, 2012; Malcolm, 2014) (Melese, 2013).

In addition, while the described variance in the model is similar to current studies (Gentry & Stokes, 2015), it is fairly small. Other variables, such as the skill, enthusiasm and time for teaching of the scholar, seem to be more significant indicators of teaching efficiency than research activity (Buckley, 2011). Even so, the objective of this research was not to optimize the model's explanatory capacity, but to provide reliable parameter estimates. Although a possibility for excluded variable bias is present in either model, if the excluded

variables are not associated with the included regressors, a standard least square estimation approach yields reliable parameter results (Magi & Beerkens, 2016). Any limits are often unique to study. Second, a weighted number of publications can be a stronger measure of the effectiveness of a person (in terms of authors). While the Slovenian Research Agency uses the same metric to determine research efficacy (Cadez, Dimovski, Zaman-Groff, 2017), others can justifiably claim that it is not the best objective measure of research productivity. Given these shortcomings, in the contemporary higher education academic setting, this analysis offers new insights into the correlation between research and teaching, and research efficiency and teaching effectiveness. I am also of the strongest conviction that there exist a stronger relationship between research productivity and teaching effectiveness depending on how both activities are managed.

Hypothesis one

Hypothesis One sought to determine the statistical differences in the conceptualisation of the research-teaching nexus between faculty and students. It was found out that there is no statistically significant difference between faculty's and students' conceptualisation of the teaching-research nexus. Therefore, there is a uniformity as to how both faculty and students conceptualise the research-teaching nexus. This uniformity stemming from the conceptualisation of both faculty members and students could be alluded to the reason that the study was grounded in one disciplinary space (Business Education), of which literature has established that disciplinary variations account for differences in the conceptualisation, perceptions, beliefs and practices of the research-teaching nexus (Barnett, 2005). Thus, there is a solid conceptualisation among faculty members that there are significant differences

among different fields of study regarding what these faculty members do and how such activities are described and valued. This creates the impression that since both faculty members and their students, involved in this study, are sampled from only Business Education discipline, the tendency for them to think alike is imperative. Thus, practices and perceptions are likely to be similar within the same discipline, but dissimilar in different disciplines.

Furthermore, the similarity in the conceptualisation could also be attributed to the fact that both faculty members and students, though, vary in their level of experiences, are exposed to the same educational context and learning environment. However, there is the tendency that faculty members might have influence on their students explicitly or implicitly since both are found within the same disciplinary spaces. Therefore, the tendency to have similar thoughts concerning the nexus is highly probable, since both students and lecturers are privy to the way in which teaching and learning takes place in their university, therefore, the likelihood of them conceptualising the link differently is not likely to be possible.

To further expatiate the level of influence lecturers have on their students in their conceptualisation and practices of the research-teaching nexus, Healey and Jenkins (2011) reported that stakeholders from the same environment or context are likely to have similar or “think-alike” conceptualisation of the research-teaching nexus due to contextual environmental factors. This could be attributed to the extent to which context is likely to influence the way things are done. The extant literature in educational practices have reported how environmental context had influenced teaching and learning outcomes. In my opinion, it would, therefore, be a disservice to

knowledge creation process regarding the research-teaching nexus to downplay the role of environmental factors such as school context and culture. These environmental factors impact the level of integration without regard for the background of these faculty members.

In support of the same argument, Kezar and Maxey (2014) exclaim that a faculty members demonstrate a significant amount of influence on their students' interest and engagement in latter studies, partly because of the passion for their fields of study coupled with perceiving these faculty members as their role models, and therefore, are likely to learn from them and imbibe their principles and practices. This confirms why the young wants to behave like the adult since they believe that the elderly always know the right things. It is, therefore, always advisable for faculty members to put up good attitude and exhibit the right skills and values since their students are always observing and learning from them.

The similar conceptualisation revealed by this study is corroborated by evidences from an interview. It was revealed by both the survey and interview that both faculty members and students had high conceptualisation of the link between research and teaching. In support of this, Elen (2007) indicated that faculty members also expect that by involving students in research, there is the likelihood to harness a dense of critical thinking and humility in students. It is interesting to also add that both faculty members and students at one point in time both phases of the study indicated that effective research-based is necessary in optimising meaningful educational outcomes. Hence, validating the similar conceptualisation realised from the study by both faculty members and students.

Although, faculty members and students do not differ in terms of their conceptualisation of the link between research and teaching, researchers are divided in terms of their conceptualisation of the link between research and teaching.. The possibility of integrating their research into their teaching is imperative (Akerlind, 2008). Brew (2001), therefore, explains the differences in their conceptualisation of the research-teaching nexus. Hence, researchers' and faculty members' goals and the associated advantages in doing research and integrating them into their teaching are likely additionally to impact their direction in introducing research into teaching.

Robertson and Bond (2001) also conclude that proactive researchers are more likely to understand the research process, principles and ideals embedded into the teaching process. Even so, as an indicator of divers research orientations, multiple research exercises are expected to contribute to distinct teaching practices, as accepted by both lecturers and students. Research-related instruction will also enable teachers to turn their conceptualisation of the teaching-research nexus as purely independent practices (Brew & Boud, 1995; Griffiths, 2004; Robertson & Bond, 2005).

This presupposes that faculty members' experience of the research-teaching nexus ought be seen as a feature of their bigger experience of being a faculty member, particularly, as far as their hidden goals in moving toward proficient improvement as a faculty member, perspectives on the idea of educating in their discipline and their job as educators (Akerlind, 2004) as indicated by both students and lecturers in that study to confirm their similar conceptualisation in this present study. As an illustration, both lecturers and

students agreed in that study that when faculty members conceptualise the teaching process as facilitative by research, it leads to several benefits.

Contrary to the findings that both faculty members and students give a similar conceptualisation of the research-teaching nexus, many stakeholders, such as students, teachers, lecturers, and scholars ascribe different connotations, descriptions or definitions to the connection between research and teaching. This, in my opinion is the reason for, has led to the complexity in the implementation of integrating research into teaching among faculty members in universities.

Also, the field of study or disciplinary context influences one's conceptualisation of the connection between research and teaching. It is therefore asserted that several of the difficulty and disputed existence of the relations between research and teaching illustrate the various ways in which the terms are conceptualised, combined with the characteristics exhibited within the context of a particular discipline whereby the interactions take place. Healey and Jenkins (2003), therefore, stated that the discipline within which a person finds him/herself is an important indicator in constructing linkages between research and teaching. This is attributed to the practice of research and the strategies to teaching appear to vary across disciplines. This also contributes to disciplines behaving as independent 'academic tribes' or 'communities of practice' (Becher & Trowler, 2001; Wenger, 1998). Therefore, the way of doing things in each community of practice affect the research-teaching nexus given the several descriptions ascribed to the nexus.

Expanding the argument, as this study reveals, the inconsistencies to the conceptualisation of the nexus, people differ greatly in their opinions on the

essence of the connection. Others are of the opinion that “university research often detracts from the quality of teaching” (Pocklington & Tupper, 2002, p. 7), while others argue that “courses taught by those at the cutting edge of research will necessarily be of higher quality than those taught by those merely using the research results of others – whatever the apparent quality of their style of delivery” (Lee, 2004, p. 9). It is important to acknowledge that there are several indicators that influence the assumptions, beliefs, perceptions, and conceptions held by individuals concerning the integration of research into teaching. That notwithstanding, irrespective of the various notions and conceptualisations, a plethora of researches on the nexus have indicated several benefits that could be derived from the effective implementation of the nexus. Hence, despite the different conceptualisations, faculty members should focus on how best to effectively integrate research into teaching to promote meaningful learning outcomes.

Hypothesis two

Hypothesis Two sought to determine the statistical differences in the conceptualisation of the link between research and teaching with regard to the ranks of faculty. The study revealed that there is a statistically significant difference between the levels of faculty in the combined conceptualisation of the research-teaching nexus. Also, the univariate test showed a statistically significant difference in scholarship-oriented conceptualisation in terms of ranks of faculty. These differences in conceptualisation among faculty of different ranks could be attributed to the different levels of experiences, training and exposure over the years of their teaching expedition. Thus, since their experiences vary, their conceptualisation is likely to vary. In support of this

Ozay (2012) indicated that differences in educational experiences is likely to lead to variations in belief systems, perceptions, attitude and practices among key players in teaching and learning.

Scholarship orientation connotes a situation when lecturers embark on reflective practices in the quest to promote meaningful and lifelong learning. The implication of this finding is that this might be accounted for by the fact that lecturers are likely to be more conscious and embark on reflective teaching than senior lecturers because of the possibility that lecturers have more to do in terms of climbing higher up the academic ladder compared to senior lecturers. Any little negligence might affect their career progression in the academia concerning their promotion, hence, they are conscious and cautious in their teaching expedition.

Therefore, it appears the tendency for senior lecturers to overlook certain things in their task as academics is highly probable. This could be attributed to the high level of experience of senior lecturers compared to lecturers, there is the possibility for them to be complacent and take certain practices for granted. In support of this, Elen (2007) revealed that most faculty members aspire to at least, reach the status of Senior lecturership in their career which is likely to serve as the first level of fulfilment in their career level of aspiration. This tends to describe the behaviour of faculty members as they progress through the ranks in their academic career. Thus, “the higher you go, the more negligent and complacent one becomes at the workplace” (Cadez, Dimovski, and Zaman Groff, 2015, p. 26). This explains why senior lecturers are likely to take things for granted regarding reflective teaching practices

relative to their counterparts at the lecturer rank who are more likely to be cautious and meticulous in their operations.

Though, statistically significant differences were found between the conceptualisation of lecturers and their ranks, however, the interview indicated that lecturers, regardless of their rank believe that the research-teaching nexus contributes to knowledge update. This, they indicated that research informs content, methods, and even resources for teaching whereby most of them reiterated that they constantly update their lecture notes through researches in my subject discipline.

This may be due to the fact that research constitutes the foundation of teaching material. It is also more probable that faculty members who are effective researchers are at the cutting edge of their profession and are conscious of foreign viewpoints on their field. Because in many increasingly changing countries, textbooks may not be recent, lectures may be the first point of touch with the new technologies. It is also important to find out that faculty members interested in research are most probable to be at the top of their field. Findings from one's research will also be used to explain, revise, and modify a participant's teaching. By adding new subjects and methodologies, research strengthens teaching. Members of the faculty presenting research conducted by themselves provide a feeling of curiosity about the findings and how they work into a broader picture. Instead of a passive embrace of evidence, active researchers are most successful in instilling an aggressively skeptical approach to interpreting challenging research findings.

The connection between research and teaching is largely defined by the way faculty members conceptualise both important task of the faculty members.

Since research and teaching are conceptualised differently in several fields of study, the form of the research-teaching nexus might also be expected to vary among faculty members, especially, those from different fields of study. That notwithstanding, irrespective of a faculty members' disposition and beliefs about the nexus, it must be applied to realise its inherent benefits. Even the different perspectives from each of the faculty members across the ranks are likely to enrich the nexus if effectively managed well through collaboration among faculty members. It is therefore, not just a coincidence when Levy and Petrulis (2012) recommended the creation of faculty knowledge among departments to allow faculty members to share their perspectives with their colleagues in the knowledge creation process to allow for collegiate learning. If this is effectively managed, the strength and weaknesses of each faculty member would offset each other to augment teaching and learning in a particular field of study.

To further expatiate on the different conceptualisation held by faculty members across ranks, Robertson and Bond (2001) indicated that university research and teaching has been observed by faculty members in varied ways. This could be attributed to different level of exposure and experiences informed by the length of time served in the university. Under normal circumstances, the tendency that senior lecturers have served more years than that of faculty members at the lecturer rank is the reality, except in exceptional cases. Therefore, there is the probability for senior lecturers to be more exposed in terms of how research connects to teaching compared to their colleagues at the lecturer rank. Hence, this explains the differences in conceptualisation across the ranks of faculty.

Healey (2000) and Brew (2003) found out that the manner in which faculty members understand the terms research, scholarship and teaching can affect the research-teaching nexus in order to better clarify these gaps in conceptualisations across faculty levels. Illustratively, some researchers see research as (external) results-oriented, whereas many see it as learning-oriented (internal). So, depending on the disposition of a particular faculty members, their beliefs, perceptions, notions, understanding and one's conceptualisation is likely to differ.

It is interesting to note that, the value placed on the professionalism of faculty members is likely to influence their respective conceptualisation about the research-teaching nexus (Ozay, 2012). Therefore, Brew (2003) posit that a majority of faculty members conceptualise scholarship as the way these faculty members value their professionalism from their own disposition. It can therefore, be inferred that the background in terms of disciplinary disposition of a faculty member is likely to influence the way the faculty members perceive and conceptualise the bond between research and teaching. Hence, contributing to the differences in conceptualisation of this bond.

To further extend the discussion on the differences in conceptualisation across ranks of lecturers, many stakeholders, including students, teachers, lecturers, and scholars describe the research-teaching nexus in diverse ways. This has led to the complexity in the implementation of the research-teaching nexus among faculty members in universities. Therefore, Robertson and Bond (2001) indicated that teaching and research in higher education has been conceptualised by different faculty members in several ways. Therefore, these stakeholders in education are likely to be influenced by how useful they believe

the nexus is to education, contingent on either direct or indirect beneficiaries of the outcome of the effective implementation of the research-teaching nexus. Brew (2003) further stated that majority of faculty members perceive scholarship as the manner faculty value their profession from their own perspective. Hence, depending on the values one places on the nexus would inform how one conceptualises it. This confirms this hypothesis that there exist a statistical difference in the conceptualisation in terms of ranks of faculty.

Hypothesis three

Hypothesis Three sought to determine the statistical differences in the conceptualisation of the research-teaching nexus with regard to students' academic level. It emerged that there is a statistically significant difference in the linear combination of the conceptualisation of the research-teaching nexus among students' academic level. The univariate test showed a statistically significant difference in Knowledge Currency conceptualisation in terms of students' academic level. The statistically significant difference in Knowledge Currency conceptualisation regarding students' level implies that the currency/update of knowledge is mostly interpreted differently from the students' viewpoint. This could be attributed to the involvement of students across the different levels of study. Under normal circumstances, it is not expected that postgraduate students would think the same way as undergraduates since the content and focus of their studies are entirely different. Hence, this is likely to cause a difference in the way they conceptualise the research-teaching nexus. Therefore, students will have different connotations, representations or descriptions attributed to any educational activity such as the research-teaching nexus.

It is worthy of note that the focus, content and scope of the research master's programme is totally different from undergraduate studies. Hence, this could account for the differences in their conceptualisation. The exposure to research differs across various levels of study. Since the scope and focus of the masters' programme, coupled with the different research experiences among students. It is worthy of note that the nature of how knowledge might be updated through the lenses of the research-teaching bond has the tendency to be dissimilar across students' level of study. Thus, since their experiences vary, their conceptualisation is likely to vary. This creates the impression that postgraduate students, all other things being equal, are likely to be more concerned about knowledge updates relative to their undergraduate counterparts.

Consistent with prior findings, Ozay (2012) indicated that differences in educational experiences and exposure are likely to lead to variations in belief systems, perceptions, attitude and practices among key players in teaching and learning. To further argue, Healey and Jenkins (2011) reported that stakeholders from the same environment or context are likely to have similar or "think-alike" conceptualisation of the link between research and teaching influenced by the same environmental context factors. This could be attributed to the extent to which context is likely to influence the way things are done. By implication, the level at which a student has attained is likely to influence his or her level of thinking and hence, informs how the person conceptualises issues. Therefore, since postgraduate students are taught differently from undergraduates, context comes in to play to make a difference. This propelled Elen (2007) to indicate that faculty members engage students in research with the hope that the students

can better develop highly valued competencies that would inculcate lifelong learning in them.

Arguing further, the conceptualisation of undergraduate students about the research-teaching nexus is likely to differ from their postgraduate counterparts due to the potential differences in their research experiences and exposure. Walkington (2015) thus establishes that, over time, universities have been very mindful of how often postgraduate students commit to higher education research projects. Undergraduate students are also a great human opportunity that is underutilized so all of them are as intelligent as Walkington's universe is. Although they are already learning, they have the expertise to make an outstanding commitment to research ventures. Their position in research, of course, should not be the same as that of postgraduate students—they have to develop the discipline's fundamental knowledge and skills, and this is done primarily by coursework. To their advantage and that of their departments, though, there is some scope for undergraduate students to engage in study teams.

Contrary to the above finding, the non-statistically significant difference in curriculum-oriented conceptualisation and scholarship-oriented conceptualisation could be attributed to the fact that both conceptualisations are geared towards students' learning outcomes and promoting lifelong learning. Therefore, regardless of the level of study, students' expectation about the learning outcome remains the same across all levels, despite different experiences, activities and exposures. Hence, they were thinking alike regarding their learning outcomes, since, expectations about their learning outcome are likely to be the same. In corroborating this finding, Healey and Jenkins (2003)

stated that in building links between research and teaching within a particular field of study in which one finds himself is critical. This is attributed to the fact that the integration is affected by the nature of the field of study, and are likely to be the same within a particular discipline since according to scholars, in some disciplines, it is relatively easier to incorporate research into teaching, while in other disciplines, it is highly impossible. Conclusively, students' conceptualisation about the research-teaching nexus is likely to be influenced by students' level of exposure and experiences coupled with the discipline within which one finds him or herself.

Hypothesis four

Hypothesis Four sought to determine differences among the ranks of faculty with regard to the extent to which research is embedded in teaching. The study revealed that there is a statistically significant difference in the linear combination of levels of integrating research into teaching among the ranks of faculty. Thus, the study revealed that Lecturers practice more of research-based teaching than Assistant lecturers and that Professors demonstrated the highest level of integration (research-tutored teaching). The implication of this finding is that the higher the rank, the likelihood that the faculty member, consciously or unconsciously, would apply a higher level of integration of research into their teaching due to high level of experience and expertise in research and teaching. No wonder Professors demonstrated highest level of integration because they teach at the highest level (Masters and Doctoral students). Therefore, they actively engage these students with research activities as part of the learning process such as self-directed reading, critical review of articles and writing term papers and project works or dissertations/thesis.

This propelled Anderson (2012) to propose that senior faculty members should mentor and entreat their younger faculty members on how best to effectively integrate research into teaching, especially, skills in applying the highest level of integration such as research-based and research-tutored teaching. He also suggested that faculty members should also constantly strive for innovative ways of enriching their practice of research integration into teaching in order to optimise students' learning outcomes.

It is also worthy to acknowledge the fact that the level at which a faculty member is teaching is likely to affect the level of integration of that faculty member. In support of this assertion, Baldwin (2005) postulated that it is always not flexible to integrate research into undergraduate curriculum as usually the case is at the postgraduate level. Baldwin also argued that there are numerous ways for faculty members to incorporate their own research perspectives into classrooms in the form of example, aside from the structured curriculum section. The literature on successful teaching strongly shows that an important aspect of enabling students to grasp thoughts, principles and hypotheses is illustrative tools and materials. Therefore, faculty members ought to create correlations between the abstract and the real, irrespective of their ranks, and to map the results of theories in reality. The active faculty member is actively looking for specific examples and stories to render lessons really interesting. It is also recommended to new faculty members that in their lessons they search for topical problems to make it more interesting. Just looking at the level of integration of research into teaching by a faculty member without a consideration of the level at which the faculty member is teaching is not

appropriate. This presupposes that the level at which the individual faculty member is dealing normally counts when considering the level of integration.

This study has shown that senior faculty members practice high levels of research integration into teaching such as research-based and research-tutored teaching compared to their junior colleagues who normally operate at the research-led teaching. This is attributed to the differing nature based on scope, focus and structure of both the undergraduate and postgraduate programmes. In support of this assertion, McLernon and Hughes (2003) posit that integrating research into teaching is quite cumbersome at undergraduate in comparison to the postgraduate level. They further indicated that complications in embedding research into teaching stems from the formalisation of the curriculum and the static nature of the undergraduate curriculum relative to the postgraduate curriculum.

Validating this findings, Baldwin (2005) indicated that irrespective of the rank, level of experience and exposure of an academic, they can effectively integrate research into teaching in the form of explicitly embedding research into teaching. This may be encouraged by teaching research on a 'as-needs-within-subject' basis, using innovative approaches and skills at suitable times to resolve core contemporary research concerns through appraisal assignments and other practices within topics. Another approach is to propose one or more techniques of comprehensive research or subjects of skills, which could provide a rigorous review of the aspects in which these techniques may trigger discipline knowledge. The series of research methods conducted within particular subjects covering research architecture, measuring approaches, data processing and

statistics, and a critical analysis of the function of these methods within the scope of the discipline are other forms of promoting incorporation.

Due to the different levels of experiences among faculty members stemming from their different ranks, Chen (2015) postulated that generally, junior faculty and non-tenure track faculty do not receive proper assistance with their research; although, experienced senior faculty's mentorship has been shown to be crucial for the success of junior faculty and non-tenure track faculty to increase research productivity during their early-career period.

Mentoring services broaden the claim and allow seasoned faculty members with research skills to share their experiences with students who need support to improve research efficiency (Rush & Wheeler, 2011). In addition, interdisciplinary research among faculty has been encouraged by federal and state agencies in attempts to improve learning and collaboration among faculty from different disciplines (Novak, Zhao, & Reiser, 2014). Nowadays, there are opportunities available in higher education to support faculty members in their research journey. These opportunities range from mentoring programs to faculty learning communities and peer reviews.

Despite the different levels of integration among faculty members regarding the different levels of integration, it was revealed that almost all the faculty members involved in the study express some level of desire to integrate research into teaching. Corroborating this finding, Robertson and Bond (2001) concluded that almost all staff members "expressed a preference for integrating teaching and research as opposed to focusing exclusively on one or the other" (p. 7). This confirms the strong conceptualisation of the research-teaching nexus by all faculty members. In validating the findings, Mägi and Beerkens (2015)

from Estonia indicate that faculty members in universities who actively engage in research are more enthused to ensure effective integration as well as co-publish with students.

Expanding the discussion, Hoskins and Mitchell (2015) concluded that most faculty members, regardless of their ranks, make students conscious of their colleagues' research efforts by relating to their areas of concern and successes and, if possible, encouraging them to chat about their work officially or unofficially with students. In the departments in which they are training, most undergraduates would not have any knowledge of the academic priorities and abilities of the staff. By presenting books and analyses and by linking to relevant research work in newsletters and other communications, agencies may also add to this understanding. Of course, some scholars simply consult with postgraduate students on a daily basis and, in some cases, with senior undergraduates to address topics of concern stemming from their study. There should not be official occasions; it is possible to invite students to pose questions and/or propose ideas.

Based on the fore-going, I strongly argue that it is essential that the developing research skills should be built on an appropriate level of disciplinary knowledge. It is therefore, vital to ensure that students have the underpinning disciplinary knowledge about research within the context of their discipline. In other words, research skills learning clearly needs to take place at the right moment in the development of students in order to act as transitional grounds for a fruitful incorporation of research into the teaching of faculty.

Hypothesis five

Hypothesis Five sought to identify whether a variance exist between gender of faculty with regard to their level of incorporation of research into teaching. It has been noticed that there is no statistically significant gap between male and female faculty members in the joint degree of incorporation of research into teaching. It appears the non-statistically significant results show consistency in linking research to teaching for both male and female faculty. Thus, male and female faculty members did not vary in their integration of research into teaching. Supporting this finding, Brew (2010) indicated that the biological make-up of an academic does not inform their level of research integration into teaching. Hence, gender does not determine the extent to which a faculty member integrate research into teaching. This is alluded to the reason that the exposure and training given to both male and female faculty members are the same and both are exposed to the same university context.

Buttressing the above assertion, Healey and Jenkins (2011) reported that stakeholders from the same environment or context are likely to have similar or “think-alike” conceptualisation of the connection between research and teaching influenced by the same environmental context factors. This could be attributed to the extent to which context is likely to influence the way things are done. The statistically no difference in the level of integration of research into teaching suggests that both male and female lecturers similarly practise integration. This could be attributed to the fact that both male and female lecturers, though, vary in their level of experiences in teaching in the university, are exposed to the same educational context and learning environment coupled with similar training programmes. This indicates that both male and female

faculty members are likely to exhibit similar levels of integration explicitly or implicitly. Also, it appears most of the faculty members from both sexes had their education and training in their respective universities. Therefore, the tendency to have similar practices regarding the research-teaching nexus is apparent for both male and female faculty.

This consistency stemming from the similar levels of integration by faculty members from both sexes could be alluded to the reason that the study was grounded in one same disciplinary space (Business Education), of which literature has established that disciplinary variations account for differences in the conceptualisation, perceptions, beliefs and practices of the research-teaching nexus (Barnett, 2005). Therefore, by implication, since both male and female faculty members are coming from only Business Education discipline, the tendency for them to think alike and implement the nexus at similar levels is highly probable since they are likely to have the same exposure within the context of Business Education. This, therefore, gives the impression that practices and perceptions are likely to be similar within the same discipline, but dissimilar in different disciplines.

Contrary to the above findings that faculty members do not differ in their integration of research into teaching in the universities, Healey and Jenkins (2011) posited that countries with highly differentiated educational system and vocationally-oriented educational systems are more susceptible to differentiated levels of integrating research into teaching based on gender. The implication is that male and female faculty members are likely to differ in their integration of research into teaching.

Buttressing the same point, researches (Brew, 2010, 2013; Healey, 2005; Ozay, 2012) indicated that the extent to which male and female faculty members integrated research into their teaching in different fields of study, is more marked in highly tracked higher educational systems leading to different levels of integration caused by different disciplinary spaces, where students are required to specialise in their fields, where female faculty members are mostly located in vocationally-oriented courses while male faculty members are usually located in the physical sciences. Hence, due to the different disciplines and gender segregation among these disciplinary spaces, different levels of integrating research into teaching is likely to be realised between males and females faculty members. This confirms why there was no statistically significant difference between male and female faculty members since both were found in one discipline of Business Education.

It is worthy of note that empirical studies in regards to differences in the gender disparity in the application of the research-teaching nexus have been somewhat contradictory. Some findings in the British sense have shown that the disparity among male and female staff members in the application of the research-teaching nexus differs substantially across colleges (Dekker, 2016). Brew (2010) also suggest that while, there may be some variation across schools, there are hardly any variations within one school and different school-types with same core mandates or within a specific field of study. However, findings from between-school or within-field disparities have been challenged by other researchers who have found that the gender gap in an effective integration of research into teaching is evident in both research-intensive and

teaching-intensive universities and that any variation is not attributable to either between-school or within-field disparities (Ozay, 2012).

Although some reports (Brew, 2010, 2013; Healey, 2005) have concentrated on variations in the gender disparity between schools and between fields, educational scholars have primarily focused on how school environment and systems lead to the introduction of gender differences in the successful incorporation of teaching research. These studies promoted certain considerations that are deemed essential to involve teacher perceptions and engagement in the classroom, peer engagement and feedback, as well as the dynamic ways in which school needs communicate with and form variations in the responses of students to the research-teaching nexus. Although these variables are perceived as taking particular forms across multiple school settings, debates have primarily centered on the similarities in the development and replication of gender disparities across schools and disciplinary spaces in the successful incorporation of research into teaching.

Hoskins and Mitchell, (2015) still supporting sex variations in research incorporation into higher education teaching, showed that they find significant and consistent sex disparities in educational attitudes and expectations among male and female faculty members towards the research-teaching nexus, that are likely to affect their respective institutions. More specifically, female faculty members indicate more favourable attitudes to research incorporation into teaching and higher expectations than their male colleagues elsewhere.

Further analysis from the same study showed that the educational aspirations and attitudes of male faculty members regarding research integration into teaching are more sensitive to more contextual environmental factors such

as motivation, zeal, enthusiasm and the need for achievement compared to their female counterparts. However, female faculty members display more stable academic attitudes and aspirations towards the integration of research into teaching than their male counterparts as they age and progress in their academic career and gain more research exposure and they are more sensitive to change than their male counterparts in the academe.

Conclusively, it is therefore, noteworthy to reiterate that the biological make-up of a faculty member does not necessarily inform their level of research integration into teaching. Hence, gender does not determine the extent of integrating research into teaching. It is based on the competencies of the individual faculty member, students' preparedness, institutional context and other environmental circumstances that are likely to inform the level at which a faculty member would integrate research into teaching for optimisation of the goals of the research-teaching nexus.

Hypothesis six

Hypothesis Six sought to determine whether there exist differences in students' experiences in research. The results show that there is a significant difference between research masters and PhD students' experience in hearing a member of staff discuss their research work in module, textbook or handout. More specifically, the results show that the PhD students have had more of such experience than the research masters' students. This is because faculty members believe that it is better to expose the master students to little of their research and expose them more to the theory since it is assumed the master students are novel researchers compared to the PhD students who are advanced researchers. Therefore, it would be reasonable for faculty members to discuss their research

intensively with the PhD students than the masters' students. Because it is assumed the PhD students are more exposed to research and thus, can better analyse and synthesise illustrative research issues within their field of study compared to that of the masters' students.

The study also showed that the undergraduate students had heard more guest lecturers discussing their research work than non-research masters students. However, in terms of research experiences, the non-research masters had experienced more research than the undergraduates. The former have been participants in and contributed to research projects run by faculty members. It is assumed that the non-research masters' students who have already completed their first degree are relatively experienced in research with more exposure than the undergraduate students. It is therefore not surprising that Colbeck (2004) pointed out that the ties are quite challenging to create in terms of research exposure and its incorporation into teaching at the undergraduate level than at the master's level. It is also quite challenging to integrate the new results from research into the nature of the undergraduate curriculum.

In contrast, in terms of exposing students to research experiences, the level of the student is paramount. This seems to suggest that the level of urgency faculty would apply to the research exposures and experiences of a student depends on the level of study of that student. Thus, faculty members are likely to expose students to some research experiences based on the level they have climbed-up on the academic level.

However, I have the conviction that regardless of a students' level of study, faculty members can effectively implement the research-teaching nexus, if they are willing to do it. It is even better to integrate research into teaching at

the undergraduate level to serve as a preparatory ground for the students so that they can imbibe it right from the foundation period before they progress on the academic ladder to reach their optimum.

Arguably, as the variety of students grows and organizational missions differ in this 21st century to account for this increase, with a rippling impact on how the research-teaching nexus is applied. Implementation is sensitive to inter-level studies and needs disciplinary variations. The previously stated data, however, supports the opinion that properly structured student-centered methods facilitate deep learning irrespective of the level of study. Elton (2001) has stated emphatically that “student-centred teaching and learning processes are intrinsically favourable towards a positive nexus, while more traditional teaching methods may at best lead to a satisfactory attainment of the nexus goals irrespective of students’ level of study” (p. 43). While the blend and form may differ, this seems to suggest that a deeper focus on effectively involving students in research will strengthen research-teaching ties and boost students' learning across all kinds of levels of study in higher education institutions.

Validating the findings, McLernon and Hughes (2003) indicate that the transfer of research experiences into teaching is more challenging at the undergraduate level compared to that of the postgraduate level. And that the formalisation of the program that establishes limitations for the instructor to build on creates more difficulties in introducing research into undergraduate teaching. Robertson and Bond (2001) developed a typology of the nexus by drawing a more nuanced image. This comprise teaching and research experience as symbiotic practices involving faculty members and students in a learning community; teaching experience as a way of communicating latest

research results (research-led teaching); and teacher experience that illustrates and encourages inquiry-based learning (research-based teaching).

Moreover, they also show certain less evident experiences of faculty members that are contradictory to the common ideal experiences: the experience of mutually conflicting research and teaching, and the experience of little link among undergraduate research and teaching, previously recorded in meta-analyses by Hattie and Marsh (1996) and uz Zamanan (1996) (2004). Hence, irrespective of the level of study, the integration can be made manifest to achieve the intended results once students have the requisite experiences.

Consequently, it is indicative to point out that conversations with postgraduate students vary from students, who frequently lack the maturity needed to appreciate the nature of conversations and the ability to turn the outcomes of conversations into actionable insights (Taylor, 2007). Therefore, a great analytical advantage that is underused is embodied by undergraduate students. Several undergraduate students are very talented individuals and fast learners. Although they are already learning, they have the expertise to make an outstanding addition to research ventures. Even so, their position in research should not be the same as that of postgraduate students who, within the framework of their field, by building their competencies. Therefore, when undergraduate students are involved in research, they use the opportunity as training grounds to build their competencies to become problem solvers of the future.

Observed Model

Based on the extensive analyses and discussion so far, the final conceptual framework in the form of an observed model is shown by Figure 6 as follows:

From the analyses and discussion of both the quantitative and qualitative data, the observed model is a deduction from this study in light of analysis and synthesis of the extant literature from prior studies. This observed model espouses a clearer interconnection between research and teaching in institutions of higher learning in the Ghanaian context of Business Education, though, it may be applicable to other fields of study. By way of explanation, Figure 6 reveals that ‘research’ and ‘teaching’ are separate tasks expected to be undertaken by every faculty member. However, at a point in time, there should be an integration of the two to become the research-teaching nexus. Hence, the nexus as sandwiched by research and teaching as depicted by Figure 6.

It is imperative to note that the intercourse between research and teaching is on a continuum, giving rise to various levels of integration. This is because different faculty members are likely to operate at different levels of integration of research into teaching, as revealed by this current study. It is also insightful that the levels of integration of research into teaching has a two-way flow. Research productivity is likely to positively or adversely influence the level at which faculty members integrate research into teaching. This goes a long way to impact teaching effectiveness of the individual faculty member. Therefore, research productivity is a significant positive predictor of teaching effectiveness, implying that a unit increase in research productivity leads to an upsurge in teaching effectiveness.

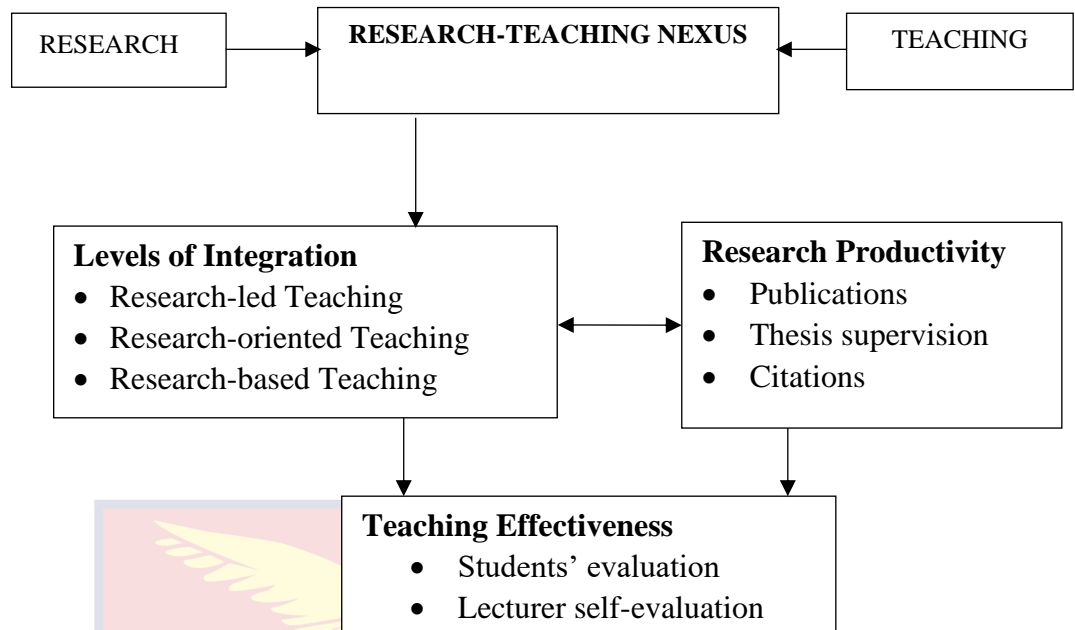


Figure 6- Observed model

Chapter Summary

This chapter constituted the inferential phase of the research process. It presented the quantitative and qualitative results and discussion of the study. After giving a brief overview, the chapter presented results on the demographic features of the respondents. This was proceeded with the main results of the study based on the research questions and hypotheses organised in order. The connecting strategy of data integration was adopted to link the qualitative results to the quantitative results at the data integration stage, where the qualitative results for each of the research questions were used to explain and support the quantitative results in a dialogical discussion based on research questions. Data integration occurred at the discussion phase of this study using the connecting strategy.

This chapter was climaxed with the observed model in the form of a framework which summarised the entire findings of the study. Based on the analyses, it can be concluded that Research productivity is a significant positive

predictor of teaching effectiveness. Thus, a unit increase in research productivity leads to a significant increase in teaching effectiveness. The mixed analyses undertaken have yielded rich findings that provides an impetus for subsequent studies to be conducted within the context of research-teaching nexus in Business Educaton, as well as, in other subject disciplines.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview

This chapter climaxes the entire study by providing a summary of the research process, as well as, the key findings. On the basis of these findings, conclusions are drawn and recommendations made to improve theory and practice within the context of the research-teaching nexus. It further highlights considerations for further research, as well as, the contributions of this study to scholarship.

Summary of the Research Process

This study examined the link between research and teaching in public universities in Ghana. The main drive was to establish how faculty members integrate research into their teaching in higher education. To better understand the research-teaching nexus, the study determined how students experience research in the university as a precursor to enriching the research-teaching nexus. The study therefore, sought to answer the following research questions:

1. How do faculty and students conceptualise the link between research and teaching in public universities?
2. What level of integration do faculty engage their students in research activity in the teaching and learning process in public universities?
3. How do students experience research in public universities?
4. What are the factors affecting lecturers' integration of research into teaching in public universities?

5. What are the perceived impact of the research-teaching nexus on teaching and learning outcomes of public universities?
6. What is the effect of research productivity on faculty's teaching effectiveness?

The study also tested the following hypotheses:

1. **H₀**: There is no statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus.
H₁: There is a statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus.
2. **H₀**: There is no statistically significant difference in the conceptualisation of the research-teaching nexus across the ranks of faculty.
H₁: There is a statistically significant difference in the conceptualisation of the research-teaching nexus across the ranks of faculty.
3. **H₀**: There is no statistically significant difference in the conceptualisation of the research-teaching nexus among students with respect to their academic levels.
H₁: There is a statistically significant difference in the conceptualisation of the research-teaching nexus among students with respect to their academic levels.
4. **H₀**: There is no statistically significant difference in the level of integration of research into teaching regarding the ranks of faculty.
H₁: There is a statistically significant difference in the level of integration of research into teaching regarding the ranks of faculty.

5. **H₀:** There is no statistically significant difference in the level of research integration into teaching with respect to the gender of faculty.

H₁: There is a statistically significant difference in the level of research integration into teaching with respect to the gender of faculty.

6. **H₀:** There is no statistically significant difference in the experiences of research among university students regarding their academic level.

H₁: There is a statistically significant difference in the experiences of research among university students regarding their academic level.

Methodologically, the study adopted the sequential explanatory mixed method design, where the quantitative results were substantiated with the qualitative results. It is worthy to point out that the actual interface of the quantitative and qualitative results was brought to bear at the discussion section of this study. The population of the study constituted all Business Education students and faculty members in two public universities in Ghana for the 2018-2019 academic year. The total population of the students and the faculty members were 1071 and 71 respectively. The multi-stage sampling strategy was used. Describing these stages, first, the disproportionate stratified sampling technique was used to determine the sample from the various strata: institution-based and programme-based. All the postgraduate students of Business Education were engaged in the study due to their relatively small number.

In all, a sample of 400 Business Education students, comprising 244 undergraduates and 156 postgraduates were selected for the study. However, valid quantitative data were obtained from 367 Business Education, constituting a 92% ($367/400 \times 100$) response rate for the students and a 73% ($52/71 \times 100$) response rate for faculty members. During the qualitative phase, the criterion

sampling (typical case) technique was used to select eight faculty members across the ranks and eight students across all levels.

Construct validity of the data was established through Principal Component Analysis (PCA) revealed through its average variance explained (AVE). In terms of analyses of the data, the quantitative data were analysed using inferential statistics (i.e one-way repeated measures ANOVA, MANOVA, Chi-square) and descriptive statistics (i.e means and standard deviations, as well as, frequencies and percentages), while the qualitative data were analysed thematically by adopting the reflexive thematic analysis. It is important to indicate that the study's objectives were all achieved.

Summary of Key Findings

Upon thorough investigations from both quantitative and qualitative perspectives, the following findings emerged:

RQ 1: Both faculty members and students conceptualised the research-teaching nexus as knowledge currency, scholarship oriented and curriculum oriented.

RQ 2: Faculty assignment of students in research activities during teaching and learning is basically at the research-led level. Thus, the dominant level of research integration into teaching and learning is research-led.

RQ 3: The dominant research experience among all students was that they hear their lecturers discuss research during lessons. Thus, UGD students normally experience research when their lecturers discuss research work, and also, through reading research papers. RM students also experienced research through reading research papers, attending research seminars and conferences and through contributing to research. NRM students experienced research

through research work their lecturers discuss with them and contributing to research. Finally, PhD students experienced research through their discussion with lecturers on research, reading papers, attending research seminars, partaking in research projects and contributing to research in anyway.

RQ 4: The factors affecting faculty members' integration of research into teaching were research productivity stimulation factor, empirically-based teaching, research active curriculum, time-oriented factor, and responsive curriculum factor. However, responsive curriculum is the dominant factor affecting the integration.

RQ 5: The impact of the research-teaching nexus was that the nexus promotes intellectual development, heightens research skills and improves university image. It also promotes relevant and functional curriculum, ensures a highly differentiated university, and finally stimulates students' interest and knowledge development.

RQ 6: Research productivity is a significant positive predictor of teaching effectiveness.

Hypothesis 1: There is no statistically significant difference between faculty's and students' conceptualisation of the research-teaching nexus. The findings also showed a non-statistically significant difference in each of the three typologies of conceptualisation between faculty and students.

Hypothesis 2: There is a statistically significant difference in the combined conceptualisation of the research-teaching nexus among the ranks of faculty. Specifically, scholarship-oriented conceptualisation was higher for lecturers more than for senior lecturers.

Hypothesis 3: There is a statistically significant difference in the conceptualisation of the research-teaching nexus among students' based on their academic level. Specifically, knowledge currency conceptualisation was higher for research master students than for undergraduate students.

Hypothesis 4: There is a statistically significant difference in the levels of integration of research into teaching among the ranks of faculty. Lecturers practise research-based teaching more than assistant lecturers. Professors practise research-tutored teaching more than senior lecturers.

Hypothesis 5: There is no statistically significant difference in the combined levels of research integration into teaching in terms of gender. Also, no significant difference was obtained among the four typologies of the level of research integration into teaching.

Hypothesis 6: A statistically significant difference was found between research masters and PhD students' experience on hearing their faculty discuss their research work in module, textbook or handout. More precisely, the results show that the PhD students had more of such experiences than the research masters' students. The finding also shows that the undergraduate students have heard more visiting lecturers discuss their research work more than non-research masters students. However, putting all the research experiences together, the non-research masters students have experienced more research than the undergraduate students.

Conclusions

Generally, there is no clear-cut, basic and steady association among research and teaching. Indeed, even where such a connection exists, it could be

seen in differed, dynamic and complex ways. Therefore, it requires impressive endeavours to produce and keep up this linkage in order to ensure its successful implementation. In spite of the controversial and highly disputed nature of the research-teaching nexus, a stronger link among research and teaching is still beneficial to both faculty members and students. This explains why faculty members and students seem to value and appreciate the association among research and teaching.

The relatively high level of conceptualisation by both faculty members and students is an indication that they believe in the existence of some level of interconnection and symbiotic connection among research and teaching and that both are inextricably intertwined. By implication, both faculty and students believe that research is capable of influencing learning outcomes in meaningful ways.

Nevertheless, it is worthy to recognise that not every research-active faculty member would automatically integrate their research experience into their teaching activities. One does not need to be an active researcher to viably coordinate research into teaching. It is therefore, an intentional and conscious effort on the part of each faculty member to create a connection among research and teaching to promote meaningful learning outcomes.

It could therefore, be inferred from this study that the connection among research and teaching is also valued by both students and faculty because the nexus allows for easier dialogue that leads to students' development of requisite skills to solve issues through critical evaluation, synthesis and reflection. Also, the study's findings suggest that the higher the rank, the higher the likelihood that an academic would consciously or unconsciously, integrate research into

teaching due to their profound level of experience and expertise in research and teaching. No wonder Professors demonstrated the highest level of integration because they normally teach at the highest academic level such as the masters and doctoral programmes.

In spite of the consciousness of the valuable nature of the research-teaching nexus, the study reveals that faculty members are still at the first level of integration (research-led). This level of integration of research into teaching could be described as passive, rather than, active. Arguably, this can be attributed to a majority of these faculty members teaching at the undergraduate level and few at the postgraduate level. Also, the students' varying engagement with research exposure across the various levels implies that their research exposure can mainly be described as a passive, rather than active.

It tends to be induced from the discoveries of the investigation that the support offered by university management for research, and its integration into teaching is an imperative driver of the effective implementation of the research-teaching nexus. Therefore, whether faculty completely disengage or highly integrate research into their teaching, university management, through its policies, has already made significant positive contributions in their quest to optimise the benefits derived from the research-teaching nexus. It is important to also indicate that the nexus is influenced by contextual realities in the university, as well as, systemic factors from the wider educational community with influences from certain critical success factors that are more curriculum-related in nature. The implication is that the connection among research and teaching is predominantly impacted by reasons which are more identified with the curriculum than any other factor with regards to advanced education. Such

factors include Quality and open research; school cycles, lifestyles and initiatives; the capabilities, inspirations and awareness of teachers; and the more systematic environment of strategy.

The significance of the job of university authorities as vital drivers of progress from the realisation of the benefits from the nexus was central from both faculty and students' perspectives. Conclusively, regardless of the level of study of students, the highest level of integration of the research-teaching nexus could be achieved. Also, irrespective of the rank of a faculty member, the highest level of implementation of the nexus could be achieved. The extant literature has indicated that the nexus is intentionally and consciously created, it does not automatically occur. Given the priceless nature of the research-teaching nexus in the higher education landscape, the development and training of faculty members in research-based teaching is reasonably imperative with the major aim of offering students more opportunities to learn, not only *from* research and *about* research, but more importantly, *through* research.

Recommendations

Based on the findings and conclusions drawn from the study, the following recommendations are made:

RQ 1: University authorities should ensure that research culture is embedded in departmental activities as part of encouraging and preparing both faculty members and students for research-based teaching within the context of Business Education.

RQ 2:

- a. Faculty members must move beyond just disseminating research findings and actively involve students in advanced form of the research-teaching nexus (research-based and research-tutored teaching). For instance, students should be encouraged to undertake independent mini projects as a part or whole of a course. This will go a long way to encourage meaningful learning outcomes and promote lifelong learning. Teaching should be student-centered.
- b. Universities, through their respective faculties/schools and departments should develop a policy for the research-teaching nexus. The policy should be supported by a policy document to serve as a guideline to enable faculty members practice research-based teaching. This can be facilitated by drafting disciplinary-specific research-teaching nexus policy documents to cater for the uniqueness of each field of study.

RQ 3: The university and its faculty should create the enabling environment and encourage their students to enrich their research experience. Sufficient opportunities such as research conferences, seminars, exhibitions should be created for students to attend in order to enrich their research experiences and exposure to serve as preparatory grounds to achieve the research-teaching nexus goals. Also, the various experiences that students are exposed to should be part of the assessment process and must be strictly enforced to benefit students' learning outcomes.

RQ 4: As part of their mechanisms for determining the teaching effectiveness of faculty members, the management of universities is encouraged to

incorporate research-teaching integration components into promotions and tenure-tracks. This could be facilitated through the exhibit of sample documents showing the extent to which faculty have integrated research into their teaching.

RQ 5: University authorities should also create the enabling environment by encouraging, motivating and resourcing lecturers, especially, through capacity building programmes to enable them effectively integrate research into teaching.

RQ 6: Faculty members should make the effort to balance time dedicated to teaching and time dedicated for research in order to optimise the benefits derived from the research-teaching nexus.

Hypothesis 1: There should be intensive continuous professional development programmes for faculty members on how to effectively integrate research into teaching. This is likely to influence students since lecturers have influence on their students directly or indirectly.

Hypothesis 2: In addition to institutionalising the policy on the research-teaching nexus, the university authorities should conscientise and sensitise its faculty members on the need to effectively integrate research into teaching regardless of their rank and position. This is because such an effective integration bestows unto students some benefits, irrespective of their level of study. Faculty members should also constantly strive for innovative ways of enriching their practice of research-based teaching.

Hypothesis 3:

- a. Updating one's knowledge should not be seen as the sole obligation of lecturers. These lecturers should also entreat their students to constantly search for current information on the content they are exposed to. This could be facilitated through giving students presentations and practical hands-on assignments.
- b. Faculty members should be made to teach at the undergraduate level, in addition to teaching at the postgraduate level in order to inculcate in the students on the basis of research culture. My view is that this will enhance the nexus, especially, in the later years of their academic life.

Hypothesis 4: Senior faculty members such as professors and senior lecturers should mentor and entreat their younger faculty members, especially, assistant lecturers on how best to practice research-based teaching, especially, the skills in applying the highest level of integration such as research-based and research-tutored teaching. As part of the mentorship agenda for young faculty members, there should be regular writing retreats to enhance and sharpen the writing skills of these young faculty members.

Hypothesis 5: Since the study found a non-statistically significant difference in the levels of integration in reference to gender of faculty members, an enabling environment should be created for both sexes. Thus, male and female faculty members should be exposed to the same continuous development programme as far as research integration into teaching is concerned since the study revealed a no statistically significant difference for males and females in terms of their practise of research-based teaching.

Hypothesis 6: The university, through its Provosts, Deans and HoDs should ensure that the curriculum of the various programmes should be re-designed in such a manner that students' experiences are connected sequentially based on students' practical research. This is likely to empower them to apply the necessary competencies needed to embark on personal inquiry in the knowledge creation process. Thus, courses must be reviewed to incorporate research experiences such as mini literature reviews into assignments, mini-projects and public lecture series to enhance the knowledge creation process.

Guidelines for Enhancing the Research-teaching Nexus

As part of contributing to knowledge, I put forward some guidelines that may serve as a blueprint to faculty members in their quest to effectively integrate research into teaching to promote learning outcomes. It is my strong conviction that these guidelines when given consideration can potentially bring dramatic change in departmental, institutional and national educational policy agenda.

Guideline 1

Faculty members should align their research interest to their teaching activities: Curriculum modification will, therefore, be necessary to strike a balance between lecturers' interest and their teaching activities. These modifications involve allocation of teaching duty according to staff area of research interest.

Guideline 2

Teaching assessment exercise ratings: The second guideline I propose is the implementation and enforcement of Teaching Assessment Exercise ratings at

the national and institutional levels. This should be used as an incentive to motivate faculty members to excel in their teaching.

Guideline 3

Flexible allocation of research and teaching roles and responsibilities to faculty members: The appointment of faculty solely for the roles of teaching and research separately is also imperative. A more flexible method to the allocation of teaching and research responsibilities would serve as a motivational mechanism for faculty members.

Guideline 4

Freedom to Shape Academic Curricula by both faculty members and students: There should be a system in place to allow faculty members to often present their inputs on what should go into the content of courses at all levels of study. Even though, some departments are already practising this guideline, I content that it must be a matter of policy institutionalised by the university. This will make it more effective to realise the nexus benefit.

Guideline 5

Allocation of teaching loads to Junior faculty members including Doctoral students as part of the experiential learning practices: This suggestion comes from a tried and verified model adopted by some universities in the US. This involves giving an opportunity to postgraduate students to teach as part of their experiential learning process. Such a policy would have a number of benefits in our context. Delegating teaching responsibilities to them will create the opportunity for their potentials to be nurtured. The teaching experiences will prepare them for their future career endeavour.

Guideline 6

Influence of National Benchmarking Guidelines on university curricula and research-based teaching: Universities follow national guidelines for setting undergraduate and postgraduate benchmarks and programme specifications. These guidelines help shape academic curricula in worldwide. The National Council for Tertiary Education (NCTE) is the major regulator of university education in Ghana in collaboration with the National Accreditations Board (NAB). One of the roles of NAB plays is to ensure quality assurance, and promote continuous improvements in managing quality-higher education.

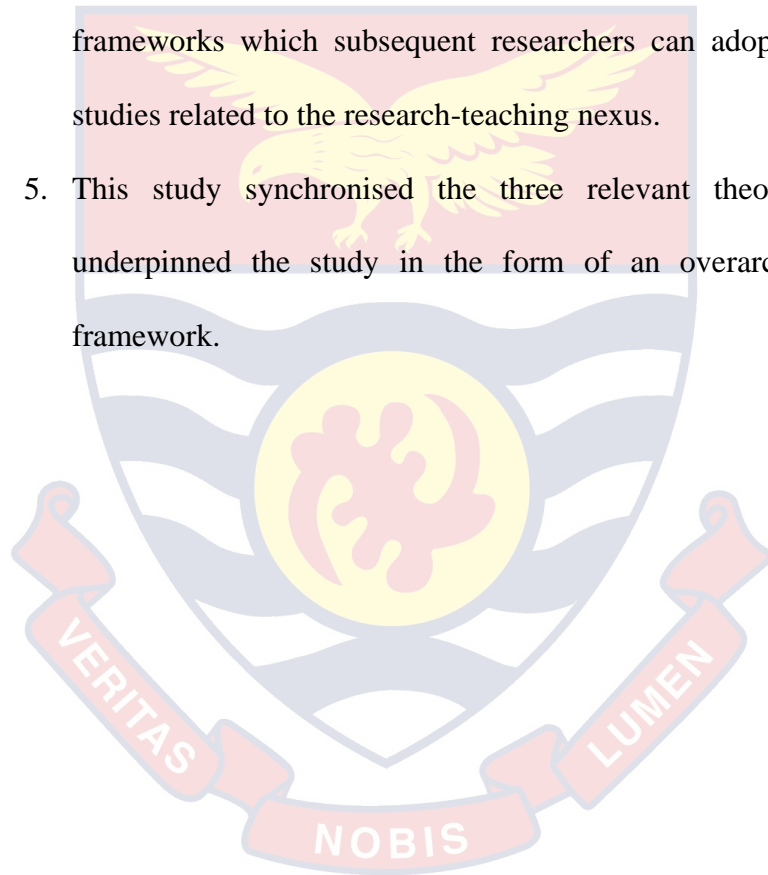
Suggestions for Further Research

1. This study could be replicated across the different disciplines to confirm the disciplinary variations among faculty members since disciplinary variations may call for different levels of integration revealed by prior studies.
2. Similar studies can focus on comparative analysis between public and private Ghanaian universities.
3. Subsequent studies may integrate observation and document analysis as part of the data collection process for triangulation purposes.
4. Other studies may focus on the influence of teaching on research.

Contributions of this Study to Scholarship

1. This study has espoused some guidelines for faculty members to effectively integrate research into teaching.

2. This study developed a standardised questionnaire to measure the level of integration of research into teaching in the higher education landscape.
3. This study is a maiden study in Ghanaian public universities to sensitise universities, faculty members and students on the research-teaching nexus.
4. This study has developed an entry and concluding conceptual frameworks which subsequent researchers can adopt as a guide on studies related to the research-teaching nexus.
5. This study synchronised the three relevant theories/models that underpinned the study in the form of an overarching theoretical framework.



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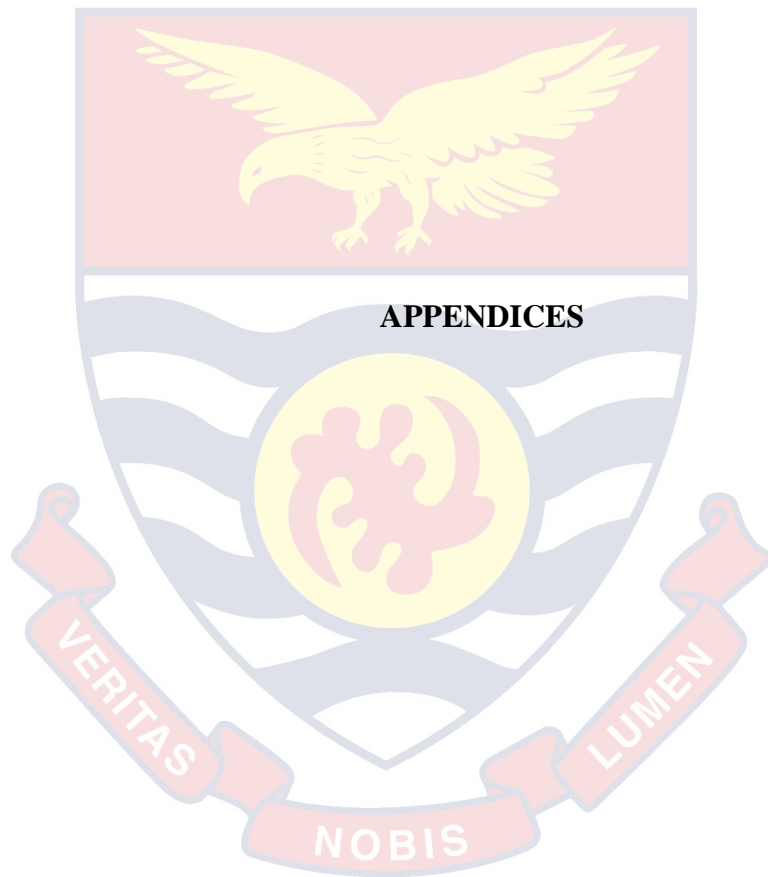
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APPENDIX A

QUESTIONNAIRE FOR LECTURERS

Academic staff of universities have been identified as critical actors in knowledge production and dissemination. To achieve this mandate, research has a significant role to play to facilitate the teaching and learning process. This questionnaire, therefore, seeks to elucidate data on how research informs teaching in public universities in Ghana.

The study is solely for academic purposes. Please kindly provide sincere and objective responses to the items. I assure you that any information provided will be treated as strictly confidential as possible. All responses remain anonymous and participation is voluntary. You may decline to respond to the items at any point in time.

INSTRUCTIONS

Please put a *check mark* (✓) where applicable in the box corresponding to your choice concerning each statement.

For the dotted lines, kindly specify the *required numbers* corresponding to the statements.

SECTION A:

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

1. Sex:

Male []

Female []

2. Rank:

Assistant Lecturer []

Lecturer []

Senior Lecturer []

Associate Professor []

Professor []

3. Highest

Academic

Qualification:.....

4. Number

of Years

Taught

in

the

University:.....

5. Teaching: Please kindly indicate the *Grand Mean Score* of any of the 3 courses appraised by your students during the previous semester.

Course 1

Course 2

Course 3

6. On a score of 1 to 4, please, kindly rate your teaching effectiveness.

.....

7. Please, kindly indicate the *number of publications* you have made since your appointment as a lecturer with regard to the following:

Journal articles

Articles reviewed

Conference papers.....

Authored books.....

Book chapters.....

Thesis supervised.....

8. Please, kindly indicate the total *number of hours you spend* on (Out of the daily hours of *24 hours*):

Teaching activities.....

Research activities.....

GENERAL INSTRUCTION (SECTIONS B TO E)

Tick (✓) the appropriate option that corresponds with your answer to the following questions. Supplied also are five options corresponding to these statements.

Strongly Disagree (SD), Disagree (D), Uncertain (U), Agree (A), and Strongly agree (SA)

SECTION B:

Lecturers' conceptualisation of the link between research and teaching in public universities

No.	Teaching and Research link is about:	SD	D	U	A	SA
9	lecturers integrating their own research into their teaching to give currency to knowledge					
10	lecturers keeping up to date and conducting secondary research to remain abreast of current disciplinary knowledge					

11	lecturer's particular research interests informing the development of teaching materials					
12	a community of scholars including students invited to join on-line discussion groups within the discipline community					
13	visiting scholars within the community of practice acting as resource persons					
14	the scholarship of teaching integrated into research supervision					
15	researching about learning and teaching that informs and evaluates curriculum development					
16	making explicit the nature of research, and questioning existing knowledge development					
17	promoting lifelong learning in students by researching to improve practice					
18	encouraging and motivating students to do research					

SECTION C:

Extent to which lecturers engage their students in research activity in the teaching and learning process in public universities

Code	No.	Statement	SD	D	U	A	SA
RL 1	19	I draw on my personal research findings in designing and teaching courses					
RL 2	20	I draw on others' research findings in designing and teaching courses					
RL 3	21	I place the latest research findings in the context of the discipline					
RL 4	22	I design learning activities around useful contemporary research findings					
RL 5	23	I rely on the transmissive means of teaching					
RL 6	24	I teach using the lecture method predominantly					
RO 2	25	I build small scale research activities into assignments					
RO 3	26	I teach students the methodological processes behind theories and models					
RO 4	27	I infuse teaching with the values of researching					

RO 5	28	I emphasise the processes by which knowledge is produced during lessons					
RO 6	29	I teach the methods used to carry out research in their disciplines					
RO 7	30	I teach students methods resembling research procedures in their disciplines					
RO 8	31	I assess students by methods resembling research procedures in their disciplines					
RB 1	32	I involve students in practical research project assignments					
RB 2	33	I design my teaching around enquiry-based activities					
RB 3	34	I encourage students to feel part of the research culture of my department					
RB 4	35	I conduct research with students to make evidence-based decisions about teaching					
RB 5	36	I design my lessons to promote active engagement with problems and issues					
RB 6	37	I design my lessons to motivate students to learn through direct involvement in research					

RB 7	38	I design my lessons to enable students carry out research to facilitate their learning process					
RB 8	39	I involve students in conducting my personal research					
RB 9	40	I encourage students to undertake independent project as a part or whole of a course					
RT 1	41	I usually provide for students a small-scale literature review for them to critique					
RT 2	42	I give students the opportunity to critique research findings presented to them					
RT 3	43	I encourage my students to contribute to research papers and conference posters					
RT 4	44	I engage my students in critical examination of any knowledge they come across					

SECTION D:

Factors affecting the compatibility between research and teaching in public universities

	No.	Statement	SD	D	U	A	SA
	45	Research, rather than teaching is rewarded by promotion at my institution					
	46	Research is valued more highly at my institution					
	47	Promotion policies fail to recognise good teaching					
	48	Lecturers who publish research are better rewarded than those who spend their time on teaching					
	49	As a result of the demands of research activity, I cannot spend much time supporting my students					
	50	Inclusion of an academic's research overloads an already cramped curriculum					
	51	Researchers can distort the curriculum with their own research at the expense of subject coverage					

52	Students rarely see staff research as valuable to their own learning					
53	The profession's influence on the curriculum creates tension if linking research to teaching					
54	Inclusion of research at the expense of professional syllabus coverage leads to gaps in the curriculum					
55	Lecturers involved in research are more committed to students' learning					
56	Lecturers who are involved in research are more enthusiastic about their teaching					
57	Integrating teaching and research increases research productivity					
58	Some of the best research ideas have emanated from the course of teaching in an area					
59	Time devoted to teaching is conducive to research output					
60	My students perceive me as enthusiastic about my course because of my research activity					

61	Students need professional skills, not research skills					
62	You need research to be at the cutting edge, an out-dated course has no point in the real world					
63	It is important for a lecturer to engage in research as the world is constantly changing					
64	Students enjoy learning activities based on real-world examples from practice					
65	Students enjoy learning activities based on real-world examples from research					
66	Empirically-based case studies provide a means of demonstrating real life practice					

SECTION E:

Perceived impact of research-teaching link on students' learning

No.	<i>Statement</i>	SD	D	U	A	SA
	<i>The link between research and teaching:</i>					
67	increases students' understanding of the course					

68	contributes to the development of students' research-related skills					
69	increases students' awareness of research methodological issues					
70	stimulates their interest and enthusiasm for the course					
71	enhances the knowledge currency of the curriculum					
72	develops important graduate attributes (such as research skills, search skills etc.)					
73	prepares students for future employment					
74	instills in students a sense of innovation and creativity					
75	develops passion for one's discipline					
76	gives credibility to the university and its faculty					
77	promotes and supports learning and teaching as a process of intellectual enquiry					
78	keeps lecturers and students up-to-date with new discoveries and ideas					
79	makes teaching interesting and relevant					
80	establishes and maintains link between theory and practice					

81	deepens teachers' knowledge of the subject matter					
82	serves as an experience sharing avenue					
83	assists students learn how research within their discipline leads to knowledge creation					
84	helps students learn methods used to carry out research in their disciplines					

THANK YOU FOR YOUR TIME AND RESPONSES



APPENDIX B

QUESTIONNAIRE FOR STUDENTS

Academic staff of universities have been identified as critical actors in knowledge production and dissemination. To achieve this mandate, research has a significant role to play to facilitate the teaching and learning process. This questionnaire, therefore, seeks to elucidate data on the link between research and teaching in public universities in Ghana. The study is solely for academic purposes. Please kindly provide sincere and objective responses to the items. I assure you that any information provided will be treated as strictly confidential as possible.

INSTRUCTIONS

Please put a check mark (✓) where applicable in the box corresponding to your choice concerning each statement.

SECTION A: DEMOGRAPHY OF RESPONDENTS

1. Sex

Male []

Female []

2. Level.....

Tick (✓) the appropriate option that corresponds with your answer to the following questions. Supplied also are five options corresponding to these statements.

Strongly Disagree (SD), Disagree (D), Uncertain (U), Agree (A), and Strongly agree (SA)

SECTION B:

How students conceptualise the link between research and teaching in public universities.

Indicate your extent of agreement on how you understand the link between research and teaching.

No.	<i>I understand the link between research and teaching to be:</i>	SD	D	U	A	SA

3	lecturers including their own research into their teaching to give currency to knowledge					
4	lecturers keeping up to date and conducting secondary research to remain abreast of current disciplinary knowledge					
5	lecturer's particular research interests informing the development of teaching materials					
6	a community of scholars including students invited to join on-line discussion groups within the discipline community;					
7	visiting scholars within the community of practice acting as resource persons;					
8	the scholarship of teaching integrated into research supervision;					
9	researching about learning and teaching that informs and evaluates curriculum development;					
10	making explicit the nature of research, and questioning existing knowledge development.					
11	promoting lifelong learning in students by researching to improve practice;					

12	encouraging and motivating students to do research;					
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SECTION C:

How students experienced research in the university.

Indicate how you came across research in the university? During your studies at the University, have you gained experience of any of the following? **Please tick as many as applicable responses.**

13	Hearing a member of staff discuss their research work in a module, textbooks or handout	
14	Hearing a guest lecturer discuss their research work in a module or textbooks	
15	Reading a research paper or report written by a member of staff	
16	Critically examining art/artefacts, such as an image, performance, device or design, produced by a member of staff	
17	Attending a University research seminar (not as part of a module)	
18	Attending a research conference	
19	Attending an artistic performance or exhibition linked to your subject area(s)	
20	Being a participant in a research project run by a member of staff	

21	Acting as a research assistant during a data collection exercise	
22	Contributing to a research project in anyway	
23	Contributing to a research conference paper or poster	

Indicate any other ways you have experienced research activity in the university.....

SECTION D:

Factors affecting the compatibility between research and teaching among academic staff in public universities.

Indicate your extent of agreement on the following factors that affect the link between research and teaching.

No.	Statements	SD	D	U	A	SA
24	I believe research is more rewarding than teaching in terms of lecturer promotion					
25	Research is valued more highly at my institution					
26	Promotion policies fail to recognise good teaching					

27	Lecturers who publish research are better rewarded than those who spend their time on teaching					
28	As a result of the demands of research activity, lecturers have little time for us					
29	Inclusion of an academic's research overloads an already cramped curriculum					
30	Researchers can distort the curriculum with their own research at the expense of subject coverage					
31	Students rarely see staff research as valuable to their own learning					
32	The profession's influence on the curriculum creates tension if linking research to teaching					
33	Inclusion of research at the expense of professional syllabus coverage leads to gaps in the curriculum					
34	Teaching staff involved in research are more committed to students' learning					
35	Teaching staff who are involved in research are more enthusiastic about their teaching					

36	Integrating teaching and research increases research productivity					
37	Some of the best research ideas have emanated from the course of teaching in an area					
38	Time devoted to teaching is conducive to research output					
39	I perceive myself as enthusiastic about my course because of my research activity					
40	Students need professional skills, not research skills					
41	You need research to be at the cutting edge, an out-dated course has no point in the real world					
42	It is important for a lecturer to engage in research as the world is constantly changing					
43	I enjoy learning activities based on real-world examples from practice					
44	I enjoy learning activities based on real-world examples from research					
45	Empirically based case studies provide a means of demonstrating real life practice					

SECTION E:

Perceived impact of research-teaching link on students' learning.

Indicate your extent of agreement on the following factors that affect research- teaching link between students' learning.

No.	Statement	SD	D	U	A	SA
	<i>The link between research and teaching (has)</i>					
46	increased my understanding of the subject					
47	contributed to the development of my research-related skills					
48	increased my awareness of research methodological issues					
49	stimulated my interest and enthusiasm for the subject					
50	enhanced the knowledge currency of the curriculum					
51	develops important graduate attributes (such as research skills, search skills etc.)					
52	prepares students for future employment					
53	instils in students a sense of innovation and creativity					
54	develops passion for one's discipline					
55	gives credibility to the university and its faculty					

56	promotes and supports learning and teaching as a process of intellectual enquiry					
57	keeps lecturers and students up-to date with new discoveries and ideas;					
58	makes teaching interesting and relevant					
59	useful in establishing and maintaining links between theory and practice					
60	deepens teachers' knowledge of the subject matter					
61	as an experience sharing avenue					
62	students learn how research within their discipline leads to knowledge creation					
63	students learn methods used to carry out research in their disciplines					

THANK YOU FOR YOUR COOPERATION

APPENDIX C

INTERVIEW PROTOCOL FOR LECTURERS

Introduction

Self-introduction

Briefing on the Rationale of the Study

1. Background Information

- a. Could you tell me about your job in terms of your **rank, positions** and **number of years spent** in teaching in the university?
- b. Please, in terms of priority, kindly rank the following: *research, teaching and community service* in order of your priority as an academic. Kindly, provide explanation to your ranking.
- c. Which of these activities do you spend much time on? On the average, how many hours to do you spend each day?

2. Conceptualisation of the link

- a. Do you believe there is a link between research and teaching? Yes/ No
- b. If Yes, how do you understand the link? If No, why?

3. Levels of Integration

- a. How/ In what ways do you use your research to inform your teaching?
- b. How/ In what ways do you use other people's research to inform your teaching?
- c. What specific activities do you involve in to effectively integrate research into your teaching?

4. The compatibility factors affecting the link

- a. In your opinion, what are your personal factors/challenges that are likely to influence lecturers' integration of research into teaching?
- b. Are there any institutional factors/challenges? Please, mention them.

- c. Do you have any form of support for conducting research to inform your teaching?

5. The impact of the link on teaching and learning

- a. Do you believe research has the tendency to affect teaching and learning? Yes/No
- b. How? Please, kindly clarify or explain further.
- c. In your opinion, what are the positive impact of the link between research and teaching in higher education?
- d. In your opinion, what are the negative impact of the link between research and teaching in higher education?
- e. Do you believe the link is strong or weak?
- f. Please, why do you think so?

6. Recommendations/Suggestions to improve the link

- a. What would you suggest/recommend to improve the link between research and teaching?

7. What have you got to say about lecturers' experience of the relationship between research production and teaching effectiveness?

Closing:

- Would you like to add anything to what we have already said?
- Do you have any other comments?
- Many thanks for your time and useful information.

APPENDIX D

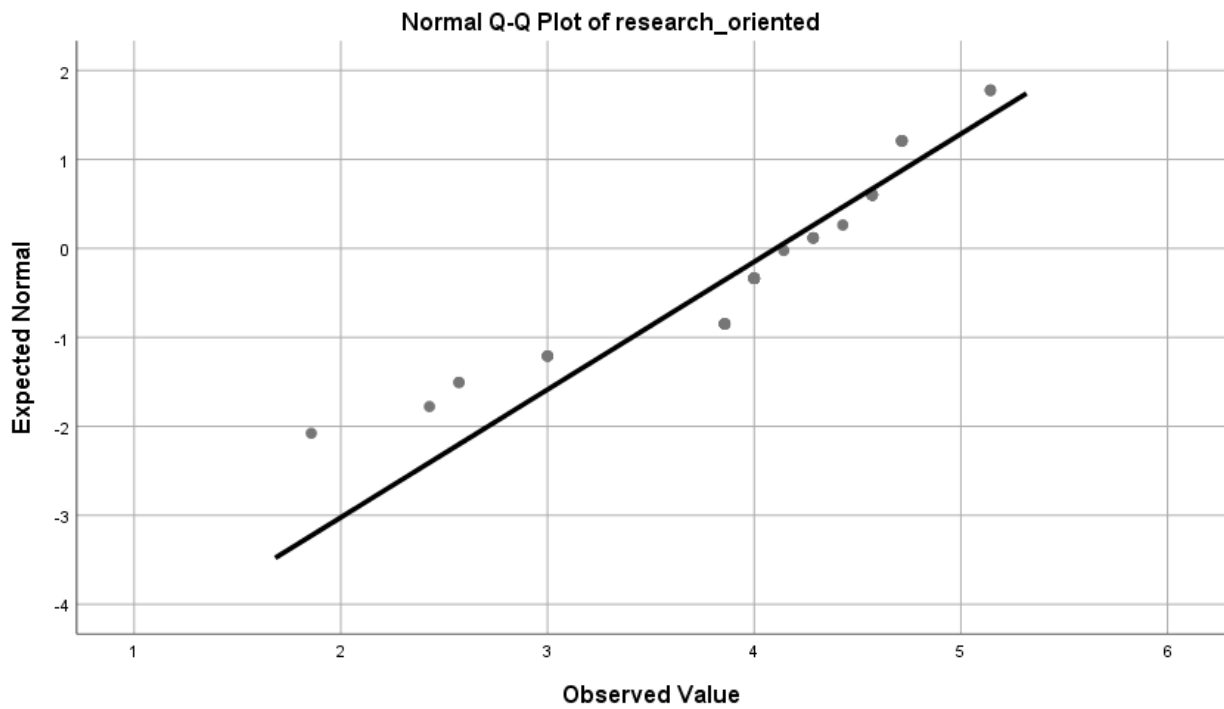
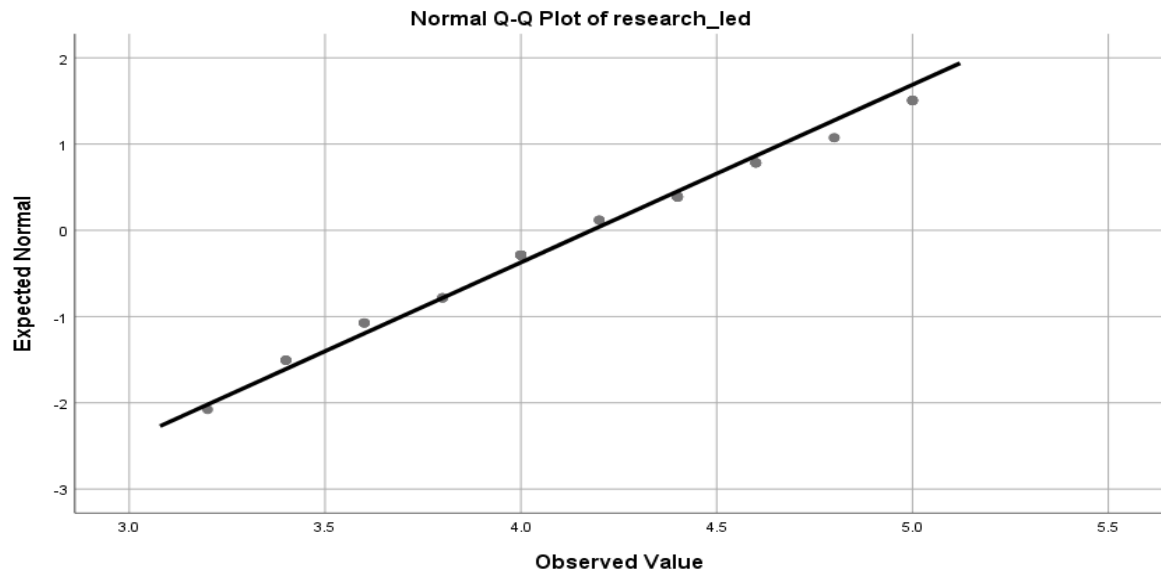
INTERVIEW PROTOCOL FOR STUDENTS

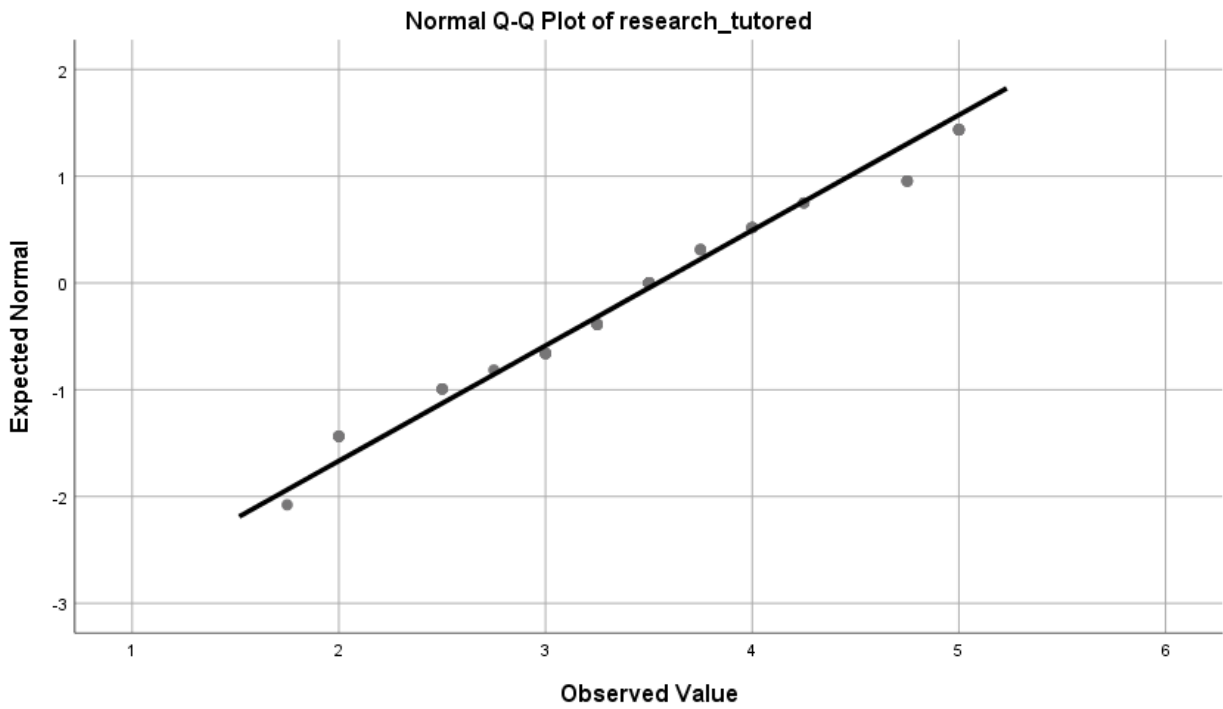
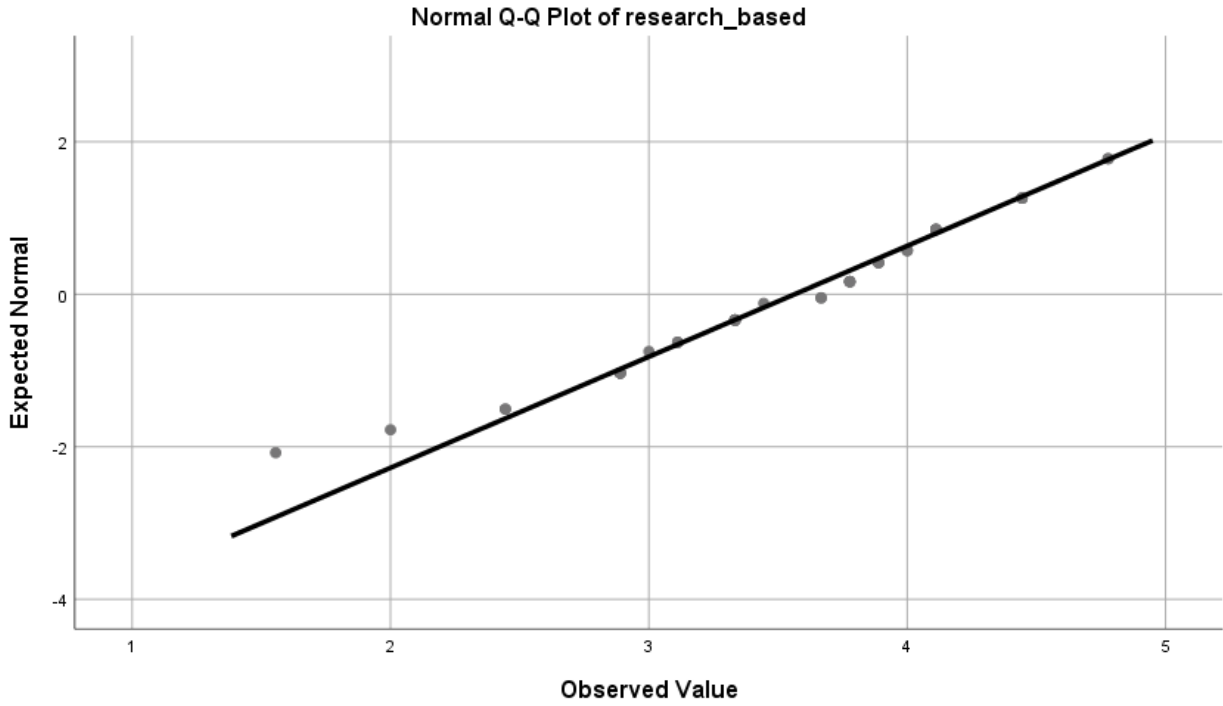
1. Please, which level are you?
2. How do you experience research in the university?
3. How do lecturers expose you to research in their teaching?

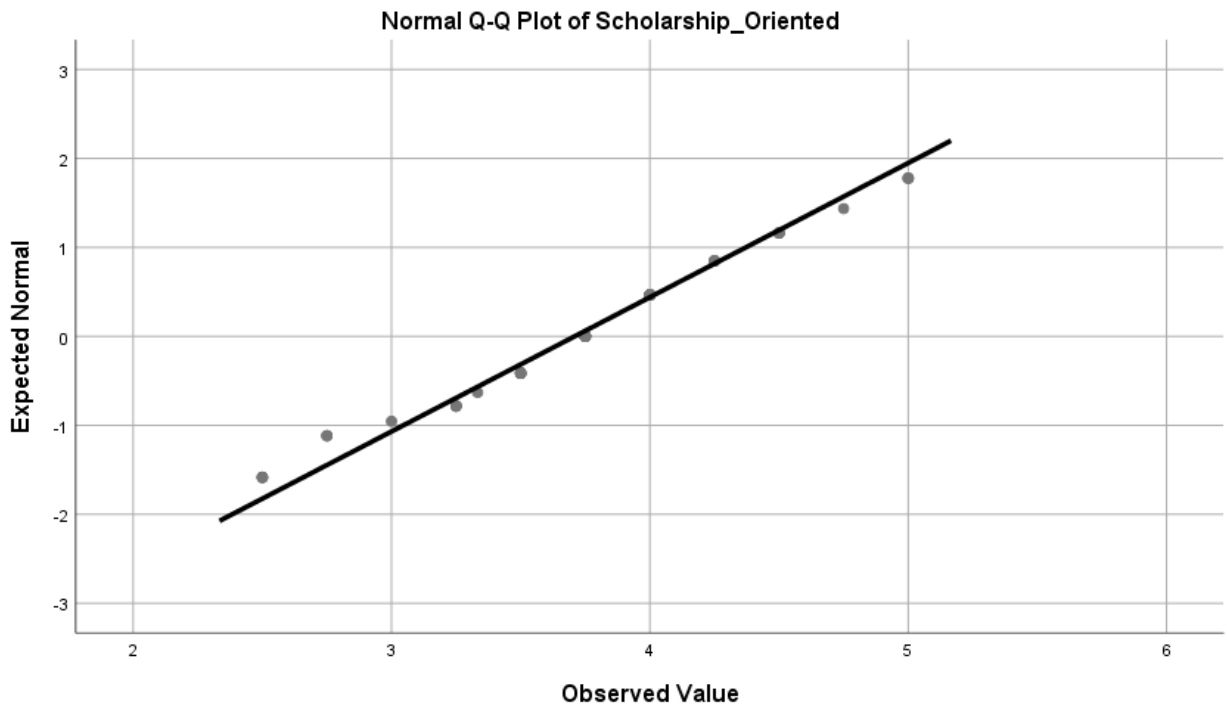
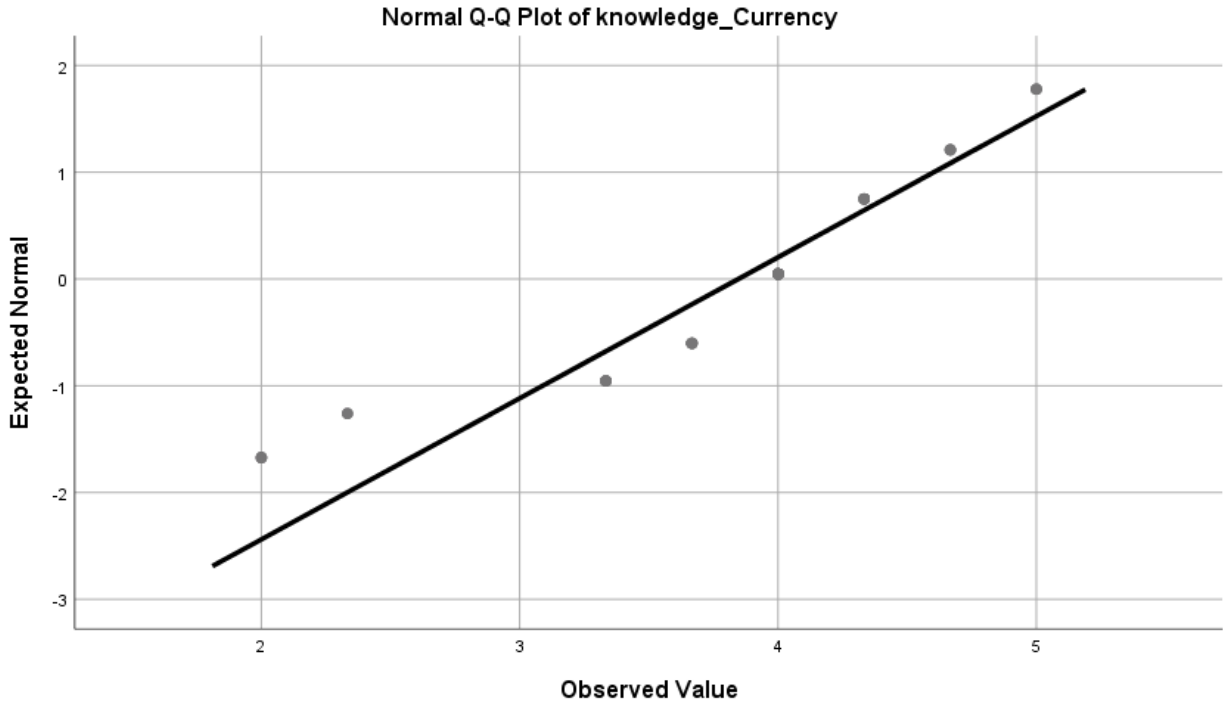


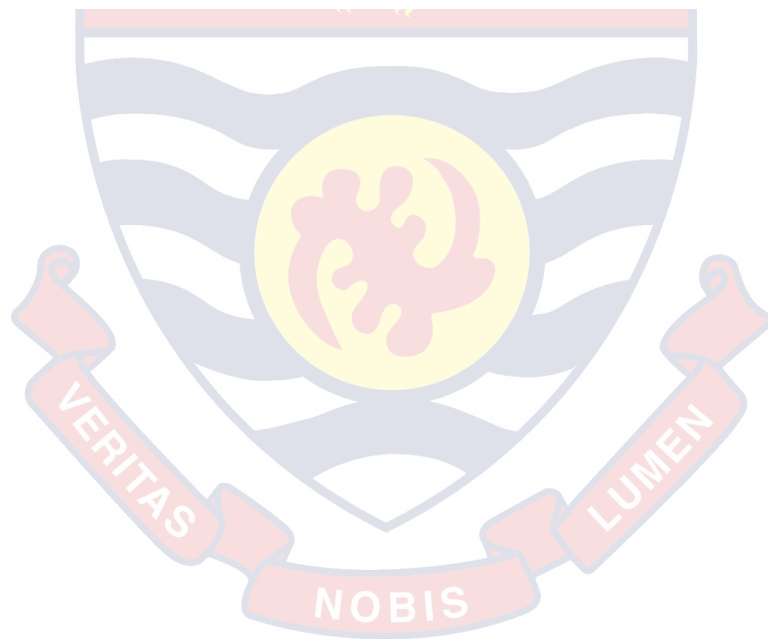
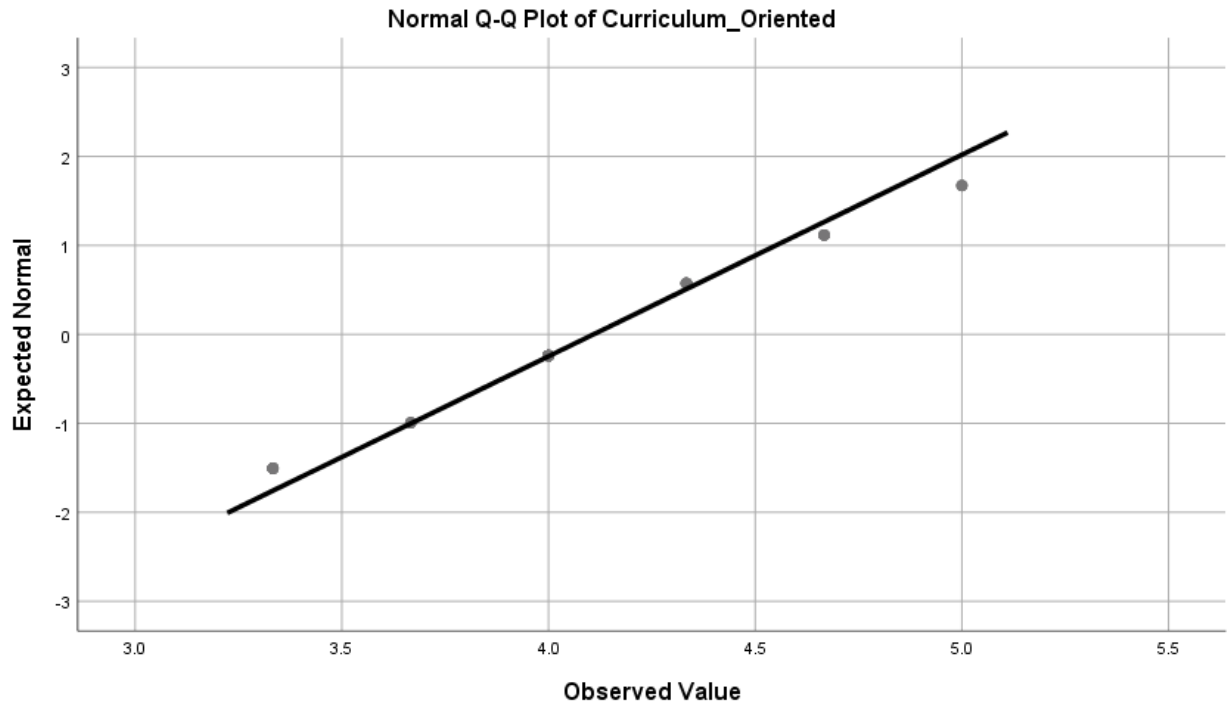
APPENDIX E

TESTS FOR NORMALITY FOR LECTURERS



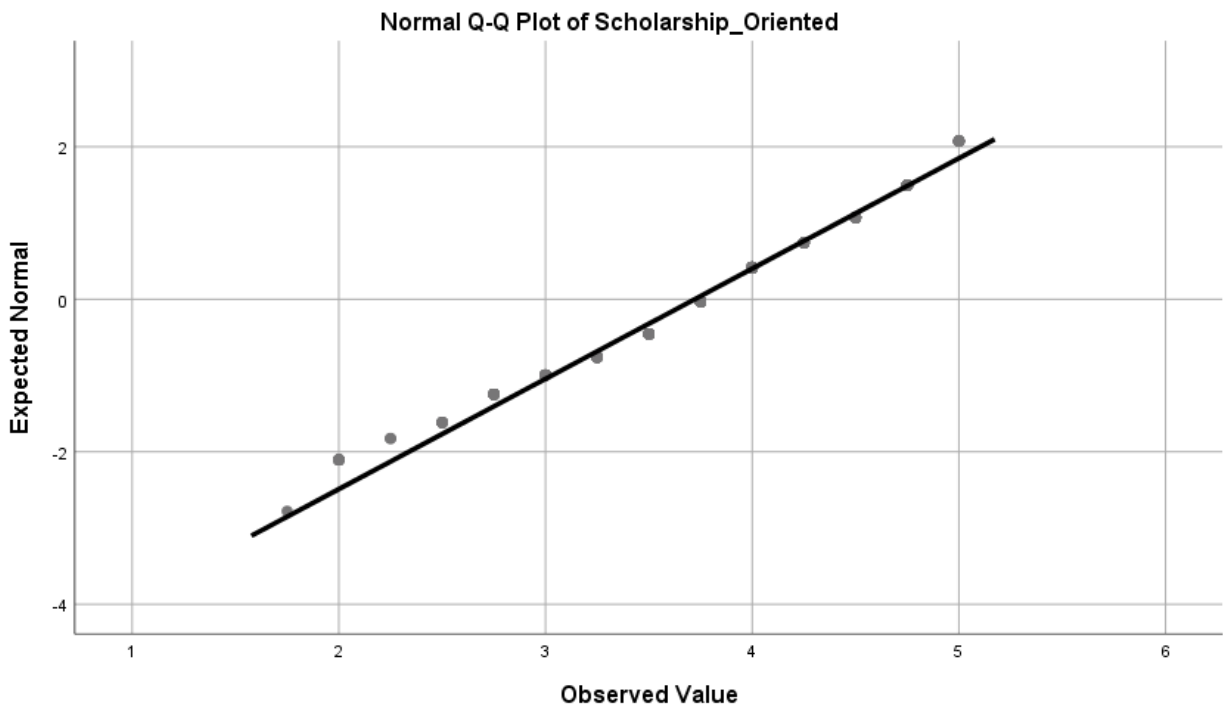
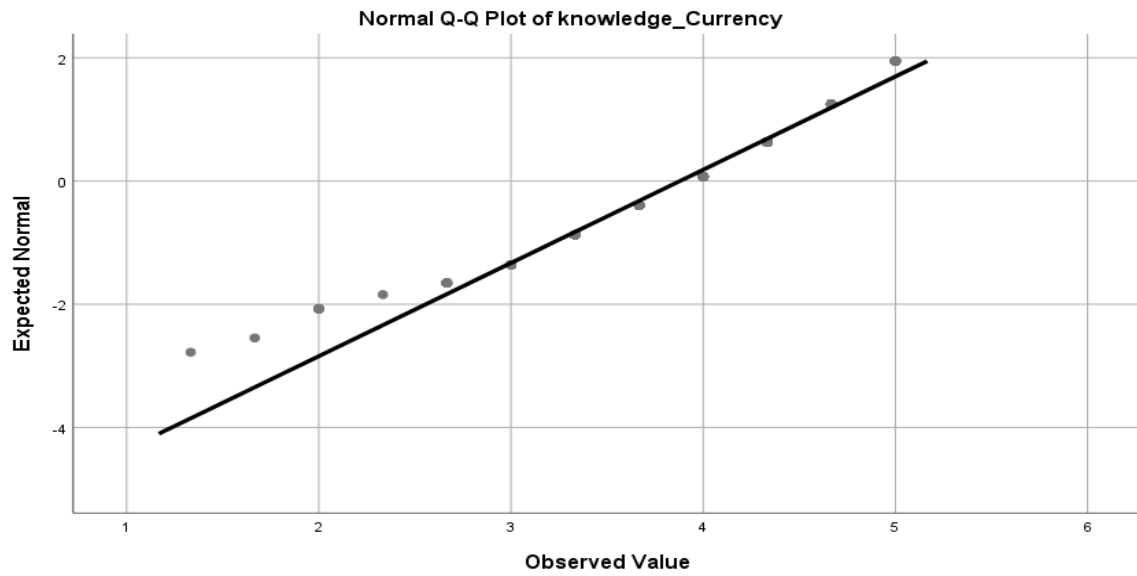


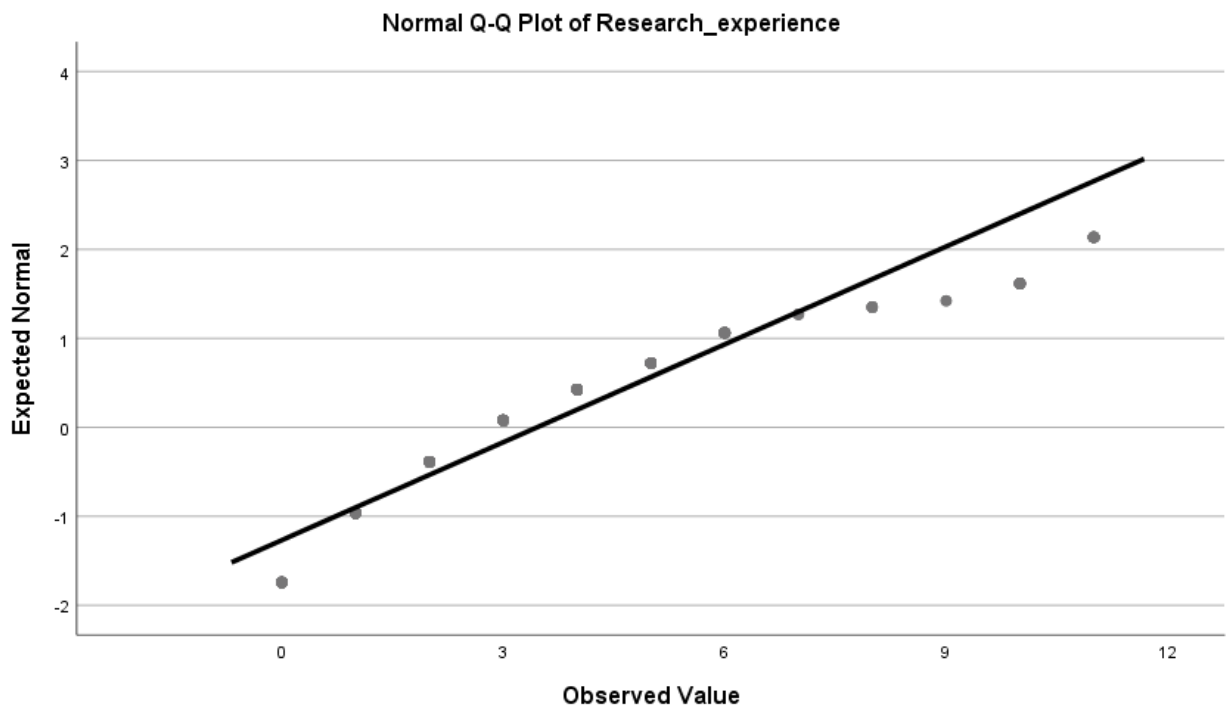
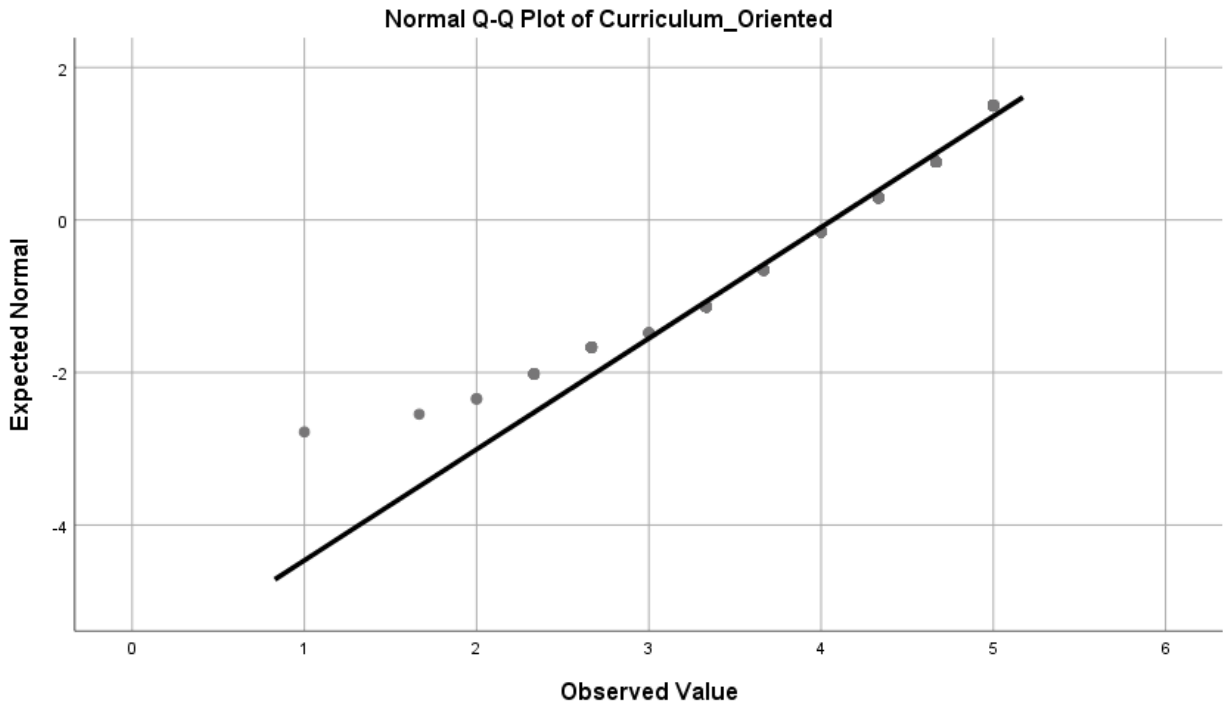




APPENDIX F

TESTS FOR NORMALITY FOR STUDENTS





APPENDIX G

DESCRIPTIVE STATISTICS

Descriptive Statistics – Lecturers’ Factors

	N	Mean	Std. Deviation
Research, rather than teaching is rewarded by promotion at my institution.	52	4.3269	.80977
Research is valued more highly at my institution.	52	4.4615	.77868
Teaching is not a significant factor in faculty rewards.	52	3.5577	1.12744
Promotion policies fail to recognise good teaching.	52	3.5385	.99925
Lecturers who publish research are better rewarded than those who spend their time on teaching.	52	4.4423	.57440
Lecturers who seek promotion tend to publish in academic journals at the expense of other activities such as teaching.	52	4.1538	.50038
As a result of the demands of research activity, I cannot spend much time supporting my students in their studies.	52	3.2308	1.13094
Integrating research into teaching promotes students’ critical enquiry skills.	52	4.0385	.86232
Using research as part of a holistic approach to learning assists students’ critical thinking skills.	52	3.8654	.76770
Research-active academics aid students to adopt a questioning approach to learning.	52	4.0192	.54198
Research activity contributes to updating the curriculum.	48	4.3542	.63546
The quest for increased specialisation of knowledge means that research is remote from what students need to know.	52	3.6731	.75980
Inclusion of an academic’s research activities worsens an already overloaded curriculum.	52	3.0769	1.08187
Researchers can distort the curriculum with their own research at the expense of subject coverage.	52	3.2692	.88817

Including specialised research leads to lecturers pitching the course too high.	52	3.0385	.96936
Students rarely see staff research as valuable to their own learning.	52	3.6538	.68269
The profession's influence on the curriculum creates tension if linking research to teaching.	52	3.1731	1.07960
Inclusion of research at the expense of professional syllabus coverage leads to gaps in the curriculum.	52	3.1346	1.01032
Lecturers involved in research are more committed to students' learning.	52	3.5000	1.03848
Lecturers who are involved in research are more enthusiastic about their teaching.	52	3.7308	.99243
Research-active lecturers adopt a more holistic and interpretative approach to their teaching.	52	3.6731	.92294
Teaching can stimulate research.	52	3.8077	.79307
Integrating teaching and research increases research productivity.	52	3.9231	.58899
Some of the best research ideas have emanated from the course of teaching in an area.	52	3.8846	.75806
Teaching and research are mutually beneficial to each other.	52	4.0000	.48507
Time devoted to teaching is conducive to research output.	52	3.6731	.67798
Teaching and research are different academic activities requiring different qualities.	52	3.7308	1.06854
It is unreasonable to expect good teachers to be good researchers and vice versa.	52	3.5192	1.11127
My students consider my course to be up-to-date because of my research activity.	52	4.1538	.66817
My students perceive me as enthusiastic about my course because of my research activity.	52	4.0000	.56011
Students on professionally-oriented courses should focus their learning on how to do the job.	52	3.7885	.74981
Students need professional skills, not research skills.	51	3.0000	1.20000

You need research to be at the cutting edge; an out-dated course has no point in the real world.	52	3.9808	.80417
It is important for a lecturer to engage in research as the world is constantly changing.	52	4.4231	.53674
Students enjoy learning activities based on real-world examples from practice.	52	4.2500	.58995
Students enjoy learning activities based on real-world examples from research.	52	4.3462	.51960
Empirically-based case studies provide a means of demonstrating real life practice.	52	4.2500	.47999

Descriptive Statistics – Students’ Factors

	N	Mean	Std. Deviation
I believe research is more rewarding than teaching in terms of lecturer promotion	367	3.5123	1.21432
Research is valued more highly at my institution	367	4.0381	.97154
Teaching is not a significant factor in faculty rewards	367	2.7384	1.22685
Promotion policies fail to recognise good teaching	367	3.3706	1.19836
Lecturers who publish research are better rewarded than those who spend their time on teaching	367	3.4986	1.15440
Lecturers who seek promotion, publish in academic journals at the expense of teaching	367	3.4932	1.12319
As a result of the demands of research activity, lecturers have little time for us	367	3.0845	1.14326
Integrating research into teaching promotes students’ critical enquiry	367	4.2180	.87553
Using research as part of a holistic approach to learning assists students’ critical thinking skills	367	4.3624	.62463
Research-active academics provide students an exemplar of a questioning approach to learning	367	3.9619	.72705
Research activity contributes to updating the curriculum	367	4.3678	.69609
Increased specialisation of knowledge means that research is remote from what students need to know	367	3.1281	1.08010
Inclusion of an academic’s research overloads an already cramped curriculum	367	3.2262	1.14547

Researchers can distort the curriculum with their own research at the expense of subject coverage	367	3.2289	1.13895
Including specialised research leads to lecturers pitching the course too high	367	3.3951	1.03188
Students rarely see staff research as valuable to their own learning	367	3.4741	1.16119
The profession's influence on the curriculum creates tension if linking research to teaching	367	3.0872	1.05996
Inclusion of research at the expense of professional syllabus coverage leads to gaps in the curriculum	367	3.1144	1.08037
Lecturers involved in research are more committed to students' learning	367	3.3488	1.15867
Lecturers who are involved in research are more enthusiastic about their teaching	367	3.6703	.93958
Research-active lecturers adopt a more holistic and interpretative approach to their teaching	367	3.9237	.78557
Teaching can stimulate research	367	4.1608	.73089
Integrating teaching and research increases research productivity	367	4.1717	.65742
Some of the best research ideas have emanated from the course of teaching in an area	367	4.2262	.72848
I believe teaching and research are mutually beneficial	367	4.3597	.57859
Time devoted to teaching is conducive to research output	367	3.4850	.97463
Teaching and research are different roles requiring different qualities	367	3.5095	1.02924
It is unreasonable to expect good teachers to be good researchers and vice versa	367	3.2752	1.18645
I consider the courses to be up-to-date because of research activity	367	3.7956	.88964
I perceive myself as enthusiastic about my course because of research activity	367	3.9237	.76441
Students on professionally-oriented courses are able to focus on their learning on how to do the job	367	3.9537	.80336
Students need professional skills, not research skills	367	2.8665	1.37151
Students need research to be at the cutting edge, an out-dated course has no point in the real world	367	3.5913	1.14602
It is important for a lecturer to engage in research as the world is constantly changing	367	4.2888	.87056

I enjoy learning activities based on real-world examples from practice	367	4.2670	.83606
I enjoy learning activities based on real-world examples from research	367	4.0409	.89380
Empirically-based case studies provide a means of demonstrating real life practice	367	3.9564	.85460

Levene's Test of Equality of Error Variances^a

		Levene Statistic	df1	df2	Sig.
research_led	Based on Mean	2.331	3	48	.086
research_oriented	Based on Mean	4.651	3	48	.006
research_based	Based on Mean	.287	3	48	.835
research_tutored	Based on Mean	1.603	3	48	.201

Tests of Between-Subjects Effects

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	research_led	3	.172	.719	.546	.043
	research_oriented	3	1.509	3.590	.020	.183
	research_based	3	2.555	7.464	.000	.318
	research_tutored	3	6.029	11.290	.000	.414
Intercept	research_led	1	386.278	1611.745	.000	.971
	research_oriented	1	345.311	821.681	.000	.945
	research_based	1	249.116	727.774	.000	.938
	research_tutored	1	252.564	473.011	.000	.908
nq2	research_led	3	.172	.719	.546	.043
	research_oriented	3	1.509	3.590	.020*	.183
	research_based	3	2.555	7.464	.000*	.318
	research_tutored	3	6.029	11.290	.000*	.414
Error	research_led	48	.240			
	research_oriented	48	.420			
	research_based	48	.342			
	research_tutored	48	.534			

Faculty and Students' Conceptualisation of the Link between research and teaching

	Mean	SD
Lecturers integrating their own research into their teaching to give currency to knowledge.	3.94	0.88
Lecturers being up to date and conducting secondary research to remain abreast of current disciplinary knowledge.	4.06	0.81
Lecturers' particular research interests informing the development of teaching materials.	3.63	0.90
a community of scholars including students invited to join on-line discussion groups within the discipline community.	3.23	0.99
visiting scholars within the community of practice acting as resource persons.	3.61	0.95
the scholarship of teaching integrated into research supervision.	3.69	0.94
researching about learning and teaching that informs and evaluates curriculum development.	4.07	0.94
making explicit the nature of research for knowledge development.	3.97	0.67
promoting lifelong learning in students through research to improve practice.	4.17	0.80
Encouraging and motivating students to do research.	4.35	0.73
Mean of Means/Average Standard Deviation	3.87	0.87

Descriptive Statistics for Conceptualisation

	N	Mean	Std. Deviation
lecturers integrating their own research into their teaching to give currency to knowledge.	52	3.7500	1.20253
lecturers being up to date and conducting secondary research to remain abreast of current disciplinary knowledge.	52	3.8846	.83205
Lecturers' particular research interests informing the development of teaching materials.	52	3.9038	.66449

a community of scholars including students invited to join on-line discussion groups within the discipline is community.	52	3.2500	1.06412
visiting scholars within the community of practice acting as resource persons.	52	3.5385	.82751
the scholarship of teaching integrated into research supervision.	51	3.9608	.79902
researching about learning and teaching that informs and evaluates curriculum development.	52	4.0385	.65564
making explicit the nature of research, and questioning existing knowledge development.	52	4.1731	.38200
promoting lifelong learning in students by researching to improve practice.	51	4.1176	.58812
encouraging and motivating students to do research.	52	4.0962	.82271
teaching and learning activities involving students/learners in the production of knowledge.	52	4.0577	.77746
ideas emerging during the course of teaching that prompt subsequent discipline-based and/ or teaching and learning research.	52	4.1538	.57342

Levels of Integration

	N	Mean	Std. Deviation
Research-led			
I draw on my personal research findings in designing and teaching courses.	52	4.1154	.58255
I draw on others' research findings in designing and teaching courses.	52	4.0962	.91308
I place the latest research findings in the context of the discipline.	52	4.2885	.57177
I design learning activities around useful contemporary research findings.	52	4.3077	.46604
I rely on the transmissive means of teaching	52	4.0962	.82271
<i>Mean of means</i>		3.99	.78
Research-oriented			
I teach research methods, techniques and skills implicitly within courses.	52	3.5962	.63430
I build small scale research activities into assignments.	52	3.7692	.80721

I teach students the methodological processes behind theories and models.	52	3.4615	1.01868
I infuse teaching with the values of researching.	52	4.0000	.62622
I emphasise the processes by which knowledge is produced during lessons.	52	4.0577	.72527
I teach the methods used to carry out research in their disciplines.	52	3.5962	.77357
I teach students methods resembling research procedures in their disciplines.	52	3.1923	.95051
I assess students by methods resembling research procedures in their disciplines.	52	3.0577	1.01775
<i>Mean of means</i>		3.59	.82
Research-based			
I involve students in practical research project assignments.	52	3.5000	.93934
I design my teaching around enquiry-based activities.	52	3.4038	.95506
I encourage students to feel part of the research culture of my department.	52	3.2885	1.09072
I conduct research with students to make evidence-based decisions about teaching.	52	3.5192	.95979
I design my lessons to promote active engagement with problems and issues.	52	3.9615	.83927
I design my lessons to motivate students to learn through direct involvement in research.	52	3.8077	.88647
I design my lessons to enable students carry out research to facilitate their learning process.	52	3.6154	1.03192
I involve students in conducting my personal research.	52	3.1923	1.18881
I encourage students to undertake independent project as a part or whole of a course.	52	3.7885	.97692
<i>Mean of means</i>		3.56	.99
Research-tutored			
I usually provide for students a small-scale literature review for them to critique.	52	3.2885	1.14338
I give students the opportunity to critique research findings presented to them.	52	3.4423	1.16170
I encourage my students to contribute to research papers and conference posters.	52	3.7308	1.15666
I engage my students in critical examination of any knowledge they come across.	52	3.7115	.97692

<i>Mean of means</i>		3.54	1.11
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Perceived Impact of the Nexus

	N	Mean	Std. Deviation
increases students' understanding of the course.	52	4.0192	.61006
contributes to the development of students' research-related skills.	52	4.1731	.51340
increases students' awareness of research methodological issues.	52	4.0962	.49545
stimulates their interest and enthusiasm for the course.	52	4.0577	.50151
enhances the knowledge currency of the curriculum.	52	4.2308	.50934
reflects teaching and learning in higher education.	52	4.0000	.44281
develops important graduate attributes (such as research skills, data gathering skills etc.)	52	4.1923	.62743
prepares students for future employment.	52	3.9423	.87253
instills in students a sense of innovation and creativity.	52	3.9231	.92559
develops passion for one's discipline.	52	4.0577	.66902
gives credibility to the university and its faculty.	52	4.2500	.58995
promotes and supports learning and teaching as a process of intellectual enquiry.	52	4.2115	.66676
keeps lecturers and students up-to-date with new discoveries and ideas.	52	4.3462	.59027
clarifies ideas and gives directions.	52	4.3269	.51340
makes teaching interesting and relevant.	52	4.2885	.45747
builds up a community of scholars enhancing the university's goodwill.	52	4.3269	.51340
establishes and maintains link between theory and practice.	52	4.2885	.49849
increases the `opportunity for inquiry and critique.	52	4.3269	.47367
provides lecturers with a framework for the development of up-to-date course material.	52	4.1923	.52537
deepens teachers' knowledge of the subject matter.	52	4.0769	.65218
serves as an experience sharing avenue.	52	4.1731	.38200
assists students learn how research within their discipline leads to knowledge creation.	52	4.0000	.44281

Introduces students to current research in their respective disciplines.	52	3.9615	.86232
helps students learn methods used to carry out research in their disciplines.	52	4.1538	.77674
requires separate personality attributes.	52	3.9038	.86907
requires time, commitment and resource.	52	4.2885	.53638

Students' conceptualisation of the link between research and teaching

<i>I understand the link between research and teaching to be:</i>	N	Mean	SD
lecturers including their own research into their teaching to give currency to knowledge	367	3.97	.83
lecturers keeping up to date and conducting secondary research to remain abreast of current disciplinary knowledge	367	4.08	.81
lecturer's particular research interests informing the development of teaching materials	367	3.59	.92
a community of scholars including students invited to join on-line discussion groups within the discipline community	367	3.23	.98
visiting scholars within the community of practice acting as resource persons	367	3.62	1.05
the scholarship of teaching integrated into research supervision	367	3.65	.95
researching about learning and teaching that informs and evaluates curriculum development	367	4.08	.98
making explicit the nature of research, and questioning existing knowledge development	367	3.94	.70
promoting lifelong learning in students by researching to improve practice	367	4.18	.82
encouraging and motivating students to do research	367	4.39	.71
teaching and learning activities involving students/learners in the production of knowledge	367	4.24	.81
ideas emerging during the course of teaching that prompt subsequent discipline-based and/ or teaching and learning research	367	3.83	1.00

Source: Field Data (2019)

Students' Experiences of Research in the University

Statements	Response	UGD	RM	NRM	PhD	Overall
Lecturer discuss research work	Yes	106(50.2)	18(28.6)	40(61.5)	15(53.6)	
	No	105(49.8)	45(71.4)	25(38.5)	13(46.4)	
Guest lecturer discuss research work	Yes	50(23.7)	29(46.0)	7(10.8)	8(28.6)	
	No	161(76.3)	34(54.0)	58(89.2)	20(71.4)	
Reading a research paper	Yes	120(56.9)	47(74.6)	31(47.7)	18(64.3)	
	No	91(43.1)	16(25.4)	34(52.3)	10(35.7)	
Examining Artefacts	Yes	21(10.0)	18(28.6)	13(20.0)	10(35.7)	
	No	190(90.0)	45(71.4)	52(80.0)	18(64.3)	
	Yes	28(13.3)	46(73.0)	27(41.5)	16(57.1)	

Attending research seminar	No	183(86.7))	17(27.0))	38(58.5))	12(42.9))	
Attending research conference	Yes	14(6.6))	33(52.4))	8(12.3))	13(46.4))	
	No	197(93.4))	30(47.6))	57(87.7))	15(53.6))	
Attending an exhibition	Yes	28(13.3))	22(34.9))	16(24.6))	11(39.3))	
	No	183(86.7))	41(65.1))	49(75.4))	17(60.7))	
Participant in a research project	Yes	49(23.2))	25(39.7))	29(44.6))	14(50.0))	
	No	162(76.8))	38(60.3))	36(55.4))	14(50.0))	
Research assistant during data collection	Yes	49(23.2))	26(41.3))	13(20.0))	8(28.6))	
	No	162(76.8))	37(58.7))	52(80.0))	20(71.4))	
Contributing to a research	Yes	77(36.5))	36(57.1))	47(72.3))	18(64.3))	
	No	134(63.5))	27(42.9))	18(27.7))	10(35.7))	

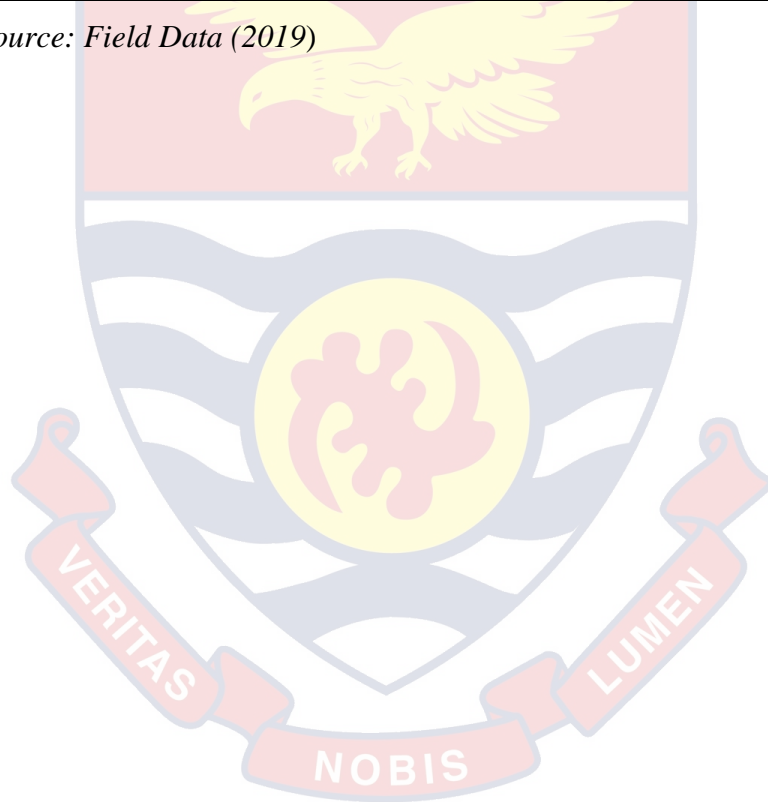
project in anyway						
Contributing to a research paper	Yes	35(16.6)	17(27.0)	6(9.2)	7(25.0)	
	No	176(83.4)	46(73.0)	59(90.8)	21(75.0)	

Students' Perceived Impact of the Link between Teaching and Research

	N	Mean	Std. Deviation
The link between research and teaching:			
increases my understanding of the courses	367	4.17	.75
contributes to the development of my research-related skills	367	4.30	.64
increases my awareness of research methodological issues	367	4.23	.68
stimulates my interest and enthusiasm for the courses	367	4.13	.65
enhances the knowledge currency of the curriculum	367	4.06	.66
reflects teaching and learning in higher education	367	4.07	.75
develops important graduate attributes (such as research skills, search skills etc.) in me	367	4.28	.75
prepares students for future employment	367	4.12	.89
instils in students a sense of innovation and creativity	367	4.29	.65
develops passion for one's discipline	367	4.27	.62
gives credibility to the university and its faculty	367	4.36	.62
promotes and supports learning and teaching as a process of intellectual enquiry	367	4.35	.63
keeps lecturers and students up-to date with new discoveries and ideas;	367	4.46	.54
clarifies ideas and gives directions;	367	4.31	.65
makes teaching interesting and relevant	367	4.38	.57
builds up a community of scholars	367	4.32	.62
establishes and maintains link between theory and practice	367	4.29	.59
increases the opportunity for inquiry and critique	367	4.35	.64
provides teachers with a framework for the development of up-to-date course material	367	4.24	.72

deepens teachers' knowledge of the subject matter	367	4.36	.68
serves as an experience sharing avenue	367	4.21	.66
students learn how research within their discipline leads to knowledge creation	367	4.22	.78
students are introduced to current research in their disciplines	367	4.14	.73
students learn methods used to carry out research in their disciplines	367	4.32	.64
research and teaching require separate personality attributes	367	3.90	.93
research and teaching require time commitment and resources	367	4.58	.57
Mean of means		4.25	.45

Source: Field Data (2019)



APPENDIX H

INTERVIEW TRANSCRIPTS

Research Question One: How do students and faculty conceptualise the Link between Research and Teaching in Public Universities?

Qualitative Results:

UGD 1: *“To be frank, personally, I know research has a role to play in the teaching and learning process, but am not sure of how these activities are linked. My believe is that the link will be more obvious when I start my Masters programme, because I heard that at the Masters’ level, we will do more research. However, I believe there are connected in some way”.*

UGD 2: *“At times, I hear of my research, my research mentioned by some of my lecturers, but do not really understand what it means. Others also refer us to books written either in the bookshops or in the library. So, I believe research has something to do with teaching and learning, if not, our lecturers wouldn’t be mentioning them in their teaching”.*

RM 2: *“I believe research has a link with teaching because, our lecturers update their lecture notes through literature. Through this, the curriculum is updated. Secondly, they refer us to several authors linked to the content they are teaching us. At times they even give us assignments to criticise some of the research findings of some authors”.*

PHD 1: *“My understanding of the link is simple: research complements the update of existing knowledge. Lecturers get their lecture notes from compiled literature findings. Also, research informs some of the methodological basis of teaching. To me, research promotes effective teaching and teaching also informs research”.*

L1: *“My understanding of the link between research and teaching is not so clear, though, I believe the link exists. However, until there is an intentional and voluntary effort and commitment to link the two most important roles of an academic. The reason is that the core mandate of an academic is to teach, research and engage in community service but not a combination of these activities. The university’s policy does not specify a blend.*

However, I normally embark on reflection after every lecture to see how best I can augment students’ learning processes”.

L2: *“If not for research, teaching wouldn’t have been possible. The reason why am saying this is that research informs content, methods, and even resources for teaching. I, for instance, I constantly update my lecture notes through researches in my subject discipline and likewise, other lecturers, I believe so. For me, teaching is a means of transmitting new research knowledge. So, I strongly believe that research has a great deal of role to play in teaching”.*

L3: *For me, looking at some disciplines, the connection between research and teaching would be more welcoming than others. Practically-oriented subjects are more prone to linking research to teaching than liberally-oriented subjects. So, the link is not easily applicable in all subject areas.*

Research Question Two: What level of integration do faculty engage their students in research activities in the teaching process?

L1: *Regarding exposing students to research in my teaching, I share to students an aspect of the course outline to go and research and come and present to the whole class. In doing this, am teaching them research skills on how to scout for relevant information. On some occasions, I give them the opportunity to critique*

existing knowledge that has stood the test of time for them to come out with their own perspectives.

L2: *I involve my students in research by trying to relate contemporary findings in Business Education to the specific courses I teach by citing relevant examples using recent events in the world of business. For instance, I recently taught Money and Banking in one of my courses. So, I had to research the recent minimum capital requirement for banks, insurance and investment brokers to make sure am up-to-date in my delivery of lessons. Sometimes, I also teach research methods, techniques and skills implicitly within courses by including small scale research activities into assignments, as well as, exposing students to the processes underpinning certain theoretical constructs.*

L3: *“Normally, when there are research seminars and workshops, I normally encourage my postgraduate students to attend. At times, I even compel them to attend by calling off my lectures and personally attend. The interesting part of it is that you would only see a handful of the students attending. I teach and assess students’ methods resembling research procedures in their disciplines. For instance, I expose them to some of the highly reputable journals in Business. I also give them practical hands-on assignments in the form of case studies. Last 2 years, I remember I asked to go to any renowned Business enterprise and collect some data to enable them write mini-projects as a term paper”.*

L4: *“I only teach at the undergraduate level. For them, there is nothing like research until they are in their third year to take Research Methods as a course, and subsequently, as a partial fulfilment for the award of the Bachelors’ Degree, they undertake a mandatory project work. Apart from this, the only way*

I expose my students to research is asking them to find some information and come and make some presentation as part of their assessment. Students also benefit from updated lecture notes from current literature in Business.

L5: *I teach at both the postgraduate and undergraduates. I extensively engage the postgraduate students, including both M.Phil and PhD in reseach activities such as critiquing articles, writing empirically-based term papers and actively engage my PhD students in critical thinking on some contentious issues in the discipline.*

For the undergraduates, nothing like research exist in their dictionary. At certain times, I indirectly involve some of my postgraduate students in conducting my personal research. At other times, I design my lessons to motivate my students to learn through direct involvement in research and self-directed reading.

L6: *Personally, I would have wished to integrate my research into teaching. However, most of these students fear research. They might think I am introducing foreign concepts into the content I am delivering. I believe it has to be done indirectly and intelligently for students not be confused.*

Research Question Three: How do students experience research in the university?

RM 2: *One of our lecturers always encourages us to attend research seminars, workshops and conferences, but won't even hear of some, unless international conferences that are not easy to attend. Rarely, do you hear of local seminars and conferences. Except for the ones organised by GRASAG twice every academic year, which I believe are not enough for a postgraduate student.*

PhD 1: *When I get time, I usually attend some research seminars and conferences, but for want of time due to busy schedules: job and family matters. For reading of journal articles, I read them extensively to shape my doctoral thesis and to be updated in my discipline. I also consult my supervisors anytime I need a document related to research. Last three years, I partnered with my M.Phil supervisor to come out with an article, and we published together.*

NRM 1: *Since the focus of our studies is not research, I don't bother myself around research-related programmes. Am only interested in obtaining good grades in my courses. However, I occasionally read some articles related to my content area. I have attended only one research seminar in my lifetime. I wish I could attend more but hardly do I hear about them. I occasionally hear some of our lecturers make mention of research by referring us to some documents.*

UGD 1: *I experienced research through the research methods we did in level 300 and the project work we are doing. I also read some research papers sometimes. At times, I wish I could participate in some research activity, but I don't get the opportunity.*

RM 1: *We expect our lecturers to sometimes bring in new perspectives by inviting resource persons such as research fellows and guest lecturers to share their expertise with us. But throughout my studies up till now, I have not had such an exposure yet, neither do my colleagues. I also expect lecturers to frequently use their personal research to make illustrations, but they don't.*

PHD 2: *For me, because of busy work schedules, I don't get time to attend conferences and seminars. What I do is I normally read research books to acquaint myself with research issues I had forgotten. At times, I call some of my*

colleagues and lecturers to clarify some pertinent issues on research and statistics.

NRM 2: *Though, our sandwich study is not focusing research, though we do research work as a course. I have the believe that I will be doing my top-up and continue to PhD. So, am doing my best to get exposed to research deeply before I get there. Currently, am even working on an article with one of my lecturers so that I can gain the experience to prepare me for the top-up. The last time, I helped one of them to also collect data in my school where am teaching.*

Research Question Four: What are the factors affecting the compatibility between research and teaching integration among faculty?

L1: *Some of our colleagues who are research-conscious lecturers do not have time for their students. When students are able to you book an appointment with them to go and discuss something, they rush them so much that they forget what they went to ask them about. This is because the colleague is so scary and rushes them through everything. This makes the students so uncomfortable and feel reluctant approaching them.*

L3: *Looking at the factors the affect the link between research and teaching, I believe Departmental research culture is a critical factor. The reason is that if the department is able to institutionalise regular research seminars, it's likely to bring both lecturers and students together to enhance their research knowledge and skills. Also, the nature of the discipline is likely to affect the link. More practically-oriented disciplines is likely to promote the link and vice versa.*

L5: *The research and teaching abilities coupled with students' exposure to research are critical success factors affecting the integration of research into*

teaching in higher education. I also believe that the personal, professional and career aspirations of a lecturer is likely to influence the efforts and commitment towards both teaching and research. For instance, if I want to be a good researcher, I need to commit all my resources towards becoming a good researcher.

L6: *The factors are so many. Institutional rewards preserved for both research and teaching can be a contributing factor. You know the extent to which promotional criteria place too much emphasis on research relative to teaching. Unless an equal balance is placed on both important activities of an academic, lecturers are likely to focus more on publishing than teaching since publishing is key, if one does not want to perish as an academic.*

L2: *The belief and understanding of an academic is also likely to influence the link. For instance, if the academic has a strong believe that research and teaching are positively related. Then efforts would be made to further enrich the link. However, if an academic believes the relationship between the two is not all that strong that is like to affect the efforts in linking them. Time for teaching and research can also not be overlooked. We are likely to spend more time on one activity than the other. At times, my sleep suffers.*

L4: *“Time is also a critical issue when it comes to research and teaching. Here is the case they expect us to publish, if not, we perish. They also expect us to teaching, meanwhile, we have fixed time at our disposal. What do they expect us to do?. It means we have to strategically apportion our scarce time to these two most important as an academic. We have no option, we try our possible best”.*

Research Question Five: What are the perceived impact of research-teaching nexus on teaching and learning?

L1: *“I have a strong believe that the link is beneficial in all aspects of education. However, the benefits are not obvious in the short-term, it is long-term in nature. I believe the integration of research into teaching practicalises the teaching and learning process by promoting concrete and meaningful teaching and learning”.*

UGD 2: *“When the lecturer introduces complex research in teaching some of the courses, it makes things so complicated that confuse us. Research matters should be reserved for Research methods as a course. Also, research-active lecturers don’t have time for us because they are constantly engaged in their research than teaching us”.***(sic)**

RM 1: *“I believe the link between research and teaching prepares us for the future since it instils in us, a sense of innovation and creativity. When some of our lecturers engage us in research-related term papers, we are able to think outside the box and come out with something novel. I believe this is preparing us for the future as future managers, since we have to be making decisions for our organisations”.*

RM 2: *“I believe research has a link with teaching because, our lecturers update their lecture notes through literature. Through this, the curriculum is updated. Secondly, they refer us to several authors linked to the content they are teaching us. At times they even give us assignments to criticise some of the research findings of some authors”.*

PHD 1: *“My understanding of the link is simple: research complements the update of existing knowledge. Lecturers get their lecture notes from compiled literature findings. Also, research informs some of the methodological basis of teaching. To me, research promotes effective teaching and teaching also informs research”.*

L2: *“If not for research, teaching wouldn't have been possible. The reason why am saying this is that research informs content, methods, and even resources for teaching. I, for instance, I constantly update my lecture notes through researches in my subject discipline and likewise, other lecturers, I believe so. For me, teaching is a means of transmitting new research knowledge. So, I strongly believe that research has a great deal of role to play in teaching”.*

L4: *I believe the link serves as an opportunity to instil in students, creativity skills. It also sensitises the younger learners and prepares them for the future for both post-graduate studies and employment. The link between research and teaching also develops passion for students' discipline since through the link, they are likely to understand how knowledge is created in their field of study”.*

L3: *“Regarding the link between research and teaching, I agree it fosters partnership and closer academic relationship among faculty and their students. My working with some of the students I supervise helped fostered a closer relationship which led to us publishing together and even discuss other personal life issues”.*

L5: *“Though, there are both benefits and drawbacks, it all boils down to how the individual academic balances these activities to promote students' learning*

outcomes. The link will either be beneficial or soar depending on so many factors”.

UGD 1: *Because lecturers engage in both research and teaching, at times they are so busy to the extent that you can't even find them in their offices. This affects our academic work seriously. At times, they don't come for lectures because they are tired.(sic)*

NRM 1: *The link draws students closer to their lecturers by creating some kind of relationship between them since they work in partnership to get a research task executed. The link makes learning more practical and meaningful for real life situations. I also think the link helps students to really understand their field of study better since they are likely to understand the historical and theoretical issues in their area of study.*

NRM 2: *Though, the link between research and teaching is beneficial, we should also not lose sight of the fact that lecturers are individuals divided between researching and teaching. This is likely to lead to diversion of attention since both activities are so demanding. There is likely to be a trade-off between research and teaching in terms of the time required to undertake those activities.*

Research Question Six: Is there any statistically significant effect of research productivity on academics teaching effectiveness?

L4: *“I strongly believe in a tight connection between research and teaching. My believe is informed by reading an article on this connection as well as my practice as an academic. In my view, both teaching and research are of mutual benefit. Thus, both benefit from each other: research affects teaching and teaching affects research. Therefore, there is a stronger relationship”.*

L2: *“I know there is some form of relationship. But the exact direction, I can’t tell, whether, the direction of the relationship is positive or negative, or intensive or mild; only statistics can tell. However, for a stronger relationship, lecturers would have to intentionally and consciously ensure a stronger link.”*

L1: *“Whether a strong connection exists between the two depends on the individual lecturer and the readiness level of their students. But in our part of the world, we don’t normally realise the connection because of the way we teach. So, there is a difference between the actual practice and ideal practice focused on the effective integration into teaching. So, I will say that ideally, there is a strong connection, but our implementation strategy is likely not to reflect this strong connection”.*

L3: *“Even the scholars themselves are confused about the exact nature of the relationship. How much more about us? I believe there is a relationship, but as to the extent, I can’t tell”.*

L5: *“To me, I believe there is a relationship, but my personal view is that the relationship is two-way directional. Meaning, research affects teaching and teaching also affects research. They have mutual impact on one another”.*

L6: *“I believe there is a negative relationship between research and teaching. The reason why I am saying this is that both activities are seen to be antagonistic since both activities compete for the same resources such as time, skills, knowledge from the same individual academic”.*

L7: *“The connection between research and teaching all boils down to proper management of the relationship. Personally, I believe that the way the lecturer*

manages it would tend to be positive or negative depending on the management strategy adopted by the individual lecturer”.

L8: *“I just know there is a relationship, am yet to experience it since am a young academic, but I think the relationship is more likely to be inverse than positive, because both research and teaching are demanding”.*



APPENDIX I

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF HUMANITIES & SOCIAL SCIENCES EDUCATION
DEPARTMENT OF BUSINESS & SOCIAL SCIENCES EDUCATION

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UNIVERSITY OF CAPE COAST
PRIVATE MAIL BAG

Date: 5th December, 2019

Our Ref: DoBSSE/59/V.1

Your Ref:

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

INTRODUCTORY LETTER

Mr. Gabriel Kwasi Aboagye is a PhD Management Education student of this Department. As part of his education, he is supposed to design and execute research of acceptable standard. With this, he is working on the research topic: "Linking Research to Teaching in Business Education of Public Universities in Ghana".

His study seeks to espouse how research informs teaching in public universities in Ghana. Thus, how lecturers integrate research into their teaching.

He would need primary data from both lecturers and students of Business Education from University of Cape Coast and University of Education, Winneba.

In case he flouts any ethical requirement as the study may necessitate, kindly get in touch with his supervisors, Prof. Yaw Afari Ankomah, the Principal Supervisor, on 0244070280 or through e-mail yankomah@ucc.edu.gh; or Alhaji Dr. Mumuni Baba Yidana the Co-Supervisor, on 0542638860 or through email myidana@ucc.edu.gh. You may also get in touch with the Department on 0209408788 or through dbsse@ucc.edu.gh.

We would be grateful if you could give him the necessary assistance to enable him complete the research.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Dr. Joseph Tufuor Kwarteng'.

DR. JOSEPH TUFUOR KWARTENG
HEAD

APPENDIX J

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309 / 0244207814

C/O Directorate of Research, Innovation and Consultancy

E-MAIL: irb@ucc.edu.gh

OUR REF: UCC/IRB/A/2016/561

YOUR REF:

OMB NO: 0990-0279

IORG #: IORG0009096

26TH NOVEMBER, 2019

Mr. Gabriel Kwasi Aboagye
Department of Business and Social Science Education
University of Cape Coast

Dear Mr Aboagye,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2019/51)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol titled **Linking research to teaching in Business Education in Public Universities of Ghana**. This approval is valid from 26th November, 2019 to 25th November, 2020. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,



Samuel Asiedu Owusu, PhD

UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST