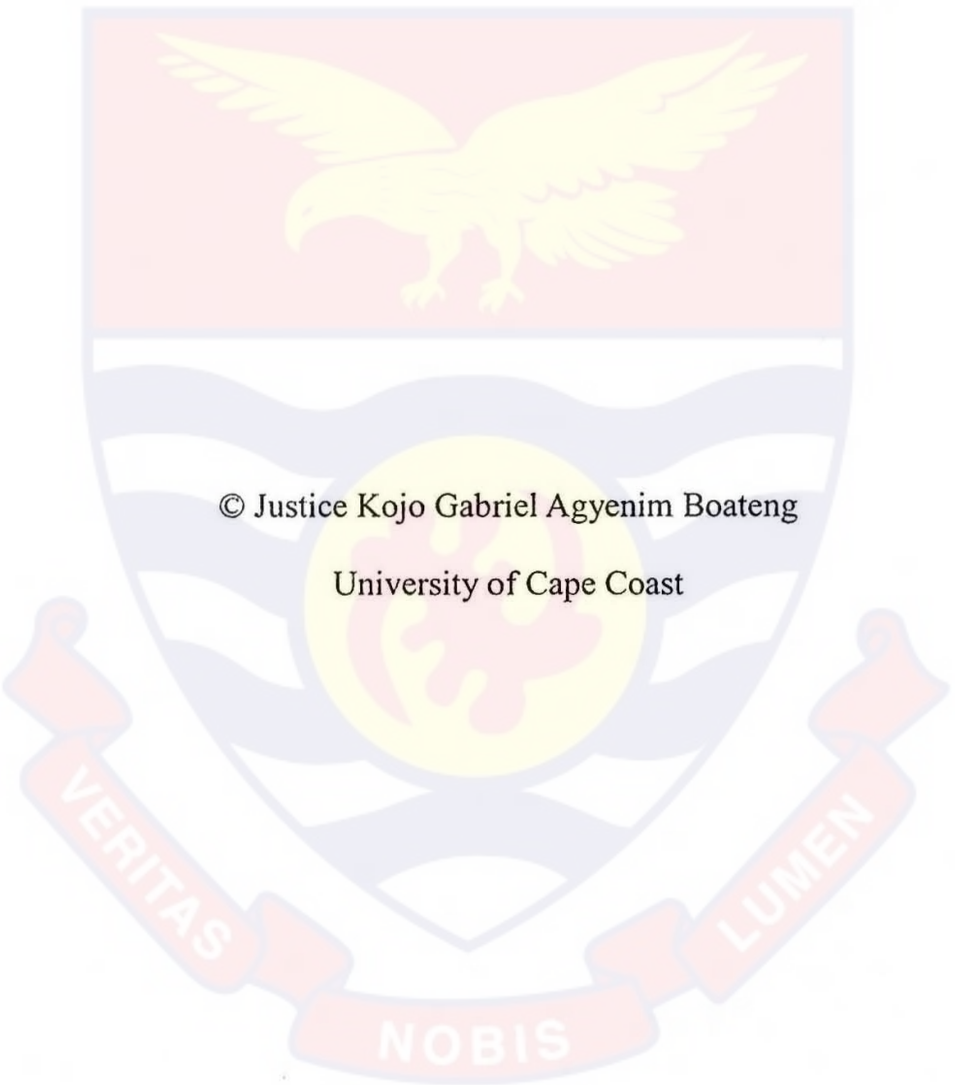

UNIVERSITY OF CAPE COAST

ENTRY CHARACTERISTICS, LEARNING STYLES AND ACADEMIC PERFORMANCE OF HIGHER EDUCATION BUSINESS STUDENTS

BY

JUSTICE KOJO GABRIEL AGYENIM BOATENG

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

OCTOBER 2021

DECLARATION

Candidate's Declaration

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

Candidate's Signature .....Date 31st March, 2022

Name: Justice Kojo Gabriel Agyenim Boateng

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 31/3/22

Name: Prof. (Mrs.) Rosemond Boohene

Co-Supervisor's Signature.....Date.31/03/2022

Name: Prof. Joseph Tufuor Kwarteng

ABSTRACT

The study sought to assess the linkage among entry characteristics, academic performance and how learning styles moderate such relationships. Using the quantitative approach, both the descriptive and explanatory study designs were adopted for the study. The population size for the study is 679 final year business students drawn from both University of Cape Coast and Wisconsin University College, from which 382 students were sampled. Data collected for the study was analysed through multiple least squares approach in Adanco. Findings from the study divulged that business students in the selected tertiary institutions in general have a strong affinity to visual learning styles. The study also showed that the entry characteristics used to select students into tertiary institutions and not the learning style adopted by the student contribute to the overall academic performance of students. In addition, learning style did neither strengthen nor reduce the association between entry characteristics and academic performance of business students. The study recommends that lecturers should identify the diverse learning styles that students use in their learning and develop content and pedagogical methods that answer the varied needs of the students.

KEY WORDS

Academic performance

Business students

Entry characteristics

Institutions of higher learning

Learning styles

Soft Skills

Cumulative grade point average

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DEDICATION

To my mother, Ante Martha, wife, Opheimama, children, Maame, Nana,

Naana Ohemaa, Ohene, the entire Boateng family and Rev Charles Atia

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CHAPTER ONE

INTRODUCTION

Institutions of higher learning around the world have several criteria used to offer admission to prospective students (Kobrin, Camara & Milewski, 2002). Such criteria used are the outputs of students in their previous institutions of learning. A key issue in learning is that it puts the responsibility on the learner to decide on the learning style that best suits them. Research has revealed that the attention educators pay to the distinctions and studying descriptions of individual learners play a key part in enlightening the value of learning and increasing students' academic achievement (Safe, 2008; Tella & Adeniyi, 2009). Following this observation, the study examines the effect of entry characteristics on academic performance. It further examines how learning styles moderate the relationship, amid entry characteristics and academic performance.

Background to the Study

Societal success is largely influenced by entrepreneurs, and entrepreneurs are required to be innovative to achieve such successes. Through education, entrepreneurs are equipped with the skills that make them creative. Education also equip individuals with the relevant skills which make them better performers (Gidado & Aaee, 2014). These skills can be acquired

through business education, defined as education for business and about business (Lizote, Alves, Teston & Olm, 2019; Kouhan, Janatolmakan, Rezaei & Khatony, 2021).

In Ghana, business, as a subject area, is taught at two levels, namely secondary and tertiary education levels. Abdullahi (2002) explains business education as an all-encompassing process that prepares students for success in the world of life. Through business education, students develop skills, knowledge and appropriate attitude towards the business world. Osuala (2004) indicates similar concerns about business education and explains that students are provided with enough knowledge to solve societal problems which contribute to economic development.

Gidado and Aaee (2014) summarise the various explanations for business education, noting that business education helps students make a sound economic judgment that drives entrepreneurship development. Aliyu (2013) sums up the objectives of business education as preparing students for careers and professions in business and enabling them to assume economic roles.

The quality of business transactions which influence the acquisition of some basic necessities of existence is determined by the quality of business

students (Al-Haddad, Taleb & Badran, 2018). Tertiary institutions are at the pinnacle of academic achievement in terms of preparing students for life. Graduates of these institutions are the ones who develop and engage in the transactions that provide fundamental necessities of existence, making formal tertiary business education crucial in the business world (Lizote, Alves, Teston & Olm, 2019; Nkrumah, 2021). This emphasises the importance of business studies and continues to motivate students.

The quality of grades is a widespread criterion used by most academic institutions to assess students' performance. The quality of candidates who are admitted to pursue the various programmes at a university, just like any other manufacturing process, considerably affects, the quality of graduates that are churned out by these institutions (Abimbola, 2018). Having the correct kind of students admitted into a programme will boost the performance of graduates, which is crucial for any country's progress. Quality graduates give a country the human resources it requires to transform. Any country's reform programmes, on the other hand, may be accomplished when higher education institutions can prepare graduates with the necessary capabilities (Abimbola, 2018).

The number of applications received by the various universities around

the country, to be considered for admission, has been steadily increasing. However, only a small percentage of those who apply are accepted into the various universities. For instance, the University of Cape Coast was only able to admit 5,785 students out of 13,188 applicants in 2017, accounting for less than half of the total applicants. Similarly, the University of Ghana, the country's premier university, received 51,321 applications, with 12,000 of them being accepted to pursue various degrees (University of Ghana, Students Services, 2018). Due to the dynamics of demand and supply, university admissions in Ghana remain extremely competitive. However, the number of applicants far outnumbers the number of places available at the individual universities.

Achievement in grades and other prerequisites are required for admission to a higher learning institution anywhere in the globe. For example, Bush (2012) claims that in the United Kingdom, two entry criteria are examined for admission to higher educational institutions: a general certificate of education and forward-looking level courses. Additional requirements such as a qualification in the English language, if it is not the applicant's native tongue, are imposed in other jurisdictions.

Other criteria such as whether the applicant is mature or has

professional experience are added. As a result, it appears that the requirements for admission to higher educational institutions are fluid and fluctuate over time. The Ghana Tertiary Education Commission (GTEC) has set standards for admitting various qualifications such as WASSCE, SSSCE, GCE, ABCE holders, and additional admission pathways such as those created for mature applicants in Ghana. As a result, students admitted to university degree programs may have a wide range of admission traits and prior experiences. It also implies that individuals admitted to the same programs may have distinct admission characteristics and prior experiences.

According to Nzesei (2015), applicants come to universities with diverse desires, and their histories may influence their learning methods. As a result, the learning styles that a student employs during his or her studies have an impact on the quality of his or her academic performance (Nzesei, 2015). This indicates that academic achievement is determined by two important variables: the characteristics used to admit the student and the learning style adopted by the student over time. According to Keefe (1997), the learning style of the student determines his or her learning behaviour. Also, according to Graf and Liu (2010), the instructional techniques utilised in generating the learning content have a significant contribution to students' performance.

It has been claimed that being aware of the teaching and learning environment of any educational background helps significantly to increase productive learning outcomes and, as a result, improved performance, (Pashler, McDaniel, Rohrer, & Bjork, 2008). Keefe (1997) also contributes to this argument by raising this question: "How would institutions of higher learning boost student achievement if these institutions do not know how students learn?" According to Banks (2003), successful learning occurs when teachers can respond to the individuals' strengths and deficiencies.

Again, it has been suggested that disparities in the learning process between people are explained by biological and psychological characteristics. Pask (2008) agrees, claiming that a person's learning process is defined by both biological and individual characteristics. According to Sitt-Gohdes (2001), a teacher's teaching style is heavily impacted by his or her own learning experiences. However, such an approach has been criticized as being unproductive for students whose learning preferences differ from those of the teacher (de Vries, 2005). As a result, the importance of learning styles in higher education and their nexus with students' academic achievement is reaffirmed.

The academic successes of students are the result of a number of

influencing factors that can have an impact on their final grades (York University, 2013). Tests, such as oral and written presentations, extended essays, and other assessments specified by the institution of higher education are examples. Detecting these characteristics may aid in the identification of relevant aspects that enhance students' performance and the identification of those that can be accurately applied to them, which may influence policy direction and affirmative action.

The University of Cape Coast (UCC) is a state-owned post-secondary institution in Ghana that offers a wide range of degree programmes to students from all over the country and abroad. Wisconsin University College is also a significant associate college of the University. Students are recognised for their achievements in the classroom. However, the factors influencing such academic performance are often disregarded, and techniques aimed towards special children frequently fall short of meeting the needs of all pupils (Al-Haddad, Taleb & Badran, 2018; Irvine, Williams, Smallridge, Solomonides, Gong & Andrew, 2021; Guedon, Pham, Braun, Sibilia & Sanchez, 2021; Nkrumah, 2021).

Statement of the Problem

The link between entrance criteria, learning styles, and academic achievement in Ghana's higher institutions is still unknown. It is apparent that the qualifications earned by students after completion do not reflect their actual success at work. According to the Institute of Students' Employers (2020), employers complain about the poor quality of graduates that are produced by the tertiary educational institutions in Ghana. Yet, it is established that the older generation had graduates who were considered nearly-made for the job market. This has implication on the entry characteristics of students who pursue higher education and how they learn. What then is the link between students' entry characteristics and learning styles and their academic achievements/performance which may translate into employability?

A plethora of studies (Ringland & Pearson, 2003; Alhajraf & Alasfour, 2014; Wadda, et al. 2016; Salahuddin & Talukder, 2017; Kwaah & Palojoki, 2018) have been carried out on entry qualifications, learning styles and academic achievement. However, some of these studies have focused on Colleges of Education (Olle-Momoh, 2008; Donche & Petegem, 2011; John et al. 2016; Kwaah & Palojoki, 2018) whilst others concentrate on the pre tertiary level (Lawrence, 2014; Jilardi, Damavandi, et al., 2011; Vaishnav &

Chirayu, 2013). Although some studies (Kyoshaba, 2007; Mlambo, 2011; Bush, 2012; Ali, Haider, Munir, Khan, & Ahmed, 2013) have been conducted at the university level in Europe, America, Asia and Africa, the literature does not reveal any evidence of these variables in Ghana.

In Ghana, the emphasis is that there is no end to what the acceptable entry characteristics are, since policy continues to change (Kobrin, Camara & Milewski, 2002). Consequently, the link between entry characteristics and performance is grounded in the general belief that students with superior entry characteristics would have superior academic performance. For this reason, a lot of prospective students are denied entry into tertiary institutions (Students' Records & Management Information Systems, 2017; University of Ghana Students Services, 2018). This situation results in a lot of students in Ghana terminating their education after the secondary level, which in turn affects the development of human capital for sustainable human development. However, regarding the VAK learning theory, and with the application of the right learning style, students can achieve superior academic performance without recourse to their entry characteristics.

Accordingly, studies that try to link students' characteristics and achievements have been deficient, in terms of concentration and methodology.

The controversy surrounding the connection between students' achievement and entry characteristics and learning styles is not yet settled. For example, Bush (2012) institutes that there is a strong linkage between entry characteristics and academic achievement. However, Donche and Petegem (2011) found that learning style but not entry characteristics rather accounts for students' academic performance. Further evidence in the study of Costa, Cardoso, Lima, Ferreira and Abrantes (2014) suggests that if the pedagogical processes failed to respond to students' needs, then students' academic achievement may suffer. Consequently, there is a need to resolve these controversies to guide lecturers in negotiating instructional interventions to improve students' academic achievement.

In addition, whereas, some researchers have concentrated on specialised areas such as Science (Bush, 2012; Salem et al., 2013), Agriculture (Mlambo, 2011), English (Erton, 2010), little attention has been given to business courses. Methodologically, a number of the earlier studies used criteria other than students' Cummulative Grade Point Average (CGPA) as an indicator of their academic achievement. However, Opoko, Alagbe, Aderonmu, Exema and Oluwatayo (2014) argue that CGPA is the best estimate of students' academic achievement. Therefore, the outcomes of the studies that

employed basis other than CGPA of students to determine their academic achievement may not be methodologically potent to establish valid conclusions.

Even so, studies that used CGPA (Opoko et al., 2014) do not use robust statistical techniques such as Structural Equation Modelling (SEM) to establish the connection among academic achievement, students' entry characteristics and learning styles. The present study goes beyond earlier studies to use higher statistical tools to shed more light on the issue.

Purpose of the Study

The purpose of the study is to analyse the interaction among entry characteristics, learning styles and their effect on academic performance of business students in the University of Cape Coast (UCC) and Wisconsin International University College (WIUC), within the VAK framework. The analysis was performed on UCC and WIUC.

Objectives of the Study

Specifically, the objectives are to:

1. evaluate learning styles employed by Higher Education Business Students.
2. analyse the effect of entry characteristics of Higher Education Business Students on academic achievement.
3. examine the effect of learning styles on Higher Education Business Students' academic achievement.
4. investigate the moderating role of the learning styles on the relationship between entry characteristics and academic performance of Higher Education Business Students.

Research Question

The following research question was formulated to guide the study in addressing research objective (1):

- What is the extent of learning styles employed by Higher Education Business Students?

Research Hypotheses

The following hypotheses were formulated to guide the study in addressing research objectives (2), (3) and (4):

1. H_0: There is no statistically significant effect of entry characteristics on the academic performance of students.

   H_1: There is a statistically significant effect of entry characteristics on the academic performance of students.

2. H_0: There is no statistically significant effect of learning styles on the academic performance.

   H_1: There is a statistically significant effect of learning styles on the academic performance.

3. H_0: There is no statistically significant moderating effect of learning styles on the relationship between entry characteristics and academic performance.

   H_1: There is a statistically significant moderating effect of learning styles on the relationship between entry characteristics and academic performance.

Significance of the Study

The study sheds insights into entry characteristics and learning styles of students and how they influence performance, along the lines of relevant theories. The study partly contributes to understanding how the theories on students' performance such as Spady's Sociological Theory, Tinto's Integration Theory and Bean's Psychological Theory are integrated to establish the purpose of this study. Specifically, outcomes obtained from this study do not absolutely support the theories employed. As a result, entry characteristics and learning styles are not absolute preconditions to enhancing academic performance. In this regard, theories on learning styles and entry characteristics should be reassessed in line with these empirical outcomes. The theoretical framework of this study, therefore, induces the opportunity for confirmation or disapproval by further studies in the Ghanaian context, as a developing economy.

The results of the study will contribute to studies in education and provide an empirical basis for the proposed relationships or otherwise. This could also help to test the relevance of the recommendations from this study on the linkages among entry characteristics, learning styles and academic performance. Unlike previous studies, this study adopts robust statistical

techniques such as Structural Equation Modelling to establish the connection among academic achievement, students' entry characteristics and their learning styles.

The results will also, identify the demographic variables that may require interventions and thus, contribute to their wellbeing. In addition, findings from the study will provide insight into other measures of academic performance that the study would consider. Such measures can, therefore, influence the development of the curriculum aimed at addressing such needs of students whose aim is not to get higher CGPA but also acquire knowledge and skills through tertiary education.

Finally, findings from this study are expected to provide a guide and justification for policy direction for admission purposes. It is worthy of note that much emphasis should not be given to categories of applicants (Mature Entrance, WASCE, SSSCE and O LEVEL students) as a major determinant for admission. This is because measures of entry characteristics do not absolutely contribute to academic performance. Moreover, policy interventions are needed in the area of teaching and instructional design conducive for the various learning styles that tertiary institutions can consider. In this regard, outcome from this study induces policy direction aimed at instituting

affirmative actions that are targeted at students that require special attention to drive their academic performance.

Delimitation

The study concentrates on how entry characteristics and learning styles affect the academic performance of students in higher education who are pursuing programs in business. The study further limits itself to business students in UCC and that of WIUC. The choice of UCC is based on the performance it has achieved in business studies over the years, producing graduates who are occupying high positions in government and also in industries. The Tertiary Business Students' quiz in 2019, which was won by the University of Cape Coast, all makes the University well-suited for such a study. The University also mentors over 61 private institutions which are pursuing business programmes. Thus, UCC mentors the majority of these private universities which are offering business studies.

The choice of WIUC is to provide a common platform to allow for a comparison. This choice was made because WIUC is mentored by UCC and uses a similar grading system as that of the latter. Furthermore, the University enrols the highest number of business students, compared to the other private

tertiary institutions mentored by UCC.

The definition of entry characteristics in this study is in line with GTEC admission requirements into the tertiary level which posit that to qualify for admission into a university in Ghana, one must have, at least, six passes without attaining aggregate D7, E8 for those with WASSCE, with the total grade score not exceeding 24 or 36 for SSCE and WASSCE respectively.

For mature students, applicants are required to meet the minimum entry criteria by passing the Mature Entrance Examinations conducted by the institution itself. These include English Language, Mathematics and an Aptitude Test. For HND candidates, applicants must have obtained, at least, 2nd Class Lower Division and in addition, possess some working experience to qualify for admission into a university in Ghana. This study also employs the Fleming (1920)'s VAK learning theory, which emphasises how learners are influenced to react towards certain learning styles when a particular learning and instructional designs are used by the instructor. The theory considers variables such as visual, auditory and kinaesthetic. This learning style is used since it is the oldest and simplest and also because it is used to classify the most common ways that people learn.

Academic performance is conceptualised as the grades obtained by

Higher Education Business Students (HEBS) within the period of study at their respective institutions. This encompasses all the scores that make up the student's grade and the soft skills which describe the competences required by such students to function well on the job market.

Limitations

The study is limited in few ways. First, the use of questionnaire in generating self-response from the students on their soft skills may not be comprehensive to cover the entire range of soft skills the students possess. However, the questionnaire provided a range of soft skills needed to perform the required test to take a decision on the formulated hypothesis. Second, qualitative examination of the entry characteristics and learning styles of business students is not considered in this study. This would have provided an in-depth understanding and reveal hidden outcomes which a purely quantitative study may not provide. Nonetheless, the presence of quantitative approach in this study enhances generalisations into a wider population.

Third, the statistical tool utilised in this study also does not consider an accurate estimate of the observed covariance matrix as revealed in the covariance based structural equation modelling (SEM) which may influence

the results. However, the partial least squares SEM utilised in this study adequately deals with the explained variance in the endogenous constructs to maintain the quality of the research outcome. Fourth, the study excludes responses from other universities. Notwithstanding this, students from both Universities (UCC and WIUC) have diverse demographic backgrounds and entry performance levels which are reflective of other university students in Ghana. The heterogeneous nature of the students from both Universities (UCC and WIUC), which other university students in Ghana assume, contributes to the reliability and generalisability of this study, despite the limit in scope.

Definition of Terms

This section of the thesis provides contextual definitions for the key terms used in the study. Entry Characteristics, Academic Performance and Learning Styles are defined contextually.

Entry Characteristics: Entry characteristics is defined along the lines of full time or part time, age, entry qualification, gender, marital status and level of education of students.

Academic Performance: Academic performance is defined by the Cumulative Grade Point Average (CGPA) of students, the ability of the

students to acquire the skills required for their career goals and knowledge acquisition.

Learning Styles: Learning styles is defined using the classifications of Fleming and Mills (1992). The study, therefore, defines Learning styles to include the visual, auditory and kinaesthetic sensory modalities used for learning information.

Higher Education: Higher education is tertiary education that drives the awarding of academic degree (Sharipov, 2020). It is also known as post-secondary education or tertiary education, and is the optional final stage of formal instruction after secondary school. In this study, higher is contextualised to include University of Cape Coast and Wisconsin University College.

Organisation of the Study

The thesis is divided into five chapters. The introduction, background of the study, problem statement, goal of the investigation, study objectives, research question/hypotheses, significance of the study, delimitation, limitations and study organisation are all included in Chapter One. Chapter Two reviews related literature on entry characteristics, learning styles and

academic performance. Chapter Three shows the research methods for the study. Chapter Four summarises the findings and discusses them. Chapter Five provides a summary of the study, conclusions, recommendations, as well as areas for further research.

Chapter Summary

The chapter presented a brief introduction of the study, followed by the background of the study, then statement of the problem. The statement of the problem inculcated the management problem as well as empirical gaps in extant literature. The chapter also showed sections such as purpose of the study, the research objectives, question and hypotheses. In addition, the significance of the study in line with theory, policy and practice was provided. The study's delimitations, limitations, definition of terms as well as organisation of the study were presented in this chapter.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews literature related to learning styles, entry characteristics of students and academic performance. It further analyses the theories that underpinned the study. Empirical review of the variables and how they are related are also supplied in this chapter. The chapter ends with a conceptual framework that posits a direct relationship between entry characteristics and academic performance and how learning styles moderate such a relationship.

Theoretical Review

The literature review presents theories that explain the various concepts used in this section of the chapter. Theories on students' performance such as Spady's Sociological theory, Tinto's Integration theory and Bean's Psychological theory are discussed in this chapter. It further discusses theories on learning styles.

Theories on Students' Performance

Spady (1970), Tinto (1975) and Bean (1980) are the three interconnected theories that contextualised academic performance and factors affecting students' academic achievement. The academic and social integration theory of Tinto (1975), on the other hand, serves as the basis for this study. This is because it is considered as igniting research on student retention, providing a broad methodological basis for student retention as it considered students' experience, both prior to and after entering university, and upon leaving university.

Spady's Sociological Theory

One of the earlier scholars to develop a generally accepted theory of students' achievement is Spady (1970; 1977). Spady's Sociological theory states that students' continuous stay in an academic institution depends on the interactions amid students and academic environment. This relation, in turn, shapes the student's traits including attitudes, skills and interests. The end result of such an interaction is a key determinant as to whether the student will perform well academically and be retained in the academic environment. Issues such as family history, academic potential, normative congruence, grade

performance, intellectual development and peer support are key in deciding on the overall performance of the student, which then helps decide whether the student will be retained or not (Spady, 1970 and 1977).

Tinto's integration theory

One key theory that has received widespread use in the area of student performance has been Tinto's theory regarding social and academic interdependencies (Draper, 2005). From the work of Spady (1970), who was the first to apply Durkheim's suicide theory to student performance in 1975, Tinto subsequently built on it. The suicide theory is premised on the idea that an individual's level of integration into society is paramount for committing suicide (Tinto, 1975). Durkheim's suicide model accentuates that people are uncomfortable to stay or remain in society when their level of integration into that society is low. This has been linked to students' ability to remain a student at the tertiary level. Tinto claims that when a student is not well integrated into the university, the likelihood of such a student leaving the university is high. This means that the student's performance will be below the expected. This makes the person uncomfortable, thereby leading to the student leaving the university (Tinto, 1975; 1992).

Tinto refines Durkheim's (1987) model by incorporating three stages of shifting from one society to another. Tinto refers to the first stage as Separation. This stage is explained as the period a student leaves one group to join another. The new group presents some level of stress, as the student is new to the members. The student then develops some coping mechanisms that will enable him/her to be comfortable with the unfamiliar environment which then dovetails into the second stage, Transition. At this stage, the student becomes comfortable in the new environment and then incorporates well into the new group which is the last stage of the shifting (McClanahan, 2004, p. 3; Swail, Redd & Perna, 2003, p. 46). This process is likened to when a student leaves secondary school to join the university. The university is considered as the new group the student is joining. The student will have to go through all three stages before being incorporated into the university. All these stages contribute to influencing the students' level of performance, as the last stage of the shifting process in this regard largely depends on the ability of the student to do well in the chosen programme.

Adjustment, difficulty, inconsistency, solitude, money, learning and external obligations and others are within these variables (Tinto, 1993, p. 45). In 1997, Tinto reorganised the integration theory by drawing insights on the

experience in classrooms. It was postulated that "the social and academic integration of pupils is driven by the interaction process in classrooms" (Tinto, 1997, p. 1).

Bennett (2003, p. 127) expands on Tinto's model and integrates the stages into two elements. Academic integration is the first part and it involves factors such as students' academic success, intellectual development and whether or not the student have confidence that lecturers are genuinely committed to educating and assisting them. The student's self-esteem and the quality of his or her relationships with fellow students and instructors are examples of social integration. Berge and Huang (2004, p. 8), McCubbin (2003, p. 2) and Seidman (1996, p. 1) elucidate Tinto's model further and posit that students' characteristics before entering the university, such as family background, prior academic performance, race, sex, etc. largely contribute to how well the student integrates into the university environment, which eventually affects his/her academic performance.

Bean's Psychological Theory

Bean (1980, p. 158) proposed the psychological theory of student retention, claiming that students' background characteristics must be considered to comprehend their integration into a new university setting. This, therefore, justifies why the current study uses background characteristics which have been posited as key determinants of students' success. Bean (1980 and 1983) extends this theory by demanding that students' intentions to prevail are impacted by their attitudes and behaviours. These attitudes and behaviours may heighten students' level of satisfaction at institutions. The amount of satisfaction can drive dedication to the institution.

The macro-environment variables such as family duties, economics and inspirations received from outside the university's environment significantly contribute to attrition than social integration variables such as university memberships and friends, with a massive influence on conventional students. Eaton and Bean (1995, p. 617) add coping behaviour to this hypothesis, claiming that "students' ability to adjust to the university setting reflects their ability to deal with this issue, which is linked to earlier coping skills in other situations".

Overview of the Theories

The theories suggest that factors that influence students' academic success are complex. The academic and social integration of students into the institution are two common elements that arise in the performance theories addressed. Pre-college qualities and features, family history and past schooling all play a role in students' retention and success, according to all three theorists: Spady, Tinto and Bean.

There is harmony in the factors provided by Spady and Tinto that contribute to students' academic performance. Tinto and Bean's work is characterised by themes such as the student's college experience, adjustment and attitude, etc. Tinto's hypothesis, thus has features in common with the theories of Spady and Bean, although the theories do not have any similar qualities. Tinto's idea also has characteristics that neither of the other two theories have. Among these features are the stages of transition from high school to university, finances, struggle of the studies, the particular demands of diverse students and their classroom experiences.

The three theories appear to offer ramification of explanations on students' performance; however, they fail to account for the complex reality of non-traditional students. Bean and Metzer (1985) acknowledge that it is

difficult to construct a typical profile of non-traditional students due to the variability of their traits. This problem, in the midst of limited generic all-purpose retention model, forces organisations to design models of their own, according to McDaniel and Graham (2001, p. 4).

The phrase "non-traditional students" denotes predominantly black students from impoverished home and school backgrounds in Ghana's higher education setting. Because of their low socioeconomic status, these students have a far harder time integrating into the social and intellectual atmosphere of higher education than typical students. For non-traditional students, for example, a lack of funds is critical because they often cannot afford basic necessities like food, let alone housing, tuition and books.

Due to financial constraints, students who are from afar and are unable to obtain university accommodation are forced to walk from their homes to the various campuses. Non-traditional students who commute rely on public transportation which is well known for its unreliability. Students are known to arrive late or miss courses on occasion. Furthermore, some non-traditional students come from low-income families that have never supported a student in higher education.

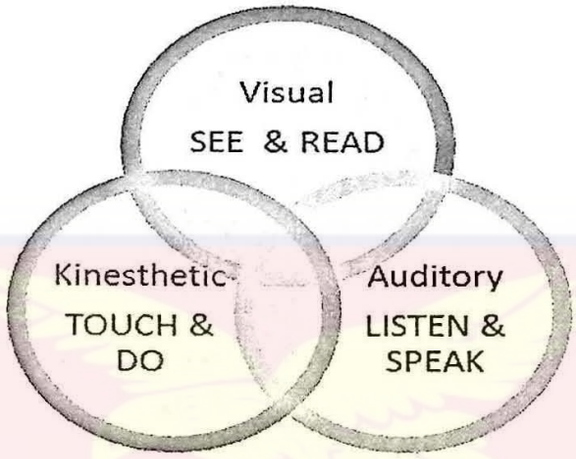
Theories on Learning Styles

Over time, research has generated various theories and models that can be used to examine learning styles. Coffield, Moseley, Hall and Ecclestone (2004), for instance, examined research styles of learning that were implemented and evaluated for their dependability and internal consistence. Theories on learning styles include the Kolb's (1981) Experiential Learning, Honey and Mumford's Information Processing Style, Vermut's (1998) Learning Style, Allinson and Hayes (1996) Wholist-Analytics and the Fleming's (1920) Visual/Auditory/Kinaesthetic (VAK) form the basis of this study.

VAK learning theory (Fleming, 1920)

This research is premised on the principle of VAK (visual, auditory and kinaesthetic), which highlights the sensory patterns as a technique to stimulate the learner (Coffield et al., 2004). This form of learning is one of the oldest and most straightforward methods of learning (Tanner & Allen, 2004), where learners use every learning style, especially showing also a favourite or prevailing one. The dominant style is reinforced or augmented by the others. The famous VAK Learning Styles Model was developed in the 1920's by the

following psychologists: Fernald, Keller, Orton, Gillingham, Stillman and Montessori.



Source: Jalal, Said, Alias and Ameruddin (2015).

Figure 1: VAK learning styles

Visual Learning Style

Visual learners prefer enjoying learning through observations and reading visual displays such as images, diagrams, photographs, maps, picture books, flipcharts and videos (Fleming, 2001). These pictures are better absorbed and stored as knowledge in one's memory. Visual students like to discover things through visual means. Such learners like to read a lot. Visual students need visual encouragement from newsletters, videos and films. If they are to work properly in the classroom, they must have written instructions (Oxford, 1995). These students must observe the teacher's body language, as well as facial expressions to properly grasp the contents of a lecture. They

prefer to be at the front of the classroom. These people reflect on images and absorb greatest from pictorial displays such as diagrams, textbooks illustrations, overlays, movies, tutorials, interactive whiteboards and handouts. Thus, visual students often use extensive notes to grasp information during lectures or class discussions (Fleming, 2006).

Auditory Learning Style

Students who prefer auditory learning style are able to absorb knowledge best when listening and speaking. Such students have exceptional listening skills and can remember what they are taught through talks, discussions, debates, arguments, lectures, presentations and audio book. It has also been suggested that such students are exceptionally good speakers, provide better explanations to issues and are also good presenters (Jalal et al., 2015). Discussions, talking things through and listening are the best means through which auditory learners learn. They are able to make inferences from people's discourses through hearing to the voice, tone, pitch and speed. Fleming (2006) posits such learners benefit from reading out loud and listening to recorded notes.

Kinaesthetic Learning Style

Kinaesthetic students can do, use and move physically. They need mobility, investigation, practical activity and external stimulation in their environment, which they respond to actively. These are concentrated and focused. Kinaesthetic students are individuals who "just invest themselves in an entirely physical context such as a field trip, play, pantomime or interview" (Kinsella, 1995). Kinaesthetic people learn best to stay stationary for lengthy periods by studying the practical way. The desire for movement and activity might distract kinesis students (Fleming, 2006).

The VAK study is based on the assumption of a preference in every student's way of learning. Some enjoy visual fashion but others like audio or kinetic fashion. Sometimes, the fondness for a certain method is stronger or dominant than the others. The dominance of a certain mode makes it easier for the learner to choose the best manner to learn new knowledge. This model is adopted because it is used to classify the most common ways that students learn in the universities. The likeness to a particular learning style modifies as the new knowledge that the learners want to acquire changes.

Summative Perspectives on the VAK Theory

There appears to be little evidence in the available literature on learning styles to firmly support the idea that when instructional strategies are aligned with students' learning styles, the best outcomes are achieved. Several researches, on the other hand, refute this assertion. People clearly have strong feelings about their own learning preferences (e.g., visual, kinaesthetic, intuitive), but it is less obvious whether or not these feelings matter. The majority of VAK learning style research has focused on classroom learning and how instructional style affects outcomes for different types of students. However, the classroom is not the only area where learning takes place. Students clearly grasp more information on their own in this era of flipped classrooms and online course materials. This can explain why the classroom's instructional approach is unimportant. It also suggests that learning styles are important; possibly a match between individuals' specific learning styles and study tactics is the key to achieving optimal results.

One's ability to identify the learning styles of students is not enough. However, it is key when one wants to develop a learning environment that is accommodative of all the learning styles. It is worth noting that learning styles that do not suit a student's preference is likely to be unbeneficial. The key

issue about learning style is not limited to only knowing one's learning style. However, emphasis should be on what a person does after knowing his/her learning style preference. Learning behaviors that are linked with preferences are more likely to lead to favorable learning outcomes than techniques that are diametrically opposed to preferences.

Much of the discussion of VAK learning styles has focused on teaching rather than learning and has neglected to consider the direct impact on teachers and students. It is unclear what is causing this. It could, however, be connected to the disconnection between academic theory and practice. Having knowledge of one's learning type has the potential of empowering students to ask teachers questions.

Furthermore, some critics believe that their field has defined how their course should be taught, and that they are merely going according to the script without respect for the opinions of students. On the other hand, they believe that it is a waste of time to try to teach everyone differently. Indeed, proponents of different learning styles have never suggested that everyone's learning preferences should be accommodated. Without being spoon-fed, some pupils can convert what their teacher says into something useful to them. It may be necessary for others to require further assistance as well as a greater

variety of activities. Some pupils who were previously disadvantaged may benefit from new teaching methods.

Additionally, some critics cite the development argument, which claims that in areas where one is weak, one should be on a curve of improved learning through development. They argue that experimenting with learning in modes one does not like is beneficial.

Conceptual Review

This section of the thesis focuses on reviewing literature that is related to concepts used in this study. The concepts of business programmes, academic performance, learning style and entry characteristics are reviewed.

Business programmes at the higher education level

Business programmes offered at the higher education level provide the leadership and basic business abilities and offer the option to dive much deeper in a single area through a very wide portfolio of business courses. Some of the business programmes offered at the higher education level in Ghana include Accounting, Finance, Development Finance, Human Resource Management, Marketing, Management, Procurement and Supply Chain

Management, General Business, Entrepreneurship and Small Enterprise Development, etc.

These programmes are offered at either the undergraduate or postgraduate levels (both Masters and PhD). The postgraduate degree programmes (specifically, Master's degree) are either research or non-research based. The research Master's degree business programmes are either classified as Master of Philosophy or Master of Commerce, which are mostly executed for academic purposes. On the other hand, the non-research business programmes are typically designed for industry practitioners or business professionals. The type of degree obtainable by the non-research business programmes are mostly Master of Business Administration or Master of Science.

Concept of Academic Performance

Academic performance is defined as "an estimate of an individual's actual or potential power to perform well in schools' task." (Harris & Hodges, 1995, as cited in Anfara, Andrews & Merten, 2005). Anfara et al. (2005) suggest that academic achievement is publicly recognised through standardising test scores and teacher-evaluated information when working

with pupils. Crow and Crow (2006) as cited in Nuthanap (2007) define academic achievements as reflecting the amount to which a learner takes advantage of instructions in a certain area of learning i.e. the extent to which the student has acquired information and skills. Academic success can, thus, be referred to as the academic achievement of a student.

With respect to educational research, a student's academic success can be seen as a student's observable and measurable behaviour. For instance, a student's academic achievement in business management involves factors the student can either observe or measure about a given behaviour in class. The academic performance of students in business comprises their test scores gained at a certain moment. Thus, academic achievement or expectation of a given declaration of education in research might be equated with the observed behaviour. Students' academic achievement includes results acquired from a pedagogical test and others (Steve, 2000).

Daniels and Schouten (1970) and Asaolu (2003) explain academic performance to mean the scores a student obtains in a particular course or courses undertaken at a given period. The authors further explain that the scores describe the intellectual abilities of the student. Daniels and Schouten (1970) stressed that grades could function as predictions and criterion

measures in forecasting academic performance. They proceeded to argue that based on the outcomes of a prior examination, the forecast of a future examination would be successful.

This argument has been corroborated by other researches or studies (Al-shorayye, 1995; Adeyemi, 1998). Their investigation validate the findings by Danniels and Schoutenl (1970), that the strongest predictor of university achievement are the General Examination Certificate and Secondary School Certificate outcomes. As divulged by Peers and Johnston (1994), the Scottish Certificate of Education approves the number and grades in the university performance of the students in their first year and last year. This finding confirms the fact that students' academic performance is not only influenced by WASSCE results but Mature Entrance results also have a significant influence on academic performance. This underscores the need to include Mature Entrance Examination as an academic qualification for predicting students' performance.

Factors Affecting Students' Academic Performance

Several factors have been explored to be a predictor of academic achievement. The student's past education (Bratti & Staffolani, 2002), social and emetical status or well-being of students (Erdogan et al. 2008), the environment of schools have always had an influence on the academic performance of the learners (Graetz, 1995; Considine & Zappala, 2002) and their social status (Sparkles, 1999).

Walters and Soyibo (1998) argue that the degree of accomplishment of high school students is linked to their sexual and socio-economic background, among others. However, a study conducted by Kanagi et al. (2015) at the University of Malaya, on economic students, indicated that academic achievement is not driven by gender for pupils of first grade. Their results showed that the key factor contributing to academic achievement was admission qualification. Another study of architectural students in Nigeria discovered that the admission and academic performance of students were also correlated (Opoko et al., 2014).

Among business research students, teaching competence, methods of instruction and quality of learning materials were factors impacting students' academic achievements (Ganyaupfu, 2013). Similar results were observed by

Alos, Caranto and David (2015). A study of nursing students indicated, as opposed to other factors, that perceived factors relating to the professors (teachers' mastery) had the largest impact on university achievement. This finding is backed by another study of nursing students, which demonstrated that teaching and learning factors influence students' academic accomplishments (Pinehas, Mulenga & Amadhila, 2017). Another study of college students conducted by Mushtaq and Khan (2012) showed that communication, teaching, guiding and family stress have affected the performance of students.

Zainol Abdin, Razaee, Abdullah and Singh (2011) studied the association of learning styles to overall academic accomplishment in a local study of 317 students and discovered a substantial relationship between university achievement and style of learning. The study also demonstrated that for diverse subjects, students maintained identical learning patterns. A study on the stress and the academic success of students who attended different academic programmes showed that medicine students showed the highest level of stress, and this was related to academic progress significantly but weakly (Elias, Ping & Abdullah, 2011).

Hakimi, Hejazi and Lavasani (2011) found that personality

characteristics are closely associated with academic achievement in a study of 285 Iranian undergraduates. However, their study show that gender is not closely associated with academic performance. Studies have also scrutinised the impact of class size on the attainment of students (Bandiera, Larcinese & Rasul, 2008). It has been shown that the increase of school size adversely affected the achievement of students. Academic achievement has also been highly linked to the pleasure of students, as revealed by 133 students at universities in Somalia (Dhaqane & Afrah, 2016).

Aside the aforementioned factors, there are other factors that equally have high tendency to enhance or inhibit the academic performance of students. These factors include teacher competence, availability of resources, pupils'/students' effort and parental involvement (Obeidatu, 2016).

Teacher Competence

There is a large amount of research about the fact that what makes an effective instructor relies on the cultural expectations of the students, parents and teachers. Anfara et al. (2005) indicate that school officials must certify that the student has qualified teachers at every classroom for that academic success to be achieved. As mentioned in Anfara et al. (2005), Cooney and

Bottoms (2003) also think that schools should involve collaboration between instructors through shared planning as well as competent teachers. Erchul and Martens (2010) affirm that substantial influence on student achievement has been the traits shown by teachers. They say that some attempts are being made by teachers such as communicating students' goals, establishing awareness of the need to constantly demonstrate progress, providing specific lessons and regulating behavior that is consistently strengthened to instill attitudes towards success in pupils. Clauss-Ehlers (2010) also believes that efficient teachers who show excellent teaching practice influence academic achievements of their students positively.

Student Effort

The effort of a student has a direct impact on the performance of their school. Kids who spend their time learning and doing homeworks likely to do better in academia than students who spend less time studying and doing their assignment (Spielberger, 2004). Nuthanap (2007) argues that an individual's drive for success stems from the concept of itself and the significance of the different incentives since they represent success and failure in other people's eyes. Thus, a youngster who considers himself to be a top class, can achieve

the highest level in the class as his aim.

Parental Involvement

The factors that drive academic achievement are high child parenthood expectations, parental home support, communications amid parents and teachers, (Desimone, 1999; Anfara et al., 2005), etc. Nuthanap (2007) also claims that more parents are able to engage in private teaching after school as the parents' economic standing is increased. It is obvious, however tiny it may be, that parents play a part in academic performance.

Concept of Learning Styles

Learning style describes how individual's best learn. An apprenticeship does not prevent people from learning in several ways and utilizing different instruments, but instead suggests that a preferred technique exists to obtain, reflect and understand information (Roig, 2008). In addition, as theory indicates, the brain is a biological organ of learning, according to Tanner and Allen (2004). It is, therefore, probably a complex and emergent interaction between neurophysiology and the individual's mind and its unique developmental process as the brain interacts with elements in its environment.

This is referred to as the organ of learning.

Learners do not stick to one style of learning. The styles of learning vary among students. This diversity of study habits has resulted in differences in education, culture and ethnicity. Conformity or variance in education techniques can produce a distinct learning result (Jalal, et al., 2015). Some navigate smoothly as they understand their cultures and match their learning approaches. Others, however, are having problems adapting to these shifts and struggling to sustain their success. Many good students drop out because of their unhappiness. As a result, it should be noted which styles of learning boost the students' learning process. The styles of learning combine a number of aspects. These elements in turn show how students recognise, communicate and react to the learning environment. Each student approaches learning differently (Keefe, 2009).

In order to include reading writing, Fleming (1998) establishes an inventory of learning styles - visual, auditory, reading/writing, and kinesthetic (VARK). These depend on the desire of the individual to learn styles through sensory fields. The use of multiple intelligence theory has taken additional forms of intelligence knowledge rather than the evaluation of sensory style preferences. He adds four ways: verbal, logical-mathematical, physical-kinesis,

musical-rhythmic and interpersonal. How every person uses the many intellects determines the style of education (Gardner, 1983; Pues, 1994). These include the sensory methods of learning contained in these intelligences. The VARK and Gardner theory pre-establishes the idea of learning styles and the optimum way to learn among students in schools. Several adult studies in the field of literary research have been conducted (Merriam & Caffarella, 2000; Baumgartner, 2001). When adults decide where they study, when, and how they learn (Merriam & Caffarella, 2000)

The explanation of learning as a process that connects experiences with concepts includes an additional discussion of literature on learning styles. Kolb (1984) uses Dewey and Piaget's learning style ideas. He described two primary processes or dimensions in learning through experience modelling based on these theories: learning and transition. The dimension of apprenticeship comprises opposites for the practical and symbolic perception of experience. The dimension of transformation involves deliberate reflection and action. For Kolb, four forms of learning are: concrete experience (CE), reflection (RO), conceptualization in abstract form (AC) and active experimentation (AE). Individual styles of learning combine two learning processes. Four essential preferences for learning are based on these:

convergence, divergence, assimilation and housing. These are combinations of learning dimensions (Kolb, 1984).

The environment has an impact on the student (Kolb, 1984). The environment impacts the perception and processing of information by the learner. Kolb (1984) has hypothesized that different topic areas are linked to these different categories and that preferences for the styles of learning varied by major degree. In his investigation, Kolb concluded that corporate leaders are accommodators, major in social science, divergent, convergent whilst science and mathematics are assimilators. These are propensities and are not to be taken as complete.

As provided by Felder and Silverman (1988), students' learning is founded on student skills and previous academic preparations, as well as the compatibility between learner style and teacher style. There may be differences between the style of the student and the style of the teacher. This in turn might lead to a poor class attitude, a focus by dullness, carelessness and ultimate failure (Felder & Silverman, 1988; Tobias, 1990).

The dimension of the learning style projected by Felder and Silverman (1988) was based on some earlier modelling and new notions, which enabled teachers, once their learning styles have been known, to learn more. Their goal

was to decrease teachers' learning styles if student learning styles are recognized, which would allow student learning styles to be combined. They have also realized that all teaching methods cannot be included into all learning styles, although the learning styles can be handled on different levels with minimal changes in teaching methodology (Livesay, Dee, Nauman, & Hites, 200).

Field students are categorised into five primary groups:

1. Intuitive student sensing (concrete, practical) (innovative, conceptual), 2. Students with visual images (pictures, preferred diagrams) (written and spoken information preferred), 3. Students with visual images (pictures, preferred diagrams) (written and spoken information preferred), 4. Students active or reflecting (prefer to accomplish things) (Prefer to ponder about things), and 5. Sequence (ideally ordinary, linear) or international students (holistic, system thinkers).

Why Learning Styles?

The notion that teachers are enjoined to be thoughtful of learning styles - to diagnose them, to encourage students to reflect on them and to organize teaching or learning procedures around them - has a strong intuitive appeal.

After that, students are more driven to study via their strengths and weaknesses as learners. In turn, teachers can respond to individual shortcomings and strengths and retention rates in formal programmes, and skill learning can serve as a basis for lifetime learning. If we agree that all of us have differences in a similar way and can relatively properly detect and evaluate these differences, the potential advantages for instructors and learners are fantastic.

A better understanding of various styles of learning would assist teachers better understand their desired teaching method (Coffield et al., 2004). This could include the manner in which they communicate as well as the tactics and procedures they employ. It could also include how they organize classrooms and the types of learning objectives and activities they use; it could acknowledge student preference for learning styles, in particular students/learners who are different and better comprehend the problems and barriers young people have to learn.

However, the most compelling promise is that teachers will be able to combine teaching in a variety of ways, using a variety of teaching aids and approaches, with the activities that they provide for their pupils. They will be able to describe and present the numerous ways in which they learn the

language. More understanding of their own prevailing ways of learning can allow teachers to deliver lessons that are more inclusive. Although in recent years the efficacy of learning styles has been called into doubt, this is mostly owing to a lack of scientific data in favour of the various models, especially regarding learning and performance increases.

However, it is usual for people to learn different methods and for teachers to be more aware of the preferences and styles of learning, and apply a wider range of school methodologies (Cheminais, 2002; Reid, 2002; Burnett, 2005). The style of learning is recognized as a key principle for inclusive learning.

Hawk and Shaw (2007) argue that understanding of the overall style of classes permits us, with significant variations from one course to another, to modify the tactics. In essence, using information about a cohort of students' style profile to boost their performance in order to adjust the teacher to the technique of Dunn and Dunn styles. Dunn, Burke and Whitely (2000) provides an alternate way which allows the instructors to make use of learning style preferences. The method consists of a tool to identify patterns of individuals and groups between students' style of learning preferences, and to design teaching styles to react. This study focuses on learning styles in academic

performance studies, because students learn in dissimilar manners and because they seem to predict their academic performances more clearly in terms of learning preferences and styles. The preferred learning style of the students helps teachers make their lessons more adaptable and apply a broader range of teachers' methods.

Concept of Entry Qualifications/Characteristics

Quality training measures generally take into account inscriptions like the characteristics of students and results such as those of students who leave the school (Chisaka & Mavundutse, 2006). Differences in entrance qualifications (inputs) and performance might be identified at the conclusion of the course to determine teaching and learning quality. One important critique is that such quality education indicators ignore educational processes and what happens to the inputs in the educational institution. The insights on the 'value added' of teaching and learning are achieved by defining the quality of education with respect to student experiences (Chisaka & Mavundutse, 2006).

University Admission Selection

Senior high school results remain the key selection criteria for admission into institutions of higher learning. The process of admission into a university starts within the last year of the applicant in the senior high school. Grades are historically the main prerequisite for admission into tertiary education and remains the key indicator for measuring the performance of the student (Kobina, 2012).

In recent times, pressure has been mounted on institutions of higher studies to consider other factors including the social background of the applicants in addition to the traditionally accepted admission criteria (Kobina, 2012). The key criteria used when considering the social background of the applicant remains the senior high school attended by the applicant. In Australia, for example, there is a centralized system used to process applicants for admission into institutions of higher learning. They consider the common ranking system known as the Australia Tertiary Admission Rank (ATAR). This ranking system allows for comparison of students from different programmes and courses. The process begins with a pre-admission examination is normally taken in the final year of the senior high school applicants. It is the outcome of this examination that is ranked to determine the qualification of the applicants.

However, in the U.S.A, admission into a university is based on High School GPA, together with college examination undertaken by the applicant. The SAT and the American Trial are the most prevalent ones used for admission into institutions of higher learning. The admission criteria used in the U.S.A were reported in the study of Burton and Ramist (2001) that combining senior schools with SAT scores was considered the greatest pre-admission predictor. Although the High School grades were usually viewed as a superior predictor of university performance, Kobrin, Camara and Milewski (2002) revealed that the SAT contributes to the predictive value of some studying groups with differences in HS grades and SAT scores.

When one compares the admission criteria in Ghana with that of the aforementioned, one will find that the criteria used for admission in Ghana is not much different from those mentioned. Whereas, in Ghana the WASSCE examination is key, in the jurisdictions mentioned, similar criteria are used. The WASSCE examination is undertaken in the final year of the applicants similar to that of Australia and the U.S.A. However, the US in addition to the college examination, employs the SAT a step higher than that of Ghana. For those who wrote SSCE examination, the admission criteria used in Ghana considers grades between A and E cumulating into an aggregate of 24 or better.

However, for those with WASSCE qualification, it considers applicants with grades between A1 and C6 also cumulating into aggregate 24 or better.

In Ghana, we prescribe subjects that students must pass in addition to the grades obtained in order to consider the applicant for admission into institutions of higher learning. Candidates should have obtained passes in English Language, Science, Mathematics and Social Studies. Other considerations are given to applicants who are considered matured. However, the regulator that is GTEC specifies that such admission should not exceed five percent of total admissions for public tertiary educational institutions and 20 percent for private tertiary educational institutions. For such applicants, they must pass a mature entrance exam conducted by the institution.

However, according to Jackson, Hesse and Boyetey (2010), though a relationship exists amidst entry grades and performance, the authors contend that performance at the university is not influenced by the student's entry grades. The authors further indicate that, even those with weak passes when supported are able to perform better when offered admission into a university.

The Cumulative Grade Point (CGPA) determines the student's performance from semester to semester. The bachelor's averages in Cumulative Grade Point nomenclature mean that 3.5 to 4.0 is of first grade,

3.00 to 3.4 is of second grade, 2.50 to 2.9 is of second-grade, 2.00 to 2.4 is of the third class, 1.50 to 1.99 is of a normal pass grade, and then 1 to 1.4 is of pass.

The difficulty in teaching a subject is closely related to how students find it tough to learn. Certain courses always appear to be the hardest to master – and maybe, by association, to teach. When students do not do well in examination, it could be interpreted as either students are lacking motivation and ability or tutors find it difficult to teach the subject. The scenario is finished when the subject is challenging for pupils and teachers alike. Therefore, it is necessary to determine whether pupils have the minimal qualifications to study. Laurillard (2002) summarizes, "To their students and disciplines, each professional academic is responsible".

The educational performance gap refers to the academic achievement disparities between student groups (Cheesman, 2006; Viadero, 2010). The success gap shows up among other achievement metrics in grades, standard test results, course selection, dropout rates and college completion rates. Universities are being tested more closely since they should play a crucial role in national development initiatives (Cheesman, 2006). The quality of the academic performance is part of the success of the education process in

universities.

There may be powerful predictors for student educational achievement of differences in entry qualifications for a given university course. In other words, varying standards for admittance to a course from one university to another may increase the inequalities in performance as students enrol for a certain course with various skills. Work on solutions to close the gaps in performance is essential and several tactics can be used to resolve the problem. These include offering separate courses for different admission qualifications than using the 'one jacket fits all' idea.

Universities have successfully reduced the graduate rate disparities after realizing the difference between the number of students that enrol for a specific program and the final graduating (Engle & Theokas, 2010). Many colleges now have the goal of reducing graduation gaps without compromising quality. In Engle and Theokas (2010), the factors include size, population and resources for each student can affect a number of parameters affecting graduation rate at an institution. Hoskins et al. (1997) found that age, gender, prior qualifications and discipline studied are important elements in determining the performance of students at the tertiary level.

Measurement is an important but difficult component of Borg's

schooling (1981). Judging on how performance gaps are measured, Viadero (2010) expressed concern. Simple measurements of the gap in achievement do not tell Viadero (2010) what's happening and suggest that it takes "whether groups have decreased over time, whether all student groups have improved or have gone further, whether the gaps are currently large among the different groups, and whether they can compare with other jurisdictions" (Viadero, 2010, p. 1).

Students whose performance is varied at entrance must be compared. Is it necessary to consider whether attending the course preserves the difference, widening the difference or narrowing the gap in performance? Difference in performance at the exit is something, or is it merely because it was different at the entrance? These topics are addressed in part in this study and remain relevant for addressing difficulties relating to entry qualifications discrepancies in student performance.

Different elements contribute to the determination of students' academic achievement in any educational effort. These factors range from students who have been admitted to the curriculum in their academic background (Ihiegbulem, 1992; Geiser & Stantellices, 2007), to students' school types prior to their entrance into their program (Considine &

Zappala, 2002; Kyoshaba, 2009), and to various qualifications obtained for admission in an advanced curriculum (Ibe-bassey, 2008; Mlambo, 2011).

Oye, Mahamat and Rahim (2012) indicate that academic performance is the measure that the short- or long-term education goals have been achieved by a student, instructor or institution. The performance is described by performance in courses and student performance on other test categories (Kyoshaba, 2009).

Diverse studies have been carried out at schools, colleges and universities on the elements that influence university performance or achievement of students. Some of the factors that have been identified and reported in these various settings have affected the academic performance of students: effort, previous education, self-motivation, social and economic status of the students' parents, age of students, students' number of study hours per day and admission points, differing qualifications in entry, tuition trends and student area (Farooq, Chaudry, Shafq & Berhanu, 2011; Ali, Haider, Munir, Khan & Ahmed, 2013).

Tertiary institution throughout the world, including Ghana, select students to enter colleges, polytechnic schools and universities with past academic performance as regard admittance or differing entry standards.

These entry points are always similar in scope or worth, even if the various examination boards may award them. Bratti and Stafolani (2002), noted the most crucial indication or determinant of the students' future academic results by measuring their preliminary education outcomes or outcomes.

Another element that impacts student academic performance at post-secondary level is credentials of students who have varied certificates of similar worth from post-secondary schools. While certificates from different certification organizations can be equal for each group of students, the content of curricula and the anticipated objectives may not be exactly same. Mlambo (2011) reported that student admission for several institutions is based on a series of diverse requirements, to the degree that the preliminary knowledge of students in the same course differs substantially. In this context, one may wonder if other scholars concur fully that previous schooling, entrance points, and various entry qualifications really affect future academic achievement. The reply is no.

The most well-known metric of academic performance is grading in different tests (Mushtaq & Khan, 2012). Therefore, the evaluation of certain grades indicates that candidates are able to master the content of courses they are evaluated. Williams and Media (2013) argue however that grading should

not be the main means of academic achievement, because gradients can depend on things such as participation and prejudice for the instructor. Mlambo (2011) believes that low academic performance at tertiary institutions (typically measured by grades) leads to a high level of attrition, which ultimately affects degree output, raising training costs for the working force of a nation. Both the government and the families or sponsors of the students are responsible for this fee. Therefore, Mlambo (2011) advises that elements that affect the performance of students should be identified. Other approaches to measure acquired results must also be found to reflect the talents of pupils.

The utilisation of previous academic results in picking students appears to be a global trend, as Minnesota (2007), Mlambo (2011) and others have highlighted. Studies like Kyoshaba (2009), Geiser and Santelices (2007) and Bratti and Staffolani (2002) have shown that past results affect future results. A critical step in helping kids to better succeed, according to Beilock (2008), is to identify the individual problems they face. This is because the experiences of pupils are really different. Identification of stressful elements is necessary because stressful academic conditions limit the working memory available to meet and control the requirements of a task for information processing (Steele, 1997). Engle (2002) believes the more people have

working-memory capacities, the better their achievement in academic tasks like problem-solving and reasoning and therefore, emphasise the necessity to understand how the types of high-stakes situations in which academic performance often occurs affect people with more or less work-memory.

Empirical Review

Effect of Entry Characteristics on Academic Performance

Studies have sought to establish a linkage between academic performance of students and entry characteristics. Entry characteristics look are the pre-requisite for admission. Different schools have resorted to the use of different admission requirements. This section of the review focuses on empirical studies on the linkage amid entry characteristics and students' academic performance in order to justify the continuous use of admission requirements into institutions of higher education.

Irvine, Williams, Smallridge, Solomonides, Gong and Andrew (2021) investigated the undergraduate nursing students' entry characteristics, learning strategies and academic performance regarding demographic characteristics. The study was conducted in a university setting in Australia. Questionnaire items of motivational strategies for learning was distributed to first-year

undergraduate students in the fourth week of commencing University. It was revealed that entry characteristics, learning styles and academic performance were associated with the greatest age difference between 18 and above 23 years. Individuals who were above 23 years had the highest grades. Moreover, international students had lower grades relative to foreign students.

In addition, Nkrumah (2021) using the value added approach, assessed the influence of entry characteristics on academic performance in Ghanaian polytechnic. Appropriate variables for the study were selected based on the Global Monitoring Report in 2005. Three courses were considered to include African Studies, Communicative Skills and Computer Literacy. Outcomes from the study were mixed. For instance, whiles age and gender had negative impact on Computer Literacy, English language impacted on African Studies positively. Moreover, the impact of English Language on Computer Literacy was negative.

Guedon, Pham, Braun, Sibilia and Sanchez (2021) examined the characteristics of gateway students and their academic performance in France. The study was conducted due to the limited representation of students in medical school. Through a multiple correspondence analysis on gateway students' characteristics and academic performance, the study's outcome was

obtained. Students who had a degree in sciences accounted for 89.3% of the entire gateway students. Students who dropped out were 6.6%, and normally at the end of second year. Out of a total of 243 gateway students, 110 of them completed the national residency exam. High performance in the residency exam was associated with males who attained high scores and a low number of uncompleted modules. It was concluded that students who came from a sciences academic background had low chance of dropping out.

A study by Daneil, Aziz and Tang (2020) examined the entry characteristics, demographic information about families and performance. Through a qualitative study, responses were obtained from students regarding their academic performance to develop an appropriate learning programme to take care of their learning needs. From this study, information obtained on the entry characteristics of students and their family background was pertinent in assessing their academic performance which facilitated the development of their learning styles.

Similarly, Salahuddin and Talukder (2017) establish that family income, place of stay of parents and respondents' means of study do not influence a student's academic performance. However, it has been noted that students who passed formative examination did well in professional examination. It is

further indicated that the educational background of biological relations had mixed effect on students' academic performance. Whereas a father's educational background did not have any influence on the performance of students, the educational background of student's mother had an influence on students' performance.

Wadda, Wagner, Al Qassab, Mohamed, Hamad and Al Sharbatti (2016) in a study on the relationship between entry characteristics and lifestyle factors and academic performance establish that entry qualifications and socio-economic status are significantly associated with academic performance. The study further shows that higher satisfaction with academic performance is associated with better performance. The study also found out that students who perceived a need for help with their studies performed worse than those who did not. It also found that females performed better. Likewise, the study established that students who had parental encouragement and good sleep performed better.

Alhajraf and Alasfour (2014) also report in their study that demographic characteristics of students such as age, gender, high school major achievement have a relationship with students' academic performance. Similarly, Salem et al. (2013) found that students' performance is affected by

factors such as gender, marital status, previous results, interest and motivation and the transportation used to reach faculty. It has also been reported that status of parents of a students' occupation, income, education background, number of siblings are inversely related to students' academic performance (Thomas & Muthee, 2010).

Opoko et al. (2014) establish in their study that no association occurs between students' admission qualification and their academic performance. The authors further posit that gender plays a key role in students' performance and therefore, report that female students outperformed their male counterparts in all semesters. Bush (2012) also reports that prior academic achievement, which is considered as part of the pre-requisite for admission into higher education, is an influencer on academic performance. The study further shows that the type of secondary school one attends is key in determining the academic performance of students in the university.

Similarly, Kwaah and Palojoki (2018) in the study on entry characteristics, academic achievement and teaching practices found that entry grades of teachers differed and that academic achievements of teachers were influenced by entry qualification. The study, therefore, recommended screening of prospective teacher trainee in order to meet the minimum entry

requirement for one to undertake a diploma in basic education programmes.

The study of Mlambo (2011) proffers some factors affecting students' academic performance with focus on age, gender and entry qualification. The study revealed that entry qualification and academic performance have no significant linkages, wherein significant associations were found between entry qualification and both gender and age. This may be caused by changes in the entry level. The same study found that although these criteria differed, they adequately assessed the ability of students to meet the needs for farm courses. However, farmers and other credentials were included in the academic charts. Ringland and Pearson's (2003) study showed no significant differences between graduates and those who were directly at 'A' level in each group; however, the academic achievement performance in each group before the university appeared to have an impact on university results to a minor extent.

Huws, Reddy and Talcot (2006) found that students who learned or studied at the university level and achieved results predict the university's academic achievement levels in their investigation of the association between previous academic achievement and later achievement. Furthermore, the Oregon State University Academic Admission Council (2003) argued that prior academic achievement determines academic success. They argued

further that standard measurements of academic potential, including average degree or 'A' degree, did not predict university academic performance.

Donche and Petegem (2011) show that student age is negatively connected to student accomplishment and that older students generally acquire lower mean examination outcomes than younger students in their study on their relationships between entry features, learning style, and academic achievement. In general, prior schooling is linked to academic achievement positively. Academic success differs between different fields of study. In this study, there were no gender effects on university achievements.

Wilson and Simons (2002) examine the effect of entrance in tertiary (TE) at University of Griffith. The results showed that the TE score was favourable but modest ($\mu = 0.39$) for a high-grade GPA score evaluated at 1 (low) -7 scale (high). The weak link highlights that performance is not a determiner of current performance, perhaps because of maturity-related cognitive development.

In contrast, Adedeji (2001) Aderson, Benjamin and Fuss (1994) report in their respective studies that admission scores obtained by students greatly influenced their CGPA or performance in the university. However, studies by Alias and Zain (2006) and Zezekwa and Mudavanhu (2011) disagreed to the

effect that entry qualification positively influenced academic performance and rather report in their study that there is an adverse relationship between entry qualification and academic performance. Similarly, Olle-Momoh (2008) reported that entry scores did not influence students' performance at the tertiary level but rather reported that experience at the tertiary level largely influenced students' academic performance.

However, while these studies have showed conflicting results, it is very important to remember that admission ratings are associated with university academic success, but to a small extent (Ali, et al., 2013; Kyoshaba, 2007). Although these studies established the link between entry qualification and academic performance, the sample was drawn from public universities outside Ghana. A similar study with a sample drawn from both public and private universities is, therefore, needed to compare the similarities or differences, if any.

Learning Styles and Academic Performance

Several studies have sought to explain the association between learning styles and academic performance. Findings have not been consistent. For example, Lizote, Alves, Teston and Olm (2019) assessed the association

between learning styles and academic performance of Accounting students. Through a well-structured questionnaire, analysis of the study was quantitatively estimated. Findings from the study divulged that the dominance learning style was auditory, then Kinaesthetic in the Vark model and the Convergent, followed by Assimilative via the Kolb model. The Visual and Divergent models were the least represented.

Moreover, İlçin, Tomruk, Yeşilyaprak, Karadibak and Savcı (2018) examined the relationship between learning styles and academic performance of Turkish physiotherapy students. The Grasha-Riechmann Student Learning Style Scales were utilized for 184 physiotherapy students' learning styles. The CGPA was recognized as a measure of academic performance. There were six learning styles (Independent, Dependent, Competitive, Collaborative, Avoidant and Participant) which were analysed based on the Kruskal-Wallis test. It was revealed that the most common learning style was collaborative. The relationship between avoidant and academic performance was negative, but academic performance positively correlated with participants' score. It was further found that the participants' learning style category academic performance was superior to all other groups.

In addition, an empirical study by Kouhan, Janatolmakan, Rezaei and

Khatony (2021) explored association between learning styles and academic performance in the midst of virtual nursing students. Through a convenience sampling technique, 237 virtual nurses were selected. Academic performance was determined based on the GPA of the most previous semester. Students were categorised based on strong and weak GPA. It was found from the strong and weak groups that most of the students were unimodal. Kinaesthetic and auditory were found to be the most common learning style for the strong and weak groups respectively. Findings from the study further revealed that for both strong and weak groups, the association between the dominant learning styles academic performance was not statistically significant.

As examined by Siddiquei and Khalid (2018) on the association between personality traits, learning styles and academic performance, an interesting outcome was provided. A sample of 144 Pakistan university students completed the Big Five inventory, Index of learning and submitted their GPA. The outcome from the study divulged that GPA positively related with three personality traits whereas neuroticism was negatively related with GPA. Moreover, three learning styles positively correlated with GPA.

An interesting study by Cimermanová (2018) examined the impact of learning styles on academic performance in Slovakia. The Grasha-Riechmann

Student Learning Style Scales were utilised. Findings from the study indicated that learning styles have no impact on academic performance.

Also, Vaishnav and Chirayu (2013) investigated the influence of different study styles on student academic accomplishment. Three methods of learning – visual, auditory and Kinaesthetic– were used (VAK). Randomly selected for the study were 200 pupils from the 9th, 10th and 11th standards in the state of Maharashtra. Using Pearson Product Time correlation method coefficient, the study findings indicated that the kinaesthetic learning style was popular among high school students than the visual and auditory methods.

It further reported that kinaesthetic learning style and academic achievement are highly correlated positively compared with auditory and visual learning styles. A study by Gokalp (2013) analyse students' learning styles and the impact of their achievement and the association between their learning styles and academic success. There were 140 students, 68 of whom were Artists and 72 pre-school teachers. The study population comprised students from the University of May Faculty of Education. The outcomes from both pre- and post-tests were not the same. The important link between the post-test results and the student's success demonstrated how they studied well.

The association between learning methods and academic

accomplishment was researched in 2011 (Abidin, Rezaee, Abdullah, & Singh, 2011). The population of the study comprised 317 pupils from an Islamic school in Malaysia. The instrument Learning Styles Survey (LSS) based on the Joy Reids Preference Questionnaire (1987) was employed. ANOVA single-way and multiple regression analysis were the statistical approaches used in this investigation. Data analysis demonstrated that the overall academic achievement and learning styles are closely related. High, moderate and low performers were likewise shown to have a similar preference pattern in all styles.

Jilardi Damavandi, Mahyuddin, Elias, Daud and Shabani, (2011) reported in their study on the interaction between learning styles and academic accomplishment of high school students in Iran. Eight public schools in Tehran were involved in the study. The Kolb Learning Style Inventory (1999) was administered. For each student, the medium of the test results was computed and used for each academic success in five areas, namely in English, science, mathematics, history and geography. A total of 285 pupils in grades 10 were picked randomly. The result of the difference analysis showed that the academic achievement of Iranian students using the four learning styles indicated different outcomes in academic performance; in particular, the mean

values were significantly higher for groups with high similarities relative to diverse ones.

Erton (2010) provides an influential study of learning styles in five faculties at the First Year Bilkent University. The study comprises newcomers aged 18 to 23 years who reacted to the Learning Style Inventory of Jeffrey Barsch and used their test values for computing the statistical coefficient between the two factors. The findings indicate a weak positive link with the correlation coefficient in the statistical relation between student learning styles and their accomplishments in the foreign language (English 101 class). Whereas these trials were carried out based on diverse models for learning, that is, cognitive styles, sensory styles and personality styles, the results revealed a favourable association between learning and academic accomplishment irrespective of the model used.

Kember, Jamieson, Pomfret and Wong (1995) show that students who use a deep approach to study does not result in good grades unless accompanied by sufficient work. Similarly, Shahzadi and Khan (2016), acknowledges that every individual is a unique learner and will therefore, lean toward a particular strategy for learning. The Spearman Rho Correlation and Kruskal-Wallis test were used in explaining the nature of the relationship

between learning styles and student academic performance in their study. Findings of the study however suggest that adopting a particular learning strategy is not a factor in influencing student academic performance. However, the study concludes that students use different learning styles and that adopting a particular learning style is dependent on the students' unique personality.

Similarly, Mlambo (2011), in a study to analyse factors contributing to students' academic performance in University of West Indies, reports that learning preference was not a key factor in influencing students' academic performance. The study employs VARK questionnaire as a measure of learning styles and GPA as a measure of academic performance. It is explained that the reason for the lack of association between learning styles and academic performance could be the use of VARK which the study explained as failing to place students in distinct learning preferences categories. It is further explained that the teaching methods employed made none of the learning preferences disadvantaged.

Lawrence (2014) investigates the relationship between learning styles, study habits and academic performance of higher secondary school students in India. In all, 13 schools were involved in the study with 300 respondents.

Standard deviation, t-test, ANOVA and Pearson's Co-efficient correlation were used in analysing data collected for the study. Findings of the study reveal that there were no significant differences between learning styles and study habits and academic achievement of higher secondary school students.

Donche and Petegem (2011) found that learning styles predicted students' academic performance contrary to the findings in John et al. (2016) and Mlambo (2011). Donche and Petegem (2011) focus on first year of higher education using the longitudinal research strategy and investigated the factors on academic achievement throughout eight three-year professional Bachelor of Education programmes in eight disciplines. The learning style inventory developed by Vermut (1998) was used as a measure of learning styles. GPA was also used as a measure of academic performance. Similarly, it has been found that self-regulated and deep learning has no relationship with academic achievement in first year of higher education. However, active or versatile learning was found to positively related to academic performance.

Kaminski, Theroux, Lister and Gabriele (2005) investigated the association between students' learning styles and grades in an introductory thermal-fluids course. The study employs the Kolb learning style inventory within the three-period of investigations. The authors report that students

without a dominant learning styles received the lowest average grades, contrary to students with dominant learning styles who received high averages in grades.

Mashayekhi, Rafati, Mashayekhi, Rafati, Mohamadisardoo and Yahaghi, (2014) looked at the association amid learning styles and academic achievement of students of Islamic Azad University in Iran. It was not daunting that learning styles and students' academic achievement were positively correlated. Similarly, Looyeh, Fazilpour, Masoule, Chehrzad and Leli (2015) found that learning styles is positively correlated with academic performance.

Pepe (2012) found that there is a parallelism between study skills of student's GPA. Similarly, Shahzadi and Ahmad (2011), in a study on academic performance of students in Pakistan, observe a relationship between academic interaction, study habits, study environment and academic performance. The study found that academic performance depends on the academic interaction and study habit is also influenced by study environment.

The empirical review reveals that there are inconsistencies in the outcomes. Whereas some studies establish that learning style is positively related to academic performance, other studies have established contrary

association between learning styles and academic performance. This makes the area worthy of investigation. The lack of consistency raises debate on whether learning styles should be promoted or focus should be on other factors that have been found to predict academic performance. Research findings from the literature reviewed suggest that there is multiplicity of instruments used to measure learning styles. It is, therefore, convoluting to find a single instrument measuring the four learning styles. Therefore, based on the above literature reviewed, it can be hypothesised that learning style is significantly related to academic performance.

The Moderating Role of Learning Style

Though studies established that entry characteristics influenced tertiary students' performance, the nature of the relationship is either strengthened or reduced depending on the learning style the student adopts. For example, in the study of Birch and Miller (2006) where the authors provided an overview of studies from 1975 to 2001, the learning style a student adopts could either increase the student's academic performance or otherwise. This goes to confirm how learning style moderates the relationship between entry characteristics and academic performance. Similarly, Baig (2001) in a study of

students of the first four batches of Karachi Medical and Dental College (KMDC), who graduated between 1997 and 2000, the study concludes that the admission scores (an entry scores) combined with Higher Secondary Certificate (HSC) marks alone cannot predict academic achievement, the learning style adopted by such students is good predictor of academic performance.

Wright and Palmer (1994) establish an association between students with varied academic background and academic performances. Similarly, Alias and Zain (2006), report that learning style does not moderate the connection amid the cumulative point average of undergraduates and CGPA. On the contrary, Lane, Lane and Cockerton (2003) report a strong association between learning style, class of undergraduate and graduate performance.

Kershaw (2009), Houltram (1996) and Wilson (1999) show that students' performance could either be enhanced or reduced depending on the learning style the student adopts. In their study, Majasan and Bakare (1999) found that adopting a specific learning style improved the link between admission qualification and final performance. Kershaw (2009) show that learning style moderates the link between a student's aggregate score (which is similar to Senior High School grades) and GPA in a study involving 124

students from Melbourne's nursing program. Similar findings are also reported by Wilson's (1999). In contrast, Houltram (1996) rather reported that entry scores did not influence students' academic success.

Alonge (1998), Gbore (2006) and Adeyemo (2001) have had inconsistent outcomes on the predictive validity of learning style on students' performance. As revealed by study by Othuon and Kishor (1994), learning style influenced Certificate of Secondary Education grades. Similarly, Adeyemo (2001) and Adebayo (2002) reported an association between learning style and performance of Secondary School Certificate (SSC) examinations. Palmer et al., (2011), found no moderation effect of learning styles on the association between students' performance at the secondary school level and at the tertiary level.

Considering the discussions above, literature on the connection amongst learning style, entry qualification and academic performance are inconclusive. This is because whereas some studies confirmed that, performance in Junior Secondary Certificate (JSC) examinations is significantly related to the performance in Secondary School Certificate (SSC) examinations using learning style as a moderator, others discovered that learning style does not moderate the link between performance and the success

of the students in Senior High and universities correspondingly. Although there were inconsistencies in the results revealed, the samples of these studies were drawn from junior secondary schools and senior secondary schools outside Ghana. It was, therefore, necessary for a similar study to be conducted with a sample drawn from tertiary institutions in Ghana to provide a basis for confirming or refuting earlier findings and to compare the similarities or differences.

Conceptual Framework

The study conceptualises that once a particular style produces certain outcomes which is favourable, that learning style may be repeated and held as being desirable for achieving results. This was done in line with the theoretical and empirical reviews of the study. However, students set goals or outcomes based on their own strength and the goal set for could also influence the effort to expend in order to realize the goals. The study, therefore, conceptualizes that both learning styles and entry characteristics explain students' academic performance. However, the nature of the relationship between entry characteristics and academic performance is moderated by the learning style the student adopts.

As it has been established in the study of Donche and Petegem (2011), prior education positively correlates with academic performance. Three variables were of interest to the researcher; learning style, academic performance and entry characteristics. Entry characteristics considered qualifications such as Mature Entrance, SSSCE, WASSCE and O' Level. Learning style is also measured using the VAK learning style and academic performance which is also measured using the cumulative grade point average (CGPA) regarding competencies attained.

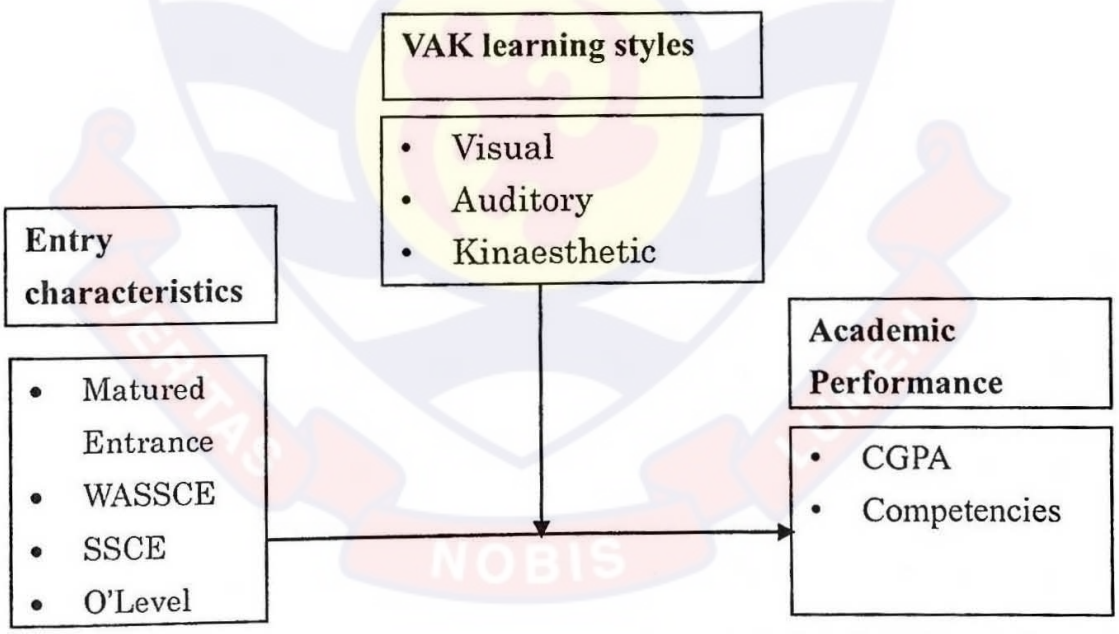


Figure 2: Conceptual framework on entry characteristics, learning style and academic performance.

Source: Author's Construct

Figure 2 contains one main independent variable at four levels; Mature,

Entrance, SSSCE, WASSCE and O' Level certificates. These certificates constitute the route or qualifications into tertiary institutions (universities). Student academic performance thus is dependent on these individual independent factors outlined above. Studies have indicated that entry qualification influence students' academic performance depending on the learning style the student adopts (Donche & Petegem, 2011; Bush, 2012; Wambugu & Emeke, 2013; Kwaah & Palojoki, 2018). This means that route into universities has significant effect on students in terms of academic performance.

Also, the performance of students in tertiary institutions is influenced by one or multiple learning styles (Kaminski et al., 2005; Mlambo, 2011; Mashayekhi, et al., 2014; Looyet et al., 2015). Many a times, these learning styles moderate the link between entry qualifications and academic performance. The arrows linking the independent factors and the moderator to the dependent variable box indicate how the independent factors and the moderator influence the state of the dependent variable. Academic performance has been measured using the commutative grade point average (CGPA), which according to Opoko et al. (2014), is not a best estimate of students' academic achievement. The current study, therefore, proposed the

use of acquisition of soft skills by students as an additional measure of academic performance. Also, the current study uses the partial least squares in structural equation modelling to predict the proposed relationships which is deemed robust (Frazier et al., 2004).

Chapter Summary

The theoretical, conceptual and empirical review based on prior research was offered in this chapter. The main intention of this chapter was to explain the link among entry characteristics, learning style and academic performance. Through the research, it became evident that there were inconsistent results on the relationship between entry characteristics and academic performance. Whereas some studies have established a positive relationship, other studies revealed a negative relationships and some found no relationship at all. Learning styles are also found to predict academic performance in some studies, whereas in other studies, no such relationship was established.

CHAPTER THREE

RESEARCH METHODS

The focus of this chapter is to discuss the philosophical viewpoint that underpins this research. The justification for choosing this study design is one of the topics explored in this Chapter. It also covers the demography, instrument utilised, test for instrument validity, procedures and analysis of the data, and ethical considerations, etc. furthermore, the philosophical framework that underpins the study is also highlighted.

Research Philosophy and Approach

The positivist paradigm provided the philosophical basis for this study. The study held that there is an objective way of describing a social phenomenon (Morgan & Smircich, 2008). This means that there is an objective truth existing in the world that could be examined and clarified logically. The philosophy for the study is that prediction of cause and effect is made possible so long as measurement is reliable and valid and can as well be generalised (Cassell & Symon, 1994). Being deductive and particularistic, this orientation allowed for formulation of research hypotheses and verifying them

empirically on a specific set of data (Nachmias & Nachmias, 1996).

It made it possible for the information to be measured numerically. It focused on questions such as "how many?" and/or "how often?", which were easily processed in the form of numbers. This approach gave direction to the purpose or objective of the survey. The questions were presented and the information converted into numbers. Techniques used were questionnaires, surveys, personality test and standardised research instruments (Burell & Morgan, 2009).

Quantitative research approach requires collecting data and converting these data into numerical form so that the researcher can make statistical calculations and draw conclusions on them (Glass & Hopkins, 2004). The use of quantitative approach in gathering data from respondents makes it possible for results to be generalised (Bryman, 2009). In addition, outcomes in quantitative research can be scientifically proven as it generates numbers and this allows for future comparisons with other works. However, this approach tends to be unbending, unnatural and unproductive in evaluating the importance people attach to actions, and are not helpful in generating theories (Crotty, 1998). Matveev (2002) also posited that information on situational context, under which data is collected cannot be provided using this approach.

Again, the researcher, in a quantitative study, has no control over the kind of answers provided by the respondent to the survey questions (Matveev, 2002). According to Edwards and Talbot (2014), the quantitative approach requires constant monitoring of model performance to ensure continued compliance with original hypothesis, which is time consuming. Also, these approaches limit outcomes of research to only those outlined in the original research proposal due to the usage of closed-ended questions and a structured format (Matveev, 2002).

The quantitative approach was adopted because the researcher used a structured questionnaire to make evocative decisions for the study. This idea was supported by Levin (2008) who opined that with the quantitative approach, data is collected by a strict procedure using questionnaire and analysed for meaningful conclusions. This approach helped the researcher to provide detailed description of the methods employed in collecting, analysing and interpreting the data collected. The quantitative approach provided an authenticated estimate of the relationships among entry characteristics, learning styles and academic performance.

Research Design

The study makes use of both descriptive cross-sectional survey and explanatory designs. First, a descriptive cross-sectional survey provides answers to questions by asking respondents to express their opinion through the responses they provide (Cohen, Manion & Morrison, 2013). According to Best and Khan (2007) and Jenkins, D'Aoust, Elias, Han, Sharps and Alvarez (2021), descriptive research is able to establish the status quo without manipulating variables. From the view of Cohen, Manion and Morrison (2007), descriptive survey design enables researchers to not describe the existing status quo but also an opportunity to compare, contrast, classify, analyse and interpret.

The descriptive cross-sectional survey design was used to describe the entry characteristics, learning styles and academic achievements of Higher Education Business Students (HEBS) at only one point in time through sample selection. This design enabled a detailed description of the HEBS in terms of their entry characteristics, learning styles and academic achievement to enable the generation of future admission and pedagogical guidelines in managing business students in tertiary education. The quest to determine whether or not HEBS academic achievement is based on their entry characteristic and/or

learning styles was facilitated by the employment of this design. Furthermore, the design was useful in estimating the size of HEBS who employ each of the various learning styles so as to give an indication of the pedagogical interventions lecturers of such students may have to employ for instructional engagement. Finally, the design enabled the development and use of an empirical model to predict the academic achievement of HEBS based on their entry characteristics, learning styles and demographics.

The use of descriptive cross-sectional survey afforded a number of advantages. For example, it was easier and cheaper to execute because only a single time reference data collection point was used. Also, it permitted very good controls over the measurement processes implemented in collecting the data from the respondents for the fact that no long-term considerations were made. It offered completeness with key data points to maximise the use of that data because the entire population was studied at a point in time.

In spite of the numerous advantages validating the use of this design, there are some limitations that make it suspicious. For example, it is only effective when it represents the entire population and therefore, any sampling error will make the validity of the design questionable. Also, its validity hinges on large sample size to ensure accuracy and hence, a small sample can provide

validity challenges. Biases resulting from non-response of a respondent may affect the results, especially where the characteristics of those who respond are different from those who do not respond. Finally, it was unable to measure any incidence such as why the kind of data collected at the time was a characteristic of the HEBS studied. Therefore, it measured only their learning styles, entry characteristics and academic achievement without being able to explain why these descriptions were associated with the students studied.

Second, regarding the second, third and fourth research objectives, the explanatory research design was utilised. Explanatory research design is useful for these objectives because it provides linkages or relationships between variables to enhance interpretations of research outcome for reliable generalisations (Saunders, Lewis & Thornhill, 2009; Saunders & Lewis, 2017). Figure 3 provides a pictorial description of the design of the study as utilised. It initiates with the research methods through to data analysis and results. This provides a pictorial guide on how the design of the study is emphasised in the context of this study.

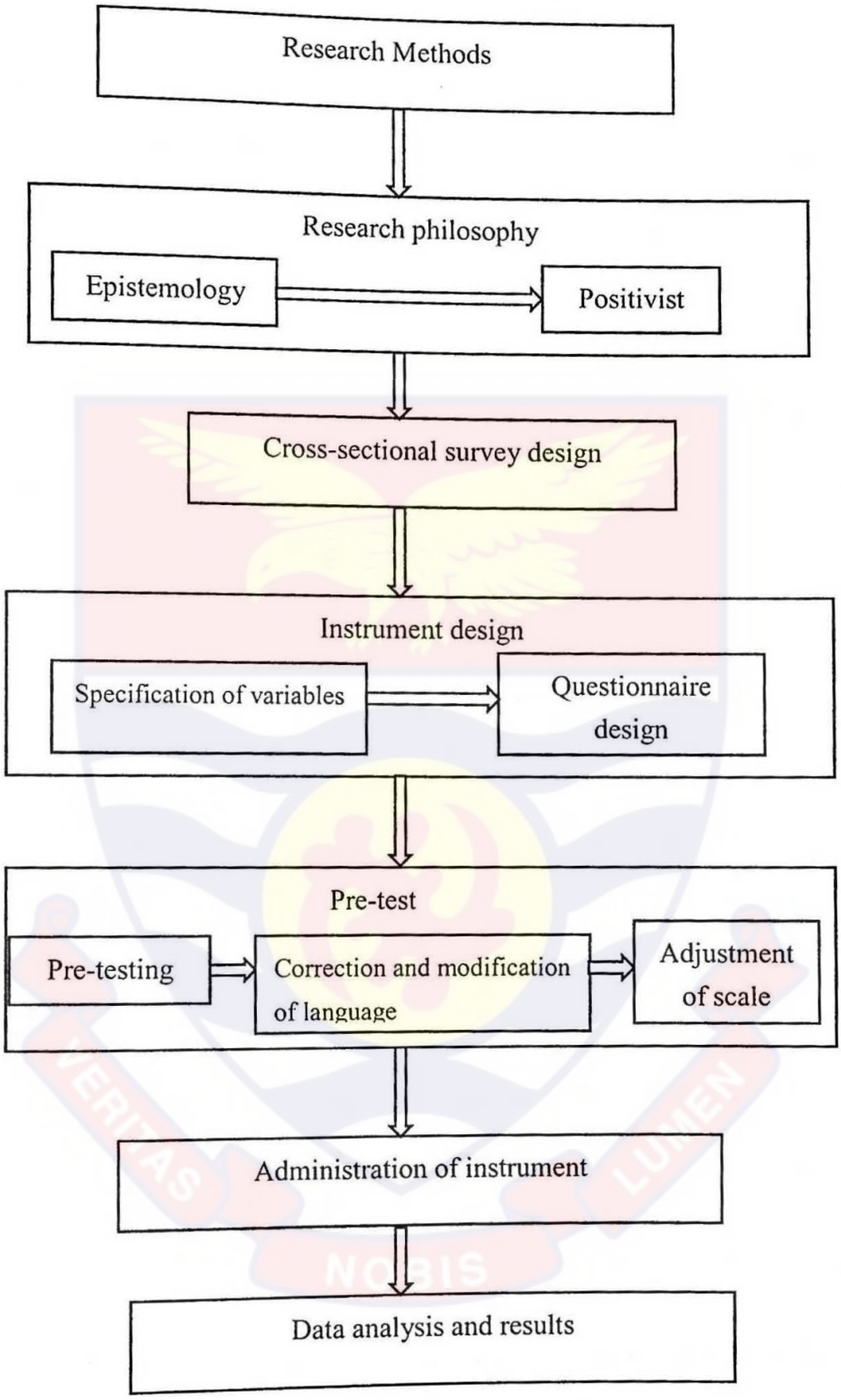


Figure 3: A description of the study design

Source: Author's Construct

Study Area

Two study areas were used for the study: University of Cape Coast (UCC) and Wisconsin International University College (WIUC). UCC began as a University College in October 1962 and was associated with the University of Ghana, Legon. UCC later gained independent status, which allowed it to grant its own degrees, diplomas and certificates on October 1, 1971.

UCC is located in the capital of Central Region of Ghana. It was established with a primary focus of training teachers for second cycle schools in the country. The University currently trains medical doctors and health-care professionals, administrators and agriculturalists in addition, and has graduated students who have gone on to become ministers of state, chief executive offices, high commissioners and members of parliament, among others.

There are specifically five colleges in UCC. They include – College of Humanities and Legal Studies, College of Education, College of Agriculture and Natural Sciences, College of Health and Allied Sciences and College of Distance Education. The University runs seven undergraduate business programmes in the field of Accounting, Finance, Management, Human

Resources Management, Marketing, Procurement and Supply Chain management and Entrepreneurship, under a common degree of Bachelor of Commerce. In addition to the undergraduate business programmes, the University offers postgraduate degree programmes for both Masters and PhD levels in related undergraduate fields of study.

Wisconsin International University College, Ghana, on the other hand, is one of the private universities established in January, 2000. The University college is affiliated to four public institutions; University of Ghana, Kwame Nkrumah University of Science and Technology, UCC and University of Development Studies. Wisconsin International University College is located at Agbogba Junction, close to Kwabenya, located in Greater Accra, Ghana. The University currently has three campuses which are located in Accra, Kanda and Kumasi. At the Wisconsin Business School, there are three departments which include – Department of General Business Studies, Department of Management Studies and Department of Accounting, Finance and Banking. The Business School offers programmes such as: BA Business Studies in Human Resource Management, Marketing, Banking and Finance, Accounting and General Business, etc.

Population

The population of this study was final year business students from UCC and WIUC. The study targeted both UCC and WIUC, relative to other universities because the two Universities positively responded to the researcher's request on CGPA data of students. In this vein, management of other universities turned down the researcher's request on grounds of sensitivity of data on students' CGPA. The business students were selected over other programmes of study due to high degree of similarities and consistencies of the business programmes offered by both UCC and WIUC. The final year students were selected for the study since they had completed seven (7) out of the eight (8) semesters in the university and therefore, had near-complete academic results, as at the time of data collection. Obviously, their Cumulative Grade Point Average (CGPA) was used as a proxy of their academic achievement. Levels 100 to 300 students were excluded for the fact that there might be possible inaccuracies in measuring their academic achievements using their CGPAs, which were not near-complete, compared to those of level 400 students. Also, students reading BCOM (Management) and BCOM (Procurement and Supply Chain Management) were excluded from this study to ensure comparability since Wisconsin International University

College did not run those programmes.

Current records show that there were 679 final year undergraduate business students in the two Universities. Thus, 519 final year undergraduate business students from UCC and 160 final year business students from WIUC (Directorate of Academic Affairs, UCC & WIUC, 2020) made up the population for this study. Table 1 presents the population distribution of the students based on programmes in the two universities.

Table 1: *Population Distribution of Respondents*

University of Cape Coast		Wisconsin University	
Specialty	Level 400	Level 400	Total
Accounting	269	71	340
Marketing	59	25	84
HRM	73	53	126
Banking/Finance	118	11	129
Total	519	160	679

Source: Directorate of Academic Affairs, UCC & WIUC (2020).

Sample and Sampling Procedure

Out of the population size of 679, data cleaning was performed to expunge missing data regarding incomplete results and unredeemed referrals in both Universities. This reduced the size of the data in both schools to 485

students. Being guided by the sample size table of Krejcie and Morgan (1970), the minimum sample size that must be selected from a targeted population size of 679 students was 245. Yet the prospective sample size of 485 was above the minimum sample size as provided by Krejcie and Morgan. In this regard, the prospective sample size was considered for this study to forestall the sample error associated with cross-sectional surveys and to increase external validity. The sample distribution obtained after cleaning the data for missing values are shown in Table 2.

Table 2: *Sample Size Distribution of the Respondents*

University of Cape Coast		Wisconsin University	
Specialisation	Level 400	Level 400	Total
Accounting	155	59	214
Marketing	48	24	72
HRM	59	44	103
Finance	84	10	92
Total	348	137	485

Source: Field data (2020)

Sources of Data

Both primary and secondary sources of data were resorted to for the study. Primary data was required on entry characteristics and students'

learning styles. These were obtained using survey, where questionnaires were resorted to in generating data from the respondents (final year students from UCC and WIUC).

The secondary data needed were in the form of students' entry characteristics as generated and kept by the offices of Academic Affairs and their academic records in the form of their CGPAs. The entry characteristics were those supplied by the students at the time they completed admission forms for entry into the Universities. The secondary entry characteristics of students were compared with the primary source to enhance the consistency of the study's outcome. These pieces of information had been historically filled on the personal records of each student in the university system. Similarly, their academic records accumulated over the seven-semester period had been kept on the personal records file by the offices of Academic Affairs in the two Universities. There was a legal duty on the part of the Universities to ensure confidentiality with recognised exceptions when it came to divulging such personal information about the students.

Data Collection Instrument

The data used in the analysis of this study were gleaned from a structured questionnaire. Questionnaire was needed to ensure that a larger number of the population was studied within the simple phase data collection period. Such issues as "How were the variables, learning styles, performance and characteristics measured and what literature do we have to back it? What scales were used to measure the variables and what was the justification?" are all addressed here.

The questionnaire was mainly close-ended, with four sections – A, B, C and D. Section A focused on demographics, which comprised respondents' sex, age, programme of study, area of specialisation and mode of study. Section B comprised the entry characteristics/qualifications the respondents used in securing admissions, Section B examined the learning styles respondents used and Section C measured the students' level of competencies attained during their 4-year degree programmes in their respective Universities.

The study employs questionnaire, considering the large number of respondents the study sought to reach out to. As it was suggested by Kothari (2008), it afforded the respondents adequate time. Again, the questionnaire was used because it was less expensive and also saved time, human and

financial resources. Relying on the explanation of Osuala (2001), the questionnaire was used because of its ability to constitute the first attempts at true scaling. However, the use of questionnaire is not sacrosanct for data collection. It has some challenges. A key limitation of the use of questionnaire for data collection is that where respondents have difficulty in understanding a question, there is no opportunity for such a respondent to have the meaning clarified (Kumar, 2006).

Test for Validity and Reliability

In order to check glitches in wording of questions, clarity of instructions and also to refine the questionnaire so that respondents would have no problem in responding to the items, a pre-test was undertaken in the UCC, using Bachelor of Commerce (Management) and Bachelor of Commerce (Procurement and Supply Chain Management) students. These students were chosen because they were not the study's unit of analysis, and possessed similar features as those of the study units.

Seventy-three (73) students, representing 15% of the actual sample size (485) were contacted for the pre-test. This, according to Baker (1994), is ideal for pretesting. Cronbach's Alpha was computed after data was received and

keyed in to ascertain the reliability coefficient.

According to Fraenkel and Wallen (2000) and Abington-Cooper (2005), a reliability coefficient of at least 0.7 is satisfactory. The Cronbach Alpha value obtained for the research instrument on competencies attained (Section C) was 0.806, indicating that the instrument fairly measured what the issues the study sought to analyse. Furthermore, both face and content validity of the instruments were approved by the supervisors of the researcher. The supervisors read to ensure that all ambiguities and inconsistencies in language were eliminated. Their assessment also ensured that all the research objectives were duly covered by the items in the questionnaire. Table 3 shows the Cronbach's Alpha of twelve Likert scale items on competencies attained by the students. A quick glance at Table 3 indicates that items passed the reliability test, in accordance with the cut-off by Fraenkel and Wallen (2000) and Abington-Cooper (2005). Thus, all the items achieved a Cronbach's Alpha of at least 0.7.

Table 3: *Reliability of constructs and items*

Construct	Items	Cronbach's Alpha
Competencies attained	CA1	0.789
	CA2	0.779
	CA3	0.821
	CA4	0.799
	CA5	0.867
	CA6	0.888
	CA7	0.877
	CA8	0.769
	CA9	0.804
	CA10	0.888
	CA11	0.894
	CA12	0.786
Overall		**0.806**

Source: Field data (2020).

Data Collection Procedures

The Department of Business and Social Sciences Education provided an introductory letter that defined the study's goals and ensured confidentiality. The purpose and the significance of the study were explained in the introductory paragraph of the instrument and permission of the respondents was sought. The instrument was sent to the students through the internet and

responses were also received via the internet. The respondents were given instructions on the completion of the questionnaire, and it took them about 15 minutes to complete them.

During the data collection, the researcher and the field assistants were available to assist in the data collection. The field assistants were selected regarding series of orientations, practical training and tests to facilitate smooth and quality data collection. They included other PhD candidates, individuals with postgraduate qualification and a few national service persons. All those whose academic records were used at the initial data analysis were surveyed by questionnaire.

Even though this approach was time-consuming, expensive and tiresome, the approach helped the researcher to collect 382 questionnaires out of the 485 students. The collected 382 questionnaires were still above the minimum sample size of 245, which makes it representative for further statistical analysis. Categorically, all students whose academic records were selected at the initial stage to achieve the prospective sample size of 485 were surveyed by questionnaire. The return rate from the survey was 79% from both Universities, with details shown in Table 4.

Table 4: *Return Rate of Questionnaire*

Programmes	University of Cape Coast		Wisconsin University		Total	
	N	%	N	%	N	%
Accounting	112	32	30	22	142	30
Marketing	51	15	15	11	66	14
HRM	72	21	23	17	95	20
Finance	69	20	10	7	79	17
Total	304	88	78	57	382	79

Source: Field data (2020).

Data Processing and Analysis

The researcher cleaned data collected for missing values to remove any incomplete questionnaire and coded them thereafter. They were then entered into the Statistical Product for Service Solution (SPSS, Version 26) and made ready for analysis. The data was examined using a combination of descriptive and inferential statistics.

Percentages, cross tabulations and frequencies were used to analyse the demographic features of the respondents to answer the research questions. In this study, the percentage frequency distributions were displayed using tables. The highest scores indicated the kind of learning style being used by the students in learning or the most preferred entry qualifications. The lowest score means that kind of learning style is not being used or less used by

students in learning or the least preferred entry qualifications.

Research hypotheses one and two sought to examine the effect of entry characteristics and learning styles on academic performance of HEBS. These hypotheses were analysed with the help of variance-based structural equation modelling. The analysis of structured equations can also be performed on smaller samples irrespective of the level of multi-collinear nature between the independent variables. Because of the above, ADANCO 2.1.0 software was performed in two stages. The measurement model analysis for psychometric features of the utilised measurement scales was performed first and hypothesis testing using the determination of the structural model was done in the second phase. It implements several limited-information estimators, such as Partial Least Squares path modelling (also called PLS modelling, PLS-SEM, or simply PLS) or ordinary least squares regression based on sum scores and places minimal demands on measurement scales, residual distributions, sample size and allows multiple predictor variables (Frazier et al., 2004).

Research hypothesis three focused on whether learning style moderates the relationship between entry characteristics of HEBS and academic performance. The Multiple Linear Regression analysis was performed at *p-value* = 0.05 (two-tailed) level of significant. Multiple Linear Regression

(MLR) was used to show directional relationships between learning styles, entry characteristics and performance of students. A *p-value* below 0.05 indicated a significant influence of the predicted variables on academic performance and a *p-value* above 0.05 indicated a insignificant effect of the predicted variables on students' academic performance. Responses provided by the students were subsequently matched with their CGPA for the analysis.

Ethical Clearance

Ethical clearance was applied for from the "Institutional Review Board" (IRB) at UCC by filling the IRB ethical clearance form. The IRB granted ethical clearance for the research after the review and approval of the ethical clearance form submitted by the researcher. Introductory letters which explained the study's goals and guaranteed confidentiality were obtained. These letters were meant to introduce the researcher to the institutions to seek their necessary assistance. In addition, the researcher submitted permission letters to the directorates of Academic Affairs at the two Universities for the collection of secondary data, as well as permission to administer questionnaire to students for the collection of primary data.

The researcher administered the instrument to WIUC students via

online mode since the University undertook online studies due to the Covid-19 pandemic at the time. The introductory paragraph of the questionnaire explained the purpose and the significance of the study to the students. Students were made aware that their participation in responding to the questionnaire was not compulsory. In the case of UCC students, the researcher sought their permission and administered the questionnaire to them. After a week, the students returned the completed questionnaire through their respective course representatives. The main challenge was that it was difficult tracking some of the students who failed to submit theirs through the course representatives. The researcher received responses from 382 (91%) out of the 420 respondents given the questionnaire.

Chapter Summary

The goal of this chapter was to outline the procedures used to gather, analyse and evaluate the findings of the study. With a population of 679 teachers, this study used a descriptive cross-sectional design to look at admission characteristics, learning styles and academic performance. A sample of 73 students was used to conduct a pretest of the instrument. A total of 285 students were chosen for the primary data collection, which was conducted via

a self-administered questionnaire. The instrument received a reliability value of 0.806, on a scale of one to ten. To analyse data on demographical variables, frequencies, percentages and cross tabulations were used.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents the results of the data analysed in accordance with the purpose of the study. The principal motive of this study is to assess entry characteristics, learning styles and their effect on academic performance. It further seeks to determine whether learning styles moderate the relationship between entry characteristics and academic performance.

The chapter begins with descriptive statistics of respondents. Furthermore, findings describing learning styles and entry characteristics of students from the two Institutions studied are presented in this chapter. In addition, findings on the analysis on the effect of entry characteristics and learning styles are presented in this chapter. Specifically, it focuses on presenting results on the effects of entry characteristics on academic performance, learning styles on academic performance, as well as the moderating role of learning styles on the relationship between entry characteristics and academic performance. The chapter ends with a discussion of the findings. Comprehensive analysis of the study are presented in succeeding sections.

Description of Respondents

A preliminary analysis was carried out to provide a description of the demographic characteristics of the respondents. Table 5 presents the demographic characteristics of the final year business students of the Universities.

Table 5: *Demographics of the Respondents (Students)*

Variables	Subscale	Freq.	Percent %
Sex	Male	213	55.8
	Female	169	44.2
Age	Below 20	7	1.8
	21-25	275	72
	26-30	71	18.6
	31-35	15	3.9
	Above 35	14	3.7
Entry Qualification	Mature Entrance	33	8.6
	SSSCE	3	0.8
	WASSCE	330	86.4
	O' Level	1	0.3
	Others	15	3.9
Programme of Study	BCOM	304	79.6
	B.SC	18	4.7
	BA	58	15.2
Area of Specialisation	Accounting	142	37.2
	Finance	79	20.7
	Marketing	66	17.3
	HRM	95	24.9
Total		382	100

Source: Field data (2020)

Regarding sex, the results suggested that most students were males (n=213, 55.8%) relative to females, representing 44.2 percent. The inequality in gender, according to Atuahene and Owusu-Ansah (2013), is attributed to the unequal access to secondary school education, which in turn favours males. This, therefore, explains the male dominance in institutions of higher education, as depicted in Table 5. Considering students' age, the dominance of those who took part in the study were within 21-25 years (n=275, 72.0%).

In relation to the students' entry qualification, the results show that 86.4%, representing a greater proportion of them, got admission into the Universities through West African Senior School Certificate Examinations (WAEC, 2019). Student using Senior Secondary Certificate Examination to gain admission accounted for 0.8 percent, those with O'Level also accounted for 0.3 percent and those who got admission through Mature Entrance Examinations accounted for 3.9 percent. The main criterion for admission into institutions of higher education has been the use of WASSCE results. The other qualifications criteria are used to complement the current use of WASSCE and also offers those with such qualification opportunities for them to pursue tertiary education. This explains why the WASSCE students dominate.

The use of Mature Entrance Examinations, on the other hand, is considered when an applicant has work experience, in addition to having met the other qualifications specified by the admission board of the institutions of higher studies. However, this is sparingly used and explains why it accounted for less than four percent. In assessing the students' programme of study, the results indicated that those reading BCOM were the majority (n=304, 79.6%). With respect to area of specialisation, the majority of the students specialized in Accounting (n=142, 37.2%).

Learning Styles of Higher Education Business Students (HEBS)

The first objective of the study sought to describe the learning styles used by the respondents from the two institutions investigated, UCC and WIUC. Summary of the findings as well as the breakdown of the findings are presented in this section. Cross tabulation and frequencies were used to describe the learning styles. First, the analysis focused on the sex of respondents and their learning styles. The composite results as well as the individual results showing the sex and learning styles of the study institutions are presented. The second part of this section focuses on presenting results of the cross tabulation of age and learning style compositely and that of the

institutions studied. The final part of this section focuses on presenting results of the cross tabulation concerning patterns with respect to area of specialisation and learning styles both composite results and that of the two institutions that were the focus of the study. Findings are shown in Tables 6-11.

Table 6 presents the composite cross tabulation outcomes of sex and learning styles.

Table 6: *Sex and Learning Style Cross Tabulation*

Sex		Learn style			Total
		Visual	Auditory	Kinaesthetic	
Male	Count	81	74	58	213
	Expected Count	83.1	80.9	49.1	213
Female	Count	68	71	30	169
	Expected Count	65.9	64.1	38.9	169
Total	Count	149	145	88	382
	Expected Count	149	145	88	382

Source: Field survey (2020)

From Table 6, out of the 382 responses recorded, 213 were males and 169 were females. From the 213 respondents who are males, 81 preferred the visual learning style, 74 also indicated that they preferred the auditory learning style and 58 indicating they preferred the kinaesthetic learning style. The results also show that, out of the 169 female respondents, 68 preferred the

visual learning style, 71 preferred auditory learning style and 30 preferred the kinaesthetic learning style. The results show a certain pattern. They show that kinaesthetic learning style is the least preferred recording a total of 88 responses. The most preferred learning style is visual learning, recording 149 responses followed by the auditory learning style. The results further points out that whereas the majority of the respondents preferred the visual learning style, a majority of the females rather preferred the auditory learning style.

Further analysis was undertaken to show the sex-learning style and institution of study. Table 7 presents the findings of the cross tabulation of sex-learning style and institution of study.

Table 7: *SEX * LEARNSTYLE Cross Tabulation and Institution of Study*

University	Sex		LEARNSTYLE			Total
			Visual	Auditory	Kinaesthetic	
UCC	Male	Count	71	61	50	182
		Expected Count	74.2	66.5	41.3	182
	Female	Count	53	50	19	122
		Expected Count	49.8	44.5	27.7	122.0
	Total	Count	124	111	69	304
		Expected Count	124.0	111.0	69.0	304.0
Wisconsin	Male	Count	10	13	8	31
		Expected Count	9.9	13.5	7.6	31.0
	Female	Count	15	21	11	47
		Expected Count	15.1	20.5	11.4	47.0
	Total	Count	25	34	19	78
		Expected Count	25.0	34.0	19.0	78.0

Source: Field survey (2020)

Comparing the respondents from the two Institutions of study, that is UCC and WIUC, the findings clearly support the findings presented in Table 5. Cumulatively, visual learning style remains the most preferred learning style. This is clearly shown in Table 7. Similarly, as shown in Table 7, both female students from UCC and Wisconsin preferred the visual learning style, followed by visual and kinaesthetic. However, in UCC, visual learning style remained the most popular among the respondents. Whereas the students in UCC preferred the visual learning style, the auditory learning style is

predominant among students in Wisconsin.

Having ascertained the sex and learning style patterns among the respondents, further analysis was done to determine whether there are patterns among the ages and learning style of respondents. Table 8 presents the composite cross-tabulation results of age-learning style.

Table 8: *AGES * LEARNSTYLE Cross Tabulation of Respondents*

Age of respondents		LEARNSTYLE			Total
		Visual	Auditory	Kinaesthetic	
Below 21	Count	2	4	1	7
	Expected Count	2.7	2.7	1.6	7.0
21-25	Count	103	106	66	275
	Expected Count	107.3	104.4	63.4	275.0
26-30	Count	33	22	16	71
	Expected Count	27.7	27.0	16.4	71.0
31-35	Count	5	6	4	15
	Expected Count	5.9	5.7	3.5	15.0
Above 35	Count	6	7	1	14
	Expected Count	5.5	5.3	3.2	14.0
Total	Count	149	145	88	382
	Expected Count	149.0	145.0	88.0	382.0

Source: Field survey (2020)

Table 8 shows that respondents aged below 21 years preferred auditory learning to the others, recording four responses. Two of the respondents indicated their preference to be visual and one indicated preference for kinaesthetic. For those aged between 21-25 years, a total of 275 responses were recorded out of a total number of 382 responses. Out of 275 responses, 106 preferred auditory learning, 103 had preference for visual learning and 66 also preferred kinaesthetic. With respect to those aged between 26-30 years, 33 of the respondents indicated that they preferred visual learning, 22 also preferred auditory learning and 16 also indicated their preference for kinaesthetic. For respondents aged between 31-35 years, five indicated their preference for visual, six preferred auditory and four preferred kinaesthetic learning styles. For those above the age of 36 years, six preferred visual, whilst 7 preferred auditory and one indicated a preference for kinaesthetic. Further examination of the table shows that the majority of the respondents were aged between 21-25 years. For respondents within this age range, a majority preferred auditory learning, 103 preferred visual and 66 had preference for kinaesthetic.

Further analysis was done to compare the ages and learning styles of the two Universities that were the focus of this study. Table 9 presents the

cross-tabulation results for age-learning style and institution of study.

Table 9: *AGES * LEARNSTYLE Cross Tabulation and Institution of Study*

University	Age of respondents		LEARNSTYLE			Total
			Visual	Auditory	Kinaesthetic	
UCC	Below 21	Count	0	0	1	1
		Expected Count	.4	.4	.2	1.0
	21-25	Count	96	96	58	250
		Expected Count	102.0	91.3	56.7	250.0
	26-30	Count	26	14	9	49
		Expected Count	20.0	17.9	11.1	49.0
	31-35	Count	2	1	1	4
	Total	Count	124	111	69	304
		Expected Count	124.0	111.0	69.0	304.0
		Expected Count	20.0	17.9	11.1	49.0
WISCONSIN	Below 21	Count	2	4	0	6
		Expected Count	1.9	2.6	1.5	6.0
	21-25	Count	7	10	8	25
		Expected Count	8.0	10.9	6.1	25.0
	26-30	Count	7	8	7	22
		Expected Count	7.1	9.6	5.4	22.0
	31-35	Count	3	5	3	11
		Expected Count	3.5	4.8	2.7	11.0
	Above 35	Count	6	7	1	14
		Expected Count	4.5	6.1	3.4	14.0
	Total	Count	25	34	19	78
		Expected Count	25.0	34.0	19.0	78.0

Source: Field survey (2020)

Table 9 shows the cross-tabulation results of the age-learning style and institution of study. The results, as presented in Table 9, indicate that only one of the respondents was aged below 21 years. The respondents, however, had preference for kinaesthetic learning style. Those aged between 21-25 years, 250 responded indicating their preferred learning style. Out of the 250 respondents aged between 21-25 years, 96 each preferred visual and auditory learning style, 58 of the respondents however had preference for kinaesthetic. For those aged between 26-30 years, a total of 49 responses were recorded. Out of this number, 26 indicated their preference for visual learning style, 14 had preference for auditory learning style and nine had preference for kinaesthetic learning style. Those aged between 31-35 years recorded the least number of responses with respect to their learning style and age. The age group recorded four responses, out of the four, two had preference for visual and one each had preference for auditory and kinaesthetic learning style.

Comparing the age-learning style of respondents from UCC and Wisconsin, the table shows that those aged below 21 years had preference for auditory and visual learning styles, only recording two and four responses respectively. Similarly, those aged between 26-30 years recorded a total of 22 responses. From this number of responses, eight preferred auditory, seven each

for visual and kinaesthetic learning styles. Eleven of the respondents, however, were aged between 31-35 years. From this number, five preferred auditory learning style, three each for visual and kinaesthetic learning style. For those above 35 years, only one of the respondents from Wisconsin indicated their preference for kinaesthetic. Seven had preference for auditory and six also had preference for visual learning style. Comparing these results, it is observed from the table that whereas students from UCC preferred visual learning, students from Wisconsin rather preferred auditory learning style. However, students from the two Universities least preferred kinaesthetic learning style.

Further analysis was undertaken to explain the patterns that exist between the area of specialisation and learning style. First, the composite results are presented before the breakdown of the results, showing the area of specialisation. Learning style among the two Universities studied are presented. Table 10 presents the results for the area of specialisation and learning style cross-tabulation.

Table 10: *Area of Specialisation * Learning Style Cross Tabulation*

Area of Specialisation		LEARNSTYLE			Total
		Visual	Auditory	Kinaesthetic	
Accounting	Count	61	51	30	142
	Expected Count	55.4	53.9	32.7	142
Finance / Banking and Finance	Count	29	28	22	79
	Expected Count	30.8	30	18.2	79
Marketing	Count	21	32	13	66
	Expected Count	25.7	25.1	15.2	66
HRM	Count	38	34	23	95
	Expected Count	37.1	36.1	21.9	95
Total	Count	149	145	88	382
	Expected Count	149	145.0	88	382

Source: Field survey (2020)

Table 10 shows that 142 of the respondents pursued Accounting. Out of this number, 61 indicated that they preferred visual learning style to study courses in their programme of study, 51 also indicated that they preferred auditory learning and 30 preferred kinaesthetic. Out of the 79 respondents who studied finance in the two Institutions, 29 indicated that they preferred visual learning style, 28 preferred auditory and 22 also indicated their preference for kinaesthetic learning style. Marketing recorded 66 responses. Out of this number, a majority of the respondents, numbering 32 preferred auditory, followed by visual learning style, with 22 responses and 13 also preferred kinaesthetic. From the 95-total number of respondents who pursued Human

Resource Management, 38 preferred visual, 34 preferred auditory and 23 also indicated their preference for kinaesthetic learning style.

Further analysis was done on the area of specialisation and learning style by institution of study using cross-tabulation. Table 11 presents the results of the cross-tabulation, indicating area of specialisation, learning style and institution of study.

Table 11: *AREA OF SPECIALISATION * LEARNSTYLE Cross Tabulation*

University	Area of Specialisation		LEARNSTYLE			Total
			Visual	Auditory	Kinaesthetic	
UCC	Accounting	Count	47	42	23	112
		Expected Count	45.7	40.9	25.4	112
	Finance / Banking and Finance	Count	25	23	21	69
		Expected Count	28.1	25.2	15.7	69
	Marketing	Count	19	23	9	51
		Expected Count	20.8	18.6	11.6	51
	HRM	Count	33	23	16	72
	Total	Count	124	111	69	304
		Expected Count	124.0	111.0	69.0	304
WISCONSIN	Accounting	Count	14	9	7	30
		Expected Count	9.6	13.1	7.3	30
	Finance / Banking and Finance	Count	4	5	1	10
		Expected Count	3.2	4.4	2.4	10
	Marketing	Count	2	9	4	15
		Expected Count	4.8	6.5	3.7	15
	HRM	Count	5	11	7	23
		Expected Count	7.4	10	5.6	23
	Total	Count	25	34	19	78
		Expected Count	25	34	19	78

Source: Field survey (2020)

From Table 11, out of the total number of 382 respondents, 304 were from UCC. From this number, 112 pursued Accounting as their area of specialisation. Out of the 112 number of respondents, 47 indicated their preference for visual learning style, 42 had preference for auditory learning style and 23 also had preference for kinaesthetic learning style. Sixty-nine of the 304 respondents selected from UCC pursued Finance as their area of specialisation. Out of this number, 25 preferred visual learning, 23 preferred auditory learning and 21 preferred kinaesthetic. However, though use of visual learning style dominated among the Accounting students that were involved in the study from UCC, auditory learning style was dominant among the students that pursed Marketing. From a total of 51 respondents that pursued marketing from UCC, 23 preferred auditory learning style, 19 preferred visual learning style and nine preferred kinaesthetic. With respect to the HRM students selected from UCC, it recorded a total number of 72 respondents. Out of this number, 33 preferred visual learning style, 23 preferred auditory learning style and 16 preferred kinaesthetic learning style.

Analysis of the respondents from Wisconsin also showed the following: a total number of 78 responses were received. Out of this number, 30 pursued Accounting, 10 pursued Finance and Banking, 15 pursued

Marketing and 23 pursued Human Resource Management. Out of the 30 that pursued Accounting, the majority of the respondents, numbering 14 preferred visual learning, nine preferred auditory learning style and seven preferred kinaesthetic learning style. However, for the 10 respondents that pursued Finance, five preferred auditory learning style, 4 preferred visual learning style and one preferred kinaesthetic. Similar pattern of response was also recorded for Marketing students from Wisconsin. Whereas respondents from UCC who pursued marketing preferred auditory learning style, respondents from Wisconsin that also pursued marketing provided similar responses. Respondents numbering nine who pursued Marketing in Wisconsin had preference for auditory learning, two had preference for visual learning and four also had preference for kinaesthetic learning style. For those that pursued Human Resource Management in Wisconsin, a majority of the respondents numbering 11 had preference for auditory learning, five had preference for visual learning and seven also had preference for kinaesthetic learning style.

The first objective of the study describes the learning styles of the respondents. First, a description of the learning styles used by the respondents was presented and compared with age, area of specialisation, gender, and the institution of study. Findings revealed that the majority of the male

respondents preferred visual learning, followed by auditory and kinaesthetic. However, the female respondents mostly preferred auditory to visual and kinaesthetic. What was established in the finding was that business students combined three learning styles in their study.

This finding, therefore, supports that of Gokalp (2013), Vaishnav and Chirayu (2013) who also found in their research, different learning styles are employed by students in higher institutions of study. The age of respondents and their learning styles were also examined. Findings of the study revealed that most of the younger students between the ages of 21-25 preferred auditory learning to the other learning styles. This goes to support the assertion of Seiler (2011) who found that college students preferred auditory learning, unlike their elder counterparts. Contrarily, the study contradicts the outcome of Irvine, Williams, Smallridge, Solomonides, Gong and Andrew (2021) who revealed that entry learning styles was associated with the greatest age difference between 18 and above 23 years. Individuals who were above 23 years had the highest grades. Moreover, international students had lower grades relative to foreign students.

Further analysis of the learning style and age of the respondents by institution also revealed that whereas students from Wisconsin preferred

auditory learning, most of the students from UCC preferred visual learning styles. The finding on the relationship between area of specialisation and learning styles is in strong consensus with the study of Kashyap and Chitrao (2020) whose outcome divulged some association. Contrary to the study of Kashyap and Chitrao (2020), the study advocates that some choices and strategies of the students from each specialisation was peculiar to their categorical group, especially, in the case of visual arts. In addition, Lizote, Alves, Teston and Olm (2019) found that the dominant learning style was auditory, with visual recording the least learning style among all gender. In a similar fashion, İlçin, Tomruk, Yeşilyaprak, Karadibak and Savcı (2018) found that the most common learning style was collaborative whereas Kouhan, Janatolmakan, Rezaei and Khatony (2021) revealed that kinaesthetic and auditory were the most common learning styles.

It can be concluded from this study that males prefer visual learning styles whereas female HEBS prefer auditory learning styles. To achieve higher performance in Accounting and Human Resource Management, visual learning style should be preferred whereas auditory learning should be preferred when pursuing a degree programme in Marketing. However, for finance, no one learning style is preferred.

Effect of Entry Characteristics on Academic Performance

The second objective of the study sought to find out whether entry characteristics is a predictor of students' academic performance. First, the study assessed the composite effect of entry characteristics on academic performance. Next, the effect of entry characteristics on students CGPA was also examined and lastly, effect of entry characteristics on students' competencies were assessed. A model was developed to achieve these. The model puts all the items that were used to measure academic performance, comprising competence and CGPA together. The study, therefore, hypothesised that entry characteristics has a significant effect on students' academic performance.

Measurement Model

Before applying the Structural Equation Model, reliability and validity of the model were evaluated and established using composite reliability. Average Variance Extracted (AVE) and Discriminant validity are displayed in Tables 12, 13 and Figure 3.

Table 12: *Construct Reliability and Average Variance Explained*

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	AVE	CA(α)
COMP	0.9543	0.9550	0.6807	0.9475
CGPA	1.0000	1.0000	1.0000	-
T_PERF	1.0000	1.0000	1.0000	-
MATURE	1.0000	1.0000	1.0000	-
SSSCE	1.0000	1.0000	1.0000	-
WASSCE	1.0000	1.0000	1.0000	-
OLEVEL	1.0000	1.0000	1.0000	-

Source: Field survey (2020)

Table 13: *Discriminant Validity: HTMT*

Construct	**COMP**	**CGPA**	**MATURE**	**SSSCE**	**WASSCE**	**OLEVEL**	**T_PERF**
COMP							
CGPA	0.0095						
MATURE	0.5658	0.0389					
SSSCE	0.1479	0.0089	0.0294				
WASSCE	0.6548	0.0568	0.7682	0.2252			
OLEVEL	0.0785	0.0078	0.0169	0.0050	0.1296		
T_PERF	**0.8488**	**0.5332**	**0.4731**	**0.1211**	**0.5492**	**0.0568**	

Source: Field survey (2020)

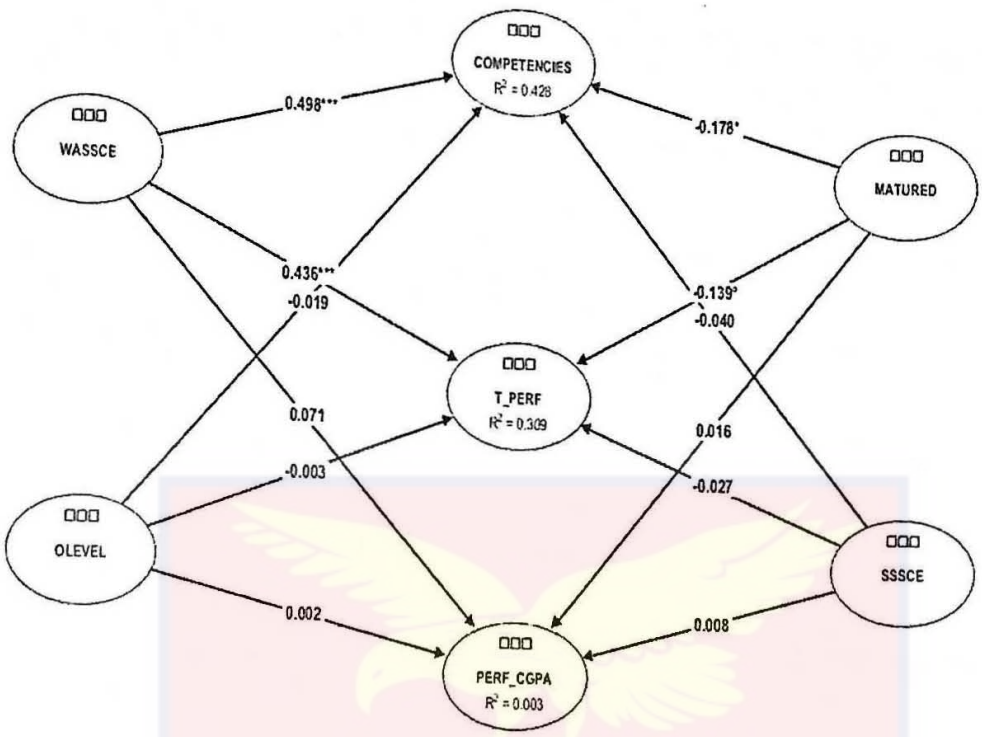


Figure 3: Model depicting the effect of entry characteristics on academic performance.

Source: Field survey (2020)

The reliability and validity of the instrument used were assessed using AVE and composite reliability scores, as presented in Table 12. The AVE and composite reliability scores were above 0.5 and 0.7 thresholds respectively. Table 13 presents the discriminant validity using Fornell-Larcker (1981) criteria and HTMT. The discriminant validity using the Fornell-Larcker (1981) criteria reported that there is discriminant validity between all the constructs based on the cross loadings. To buttress this point, the study assessed the HTMT. The results showed that the structural model and all the beta paths were statistically significant.

Numbers within the circle illustrated in Figure 3 show how much variance of academic performance is explained by the four entry characteristics. It also looked at how much variance of both competence and CGPA are explained by the four entry characteristics. As indicated in Figure 3, the coefficient of determination for between the four entry characteristics and academic performance compositely showed R^2 0.309, which indicates that entry characteristics (WASSCE, SSSCE, O'Level and Mature Entrance) explain 30.9% of the variance in academic performance compositely. Figure 3 further indicates the coefficient of determination between the four entry characteristics and competence and CGPA also recorded an R^2 of 0.428 and 0.003, indicating that entry characteristics explain 42.8% of the variance in students' competence and 0.3% of students' CGPA.

The weight of each path coefficients allows for the variables to be ranked according to their statistical importance. Based on the findings, as presented in Figure 3, with respect to the effect of entry characteristics on academic performance compositely, WASSCE, as an entry characteristic, recorded the highest loading of 0.436, Mature Entrance, SSSCE and O'Level also recorded loadings of 0.139, 0.027 and 0.003 respectively. Based on the loadings, the study can, therefore, indicate that WASSCE and Mature Entrance,

as entry qualifications, are better predictors of academic performance compositely since the standard path coefficients of these two, WASSCE and Mature Entrance, are higher than 0.1.

With respect to the effect of entry characteristics on competence, WASSCE recorded the highest path loading of 0.498, Mature Entrance followed with loading of 0.178, SSSCE and O'Level entry qualification follows with path loading of 0.040 and 0.019 respectively. This indicates that both WASSCE and Mature Entrance are better predictors of students' competencies as they all recorded path loadings greater 0.1. Further analysis to determine the effect of entry characteristics on students' CGPA, all the path loadings were less than 0.1. This means that the four entry qualifications (WASSCE, SSSCE, Mature Entrance and O'Level) are not predictors of students' CGPA as the path loadings for entry characteristics on CGPA recorded 0.071, 0.008, 0.002 and 0.0016 for WASSCE, SSSCE, O'Level and Mature Entrance respectively.

Bootstrapping procedure was run to check if the path coefficients of the inner model have entry qualification influencing academic performance. Table 14 presents the bootstrapping and effect size results for model one.

Table 14: *Bootstrapping Results and Effect Size of Model One*

Effect	Path coeff.	Standard bootstrap results				
		S. E	t-value	p-value	R^2	Cohen's f^2
MATURE -> COMP	-0.1777	0.0808	-2.1996	0.0281	0.4280	0.0194
MATURE -> CGPA	0.0159	0.0988	0.1606	0.8724	0.0033	0.0001
MATURE -> T_PERF	-0.1392	0.0841	-1.6544	0.0984	0.3086	0.0098
SSSCE -> COMP	-0.0401	0.0496	-0.8099	0.4182	0.4280	0.0024
SSSCE -> CGPA	0.0075	0.0347	0.2162	0.8288	0.0033	0.0000
SSSCE -> T_PERF	-0.0270	0.0387	-0.6975	0.4856	0.3086	0.0009
WASSCE -> COMP	0.4977	0.0910	5.4701	0.0000	0.4280	0.1419
WASSCE -> CGPA	0.0709	0.1053	0.6740	0.5005	0.0033	0.0017
WASSCE -> T_PERF	0.4359	0.0912	4.7803	0.0000	0.3086	0.0901
OLEVEL -> COMP	-0.0192	0.0188	-1.0224	0.3069	0.4280	0.0006
OLEVEL -> CGPA	0.0017	0.0197	0.0861	0.9314	0.0033	0.0000
OLEVEL -> T_PERF	-0.0027	0.0175	-0.1566	0.8756	0.3086	0.0000

Source: Field survey (2020)

The findings, as presented in Table 14, indicate that with respect to the effect of entry characteristics on academic performance compositely, WASSCE, as an entry qualification, recorded T-statistics of 4.7803, which is

greater than 1.96, with a p-value less of 0.0000. This means that WASSCE is the only entry qualification that significantly predicts academic performance compositely. With respect to entry qualification and competence, only Mature Entrance and WASSCE entry qualification recorded significant figures with T-statistics of 2.1996 and 5.4701 respectively with p-values less than 0.05. This means that Mature Entrance and WASSCE entry qualification are the only predictors of students' competence. With respect to entry qualification and that of students' performance based on CGPA, none of the entry variables were significant. All recorded T-statistics less than 1.96 and p-values greater than 0.05. This means that Mature Entrance, SSSCE, WASSCE and O'Level entry qualifications are not predictors of students' CGPA.

Further, the model's effect size (f^2) recorded an effect size that is greater than 0.5, with respect to entry characteristics and students' competence. This confirms why WASSCE, as an entry qualification, is the only predictor of academic performance when it comes to students' competence.

With respect to the second objective, the study sought to find out the effect of entry characteristics on students' academic performance. Findings of the study indicated that of the four entry characteristics or qualification and their effect on total performance, only students with WASSCE as an entry

qualification influenced students' total performance. Further, it was revealed that with respect the influence of entry characteristics and the attainment of skills required for the job, findings of the study revealed that those with Mature Entrance qualification and that of WASSCE had a greater influence on the acquisition of the relevant skills required for the job. The findings, therefore, support earlier studies (Ringland & Pearson, 2003; Wadda, et al., 2016; Salahuddin & Talukder, 2017; Nkrumah, 2021; Guedon, Pham, Braun, Sibilia & Sanchez 2021), which found that students' entry qualifications into universities contributed significantly to their academic performance.

Similarly, the findings lend support to the findings established in the study of Daneil, Aziz and Tang (2020), Opoko, et al. (2014) and Salem et al. (2013) who also established a significant effect of entry qualifications on academic performance. Alhajraf and Alasfour (2014) and Huws et al. (2006), found that students' entry qualifications into the tertiary level predict a level of academic achievement at university. Kwaah and Palojoki (2018) also found that entry grades differed and that academic achievements were influenced by entry qualification. Moreover, Guedon, Pham, Braun, Sibilia and Sanchez (2021) concluded that students who came from a sciences academic background had low chance of dropping out.

The second objective concludes that WASSCE and Mature entry characteristics influenced students' competences but not their CGPA. Students admitted mainly concentrate on the requirements of job opportunities but not academic prowess. Employers may spend less on training new entrants to acquire general skills and thus reduce HR cost to the organisation. On the other hand, students may end up not being ready for further academic work on the grounds that their concentration has being on securing job after school and thus, the focus on the soft skills

Effect of Learning Styles on Academic Performance of HEBS

The third objective of the study sought to find out whether learning styles used by students from the two institutions influence their academic performance. First, the study assessed the composite effect of three learning styles on academic performance. Next, the effect of three learning styles on students' CGPA was examined and lastly, effect of learning styles on students' competences were assessed. A model was developed to achieve these. The model puts all the items that were used to measure academic performance comprising competence and CGPA together. The study, therefore, hypothesised that learning styles used by students have a significant effect on

students' academic performance. Comprehensive outcome of the analysis are shown in the succeeding sections.

Measurement Model

The structural model's reliability and validity were examined using AVE, composite reliability and discriminant validity scores. The validity and reliability scores are presented in Tables 15, 16 and Figure 4.

Table 15: *Construct Reliability and Average Variance Explained for Model Two*

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	AVE	CA(α)
COMP	0.9890	0.9537	0.6743	0.9475
CGPA	1.0000	1.0000	1.0000	-
T_PERF	1.0000	1.0000	1.0000	-
KINAESTHETIC	1.0000	1.0000	1.0000	-
VISUAL	1.0000	1.0000	1.0000	-

Source: Field survey (2020)

Table 16: *Discriminant Validity: HTMT for Model Two*

Construct	COMP	CGPA	T_PERF	KINAESTHETIC	VISUAL
COMP					
CGPA	0.0095				
T_PERF	0.8488	0.5332			
KINAESTHETIC	0.0175	0.0802	0.0429		
VISUAL	0.1014	0.0221	0.0867	0.4302	

Source: Field survey (2020)

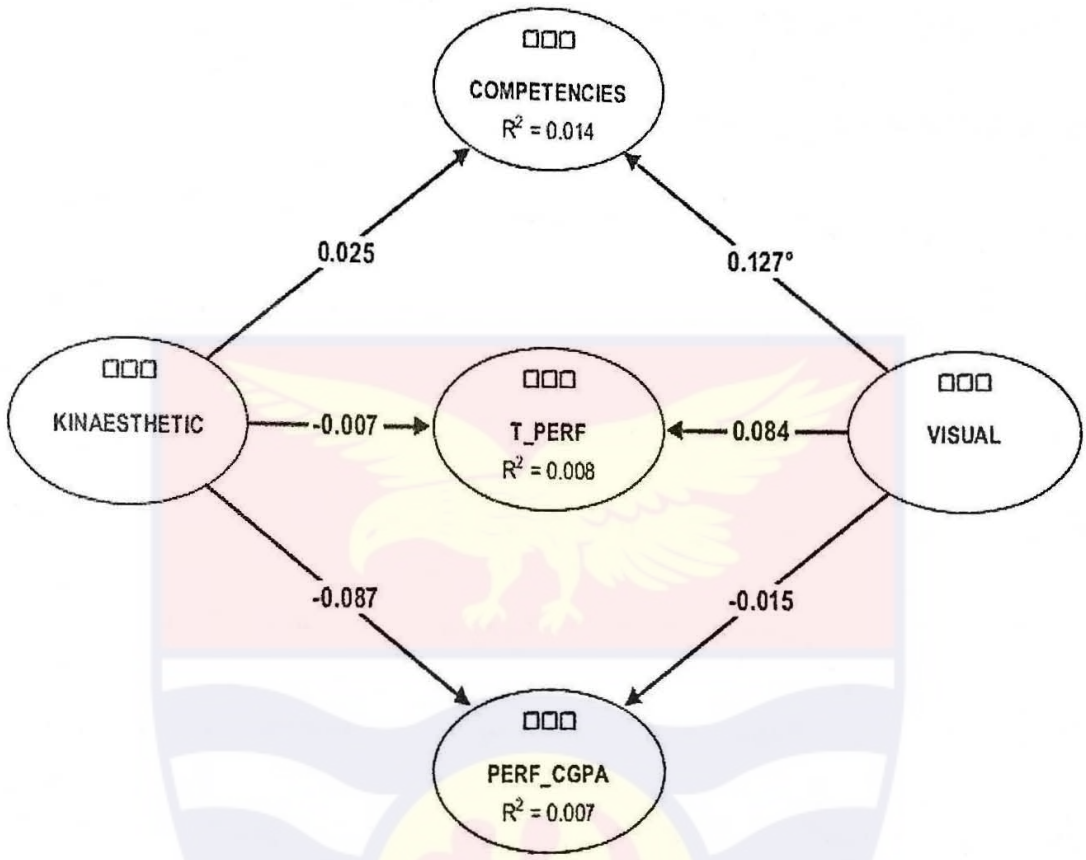


Figure 4: Model depicting the effect of learning styles on academic performance

Source: Field survey (2020)

The model recorded AVE and reliability scores above 0.5 and 0.7 respectively in Table 15, an indication of the validity and reliability of the model. Table 16 presented the discriminant validity using Fornell-Larcker (1981) criteria and HTMT. The discriminant validity using the Fornell-Larcker (1981) indicated that the off-diagonal values in the matrix, as shown in Table 16, specify that there is discriminant validity between all the constructs based

on the cross loadings. To buttress this point, the HTMT values were also assessed. Once the construct measurements as modelled in Figure 4 were confirmed as valid and reliable, the structural model's predictive abilities and relationships were examined. The results accentuated a statistically significant structural model and beta paths.

Numbers within the circle illustrated in Figure 4 show how much variance of academic performance is explained by the three learning styles. It also looked at how much variance of both competence and CGPA are explained by the three learning styles. In this study, as indicated in Figure 4, the coefficient of determination between the three learning styles and academic performance compositely showed R^2 0.008, which indicates that learning styles (Kinaesthetic, visual, auditory) explain 0.8% of the variance in academic performance compositely. Figure 4, further indicates the coefficient of determination between the three learning styles and competence and CGPA also recorded an R^2 of 0.014 and 0.007, indicating that entry characteristics explain 1.4% of the variance in students' competence and 0.7% of students' CGPA.

The weight of each path coefficients allows for the variables to be ranked according to their statistical importance. Based on the findings, as

presented in Figure 4, students who learn using the kinaesthetic learning style developed greater competencies than students who use other learning approaches. This is supported by a positive path coefficient but insignificant $[\beta = 0.0249, p > 0.05]$. In contrast, students who used the kinaesthetic learning style had a lower CGPA and total performance compared to other learning style approaches. Visual leaning style improved students' competencies and total performance than other learning styles. Visual learning style reduced students' CGPA in relationship to other learning styles.

Bootstrapping was run using a two-tailed t-test with a significance level of 5% to check for the significance of the path coefficients. The path coefficient should be significant if the T-statistics is larger than 1.96. Table 17 presents the bootstrapping and effect size results for model one as described.

Table 17: *Bootstrap: Direct Effect, Effect Size and Predictive Relevance*

Effect	Path coeff.	Standard bootstrap results S. E	t-value	p-value	R^2	Cohen's f^2
KINAESTHETIC -> COMP	0.0249	0.0826	0.3012	0.7634	0.0140	0.0005
KINAESTHETIC -> CGPA	-0.0868	0.0567	-1.5307	0.1262	0.0066	0.0062
KINAESTHETIC -> T_PERF	-0.0068	0.0610	-0.1116	0.9112	0.0076	0.0000
VISUAL -> COMP	0.1268	0.0713	1.7799	0.0754	0.0140	0.0133
VISUAL -> CGPA	-0.0153	0.0578	-0.2643	0.7916	0.0066	0.0002
VISUAL -> T_PERF	0.0838	0.0594	1.4104	0.1587	0.0076	0.0058

Source: Field survey (2020)

From Table 17, it has been confirmed that learning style is not a strong predictor of academic performance in universities. Therefore, the null hypothesis is failed to be rejected by the researcher. Thus, "*There is no statistically significant effect of students' learning styles on academic performance*". Since the effect was non-significant, there was no need to verify with diagnostics. The results imply that students' style of learning cannot determine their competent level and overall CGPA. The findings corroborate the outcomes of Erton (2010), John, et al. (2016), and Mlambo (2011), which found that there was no significant effect of learning styles on

academic achievement. Further, Kouhan, Janatolmakan, Rezaei and Khatony (2021), Cimermanová (2018) and Lawrence (2014) found no significant effect of learning style on academic performance.

However, the findings of the study contradict the outcomes of Gokalp (2013), Siddiquei and Khalid (2018), İlçin, Tomruk, Yeşilyaprak, Karadibak and Savcı (2018), who found a significant relationship between overall academic achievement and learning styles. Earlier research, (Jilardi Damavandi, et al., 2011; Donche & Petegem, 2011; Mashayekhi, et al., 2014) agreed with the view that learning styles is positively correlated with academic performance. Kaminski, et al., (2005) and Looyeh, et al., (2015) also found that there is a parallelism between study skills and student's CGPA. The study concluded that students without a dominant learning style received the lowest average grades contrary to students with a dominant learning styles who received high averages in grades.

The finding could be explained by the fact that every individual is a unique learner and will, therefore, lean toward a particular strategy for learning. Therefore, adopting a particular learning strategy is not a factor in influencing students' academic performance. This is because students use different learning styles and adopting a particular learning style is dependent

on the students' unique personality. Students do not limit themselves to a particular learning style. However, the adoption of a particular learning could be as a result of the interaction student has with its immediate learning environment. The nature of such interaction could explain the multiplicity of learning styles adopted by students.

Moderating Role of Learning Styles on the Relationship between Entry Characteristics and Academic Performance of HEBS

The empirical results of the moderating role of learning styles in the relationship between entry characteristics and academic performance of HEBS is subsequently shown. The results from the estimated dummy-variable model were displayed and deliberated on in relation to objective four, which was hypothesised that learning style moderated the relationship between entry characteristics and academic performance. The study created four dummy variables (*Mature = Mature Entrance dummy, SSSCE = SSSCE entrance dummy, WASSCE = WASSCE entrance dummy, and O LEVEL = O'Level entrance dummy)* from the independent variable: entry characteristics which comprised five categories. Also, two appropriate dummy variables were created from the moderating variable: learning style variables as it comprises

three categories (*VISUAL = Visual learning style dummy, AUDITORY = Auditory learning style dummy).* The study used three dependent variables in separate models thus, *PERF_CGPA* which measures Cumulative Grade Point Average, *PERF_COMP* which is a proxy for soft skills obtained by the students while *T_PERF* is the overall measure for both respondents' CGPA and Competences obtained.

The study developed eight interactive dummy variables, but due to collinearity issues, three variables were dropped from the various models estimated. The study used six models to analyse the various relationships. Models 1, 3 and 5 analysed the direct relationship of entry characteristics and learning styles on academic performance while models 2, 4 and 6 sought to analyse the moderating role of learning styles in the relationship between entry characteristics and academic performance of HEBS. From Table 18, the influence of learning styles and entry characteristics on academic performance is highlighted.

Table 18: *The Role of Learning Styles on the Relationship between Entry Characteristics and Academic Performance (CGPA)*

Variables	*Dependent Variable: PERF_CGPA*	
	Model 1	Model 2
MATURE	0.0363	-0.233
	(0.212)	(0.357)
SSSCE	0.0164	0.117
	(0.431)	(0.743)
WASSCE	0.0985	-0.365
	(0.180)	(0.288)
OLEVEL	-0.0174	0.417
	(0.703)	(0.743)
VISUAL	0.0956	-0.392
	(0.0918)	(0.438)
AUDITORY	0.0962	-0.751*
	(0.0921)	(0.411)
MATURE x VISUAL		0.219
SSSCE x VISUAL		0.141
		(0.947)
WASSCE x VISUAL		0.549
		(0.449)
MATURE x AUDITORY		0.712
		(0.505)
WASSCE x AUDITORY		0.917**
		(0.423)
Constant	2.621***	3.033***
	(0.182)	(0.277)
Diagnostics		
R-squared	*0.005*	*0.210*
F-stats	*0.339*	*3.732*
p-value	*0.916*	*0.045***

Table 18: *Continued*

Variables	*Dependent Variable: PERF_CGPA*	
	Model 1	Model 2
Durbin Watson (DW)	*1.866*	*1.863*
Estimation	*OLS*	*OLS*
Observations	*382*	*382*

*Note: PERF_CGPA = Cumulative Grade Point Average Performance, Mature = Mature Entrance dummy, SSSCE = SSSCE entrance dummy, WASSCE = WASSCE entrance dummy, O'LEVEL = O'Level entrance dummy, VISUAL = Visual learning style dummy, AUDITORY = Auditory learning style dummy. ***, ** and * indicate 1%, 5% and 10% significance levels respectively. Standard errors in parentheses.*

Source: Field survey (2020)

The Moderating Role of Learning Styles in the Relationship between Entry Characteristics and Academic Performance (CGPA) of HEBS

Model 1 shows the individual effect of entry characteristics and learning styles on academic performance (GCPA) of HEBS in Ghana. Students who entered the university with Mature Entrance were found to have an insignificant effect on their cumulative grade point average *[β = 0.0363, p > 0.05]*. Similar results were found for students who entered the university with the other three entry characteristics, namely: SSSCE, WASSCE and O LEVEL,

[β = 0.0164, p > 0.05; β = 0.0985, p > 0.05; β = -0.0174, p > 0.05, respectively]. This implies that entry characteristics do not influence the cumulative grade point average of HEBS in Ghana. Also, the learning styles (VISUAL and AUDITORY) were found to have an insignificant effect on the cumulative grade point average of HEBS in Ghana, *[β = 0.0957, p > 0.05; β = 0.0962, p > 0.05, respectively]*. The results imply that learning styles cannot cause a change in the cumulative grade point average of HEBS in Ghana. The intercept represents the expected cumulative grade point average of students who entered the university with other entry characteristics and used the kinaesthetic learning style approach. Thus, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had an expected cumulative grade point average of 2.621, higher than other learning styles with either Mature, SSSCE, WASSCE, and O'LEVEL entrance, this coefficient was found to be significant at 1%. That is, the common intercept value refers to all those categories that take a value of 0 (reference category) in the model.

From model 2, in Table 17, five interactive dummy variables of entry characteristics and learning styles were constructed and included in the model to examine the moderating role of learning styles in the relationship between

entry characteristics and academic performance (CGPA) of HEBS. The addition of the interactive terms, *[WASSCE x AUDITORY]* was found to be significant *[$\beta = 0.917$, $p < 0.05$]*, while the other four interactive terms *[MATURE x VISUAL, SSSCE x VISUAL, WASSCE x VISUAL and MATURE x AUDITORY]* were found to be statistically insignificant *[$\beta = 0.219$, $p > 0.05$; $\beta = 0.141$, $p > 0.05$; $\beta = 0.549$, $p > 0.05$; $\beta = 0.712$, $p > 0.05$, respectively]*. This implies that entrance into the university with WASSCE yielded a lower cumulative grade point average of about -0.37, being a student who used Auditory learning style had a lower cumulative grade point average of about -0.75 and being both a student who used WASSCE and learned by the Auditory learning style had a cumulative grade point average lower by about *-0.2 [-0.37 - 0.75 + 0.92]*, holding all other variables constant. Thus, a WASSCE entrance student who used the Auditory learning style earned a cumulative grade point average higher than a WASSCE entrance alone or an Auditory learning style alone. Other combinations of interactive terms were found to be statistically insignificant. The intercept was found to be statistically significant *[$\beta = 3.033$, $p < 0.01$]*. Thus, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had an expected cumulative grade point average of 3.033 higher than other learning

styles, with either Mature, SSSCE, WASSCE, and O'LEVEL entrance. The influence of learning styles and entry characteristics on academic performance (academic competences) is presented in Table 19.

Table 19: *The Role of Learning Styles in the Relationship between Entry Characteristics and Academic Performance (Competences)*

Variables	***Dependent Variable: PERF_COMP***	
	Model 3	Model 4
MATURE	-0.604**	-0.581
	(0.253)	(0.429)
SSSCE	-0.420	0.0364
	(0.514)	(0.891)
WASSCE	1.398***	1.482***
	(0.215)	(0.346)
OLEVEL	0.0438	0.309
	(0.839)	(0.891)
VISUAL	0.00453	0.515
	(0.111)	(0.525)
AUDITORY	-0.191*	-0.385
	(0.111)	(0.492)
MATURE x VISUAL		-0.572
		(0.640)
SSSCE x VISUAL		-0.991
		(1.135)
WASSCE x VISUAL		-0.526
		(0.538)
MATURE x AUDITORY		0.369
		(0.606)
WASSCE x AUDITORY		0.177
Constant	2.511***	2.439***
	(0.218)	(0.332)
Diagnostics		
R-squared	*0.389*	*0.393*
F-stats	*38.989*	*21.334*

Table 19: *Continued*

Variables	*Dependent Variable: PERF_COMP*	
	Model 3	Model 4
p-value	*0.000*** *	*0.000*** *
Durbin Watson (DW)	*1.652*	*1.640*
Estimation	*OLS*	*OLS*
Observations	*374*	*374*

*Note: PERF_COMP = Competence Performance, MATURE = MATURE entrance dummy, SSSCE = SSSCE entrance dummy, WASSCE = WASSCE entrance dummy, OLEVEL = O'Level entrance dummy, VISUAL = Visual learning style dummy, AUDITORY = Auditory learning style dummy. ***, ** and * indicate 1%, 5% and 10% significance levels respectively. Standard errors in parentheses*

Source: Field survey (2020)

The Moderating Role of Learning Styles on the Relationship between Entry Characteristics and Academic Performance (Competencies) of HEBS

The results in Table 19 comprised two separate models, 3 and 4, to analyse the separate effect of entry characteristics and learning styles on academic performance measured by the acquisition of soft skills (competencies). From model 3, the study found that Mature Entrance students

acquired relatively lower soft skills, compared to other entry qualifications by 0.604 *[β = -0.604, p < 0.05]*. Also, students who entered the university with WASSCE acquired higher soft skills and competencies, compared to other entry characteristics *[β = 1.398, p < 0.01; β = 1.482, p < 0.01]* from models 3 and 4 respectively. SSSCE and O LEVEL entry characteristics do not matter for the acquisition of soft skills of HEBS in Ghana *[β = -0.420, p > 0.05; β = 0.044, p > 0.05, respectively]*. Also, a student who adopted the Auditory learning style acquired a lower competence of about 0.191 compared to other learning styles, *[β = -0.191, p < 0.10]*, from model 3.

Also, five interactive dummy variables of entry characteristics and learning styles were constructed and included in model 4, in Table 19, to examine the moderating role of learning styles in the relationship between entry characteristics and academic performance (competencies) of HEBS. All the five interactive dummy terms *[MATURE x VISUAL, SSSCE x VISUAL, WASSCE x VISUAL, MATURE x AUDITORY and WASSCE x AUDITORY]* were found to be statistically insignificant *[β = -0.572, p > 0.05; β = -0.991, p > 0.05; β = -0.526, p > 0.05; β = 0.369, p > 0.05; β = 0.177, p > 0.05, respectively]*. This implies that learning styles do not condition the effect of entry characteristics on the competencies of HEBS. Thus, the learning style

adopted by students does not matter in the relationship between entry characteristics and competencies or soft skills gained by HEBS. The intercept was found to be statistically significant *[β = 2.439, p < 0.01]*. Thus, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had expected competencies or soft skills of 3.033 higher than other learning styles with either Mature Entrance, SSSCE, WASSCE and O' LEVEL entrance.

The Moderating Role of Learning Styles on the Relationship between Entry Characteristics and Academic Performance (Total Performance) of HEBS

Model 5, in Table 20 shows the individual effect of entry characteristics and learning styles on academic performance (total performance) of HEBS in Ghana. From model 5, the study found that Mature Entrance students acquired relatively lower total performance, compared to other entry qualifications by 0.568 *[β = -0.568, p < 0.05]*. Also, students who entered the university with WASSCE performed higher, compared to other entry characteristics of HEBS in Ghana, *[β = 1.513, p < 0.01, β = 1.126, p < 0.05]* from models 5 and 6 respectively. SSSCE and O' LEVEL entry

characteristics did not contribute to the total performance of HEBS in Ghana *[β = -0.420, p > 0.05; β = 0.044, p > 0.05]*. From model 6, a student who adopted the Auditory learning style performed lower of about 1.135, compared to other learning styles, *[β = -1.135, p > 0.05]*.

From model 6, in Table 20, five interactive dummy variables of entry characteristics and learning styles were constructed and included in the model to assess whether the association between entry characteristics and academic performance (total performance) could either be strengthened or reduced by the learning style a student of HEBS in Ghana adopts. The addition of the interactive terms, *[WASSCE x AUDITORY]* was found to be significant *[β = 1.115, p < 0.10]*, while the other four interactive terms *[MATURE x VISUAL, SSSCE x VISUAL, WASSCE x VISUAL and MATURE x AUDITORY]* were found to be statistically insignificant *[β = -0.353, p > 0.05; β = -0.850, p > 0.05; β = 0.0227, p > 0.05; β = 1.081, p > 0.05, respectively]*.

This implies that entrance into the university with WASSCE yielded a higher total performance of about 1.13, being a student who used Auditory learning style had a lower total performance of about -1.14, and being both a student who used WASSCE and learned by the Auditory learning style had a higher total performance by about *1.11 [1.13 - 1.14 + 1.12]*, holding all other

variables constant. Thus, a WASSCE entrance student who used the Auditory learning style earned a total performance lower than a WASSCE entrance alone but greater than an Auditory learning style alone. Other combinations of interactive terms were found to be statistically insignificant. The intercept was found to be statistically significant $[\beta = 5.473, p < 0.01]$. Thus, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had a total performance of 5.473 higher than other learning styles with either Mature, SSSCE, WASSCE and O' LEVEL entrance.

Table 20: *The Role of Learning Styles in the Relationship between Entry Characteristics and Academic Performance (Total Performance)*

Variables	*Dependent Variable: T_PERF*	
	Model 5	Model 6
MATURE	-0.568*	-0.814
	(0.323)	(0.546)
SSSCE	-0.403	0.154
	(0.657)	(1.135)
WASSCE	1.513***	1.126**
	(0.274)	(0.440)
OLEVEL	0.0154	0.726
	(1.072)	(1.135)
VISUAL	0.0979	0.124
	(0.141)	(0.669)
AUDITORY	-0.0794	-1.135*
	(0.142)	(0.627)
MATURE x VISUAL		-0.353
		(0.815)
SSSCE x VISUAL		-0.850
		(1.446)
WASSCE x VISUAL		0.0227
		(0.686)
MATURE x AUDITORY		1.081
		(0.771)
WASSCE x AUDITORY		1.115*
		(0.646)
Constant	5.128***	5.473***
	(0.278)	(0.423)
Diagnostics		
R-squared	*0.300*	*0.308*
F-stats	*26.177*	*14.671*
p-value	*0.000****	*0.000****
Durbin Watson (DW)	*1.787*	*1.779*
Estimation	*OLS*	*OLS*
Observations	*374*	*374*

*Note: T_PERF = Total Performance, MATURE = MATURE entrance dummy, SSSCE = SSSCE entrance dummy, WASSCE = WASSCE entrance dummy, OLEVEL = O'Level entrance dummy, VISUAL = Visual learning style dummy, AUDITORY = Auditory learning style dummy. ***, ** and * indicate 1%, 5% and 10% significance levels respectively. Standard errors in parentheses*

Source: Field survey (2020)

These results were consistent with the findings of Salahuddin et al. (2017), who posit that respondents' previous medium of study had little

influence on their academic performance. Also, Opoko et al. (2014) report that no association exists between admission qualification and students' academic performance. Similarly, Mlambo (2011) and Olle-Momoh (2008) found no significant effect between entry qualification or grade and academic performance or achievement. Besides, there exists a high positive correlation between kinaesthetic learning style and academic achievement than auditory and visual learning styles (Vaishnav et al.; 2013). John et al. (2016) suggest that adopting a particular learning strategy is not a factor in influencing students' academic performance; however, students use different learning styles, and adapting a particular learning style is dependent on the students' unique personality.

Also, Erton (2010) reports that the nature of the association between learning styles and students' achievement in foreign language was weak. A study by Lane et al. (2003) revealed a strong correlation between learning style, class of undergraduate and graduate performance. Other studies by Kershaw (2009), Houltram (1996) and Wilson (1999) revealed that learning style moderates the association between entry grades and final performance. Majasan and Bakare (1999) also confirmed that the learning style adopted by a student has the potential of influencing the academic performance of a student.

Kershaw (2009) found that learning style moderates the correlation between a student's year 12 aggregate score (which is similar to Senior High School grades) and students' grade point average (GPA). A study by Othuon and Kishor (1994) found that learning style moderates the relationship between the Certificate of Secondary Education grades and the academic performance of students.

On the contrary, Bush (2012) found out that prior academic achievement, which is considered as part of the pre-requisite for admission into higher education was found to be the most superior predictor of academic performance. The study by Donche et al. (2011) shows that prior education, in general, is positively related to academic achievement, as did Kanagi et al. (2015), who also found academic performance to be influenced by entry qualification. Similarly, Opoko et al. (2014) found a correlation between entry qualification and the academic performance of students. In contrast, Adedeji (2001) found a strong positive correlation between students' admission scores and their undergraduate performance.

Other studies by Alias et al. (2006) and Zezekwa et al. (2011) show that there is a negative relationship between entry qualification and academic performance. Furthermore, academic performance differs across various

learning styles for Iranian students (Jilardi Damavandi et al., 2011). Empirical evidence suggests that the present academic environment (Sparkles, 1999; Sentamu, 2003; Mushtaq & Khan, 2012), learners' previous education performance (Bratti et al., 2002; Opoko et al., 2014), parents' income and social status (Graetz, 1995; Considine et al., 2002), and students' social and emotional status or wellbeing (Erdogan et.al. 2008) were some of the major factors that influenced the academic performance of students. Also, Birch et al. (2006) found that with learning style as moderator, Senior High School grades had a negative predictive power of academic achievement. In the research by Palmer et al. (2011), they found that learning style did not moderate the link between performance in the Senior High School examination and the success of the student in the university.

Diagnostics on the Regression Models

Diagnostics procedures on the regression estimations were performed on models 1-6. The F test of explanatory power was used to draw inferences about whether or not the R^2 is significantly different from zero. From Tables 17 to 20, it is evident that (p-values < 0.05) in all the models showed that the explanatory variables jointly explained the dependent variable in each model.

The ratio of the number of observations to the number of independent variables included in each model is relatively greater than 15. Also, from the results, the Durbin Watson statistic suggests that the residuals of the empirical model are not auto-correlated. The results imply that required benchmark was met by all the variables of closer to 2, with less tendency for autocorrelation.

Summary Results of Models One and Two

The results of the hypotheses tested are presented in Table 21.

Table 21: *Highlights the Results of the Hypotheses Tested*

Hypotheses	Path coefficient	T-Statistics	P-Value	Results
Entry characteristics > Academic performance				
MATURE > academic performance	-0.1392	-1.6544	0.0984	Rejected
SSSCE > academic performance	-0.0270	-0.6975	0.4856	Rejected
WASSCE > academic performance	0.4359	4.7803	0.000	Accepted
O'Level > Academic performance	-0.0027	-0.1566	0.8756	Rejected
MATURE > competence	-0.1777	2.1996	0.0281	Accepted
SSSCE > competence	-0.0401	0.0496	-0.8099	Rejected
WASSCE > competence	0.4977	5.4701	0.0000	Accepted
Entry characteristics > Academic performance				
O'Level > Competence	-0.0192	-1.0224	0.369	Rejected
MATURE > CGPA	0.0159	0.1606	0.8724	Rejected
SSSCE > CGPA	0.0075	0.2162	0.8288	Rejected

WASSCE > CGPA	0.0709	0.6740	0.5005	Rejected
O'Level > CGPA	0.0017	0.0861	0.9314	Rejected
Learning styles > academic performance				
KINAESTHETIC -> COMP	0.0249	0.3012	0.7634	Rejected
KINAESTHETIC -> CGPA	-0.0868	-1.5307	0.1262	Rejected
KINAESTHETIC -> T_PERF	-0.0068	-0.1116	0.9112	Rejected
VISUAL -> COMP	0.1268	1.7799	0.0754	Rejected
VISUAL -> CGPA	-0.0153	-0.2643	0.7916	Rejected
VISUAL -> T_PERF	0.0838	1.4104	0.1587	Rejected

Source: Field survey (2020)

With respect to the entry characteristics and their influence on academic performance, the study failed to reject the hypothesis that WASSCE is the only entry characteristic that affects academic performance of students. However, when it comes to students' competences, WASSCE and Mature Entrance was found to influence students' competences. However, when it comes to CGPA, none of the entry characteristics was found to influence it. Furthermore, none of the learning styles was found to influence students' academic performance.

Chapter Summary

This chapter presented the findings of the study based on the objectives stated. Findings were presented for each of the four objectives. The first objective examined the nature of learning styles used by HEBS. The analysis also focused on describing the learning styles and academic performance of HEBS. Further analysis was done to ascertain the effect of entry characteristics of HEBS on academic performance. Finally, analysis sought to examine whether learning styles moderated the relationship between entry characteristics and academic performance of HEBS. One research question and three hypotheses were tested in order to answer the four research objectives as part of the analysis.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter summarises and concludes the study. The chapter first summarises the various components of the study. It then draws conclusions from the findings of the study. Recommendations emanating from the findings and suggestions for further studies are also provided. The chapter as well outlines the contribution of the study to knowledge and policy directives.

Summary

There are two parts to this summary. The first section recaps the research procedure, while the second section summarises the most important findings.

Summary of Research Process

The thesis analysed how entry characteristics and learning styles contribute to shaping academic performance of higher education business students. It further assessed how learning styles either strengthened or reduced the magnitude between entry characteristics and academic performance of higher education business students. Specifically, the study sought to:

1. evaluate the learning styles employed by HEBS.
2. analyse the effect of entry characteristics of HEBS on academic performance.
3. examine the effect of learning styles on HEBS academic performance.
4. investigate the moderating role of the learning styles on the relationship between entry characteristics and academic performance of HEBS.

These objectives were formulated into one research question and hypotheses to guide the execution of the study. These are repeated below:

1. What is the nature of learning styles used by HEBS?

H_0: 1 There is no statistically significant effect of entry characteristics into university on the academic performance of HEBS.

H_1: 1 There is a statistically significant effect of entry characteristics into university on the academic performance of HEBS.

H_0: 2 There is no statistically significant effect of learning styles on the academic performance of HEBS.

H_1: 2 There is a statistically significant effect of learning styles on the academic performance of HEBS.

H_0: 3 There is no statistically significant effect of moderating role of the

learning styles on the relationship between entry characteristics and academic performance of HEBS.

H_1: 3 There is a statistically significant effect of moderating role of the learning styles on the relationship between entry characteristics and academic performance of HEBS.

The study population comprised 679 HEBS from UCC and WIUC. Out of this population, 485 HEBS were surveyed through a self-developed questionnaire to collect data on the learning styles of HEBS and students' competencies. Data on students' CGPA and entry characteristics were obtained through secondary sources from the Students and Records Management Information Systems (SRMIS) in the two Institutions. In all, 382 responses were retrieved and used for the analysis. A five-percent confidence level was used for the test of significance. The first objective was also analysed using descriptive statistics, including cross-tabulations. The analysis was facilitated by SPSS version 22. The three hypotheses stated were tested using Partial Least Square in Adanco.

Key Findings

A summary of the key findings of the study are as follows:

The first objective of the study sought to describe the learning styles used by HEBS. With kinaesthetic learning style being the least preferred, HEBS in general preferred visual learning style which varied with specific sub -groups. For example, most of the male students used the visual learning style, as opposed to auditory learning style, which was popular among the female students. Students within 21-25 years age group mostly preferred auditory learning style whilst those aged between 26-30 years preferred the visual learning style. While Finance students did not show any clear preference for a particular learning style, Accounting and HRM students preferred the use of visual learning style and the auditory learning style is prominently adopted by Marketing students. On the average, with kinaesthetic learning style being the least preferred, HEBS in general, preferred visual learning styles, which varied with specific sub-groups.

The second objective sought to determine whether entry characteristics influenced academic performance of students. It was revealed that of the four entry characteristics, WASSCE and Mature Examination as entry qualifications were found to be significant in influencing students'

competence. It was further revealed that WASSCE influenced total performance but did not have any influence on students' CGPA. The other entry qualification did not also record any significant influences on academic performance, i.e. competence, CGPA and total performance. The study, therefore, fails to accept the hypothesis that entry characteristics does not have a significant effect on academic performance. The study, therefore, posits that entry characteristics rather significantly influences students' academic performance.

The third objective sought to determine whether learning styles used by HEBS influenced their academic performance. It was found that none of the three learning styles had a significant influence on students' competence, CGPA and total performance, either individually or compositely.

The fourth objective of the study examined the moderating role of learning styles on the nexus between entry characteristics and academic performance of HEBS. It was found that Mature entry mode did not have any statistically significant effect on their cumulative grade point average. Similarly, the study found that SSSCE, WASSCE and O' LEVEL did not have any statistical effect or influence on such students' cumulative grade point average. The study also found that learning styles (VISUAL and AUDITORY)

had no statistically significant effect on the cumulative grade point average of HEBS in Ghana.

The second aspect of the fourth objective was to examine entry characteristics with learning styles and the acquisition of soft skills (i.e., competency). The study found that Mature entry students acquired relatively lower soft skills, compared to other entry qualifications. Also, students who entered the university with WASSCE acquired higher competencies, compared to other entry characteristics. All the five interactive dummy terms *[MATURE x VISUAL, SSSCE x VISUAL, WASSCE x VISUAL, MATURE x AUDITORY and WASSCE x AUDITORY]* were found not to be statistically significant.

The third aspect of the fourth objective was to look at the moderating role of learning styles on the relationship between entry characteristics and performance in total (CGPA + Competences). The study found that Mature entry students acquired relatively lower total performance, compared to other entry qualifications. Also, students who entered the university with WASSCE performed better, compared to those with other entry characteristics. Students with SSSCE and O' LEVEL entry characteristics did not contribute to the total performance of HEBS. It also found that a student who adopted the auditory learning style performed poorer, compared to other learning styles. The

addition of some interactive terms *[WASSCE x AUDITORY]* was found to be significant while the other four interactive terms *[MATURE x VISUAL, SSSCE x VISUAL, WASSCE x VISUAL and MATURE x AUDITORY]* were found not to be statistically significant. Generally, the learning style adopted by students does not matter in the relationship between entry characteristics and competencies or soft skills gained by HEBS.

The study also found that entry into the university with WASSCE yielded a higher total performance and students who used Auditory learning style had a lower total performance. Students who used WASSCE and at the same time learned by the Auditory learning style had a higher total performance, holding all other variables constant. Thus, a combination of the variables, WASSCE students and the Auditory learning style, earned a total performance lower than the variable WASSCE alone, but greater than Auditory learning style alone. Other combinations of interactive terms were found to be statistically insignificant. The intercept was found to be statistically significant. Thus, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had a total performance higher than other learning styles with Mature, SSSCE, WASSCE or O' LEVEL Entrance.

Conclusions

Based on the result of the findings, the following conclusions are drawn:

It is concluded from the first objective that males prefer visual learning whereas female HEBS prefer auditory learning styles. Visual learning style should be preferred whereas auditory learning should be preferred when pursuing a degree programme in Marketing to achieve higher performance. However, for Finance, no one learning style is preferred. It implies that the same teaching methodology will not appeal to the varied needs of the students in the same class but given the large number of students in one class, it may make it practically incomprehensible for the teacher to appeal to the varied needs of the students. The large class sizes leave the teachers limited range of choices to engage the students, as pedagogy may dictate. This state of affairs may lead the teacher to consider the approach that affords ease and convenience in delivery of the lesson.

It is concluded from the second objective that WASSCE and Mature entry characteristics influenced students' competences but not their CGPA. Students admitted mainly concentrate on the requirements of job opportunities

but not academic prowess. On the one hand, this is the sign that students will end up developing the relevant skills that position them as employable. Employers may spend less on training new entrants to acquire general skills and thus, reduce HR cost to the organisation. On the other hand, students may end up not being ready for further academic work, on the grounds that their concentration has been on securing job after school and thus, the focus on the soft skills. The end product is the parochial development of the student and the consequential lapses in the totality of their development. As a result, none of the entry modes is superior in determining students' CGPA performance, though WASSCE entry characteristics influenced students' competences.

The study further concludes on the third objective that none of the learning styles accounts for HEBS' academic performance. Providing tailor-made instructions on the basis of individual learning styles has been proven to be irrelevant. For that matter, the finding for research objective two cannot be relied upon for instructional decisions. It only provides information on the learning style individuals or groups of students prefer. That means that university business lecturers can use whatever technique or methodology that is convenient for them and produce the best outcomes, rather than tailoring their lessons to the needs of specific groups of students, based on their

learning styles.

With respect to the fourth objective, the following conclusions are made, dependent on the discoveries of the study. Entry characteristics do not influence the cumulative grade point average of HEBS in Ghana. The study further concludes that learning styles do not cause a change in the cumulative grade point average of HEBS in Ghana. However, it concludes that a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style records higher cumulative grade point average. This implies that entrance into the university with WASSCE yielded a lower cumulative grade point average. Being a student who used Auditory learning style had a lower cumulative grade point average and being both a student who used WASSCE and learned by the Auditory learning style had a cumulative grade point average lower. Thus, a WASSCE entrance student who used the Auditory learning style earned a cumulative grade point average higher than a WASSCE entrance alone or an Auditory learning style alone. It further concludes that a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had an expected cumulative grade point average higher than other learning styles.

The study further concludes that students with SSSCE and O' LEVEL entry characteristics do not matter for the acquisition of competences (soft skills) of HEBS in Ghana. This implies that learning styles do not condition the effect of entry characteristics on the competencies of HEBS. Thus, the learning style adopted by students does not matter in the relationship between entry characteristics and competencies or soft skills gained by HEBS. Consequently, a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had expected competencies or soft skills higher than other learning styles, with either Mature, SSSCE, WASSCE and O' LEVEL entrance.

This implies that entrance into the university with WASSCE yielded a higher total performance, being a student who used Auditory learning style had a lower total performance. Being both a student who used WASSCE and learned by the Auditory learning style had a higher total performance. Hence, a WASSCE entrance student who used the Auditory learning style earned a total performance lower than a WASSCE entrance alone but greater than an Auditory learning style alone. It further concludes that a student who entered the university with other entry characteristics and learned through the kinaesthetic learning style had a total performance higher than other learning

styles with either Mature, SSSCE, WASSCE and O' LEVEL entrance as entry qualification. When it comes to total performance, that is acquisition of soft skills and academic achievement (CGPA), none of the independent variables, that is entry characteristics and learning styles has any influence.

In addition, once a student gains admission, the mode of entry and their learning styles do not mediate the extent to which they attain employable and or academic feat. It means that discriminatory at the point of admission as to which entry qualification is likely to yield higher performance and hence preference made for some at the expense of others is untenable. It should also be emphasised that a student's preferred learning style is not considered an indicator of an individual's performance. This further suggests that the mode through which a student learns is irrelevant in the determination of the student's performance. Therefore, it must be recognized that each of the learning styles should be regarded as a mere mode. It can then be said that there is no superiority in the modes of learning but just a matter of nominal grouping.

Recommendations

Based on the results of the study's findings, the following recommendations are made:

It is recommended from the first objective that lecturers should consider different learning styles that students use in their learning and develop content and use pedagogical methods that respond to the varied needs of the students. The universities continue to prepare students not only for them to become better in achieving good grades but rather continue to develop the competencies of such students and make them easily transferrable to the job market. The course content and the pedagogical approach used should continue to include the acquisition of soft skills. The teaching and assessment by the lecturers should focus on both academic and career-oriented methods in order to ensure total performance of students. Moreover, delivering of lectures should take into consideration the peculiarities and differences of students in order to stimulate students' interests.

On the second objective, it is recommended that there should be a conscious efforts by lecturers to give group work based on gender and or programme of study. Also, to ensure heterogeneity and sharing of ideas, the lecturer may resort to think-pair-share to ensure that there will be

heterogeneity within the group to foster shared ideas. None of the modes' of entry should be discriminated against when it comes to admission into business programmes. Programmes should be initiated to build the confidence in Mature students.

Based on the third objective, since none of the learning styles influenced academic performance, the study, therefore, recommends that the learning style that a student adopts should be nurtured and boosted to enable the student to develop his/her potentials. Lecturers should also develop instructional approaches that appeal to all the categories of students with various learning styles. With recourse to the conclusions of research objectives two and four, it is recommended for lecturers to use strategies and activities that prove effective as the situation demands.

With respect to the fourth objective, preference for auditory learning by WASSCE students yielded higher CGPA and therefore, recommends that students who entered HEBS with WASSCE qualification should develop preference for auditory learning style. It recommends that for those who entered HEBS with other qualifications, preference for kinaesthetic learning style should be developed with the aim of accomplishing improved performance. There must be proportionate share of the qualified candidates in

each requirement category vis-a-vis the number of students to be admitted in a particular year. However, effort should be made to incorporate each requirement category even if this formula makes their quota insignificant. Different learning styles do not matter in a heterogeneous class with different learning modes. This suggests that the application of VAK learning theory is not absolute and needs to be put into perspective by educationists.

Contribution to Knowledge and Theory

The study affirms the VAK learning theory and demonstrates that students are not reliant on a particular learning style. The study advocates for lecturers to aid in nurturing the learning styles that students prefer so as to get the best out of them. The findings also contribute to knowledge and posit that entry characteristics contribute to students' academic performance. Nonetheless, the study rejects the general assertions that students are not ready for the job market and that they do not possess the relevant soft skills required for such jobs. The findings of the study, therefore, refute such an assertion as the study establishes that UCC and Wisconsin students' performance is largely the acquisition of soft skills relevant for the job. It establishes that those who gained admission through Mature Entrance and WASSCE rather influenced

performance through the acquisition of soft skills. The acquisition of soft skills rather explains the significant effect of WASSCE as an entry characteristic on academic performance.

Conversely, findings did not lend backing to the statement that learning style influence academic performance. The findings, however, posit that student's performance is not solely dependent on the learning style a student adopts. The findings indicate that entry characteristics of students, when combined with certain learning styles, contributes greatly to influencing students' academic performance. This shows that a student's learning style influences the association between academic performance and student entry factors.

Contributions to Practice

Pedagogy used by lecturers should ensure that it addresses all the learning styles identified in the VAK learning styles in order to benefit all students' categories who have preference for different learning styles.

Contribution to Policy

Part of the universities approach to gaining students to apply for admission has been visiting the various SHSs and presenting to them the various programmes of study and their pre-requisite qualification. However, same is not done for those who are considered Mature. Those considered Mature Students mostly get to know when the university advertises but no conscious effort is put in place to visit such people who are mostly workers at their work places, to explain to them the opportunities available for them. In order to attract more students who qualify to be considered as Mature Applicants, the universities should liaise with human resource managers across the country to discuss with them the various programmes run by the universities and the opportunities available to their staff who may qualify to be considered for Mature Entrance.

The study further suggests that a policy be developed so that course outlines include how the lecturer develops course contents and pedagogical approaches that address the different learning styles of students. The quality assurance units of the two studied Institutions should include how the lecturers address the three learning styles used by students in their learning. This can be part of the assessment criteria by these quality assurance units and also ensure

that all learning needs of students are adequately addressed in the course content and the pedagogy used.

Suggestions for Further Research

A more comprehensive means of assessing soft skills should be employed to re-examine the relationship between entry characteristics and learning styles. The relationship can be explored through a large sample size from multiple tertiary institutions to increase validity and reliability. The study focused on only two institutions, Wisconsin and UCC. However, there are other students also pursuing the same degree through distance learning, which is another mode of learning in the university. These are people who study in the comfort of their homes. A study on their learning styles will also provide another perspective on the subject. Other studies can focus on other student categories pursuing other programmes of study since the study focused on only business students. Other studies can consider the social and family circumstances on students' learning style. Since the caveat of this study, regarding methodological weakness, is the absence of the covariance-based SEM, further studies may explore the relationships using this statistical technique to decipher hidden outcomes.

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APPENDICES

Appendix A

UNIVERSITY OF CAPE COAST
INSTITUTIONAL REVIEW BOARD SECRETARIAT

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3RD JULY, 2020

Mr. Justice K.G.A. Boateng
Department of Business and Social Sciences Education
University of Cape Coast

Dear Mr. Boateng,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2020/04)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol **Effects of Entry Characteristics and Learning Styles on Academic Performance of Higher Education Business Students (HEBS) in the University of Cape Coast and Wisconsin International University College.** This approval is valid from 3rd July, 2020 to 2nd July, 2021. 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

APPENDIX B
UNIVERSITY OF CAPE COAST
QUESTIONNAIRE

Dear respondent,

I am undertaking a study on the "effect of learning styles and entry characteristics on academic performance of Higher Education Business Students". I would be grateful if you could spend some few minutes of your time to complete this questionnaire.

The questionnaire is in three sections. The first section seeks to acquire your demographic information. In the second section, the items were developed from specific responses to identifying preferred learning styles of learners. The third and last part seeks your opinions on the competencies you have obtained as a result of enrolling in the programme that you consider crucial for use in the actual work environment.

I wish to alert you that your identity would be strictly anonymized. More so, your confidentiality is assured regarding the information you provide in respect of this study which is purely an academic exercise. Therefore, you are kindly entreated to respond to this questionnaire as much as you can.

SECTION A: Background Characteristics of Respondent

1. Sex:
   Male [ ]
   Female [ ]
2. Age in years: _____
3. Entry Qualification/route:
   Mature Entrance [ ]
   SSSCE [ ]
   WASSCE [ ]
   O' level [ ]
   Other, please specify.....
4. Name of Second Cycle Institution Attended .....
5. Name of University of Study:
   University of Cape Coast (UCC) [ ]
   Wisconsin International University College [ ]
6. Programme of Study:
   Bachelor of Commence (BCOM) [ ] Bachelor of Science (B.SC) [ ]
   Bachelor of Arts Business Studies (BA) [ ]
7. Area of Specialisation:

Accounting [ ]

Finance/ Banking and Finance [ ]

Marketing [ ]

Human Resource Management [ ]

8. Mode of Study:

Regular (Full Time) [ ]

Weekend (Distance) [ ]

SECTION B: Learning Styles

Read the following items and circle the letter that correspond to the best description of you for each in your opinion.

SECTION B: Learning Styles

Read the items below and choose by circling the letter that correspond to the finest description of you for the individual item in your view.

1. I wish to use my computer to learn by,

a. first reading the manual.
b. first getting someone teach me how to use it.
c. starts operating the computer and get assistance if they need be.

2. It is simple to look for directions to a new location by,

a. using a map.
b. having someone direct me to reach my destination.
c. getting assistance from someone to take me there or follow him or her.

3. I do the following to recall a mobile number,

a. search for the contact and call it repeatedly.
b. redial it mutely or loudly to myself on numerous occasions.
c. recall the mobile number by pressing the arrangement on the keypad, or have it written down.

4. For the purpose of comfortability, I like

a. reading a magazine or a book.
b. listening or playing a music.
c. having a walk or engage in hands on activities.

5. I am good at

a. reading books.
b. talking to friends.
c. engage in hands on activities.

6. I achieve excellence in school, through,

a. reading books.
b. listening to instructors.
c. doing physical activities.

7. In school, I wish to be

a. a intellectual.
b. a speaker.
c. an achiever.

8. I achieve excellence in a test by,

a. reading and depicting the facts in my memory.
b. reading and mentioning the thoughts loudly or mutely.
c. identify, take notes, and summarize.

9. I find it easy remembering

a. faces.
b. names.
c. actions.

10. I would like to make myself busy on Saturday by,

a. watching a movie.
b. attending a concert.
c. taking part in athletics or be outside.

11. It is very necessary, as part of a college class to have access to

a. worthy reading material which has pictures, graphs, and diagrams.
b. respectable instructor who provides exciting talks.
c. physical activities.

12. When studying, I find it more convenient

a. reading and evaluating the learning material.
b. deliberate on the matter with colleagues.
c. take records or summaries.

13. Anytime I miss my way, it's appropriate to

a. consult the map.
b. ask for directions from someone.
c. search the locality till I find a similar direction.

14. When preparing food in the kitchen, I frequently

a. search for recent instructions.
b. communicate to friends for new guidelines.
c. put things together and it turns out to be perfect.

15. To assemble for a recent model or piece of fittings, I

a. first consult the guidelines.
b. involve myself sequentially.
c. begin combining things and consult the guidelines when getting confused.

16. In problem solving, it is advisable to

a. rely on a popular textbook on the subject.
b. discuss the possibilities with a reliable colleague.

c. work on it.

17. Which of the following declarations is most enjoyable to?

a. A portrait is wealth a thousand words.

b. Speak in a language I will understand.

c. work on it.

18. My mother told me when I was a child, that I

a. waste too much energy and resources to read, take photos, or draw.

b. meet colleagues with a lot of ideas and always communicating through the mobile phone.

c. was always taking things apart to see how they worked.

SECTION C: Competencies Attained

Kindly respond to the competencies you have gained so far through your University degree programme.

Ranking: 5 = strongly agree, 4 = agree, 3=Neutral 2=Disagree, 1= Strongly disagree

No.	**At the end of the program, I am sure I can:**	5	4	3	2	1
1	apply the basic knowledge of business education to solve business problems					
2	identify, formulate and analyse complex business problems					
3	design solutions for complex business problems with a concern for public, health, safety, cultural, societal and environmental issues					
4	carry out a research-based investigation using various statistical approaches and analyse the results					
5	anticipate and model business programs, choose, build, and employ relevant current IT technologies and techniques.					
6	study socioeconomic, health, safety, legal, and cultural issues in relation to professional business activities using contextual knowledge					
7	understand how professional business solutions are impacted in societal and environmental situations					
8	Professional ethics should be applied to commercial procedures.					

9	in multidisciplinary situations, perform as an individual member					
10	communicate successfully with business communities and the general public on business concerns					
11	operate in a multidisciplinary context as a leader and a team member					
12	understand the importance of continual learning for constant enhancements and upgrades of knowledge					

THANK YOU