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PERCEIVED DISCONNECT BETWEEN RESEARCH AND TEACHING IN UNIVERSITIES: A MYTH OR REALITY? MANAGEMENT STUDENTS' PERSPECTIVE

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ABSTRACT

Universities, over the world, are struggling to define their identity as either, research-intensive, teaching-intensive or liberal universities due to how research and teaching has been construed and implemented by faculty over the years. This empirical paper, therefore, sought to examine the perceived disconnection between research and teaching among university students in Management across their levels of study. Specifically, it sought to assess how Management students conceptualise the link between research and teaching, as well as, the impact of the link from students' standpoint. Using the descriptive cross-sectional survey design, this study through a questionnaire, collected data from 367 Management students across different levels of study in the university. These students comprised undergraduates, non-research masters, research masters and doctoral students proportionally stratified to ensure a fair representation based on the total number of students for each category. In order to ensure the construct validity of the self-developed questionnaire, a principal component analysis (PCA) was conducted. An oblique, specifically, promax rotation was used, where the eigenvalue-greater-than-one rule was used to determine the suitable factors to retain. In testing for the normality, multiple indicators were used since only one cannot be relied on. The Shapiro-Wilk test did not provide enough evidence, an inspection of the graphs was necessary. Therefore, the mean and median were also compared to check for normality. Prominent among how they conceptualise the link are that they believed research is linked to teaching in the form of lecturers keeping up-to-date and conducting research in order to remain in touch with contemporary disciplinary knowledge. Furthermore, students agreed to the fact that the research-teaching nexus is all about researching about learning and teaching that informs and evaluates curriculum development. Regarding the impact of the nexus, it is also seen by the students as encouraging, stimulating and motivating students to do research, coupled with lecturers including their own research into their teaching to give currency to knowledge. It is therefore, recommended that university management should provide more opportunities and also create the enabling environment for students to contribute to new discoveries and creative works by extending student research assistantships in all aspects of their academic life.

KEYWORDS: Research, teaching, research-teaching nexus, conceptualisation, higher education, faculty

INTRODUCTION

The issue of whether a nexus exist between teaching and research has been a long-standing debate. While the needs of the knowledge economy encourage a symbiotic relationship between research and teaching, counter-pressures in the form of globalisation, competition and marketisation of higher education, rather, pull the two academic activities apart (Arimoto, 2015; Beerkens, 2013). In spite of the universally upheld belief in what the research-teaching nexus represents, prior researches (Brew, 2003; Hattie & Marsh, 1996; Robertson & Bond, 2005) report little or no relationship. The lack of quantitative investigations supporting the TRN led Dekker (2016, p. 276) to state that “it is lamentable that nearly every conclusion about the compatibility between research and teaching within the British and Australian systems has been reached entirely through anecdote and informal observation”. The study by Boyd, O’Reilly, Rendell, Rowe, Wilson, Dimmock, Nuske, Edelheim, Bucher, and Fisher (2012) strongly advocate for a stronger nexus between research and teaching.

Fox (1992) intimates that whether antagonistic or complementary, the bond between teaching and research roled out by faculty members are resources and time dependent. Validating this assertion, Hensley (2015) asserts that faculty’ members’ commitment to teaching coupled with the quality of their teaching ratings constantly decline with increasing numbers of publications. Reiterating the earlier made assertion, Hensley (2015) states that “when you co-locate teaching and research, you reduce your efficiency in producing both” (p. 22). By taking into consideration the different perspectives from faculty, it is not surprising that teaching contributions to research seems to suffer. This compelled Edwards, O’Shea, Cretchley, and Narayan, (2010) to state that: “...these two crucial activities are essentially separate endeavours that just happen to occur in the same place. As far as the individual academic is concerned, there is no causal relation, no essential congruence” (p. 274).

Reasons have been adduced for the disconnect between teaching and research at the tertiary level. Time constraint is at the base of this disconnect. Hattie and Marsh (1996) identify the disproportionate commitment to either research or teaching which will have a negative impact on the performance on each other. They also assert that the traits are different for both. Research activity is generally individualistic, solitary and private whereas teaching is an interactive activity. Additionally, institutions despite giving lip-service to the importance of teaching still prioritise research (Boyd et al., 2012). The basic criterion for professional growth is publication. You either “publish or perish” even if you are the best academic. Career advancement is primarily linked to research output. National policies for promoting research appear to damage the relationship. Systemic barriers therefore make it difficult for teaching and research to be positively correlated (Arimoto, 2015). Research and teaching are core to the requirements of tertiary education and the demands of higher performance on both fronts are increasing. It has long become an assumption within the university that research activity is the most common manifestation of scholarship. As a result, research endeavours have tended to be

considered by some to be of higher status and more valuable than teaching. Efforts should be focused on ways of strengthening this nexus which is the bedrock of true scholarship.

Stemming from the above discourse, the following research questions and hypothesis have been formulated to benchmark the study:

1. How do university students in Management perceive the link between research and teaching?
2. What are the perceived impact of the link between research and teaching on students' learning?

Hypothesis

H₀: There is no statistically significant difference in the conceptualisation of the link between research and teaching with regards to students' level of study.

H₁: There is a statistically significant difference in the conceptualisation of the link between research and teaching with regards to students' level of study.

In the light of all these, this study sought to unravel the perceived disconnection between research and teaching that has characterised contemporary higher education from the perspective of Management students. The rest of this write-up is organised by focusing on the basic assumptions underpinning the study followed by an extant review of literature, as well as, methodology, conclusion and implications for policy and practice.

Basic Assumptions Underpinning the Disconnect Between Teaching and Research

There are some assumptions holding sway in the academe which tend to widen the gap between teaching and research. They include:

- Active researchers are at the “cutting edge” of their discipline. It is assumed that researchers are per se up with the latest developments in their field, and that this must therefore positively affect their teaching.
- It is a part and parcel of academia. This is an incontrovertible aspect of university education.
- The same attributes characterise successful researchers and successful teachers that include high level of commitment, focus, organisation of materials, analysis and communication.
- The enthusiasm generated for the teacher by active engagement in research will rub off on the students. The underlying premise is that the teacher will communicate the passion and energy generated by active involvement in research to students who will in turn be excited by the subject and the possibility offered by research.
- Academics can offer their students first-hand knowledge from research and students will respond to the authenticity and credibility of a teacher who is actively engaged in research.

Literature Review

Theoretical Review

The Four Modes of the Scholarship of Teaching and Learning (SoTL) Model

Boyer (1997), as cited in Hofmeyer, Newton and Scott (2007) postulate that in the landmark publication titled, “Scholarship Reconsidered”, Boyer challenged the “research versus teaching debates” by advocating for the scholarship of discovery, teaching, integration, and application. The scholarship of discovery regards publications and research as the benchmark in the scheme of merit, advancement and tenure worldwide.

That notwithstanding, this limited portrayal of the scholarship does not adequately embrace universities’ commitments to serve global communities and to improve health and health equality. Hofmeyer, Newton and Scott claim that within the inter-professional and information sharing discussions, the scholarship of discovery, training, incorporation and implementation should be placed. Figure 2 demonstrates how these four modes of scholarships of teaching and learning are connected to inform teaching and learning in higher education.

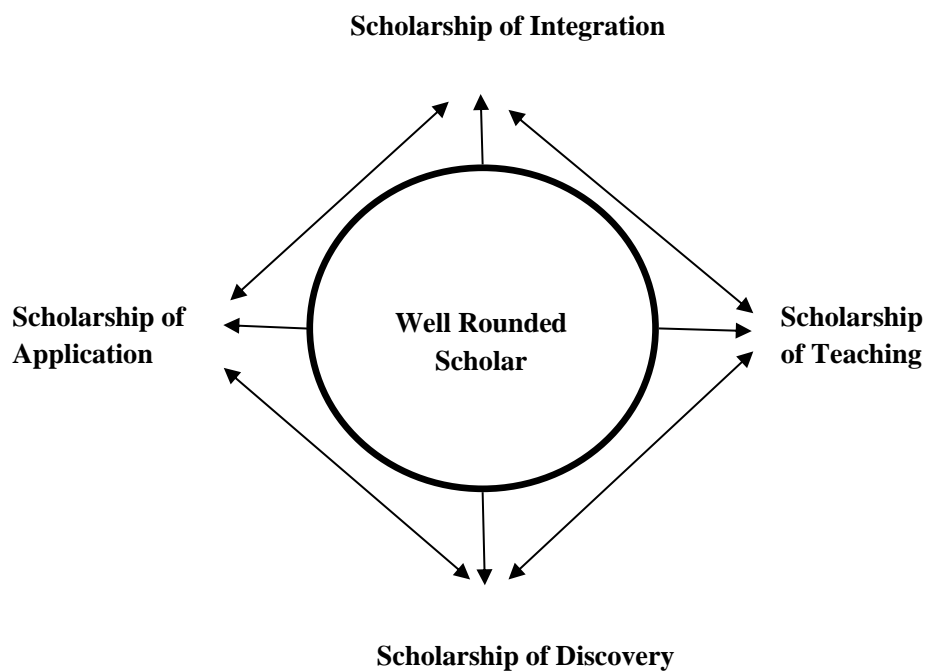


Figure 1- Four modes of the scholarship of teaching and learning.

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

The components of Figure 1 are elaborated as follows.

Scholarship of discovery

In the context of a field like Business education, the exploration scholarship is understood as original study that extends or contradicts existing awareness. Boyer (1997) describes discovery as the development of knowledge for the sake of knowledge, according to Hofmeyer, Newton and Scott

(2007), 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 entail: What can be understood? And what's still to be discovered? Via peer-review processes such as journals, new information is vetted and controlled. While this commodity is most important in the merit, promotion and tenure reward systems in the academic institutions, this traditional view of scholarship marginalises other forms of scholarship. Thus, it is a disincentive for those who seek tenure and advancement, but who are more interested in teaching, incorporation, and applied scholarship. Nibert (2011) argues that exploration 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 discovery scholarships. In addition, McCarthy and Higgs (2005) suggest that once the scope of knowledge and original scholarship has to be taught, the scholarship of invention is correlated with so many more pedagogical and realistic discoveries. 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 exploration, 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 new and different 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, previously located 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, one defines one's own research so that it is beneficial beyond one's own academic limits and may be incorporated into a broader body of information. He emphasises that in a global economy, the rapid speed of social change has enhanced the value of this type of scholarship. In validating Nibert's feelings, McCarthy and Higgs (2005) forward an assertion that the integration scholarship is a significant company that aims to analyse, pull together and add new knowledge to bear on original study. Portion of this partnership has to do with providing time in both formal and informal sessions to exchange faculty expertise.

Scholarship of application

In the scholarship of application, Hofmeyer, Newton and Scott (2007) assert that scholars in one discipline build bridges and collaborative relationships with other disciplines, decision and policy-makers and communities in order to apply theory to solve everyday problems. The scholarship of application directly links other forms of scholarship with practice. This process involves the dynamic engagement and the translation of new knowledge in practical interventions that solve problems or improve the difficulties experienced by individuals and society. They further state that this scholarly activity allows for dynamic creativity in bridging the gap between theory and practice. This creates the impression that scholars engaged in applied scholarship seek to understand how knowledge can be responsibly and ethically applied to consequential problems and how it can be helpful at the micro (individual), meso and macro levels (society, government, institutions), as well as seek to learn how social problems themselves can define an agenda for scholarly investigation. The scholarly implication is that the scholarship of application focuses on using research findings and innovations to remedy societal problems. Based on this scholarship, universities should organise regular seminars and workshops to create the enabling environment for shared knowledge among faculty members, as well as students.

Scholarship of teaching

The scholarship of teaching should broaden 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 life-long learning (Hofmeyer, Newton & Scott, 2007). It is important to remember that the academic community tends to prioritize and give high importance to the role of faculty members in tasks other than teaching (Royeen, 1999).

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 members 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.

Conceptualisation of the Teaching-research Nexus (TRN)

Conceptualisation of the research-teaching nexus reflects the fourfold distinction between 'research-led', 'research-oriented', 'research-tutored', and 'research-based' teaching. In a qualitative study, first-year undergraduates on degree programmes in the Arts, Humanities and Social Sciences experience inquiry and research in four distinct ways. Research as 'gathering information' and 'exploring others' ideas' was associated with learning by engaging independently with a knowledge base. Research as

‘evidencing and developing students’ own ideas’ and ‘making discoveries’ was associated with an emergent sense of participation in knowledge building, understood as the potential to bring something personal or new to an area of study (Levy and Petruilis, 2012, p .85).

The research-teaching nexus can also be conceptualised as a continuum with no relationship between teaching and research with students as consumers at one end and a full relationship with students as producers at the other. ‘Research-based’ teaching gives the strongest relationship. The equation now becomes teaching = research. Each educational activity (lecture, working group meeting, etc.) can be placed on a continuum to reflect the level of integration of research into teaching (Winckler, 2011). The Research-Teaching Nexus (RTN) is a dynamic process of development that is actively experienced by students both within and beyond their degree programme, and that it is affective in nature. That is to say that the nexus is multidimensional, is not just a technical imposition of a particular pedagogical form, and that students develop feelings and reactions to it (Levy and Petruilis, 2012). In turn, this means that the conceptualisation of the research and teaching link in relation to learning can be both inclusive and exclusive. To be clear, the students who understand the relationship between teaching and research to be very broad in nature and these understandings changed over time. From the perspective of those who were experiencing the RTN, research was infused within learning and teaching and the general experience being a student. Research, and its relationship with learning and teaching, was not confined to strict definition and was very much elastic in nature. With these considerations in mind, the results are structured to discuss two interrelated themes: the phases of development associated with the RTN and, the constraints on engagement.

Impact of the Research-teaching Nexus (RTN)

The extant literature indicates that the link between research and teaching can inform and enhance not only the teaching but also the learning environment, benefitting students during their degree studies and afterwards, when they move into the world of employment and lifelong learning. Since RTN is one aspect of the nexus, we assume the benefit that students obtain from RTN is very similar across disciplines. According to Winckler (2011), there are four key categories of benefits. Firstly, it helps deepen students’ understanding of the knowledge bases of disciplines and professions, including their research methods and contemporary research challenges and issues. Secondly, it builds students’ higher-order intellectual capabilities and enhances their skills for employment and lifelong learning. Thirdly, it develops students’ capacity to conduct research and enquiry. Fourthly, it enhances students’ engagement and develops their capacity for independent learning.

Moreover, students also benefit from the integration of academic’s research and teaching activities. For instance, academics who teach using their personal research, or design courses and learning activities around contemporary research issues, bring research passion together with latest research in the field into the classroom teaching/learning context for evidence-based decisions. Through this, the value of the research findings is enhanced in the contextual teaching/learning environment, and at the same time students incrementally become familiar with a research-based learning approach, and are

unconsciously infused with the university research culture as they develop their research skills (Healey, 2005). Thus, the benefits students derive are that they become familiar with the nature of research and get to know the new knowledge created.

To further elaborate on the benefits of the research-teaching nexus, Neumann (1994) found research having positive benefits to students by increasing the course's credibility and the perception that students were learning relevant and current course content. Additionally, the research interests of academic staff gave students the opportunity to view instructors as real people' and to relate on a level of interest and enthusiasm in the same area of study. Jenkins, Blackman, Lindsay, and Paton-Saltzberg (1998) report that students' own motivation and interest in a subject area often stem from instructor enthusiasm which had roots in the academic's research interests. Healey (2005), in the summary of the literature examining student perceptions of research on their learning environment, argues that students perceive clear benefits from staff research, including enthusiasm, credibility, and "the reflected glory of being taught by nationally and internationally known researchers" (p.193).

Undergraduate research is one of these 'high-impact practices. Student-faculty research has, according to the report, a positive relationship with many universities' educational objectives and with 'deep learning' (rather than surface-level learning). The goal of undergraduate research is 'to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions' (Association, 2009, p. 20). Therefore, every course in an undergraduate curriculum 'should provide an opportunity for a student to succeed through discovery-based methods' (Boyer, 1998, p. 17). Research-based teaching and learning fits also well with more recent theories of motivation and learning, including the self-determination theory (Deci and Ryan, 2012; Martens and De Brabander, 2014).

The League of European Research Universities (LERU) presents research-based teaching and learning more or less as self-evident: 'Research-intensive universities that possess world class research and education provide the most efficient means of providing this combination of basic research and research-based education'. League of European Research Universities asks the EU 'to support the vital interaction between basic research and education in research universities' (League of European Research Universities, 2002, p. 1). Documents from individual universities in Europe show that a close intertwining of teaching and research is important for these universities because this link strengthens their identity as a university. Co-existence and integration of teaching and research distinguishes universities from other research and educational institutions. Universities can give their students a genuine research experience they cannot get in any other setting. Research-based teaching and learning is also important for universities because it helps universities to fulfil their mission to stimulate, encourage and support students to develop the knowledge, insights, attitudes and skills they are expected to need in follow-up studies and professional careers (Giller, 2011).

Academics also expect that students by engaging them in research can better develop highly valued competencies such as a critical attitude, a humble attitude because researchers accept that there is nothing like ‘the’ truth, to think independently, and to express thoughts clearly (Beerkens, 2013). ‘For me the most important thing is to get the students critical towards everything ... Not to accept anything as truth’ said a law lecturer from the University of Helsinki (Beerkens, 2013, p. 168). More research-based teaching is also expected to contribute to transferable skills such as problem solving and team working and to attitudes such as intellectual curiosity, persistence, and identification with and a sense of attachment to a particular discipline, institute, and/or university (which is an important intrinsic motivation factor). More research in teaching is also desirable for academics who love conducting research because they can integrate what they love (and maybe love most) in their teaching and can in this way make their teaching more attractive for themselves. Research-based teaching can also be instrumental to the teacher’s own research when students discuss conducted research and plans for future research and when they assist in data collection and analysis.

METHODOLOGY

Research Design

The study adopted the descriptive cross-sectional survey design. This design relates to observations of variables in a population where all measurements are obtained at a single point in time. The justification for choosing the descriptive cross-sectional survey design was because the aim of this research work was to determine the perceived disconnect between research and teaching among the selected participants at a given point in time (cross-section) and compare the difference with respect to an established benchmark. This design allowed for the collection of the data within the given short time frame. It also ensured that the selected variables were assessed and analysed under the same set of conditions. The aim was not to manipulate the variables under investigation. Therefore, this design enabled me report the results the way they are without manipulating variables.

Population

The population for this study comprises all Management students (undergraduates, graduate students and post-graduates students) of public universities in Ghana (UCC and UEW) across all levels of study estimated to be 1,809 (Students Records, UCC and UEW, 2019). Out of this number, 991 were from the University of Cape Coast (UCC) while 818 were drawn from the University of Education, Winneba (UEW). Proportionately, regarding the students’ population, 223 respondents were selected from the population of UCC, while 144 were sampled from UEW (Krejcie and Morgan, 1970). The choice of UCC and UEW was informed by the fact that they are the two high profile public universities that offer Social Science and Business Education in Ghana. Most importantly, these universities are described citadel for teacher education in the Social Sciences and Business Education. Therefore, they were properly positioned to establish a clearer link between research and teaching, especially, in the fields of Social Science Education and Business Education.

Sample and Sampling Technique

Having the population in mind, based on the Krejcie and Morgan (1970) sampling table, a sample of 367 Social Science and Business Education students were selected using the stratified proportionate technique to participate in the study. Since the students' population is made up of different categories of students across all levels (undergraduate, masters and Ph.D) and these category were selected from these two universities, to ensure a fair representation of the population, the selection was done proportionately according to the number of students in each category. The proportionate stratified sampling technique was therefore, used to sample the Business students so as to ensure a fair representative selection. Afterwards, the simple random lottery technique was therefore, used to climax the selection process in order to ensure that each student was given an equal chance to participate in the study. The sampling of the cases was done in such a way to reflect the different perspectives from the participants in order to have enriched and deeper insights into the issue under investigation (Creswell, 2013). In all, 367 students across levels were used for the study.

Research Instruments

Self- developed questionnaire was used to elicit information from the students. To ensure a high level of reliability of the instrument, it was designed to conform to literature, and an aspect of it was adapted from reliable scholars to ensure a high level of acceptability. The development of the instrument was informed by extant literature and further subjected to thorough peer review and enriched with pilot testing. A pilot-test of the questionnaire was conducted at the University for Development Studies (UDS), since they have similar academic programmes just like the other Universities in Ghana offering Social Science and Business Education (UCC and UEW).

Validity and Reliability of Instruments

To ensure the face validity of the items on the questionnaire, the items were strictly crafted to conform to the literature. To also ensure content validity, the questionnaires was given to experts and other colleagues who went through and offered their suggestions. To ensure the construct validity of the self-developed questionnaire, a Principal Component Analysis (PCA) was conducted. An oblique, specifically, promax rotation was used, where the eigenvalue-greater-than-one rule was used to determine an appropriate number of factors to retain. Thus, only factors with an eigenvalue of 1.0 or more were retained for further investigation (Kaiser, 1958).

To clarify further, the eigenvalue of a factor represents the amount of the total variance explained by that factor. It is worthy of note that, what Thurstone (1947) refers to as 'simple structure' was experienced through the factor analytic process. This involved each of the variables loading strongly on only one component, and each component being represented by a number of strongly loading variables, making the measurement scales stronger. The least Kaiser-Meyer-Olkin measure of sampling adequacy was .64, which is acceptable. Bartlett's Test of Sphericity indicates that the correlations between variables are different enough from zero, $p < .001$. Several factors emerged, which cumulatively explained an average amount of 70% of the variance measured by the items.

Data collection procedures

An ethical clearance was given by the Ethical Review Board of the College of Education Studies, University of Cape Coast, after the proposal was submitted for perusal. After the ethical clearance was granted, an introductory letter was obtained from the Department of Business and Social Sciences Education, University of Cape Coast. The introductory letter was presented to the various Registrars of the Universities concerned to seek their permission in order to administer the questionnaire, as well as, conduct the interview. This was necessary so as to ensure that students were pre-informed about the data collection exercise. A follow-up was done to arrange for time and date which were convenient for the data to be collected and an opportunity to explain to the respondents what the study sought to achieve. The date and time were arranged and data collection commenced. The students responded to the survey in their respective lecture theatres.

Based on the consent granted by the Registrars of the various universities, the questionnaires were distributed to the students to solicit their responses regarding the research-teaching nexus. The survey lasted for an average period of 30 minutes per respondent. In all, six weeks were used to collect the data.

In each lecture hall, the researcher explained to the class, the purpose of the study and the nature of the items on the questionnaire as recommended by Creswell (2013). However, it was made clear to the respondents that their participation in the study was voluntary and thus, they were encouraged to provide accurate and honest information if they were willing to participate. We pointed out to the participants, that they had the right to withdraw from the study at any point in time as suggested by Creswell (2013), but this right ended after their instrument has been submitted to the researchers. This was because of the difficulty of tracing back their questionnaire for it to be taken out of the analysis. Respondents were made aware that the study was free from any psychological or physical harm. They were also assured of confidentiality.

The respondents were told that they were not required to provide 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 (Koshy, 2010). We further sought the consent of the participants by signing the consent declaration section of the questionnaire.

Data Processing and Analysis

The data gathered was checked one after the other to ensure its completeness. Respondents who did not respond to more than 10% of the items on the questionnaire were eliminated (Koshy, 2010). The questionnaires were then numbered from one to the last number based on each category of respondents. The data were coded and entered into the Statistical Product for Service Solution (SPSS, version 23) computer software. The data were screened for entry errors and outliers. Inferential analysis was done using a confidence interval of 95% and an alpha level of .05. For inferential analysis, the researcher

checked for the normality assumptions together with other significant assumptions depending on the type of statistical analysis employed.

In testing for the normality, multiple indicators were used since only one could not be relied on. The Shapiro-Wilk test did not provide enough evidence, an inspection of the graphs was necessary. In some cases, the mean and the median were also compared. This was necessary because Pallant (2010) argues 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 also computed to find out the magnitude of the differences.

After a thorough check, the closed-ended questionnaire items were analysed statistically using descriptive statistics (i.e. frequency counts, percentages, means, and standard deviations) and inferential statistics (ANOVA) was also used to examine the statistical effects and differences between and among variables. The .05 was used as the criterion for establishing statistical significance for all the inferential statistical procedures in the study. Effect sizes were calculated to establish the practical significance of the results.

RESULTS AND DISCUSSION

Table 1: Gender of Students

		Frequenc		Valid	Cumulative
	Sex	y	Percent	Percent	Percent
Valid	Male	201	54.8	54.8	54.8
	Female	166	45.2	45.2	100.0
	Total	367	100.0	100.0	

Source: Field Data (2021)

Table 1 presents the number of participants who took part in the study based on gender. Out of 367 students who participated in the study, 201(54.8%) were males, while 166 (45.2%) were females. The implication is that the study was dominated by males across the four levels of study.

Table 2: Level of Study

		Frequenc		Valid	Cumulative
	Level	y	Percent	Percent	Percent
	Undergraduate	211	57.5	57.5	57.5
	Research masters	63	17.2	17.2	74.7
	Non-research masters	65	17.7	17.7	92.4

Ph.D	28	7.6	7.6	100.0
Total	367	100.0	100.0	

Source: Field Data (2021)

Table 2 presents the number of participants who took part in the study based on their level of study (undergraduates, non-research masters, research masters and Ph.D). Out of 367 students who participated in the study, 211(57.5%) were undergraduates, 65(17,7%) were non-research masters students, 63(17.2%) were research masters, while 28(7.6) were Ph.D students. As shown in Table 2, undergraduate students dominated the study. This is explained by the fact that it is the level at which the link between research and teaching starts and builds up throughout the academic life of each of the students, hence, their perspective is needed to build institutional structures so as to establish the nexus.

Table 3: 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 integrating 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 (2021)

Regarding the conceptualisation of the link between research and teaching, almost all the students were in agreement to the items measuring conceptualisation, except for a few of them. However, the extent of agreement varied from one item to another as revealed in Table 3. Popular among the students' conceptualisation of the link is that they believed research is linked to teaching in the form of lecturers updating their content and conducting secondary research to remain abreast of current disciplinary knowledge ($M=4.08$, $SD=.81$). Also, students understood the link between research and teaching to be that of promoting lifelong learning in students by researching to improve practice ($M=4.18$, $SD=.82$). They also conceptualised the link between research and teaching to mean making explicit the nature of research, and questioning existing knowledge development ($M=3.94$, $SD=.70$).

Furthermore, students consented to the idea that the teaching-research nexus is all about researching about learning and teaching that informs and evaluates curriculum development ($M=4.08$, $SD=.98$). The nexus is also seen by the students as encouraging, stimulating and motivating students to do research ($M=4.39$, $SD=.71$), coupled with lecturers including their own research into their teaching to give currency to knowledge ($M=3.97$, $SD=.83$). Moreover, they also indicated that the connection between the two is perceived as teaching and learning activities involving students or learners in the production of knowledge ($M=4.24$, $SD=.81$). It is important to also establish the fact that among all the items describing the conceptualisation of the link, few students described the link as a community of scholars, including students who are invited to join on-line discussion groups within the disciplinary community ($M=3.23$, $SD=.98$), as well as, the scholarship of teaching that is integrated into research supervision ($M=3.65$, $SD=.95$).

Corroborating the above findings, the overarching themes of the findings suggests that the RTN is a dynamic process of development that is actively experienced by students both within and beyond their degree programme, and that it is affective in nature. That is to say that the nexus is multidimensional, it is not just a technical imposition of a particular pedagogical form, and that students develop feelings and reactions to it (Levy and Petrusis, 2012). In turn, this means that the conceptualisation of the research and teaching link in relation to learning can be both inclusive and exclusive. To be clear, the students understood the relationship between teaching and research to be very broad in nature and these understandings changed over time. From the perspective of those who were experiencing the RTN, research was infused within learning and teaching and the general experience being a student. Research, and its relationship with learning and teaching, was not confined to strict definition and was very much elastic in nature. With these considerations in mind, the results are structured to discuss two interrelated themes: the phases of development associated with the RTN and, the constraints on engagement.

Based on these findings, it can be established that students have different ways of understanding for the teaching-research nexus, despite these different understanding, they have high levels of conceptualisation of the link between research and teaching.

Impact of the Link Between Research and Teaching

Literature have established that research has impact on teaching. Table 4 sought to show the impact of research on teaching as perceived by the students.

Table 4: 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 (2021)

There are consequences stemming from the effort of effectively integrating research into teaching in public universities in Ghana. Among these impacts, as indicated by the respondents are that the link between research and teaching increases the opportunity for inquiry and critique ($M=4.35$, $SD=.64$), coupled with building up a community of scholars that enhances the university's goodwill ($M=4.32$, $SD=.62$). The students also indicate that creating a link between research and teaching keeps students and lecturers up-to-date with new discoveries and ideas ($M=4.46$, $SD=.54$) thereby, establishing and maintaining links between theory and practice ($M=4.29$, $SD=.59$).

In support of this, scholars have indicated that the value of the research findings is enhanced in the contextual teaching/learning environment by applying the nexus, and in the same time students progressively become familiar with a research-based learning approach, and are unconsciously infused with the university research culture as they develop their research skills (Giller, 2011). The students also intimated that the teaching-research-nexus makes teaching interesting and relevant ($M=4.38$, $SD=.57$), this goes a long way to clarify ideas and give directions within the discipline ($M=4.31$, $SD=.65$). It is important to acknowledge that every course in an undergraduate curriculum 'should provide an opportunity for a student to succeed through discovery-based methods' (Boyer, 1998, p. 17). Research-based teaching and learning also fits well with more recent theories of motivation and learning, including the self-determination theory (Deci and Ryan, 1985, 2012; Martens and De Brabander, 2014).

To further justify the essence of the connection between research and teaching, the students confirmed that the nexus promotes and supports learning and teaching as a process of intellectual enquiry ($M=4.35$, $SD=.63$), as well as, providing students with a framework for the development of up-to-date course materials ($M=4.38$, $SD=.57$). According to Winckler (2011), there are four key categories of benefits. Firstly, it helps deepen students' understanding of the knowledge bases of disciplines and professions, including their research methods and contemporary research challenges and issues. Secondly, it builds students' higher-order intellectual capabilities and enhances their skills for employment and lifelong learning. Thirdly, it develops students' capacity to conduct research and enquiry. Fourthly, it enhances students' engagement and develops their capacity for independent learning.

The students agreed to the notion that an effective integration of research and teaching gives credibility to the university and its faculties ($M=4.36$, $SD=.62$), which helps to develop important graduate attributes such as research skills, data gathering skills and data analysis skills ($M=4.28$, $SD=.75$). Hence, leading to the development of research-related skills on the part of the students ($M=4.30$, $SD=.64$). In support of this findings, Giller (2011) indicates that a close intertwining of teaching and research is important for these universities because this link strengthens their identity as a university. Coexistence and integration of teaching and research distinguishes universities from other research

and educational institutions. Universities can give their students a genuine research experience they may get in any other setting.

Research-based teaching and learning is also important for universities because it helps universities to fulfil their mission to stimulate, encourage and support students to develop the knowledge, insights, attitudes and skills they are expected to need in follow-up studies and professional careers. This is not different from Dekker's (2016) observation when he indicates that academics also expect that students by engaging them in research can better develop highly valued competencies such as a critical attitude, a humble attitude because researchers accept that there is nothing like 'the' truth, to think independently, and to express thoughts clearly. Research as 'gathering information' and 'exploring others' ideas' was associated with learning by engaging independently with a knowledge base. Research as 'evidencing and developing students' own ideas' and 'making discoveries' was associated with an emergent sense of participation in knowledge building, understood as the potential to bring something personal or new to an area of study (Levy and Petrulis, 2012, p. 85). It is important to acknowledge the fact that all the students agreed to the fact that an effective integration of research into teaching is beneficial to the teaching and learning process by enhancing students' understanding. However, these benefits manifest in diverse ways, as such they disagreed with some of the other benefits.

Testing for Hypotheses

H_0 : There is no statistically significant differences in the conceptualisation of the link between research and teaching with regards to students' level of study.

H_1 : There is a statistically significant differences in the conceptualisation of the link between research and teaching with regards to students' level of study.

A one-way analysis of variance (ANOVA) was conducted to find out whether differences exist in the conceptualisation of the link between research and teaching with regards to students' level of study. In other words, the analysis was done to examine how the conception of students about the link between research and teaching is influenced by their level of study. Four levels (Undergraduates, Research masters, Non-Research masters and Doctoral students) were involved. The dependent variable was the conceptualisation of the link between research and teaching, which is continuous.

As a rule of the thumb, for one-way ANOVA test to be conducted, the data needs to meet the normality assumption and thus, the Shapiro-Wilk test was conducted to examine the normality of the data. The test revealed that the distribution was normal. It was, therefore, imperative to test for the homogeneity of variance to determine the the level of homoscedasticity of the data. This was made possible by the use of Levene's test.

Table 5: Test of Homogeneity of Variances

Levene's Statistic	df1	df2	Sig.
1.471	3	363	.222

*Significant at .05 level

The finding from the homogeneity of variance test ($p=.222$) shows that the data did not violate the assumption of test for homogeneity of variance. This is evident as the p-value for the test was greater ($p>.05$) than the level of significance and consequently, was not significant. This suggests that equal variances are assumed. Since the assumptions underlying the use of one-way ANOVA was satisfied, the actual test was conducted in an attempt to find out whether differences exist in the conceptualisation of the link between research and teaching with regards to students' level of study.

Table 6: ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.92	3	.64	2.29	.078
Within Groups	101.53	363	.28		
Total	103.46	366			

*Significant at .05 level

From Table 6, results from the ANOVA test revealed that a statistically significant differences do not exist in the mean scores of the four levels of study [$F(3, 363) = 2.29, p = .078 > .05$] with regards to their conceptualisation of the link across levels of tertiary education. To further substantiate the findings, descriptive statistics for each of the conceptualisation of the link between research and teaching across the four levels of study is displayed on Table 7. In confirmation to the above findings, Beerkens (2013) agreed to the fact that though, academics and students ascribe different meanings to the teaching-research nexus, their notions of the link is not too different from what scholars have identified. Therefore, this confirms why postgraduate students' conceptualization is not different from how undergraduates conceptualise the link between research and teaching.

Table 7: Conceptualisation of the Link Across Levels of Study

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Undergraduate	211	3.88	.50	.035	3.81	3.95
Research Masters	63	4.05	.57	.072	3.91	4.20

Non-Research Masters	65	3.83	.53	.066	3.70	3.96
PhD	28	3.87	.60	.11	3.63	4.10
Total	367	3.90	.53	.03	3.85	3.95

Source: Field Data (2021)

As shown in Table 7, the overall mean score for the four levels is 3.90 with a standard deviation of 0.53. The mean scores and standard deviations of the levels are as follows: Undergraduate (M=3.88, SD=.50), Research masters (M=4.05, SD=.57). Non-Research masters (M=3.83, SD=.53) and PhD (M=3.87, SD=.60). Though, there are variations in the mean scores across the four levels of study, these variations are not statistically significant. As Hensley (2015) states, “when you co-locate teaching and research, you reduce your efficiency in producing both” (p. 22). It is therefore, not obvious about the benefits accrued to both students, as well as, the department for academics to be simultaneously active in teaching and research. This is likely to influence the conceptualisation of all students, regardless of their levels of study. Therefore, the teaching-research nexus takes shape in various forms. Students can learn from, about and through research (Hensley, 2015). Learning from research means that students acquire knowledge of important theories and research in their fields of discipline. Learning about research means that students gain knowledge of methods and techniques of research in courses, methods and techniques of research and/or in research laboratories. Learning through research means that students acquire knowledge of their discipline by conducting research themselves. Hence, whether students learn from, about or through research is likely to influence their conceptualisation.

CONCLUSION

The characteristics of good university academics identified by students in the present study do not appear to support the premise that active research is a requirement for good teaching. Apart from subject knowledge, which students appear to indicate they would prefer to receive through the academic’s scholarly endeavours, industry and experience, the reported characteristics of a good academic are arguably less intrinsically related to their research activities than their teaching roles. The implication of the responses by the students indicates that they require their teachers who are also researchers to possess communication ability, followed by subject knowledge, interest in student learning, enthusiasm and a sense of organisational skills.

It is not the intention of this paper to downplay the need for a strong research-teaching framework at the institutional or departmental level. Rather, the contention of this paper is that there needs to be greater support both at the individual lecturer level, the departmental level and the university-wide level to bridge the perceived disconnect between research and teaching. Each individual academic is not expected to be a top researcher and teacher simultaneously. Instead, a balance of teaching and research contributions within departmental groups is sought thereby retaining the integrity and benefits of the research-teaching nexus at the institutional level. Within the framework of a weak research-

teaching nexus model, teaching intensive career paths constitute a legitimate and effective contribution to the functioning of an academic department.

The implication for curriculum designers and implementers is the assignment of research-related activities to students could be an effective approach in higher education settings. By providing students with an active role in the learning process, the course activities offered opportunities to all students to apply and develop their skills in processing, presenting, and discussing academic work and fostered their engagement in the course, despite the different learning strategies the students may have employed. Furthermore, this approach can be enhanced by having students work in group settings and create knowledge artifacts that can be used as educational material by their peers. Artifacts that require higher degrees of active engagement with the learning material are more likely to be positively evaluated by the students regarding various aspects of the learning process (such as collaboration, participation, understanding, etc.) leading to higher cognitive gains and enhanced research skills acquisition.

Implications for Policy and Practice

- University authorities should ensure faculty members' research interests are aligned to their teaching activities
- 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.
- 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.
- 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.
- 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.

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