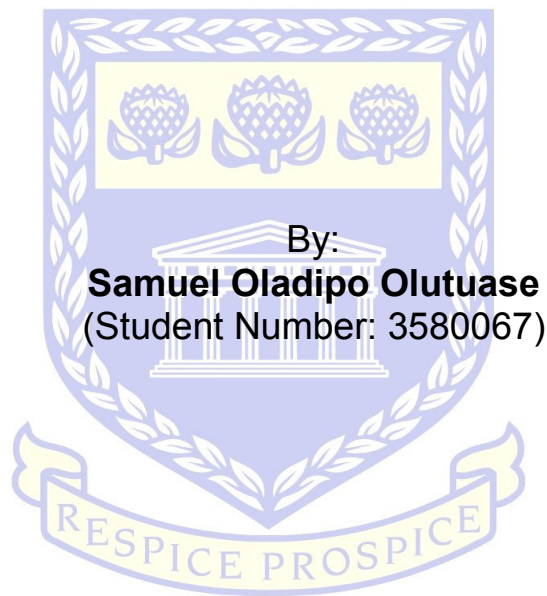


## Title Page

# Modelling the Effect of Entrepreneurship Education on Entrepreneurial Mindset, Skills and Intentions: Empirical Evidence from Undergraduates in Nigeria



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A thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy (PhD), in the School of Business and Finance, University of the Western Cape

**WESTERN CAPE**

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**Co-Supervisor:** Dr. Bingwen Yan

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## ABSTRACT

**Background:** Entrepreneurial firms, entrepreneurial capital, entrepreneurial ecosystem and entrepreneurial economy are a few terminologies that have emerged since the resurgence of entrepreneurship, arising from the 1990's entrepreneurial revolution in the United States of America. Entrepreneurship education, a paradigm shift from the conventional, has been identified as being critical to fostering entrepreneurship, building entrepreneurial capital, growing entrepreneurial economy and ultimately delivering sustainable economic growth and development for any nation – emerging or developed. From America to Africa, entrepreneurship modules with varied objectives and designs have multiplied in the last decade.

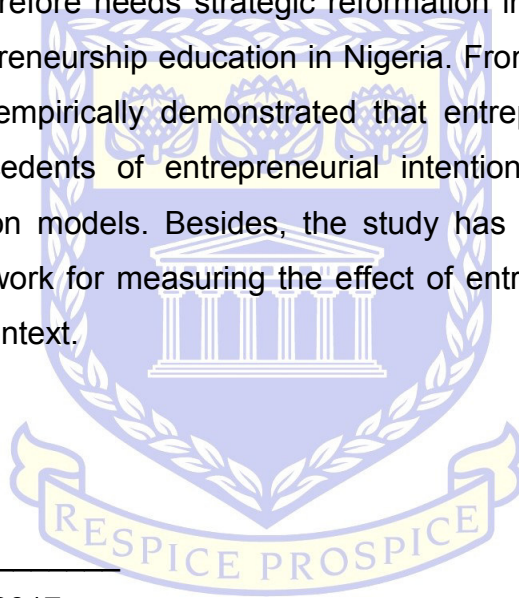
As an emerging economy, Nigeria, in recognition of the importance of entrepreneurship education, has introduced a compulsory entrepreneurship module in all universities for the undergraduates since 2007/08 academic year. This initiative was especially expedient given the growing graduate unemployment rate in the country. For instance, the graduate unemployment rate rose from 25.6 percent in 2003 to 40.3 percent in 2009. Besides, an estimated 80 percent of graduates in Nigeria are unable to secure paid employment with additional 1.8 million youths joining the labour market on yearly basis.

As overarching objectives, the compulsory entrepreneurship initiative is expected to foster entrepreneurial skills and 'mindset' – entrepreneurial thinking – in the undergraduate students. The entrepreneurial mindset and skills are expected to lead them towards entrepreneurial intentions, behaviours and ultimately, actions. This study therefore aimed at developing and testing a structured model to measure the effects of entrepreneurship education on entrepreneurial mindset, skills and intentions of undergraduate students in Nigeria.

**Methodology:** Adopting the mixed method approach, this research employed the cross-sectional survey design, utilising questionnaire, personal interviews and focus group discussions as instruments of data collection. As a triangulated study, data were collected from students who had taken the compulsory entrepreneurship module as well as from lecturers of the module. While questionnaire was used to survey a sample of 707 students who had taken the compulsory entrepreneurship module; personal interviews were used to obtain data from the lecturers of the entrepreneurship module. In addition, focus group discussions were conducted with some selected students from the survey. The questionnaire generated quantitative data which was analysed using Structured Equation Modelling (SEM) via the AMOS (version 24); while the interviews and focus group discussions were recorded in video and audio clips. The clips were transcribed into text using the selective and smooth verbatim protocols, thus generating qualitative data which were analysed using the qualitative content analysis via ATLAS.ti (version 7.5.12).

**Results:** The results of the Structured Equation Modelling (SEM) and qualitative content analyses were triangulated in order to highlight the salient findings of the study. The study demonstrates that entrepreneurship education significantly and positively relates with entrepreneurial intention; and that institutional setting, a sub-variable of entrepreneurship education can be either strengthen or undermine the impact of the content of an entrepreneurship module. Furthermore, the study demonstrates that institutional setting can determine what teaching methods are adopted for an entrepreneurship module; whereas content of entrepreneurship module alone does not significantly determine what teaching methods are adopted for an entrepreneurship module. The study also shows that entrepreneurial mindsets and skills are significant antecedents of entrepreneurial intention while a reinforcing interaction between entrepreneurial mindset and entrepreneurial skills could exist.

**Conclusion:** The findings of this study indicate some practical, policy and theoretical implications. From the practical and policy perspectives, this study suggests that entrepreneurship education in Nigerian higher education institutions is a potential tool for solving the decades-long graduate unemployment with its attendant socio-economic challenges. But the potency of the national entrepreneurship education initiative in terms of spurring entrepreneurial graduates is being undermined by dysfunctional institutional setting. This therefore needs strategic reformation in order to maximise the impact of entrepreneurship education in Nigeria. From perspective of theory, this study has empirically demonstrated that entrepreneurial mindset and skills are antecedents of entrepreneurial intention which are lacking in previous intention models. Besides, the study has provided an alternative model or framework for measuring the effect of entrepreneurship education within a given context.



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Date: 12<sup>th</sup> May, 2017

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## KEYWORDS

- Entrepreneurship education
- Entrepreneurial mindset
- Entrepreneurial skills
- Entrepreneurial intentions
- Youth unemployment
- Graduate unemployment
- Nigerian undergraduates



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## DECLARATION

I declare that *Modelling the Effect of Entrepreneurship Education on Entrepreneurial Mindset and Skills: Empirical Evidence from undergraduates in Nigeria* is my own work, undertaken under the supervision of **Dr. Pradeep Brijlal** and **Dr. Bingwen Yan** and has not been presented elsewhere for the award of a degree or certificate. All sources have been duly distinguished and appropriately acknowledged by complete references.

---

**Samuel Oladipo Olutuase**

Date: 12<sup>th</sup> May, 2017



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## LIST OF ABBREVIATIONS

<b>CAC</b>	– Corporate Affairs Commission
<b>DE</b>	– Direct Entry
<b>EE</b>	– Entrepreneurship Education
<b>EI</b>	– Entrepreneurial Intention
<b>EM</b>	– Entrepreneurial Mindset
<b>ES</b>	– Entrepreneurial Skills
<b>GNS</b>	– General Studies
<b>GST</b>	– General Studies
<b>HEI</b>	– Higher Education Institution
<b>NAFDAC</b>	– National Agency for Food and Drug Administration and Control
<b>NBTE</b>	– National Board for Technical Education
<b>NCCE</b>	– National Commission for Colleges of Education
<b>NUC</b>	– National Universities Commission
<b>SON</b>	– Standards Organisation of Nigeria
<b>UME</b>	– University Matriculation Examination

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# CHAPTER ONE: INTRODUCTION

This chapter gives a background to the problem understudied in this thesis. It also outlines the research questions and objectives that guided the thrust of the study. A brief review of key literature that underlies the theoretical framework is also presented. The chapter closes with the organisation of the entire thesis report.

## 1.1 BACKGROUND OF THE STUDY

The American entrepreneurial revolution of the 1990s is arguably tagged to have largely accounted for the American rapid economic growth with all time high rates. In a bid to unravel the definite factors that underpinned that revolution, researchers have uniformly highlighted education as being dominant (Kuratko, 2003, 2004, 2005). The decades that followed have seen multiplication of various entrepreneurship education programmes across American universities and colleges and these programmes have evolved in approach, design, spread and content. For example, between 2004 and 2008, entrepreneurship education grew from 2,200 to well above 5,000 in terms of number of programmes being offered by American higher institutions with over 9,000 faculty members and students attendance of over 400,000 per annum (Katz, 2003; Kauffman & Foundation, 2013; Kuratko, 2003; Solomon, Duffy, & Tarabishy, 2002).

This rekindled interest in entrepreneurship springing from the United States has rippled into what can be termed “global resurgence of entrepreneurship in the 21<sup>st</sup> century” (Carree & Thurik, 2010, 2000; Fayolle, 2013; Lim, Lee, & Chang, 2005; Parker, 2011; Toma, Grigore, & Marinescu, 2014). By and large, governments, industries and academics converging in triple-helix researches now lay credence to entrepreneurship, although from divergent perspectives. For instance, governments’ policies and programmes at both national and local levels, have been strongly rebased on the perception that entrepreneurship education can potentially spur sustainable economic growth and development (Kuratko, 2003; Matlay, 2006, 2008; Mitra & Matlay, 2004;

Mwasalwiba, 2010). At the micro level, firms are increasingly embracing the new paradigm of entrepreneurial strategies for achieving competitive edge in a stiffened competitive environment (Kuratko, 2003) – *an idea that emerged from Schumpeter's views on innovation* (Wennekers & Thurik, 1999). At the core is the relentless academic effort which has continuously attempted to provide more robust theory-grounded frame for policy making, industry-inclinations and broader perspectives through researches in entrepreneurship education.

One upshot of this rekindled interest in entrepreneurship is entrepreneurship education. OECD (2007) had found entrepreneurship education as one critical policy area for fostering entrepreneurship in an economy. More and more countries have now recognised the critical role of education in shaping the orientation of their youths towards entrepreneurial pursuits and have thus, integrated entrepreneurship education into more academic programmes or mounted more rigorous entrepreneurship-based modules. All of these efforts are geared towards growing the entrepreneurial abilities, or at least creating entrepreneurial mindset.

In the next chapter (Chapter Two), a succinct background to the research problem is presented with reference to the Nigerian situation.

## **1.2 STATEMENT OF THE PROBLEM**

In his thoughts on creating a successful entrepreneurship ecosystem, Isenberg (2011a, 2011b) corroborated by Mason and Brown (2014) identified education as a key element. Apart from connecting the education element with other “entrepreneurial actors” (e.g. financing organisations), these authors said that such an education should stimulate performance within the local entrepreneurial environment. In other words, entrepreneurship education must be geared towards imparting a mind that relates to the environment with a view of unearthing entrepreneurial opportunities for possible action. Such a mindset is what Nixdorff and Solomon (2005) regarded as precursor to entrepreneurial behaviour. In the wake of the global financial crisis, the World

Economic Forum (2009) renewed its pursuit of a global education initiative (GEI). This initiative vigorously advocates for entrepreneurship education which, in audience, includes all categories of people – youths, academia, disadvantaged, underserved, the socially excluded – and their active participation in entrepreneurial activities. This new global education initiative of the World Economic Forum is based on the ardent belief that entrepreneurship education is the “gold-mine” to be explored for solving many of the 21<sup>st</sup> century global socio-economic challenges which, amongst others, include slowing economic growth, unemployment and poverty. Besides, the development of critical skills and attitude requisite for innovation and economic growth has been regarded as the primary function of entrepreneurship education, formal or informal. Educational institutions (from primary level to tertiary level) are therefore, expected to play a crucial role in realising the goals of entrepreneurship education which are impacting entrepreneurial skills, mindsets and behaviours for new solutions and economic restructuring.

In pursuit of a more sustainable economic growth and development as well as tackling the growing graduate unemployment (estimated at 25.6% in 2003), the federal government of Nigeria therefore initiated the policy of compulsory entrepreneurship education as a general studies module across all disciplines at the undergraduate level in Nigerian higher education institutions (HEIs) in 2007 (Ramoni, 2015; Akpan, Effiong, and Ele, 2012). The expectation is that the policy will lead to producing entrepreneurially minded and skilful graduates who will create new economic units or products to drive economic growth and development for the country. Specifically, the overarching objective of the entrepreneurship education programme (EEP) seeks “To redirect education/training for relevance and quality by developing in the undergraduate/graduate an entrepreneurial mindset (spirit) and equipping each with the skills necessary to start and run a business successfully” (Sagagi, Anyanwu, Aliu, & Abimbola, 2012; University of Jos, 2010). The growing number of HEIs (Universities, Colleges and Polytechnics) in Nigeria (which rose from 234 in 2007 to 329 as at July 2016) coupled with systematic expansion in infrastructures, staff base and programmes made possible by

investment through Tertiary Education Trust Fund (TETFUND) between 2007 and 2015 has paved way for higher enrolment for tertiary education in Nigeria (National Bureau of Statistics, 2011; Okuneye & Adelowoka, 2014). With an average enrolment of 1.9 million per annum, it is expected that Nigeria churns out about 1.8 million youths (ages 20 – 35) annually and these graduates should be well equipped with entrepreneurial skills and mindset. This, expectedly, should have resulted in decreased youth and graduate unemployment rates as well as increased job creation rates. But as Ramoni (2015) stated, increasing graduate unemployment rate still persists despite the implementation of the entrepreneurship policy by the HEIs in Nigeria. Some researchers such as Ifedili and Ofoegbu (2011); Akhuemonkhan, Raimi, and Sofoluwe (2013) and Olorundare and Kayode (2014); Babatunde and Durowaiye (2014) also maintained similar position with Ramoni (2015).

Particularly, Ifedili and Ofoegbu (2011); and Ogah and Emesini (2013)'s attempt at conducting empirical investigation into entrepreneurship education in Nigeria is akin to the suggested research by Fayolle, Gailly, and Lassas-Clerc (2006a). Ifedili and Ofoegbu (2011) conducted a survey of 800 students, who had undergone an entrepreneurship course in a university in the eastern part of Nigeria. Their findings show that students are generally positive towards entrepreneurship course in terms of expectation (up to 81%) but the course did not significantly provoke students' inquisition for knowledge. Their study blamed this on content, delivery and management of the course. In their own study, Ogah and Emesini (2013) discovered that students expressed a general lack of confidence to pursue an entrepreneurial career after/upon graduation because the General Studies (GST or GNS) entrepreneurship course did not expose them to critical and practical issues such as problem solving skills and ability to identify ready markets for products, amongst others. In their studies, Babatunde and Durowaiye (2014) showed how entrepreneurship education has strongly impacted on entrepreneurial intentions but that greater proportion of students still lack the requisite entrepreneurial mindset and skills that catalyses intention into action.

Beside the scant studies which focus on how entrepreneurial education impacts on entrepreneurial mindset and skills and entrepreneurial mindset; and skills in turn impacting on entrepreneurial intentions amongst undergraduate students, there has been no clearly defined theoretical and structured analytical model used to assess the mandatory entrepreneurship course in Nigeria since its introduction so as to empirically establish evidence of the impact of entrepreneurship education on entrepreneurial mindset and skills and the impact of entrepreneurial mindset and skills on entrepreneurial intention.

### **1.3 THE RESEARCH QUESTION**

#### **1.3.1 Primary Research Question**

As a blueprint to research design and methodology that aim at solving the research problem stated in section 1.2, the primary research question is stated thus:

What is the optimal way to measure the impact of the entrepreneurship education in Nigerian universities on the entrepreneurial mindset, skills and intentions of undergraduates?

#### **1.3.2 Investigative Research Questions**

To answer the primary research question, the following investigative research questions are formulated as below:

- Is the entrepreneurship education in Higher Education Institutions related to the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria?
- Are the components of entrepreneurship education inter-related?
- Do the components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students?
- Are the entrepreneurial mindset and entrepreneurial skills of undergraduate students related?



- Do the entrepreneurial mindset and skills impact on the entrepreneurial intentions of undergraduate students?

#### **1.4 RESEARCH OBJECTIVES**

Based on the research problem stated in section 1.2, the primary objective of this study is to develop a structured model to measure the effects of entrepreneurship education on undergraduate students in Nigeria in terms of entrepreneurial mindset, skills and intentions.

To achieve the primary research objective, the following sub research objectives are formulated:

- To determine the nature of relationship between the entrepreneurship education in Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria.
- To ascertain the inter-relationships among the components of entrepreneurship education.
- To determine the extent to which components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students.
- To determine the extent of impact of entrepreneurial mindset and skills on the entrepreneurial intentions of undergraduate students
- To determine the interaction between the entrepreneurial mindset and entrepreneurial skills of undergraduate students.
- To explore common approaches of measuring the impact of entrepreneurship education on entrepreneurial intentions.

#### **1.5 THEORETICAL FRAMEWORK**

Between 2006 and 2016, research interests in entrepreneurship education have deepened especially because, there is need to respond to concerns about the effectiveness of entrepreneurship education, its impact and justification of its heavy funding. The fact that huge sums of money have been invested in the curricular development as well as teaching of various entrepreneurship programmes, remains incontestable (Fayolle *et al.*, 2006a;

Fiet, 2001). While it appears reasonable to justify the worth of funding in entrepreneurship education through “measurability”, objectivity in and veritable methodology for measurement have been of more concerns to researchers in this growing field (Hindle & Cutting, 2002; Mwasalwiba, 2010; Peterman & Kennedy, 2003). A number of researches – cross-sectional and longitudinal – have been conducted to provide some theoretical insights and/or some empirical evidences of the effectiveness or otherwise, of entrepreneurship education programmes (e.g. Autio, Keeley, Klofsten, & Ulfstedt, 1997; Johannisson, 1991; Varela & Jimenez, 2001). One glaring fact about most of these researches is their divergence in methodology.

According to Fayolle *et al.* (2006a), many researches on one hand have focused on venture creation as a direct impact assessment of entrepreneurship education but Block and Stumpf (1992), and Hytti and Kuopusjarvi, (2004), as quoted in Fayolle *et al.* (2006a), had criticised this method as not being appropriate. Their argument was that business venturing is a process that spans longer term and so, it is mathematically challenging to disaggregate the extent to which what entrepreneurship course or module has impacted a particular venture creation as time passage would have allowed other factors to play prominent role in the process. On the other hand, is the measurement of entrepreneurial intentions of students as a result of their participation in an entrepreneurial programme or module (Fayolle *et al.*, 2006a; Lorz, Volery, & Müller, 2011)? The empirical evidence that socio-economic environment potentially redefines entrepreneurial intentions and thus entrepreneurial activities of people, over a period of time as posited by Lu'thje and Franke (2003); Begley, Tan, Larasati, Rab and Zamora (1997); Scott and Twomey (1988); Matthews and Moser (1995) in Fayolle *et al.* (2006a) raises questions of the rationality and objectivity on that approach of measuring the impact of entrepreneurship education. Fayolle *et al.* (2006a) suggested that assessing the impact of entrepreneurship education should be reduced to educational level where the achievement of the set goals vis-à-vis target audience is evaluated.

In their “new methodology” which they contextualised and tested within the frame of the theory of planned behaviour (Fayolle *et al.*, 2006a), Fayolle *et al.* (2006a) provided some new insights for future researches in the field of entrepreneurship education (see Figure 1 on 8). The model examines the components of a typical Entrepreneurship Education Programme (EEP) such as institutional setting, objectives, content and pedagogy how these ultimately affect entrepreneurial behaviours which is included in the Theory of Planned Behaviour (TPB). Fayolle *et al.* (2006a) however identified that entrepreneurial mindset (which they called “attitude”) is a critical intermediary between education and intention. In other words, if entrepreneurship education did not sufficiently create an attitude malleable towards entrepreneurial undertaking, there might as well not be a positive intention towards entrepreneurship no matter how favourable other conditions are.

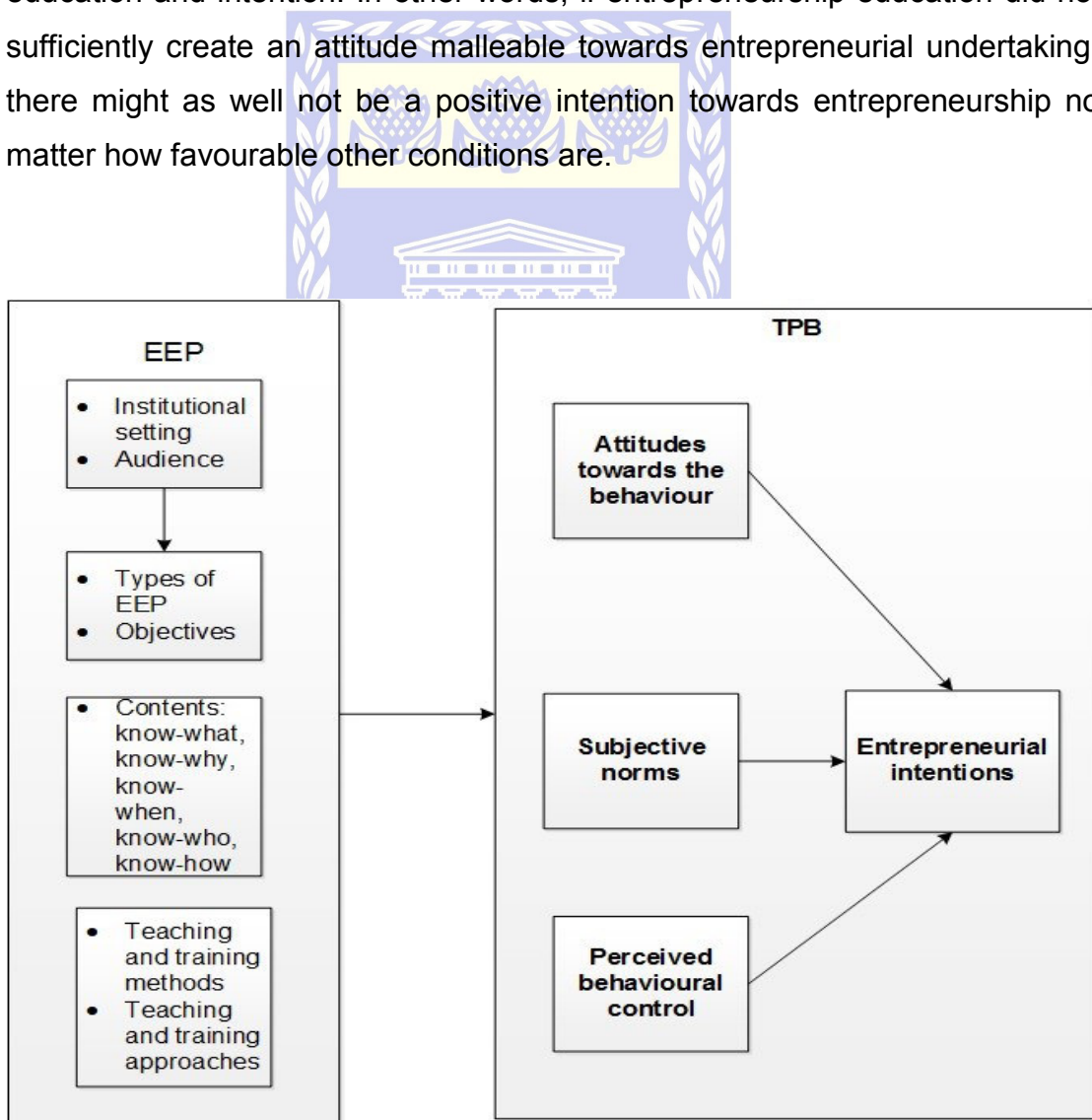


Figure 1.1: EEP Assessment Model

Source: Fayolle, Gailly and Lassas-Clerc (2006a)

In this framework Fayolle *et al.* (2006a) set out well defined criteria and methodology for measuring entrepreneurial education. In the end, they recommended their model for testing certain features of an entrepreneurship education with a view of providing empirical basis for evolving a more effective entrepreneurship education programme in a given context.

With focus on the endogenous factors and entrepreneurship education components such as institutional setting, content and teaching approaches, the Fayolle *et al.* (2006a)'s model can be merged with the expectation frame of entrepreneurship education in Nigerian universities. The essence of the fusion is to establish possible links between selected components/aspects of entrepreneurship education from the Fayolle *et al.* (2006a)'s model with the two cardinal expectations of the Nigerian entrepreneurship education purported to promote entrepreneurial intentions/behaviours amongst the undergraduates.

The model (Figure 1.2 on 10) highlights institutional setting, content, teaching methods and approaches as those aspects of entrepreneurship education that could stimulate entrepreneurial mindset and impart skills amongst the undergraduates. In order to place this in the proper contexts of entrepreneurial intention theories, mindset and skills are regarded as reinforcements to each other which could in turn reinforce entrepreneurial intentions (without recourse to the contextual factors originally put in the theory of planned behaviour).

Drawing a research model from this context, Figure 1.2 includes how entrepreneurship education components can impact on mindset and skills of students leading to intentions. This delineation is necessary in order to keep a strong focus on the major variables of the study: entrepreneurship education, entrepreneurial mindset and skills and intentions (discussed fully in chapter three).

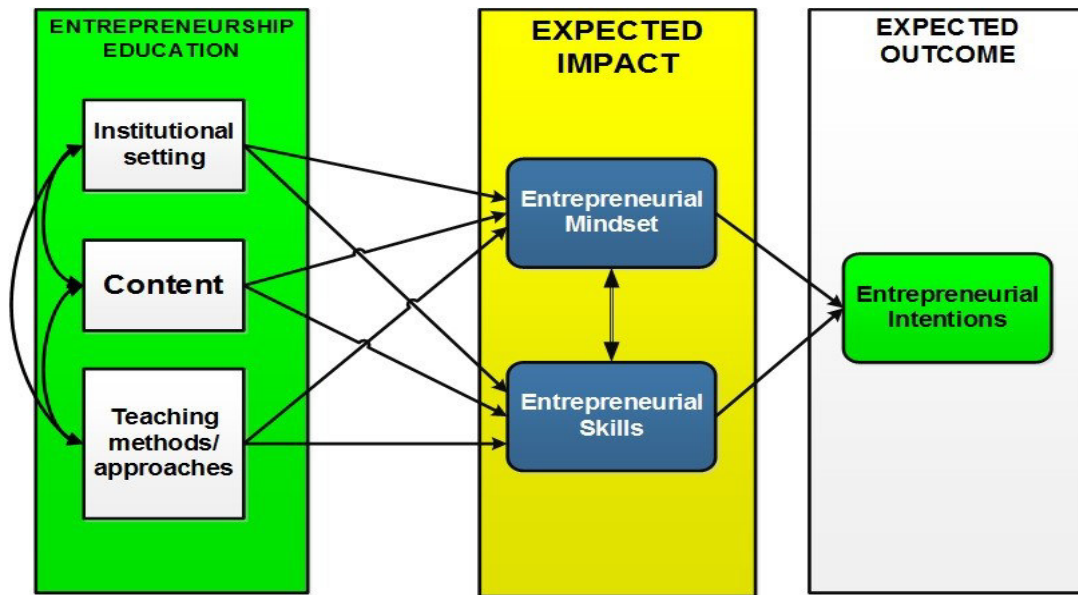


Figure 1.2: The Entrepreneurial Education-Mindset-Skill (EMS) Model

## 1.6 HYPOTHESES DEVELOPMENT

For the purpose of establishing empirical evidence, the following hypotheses are developed from the research model. This development of these hypotheses is shown in Figure 1.3 below.

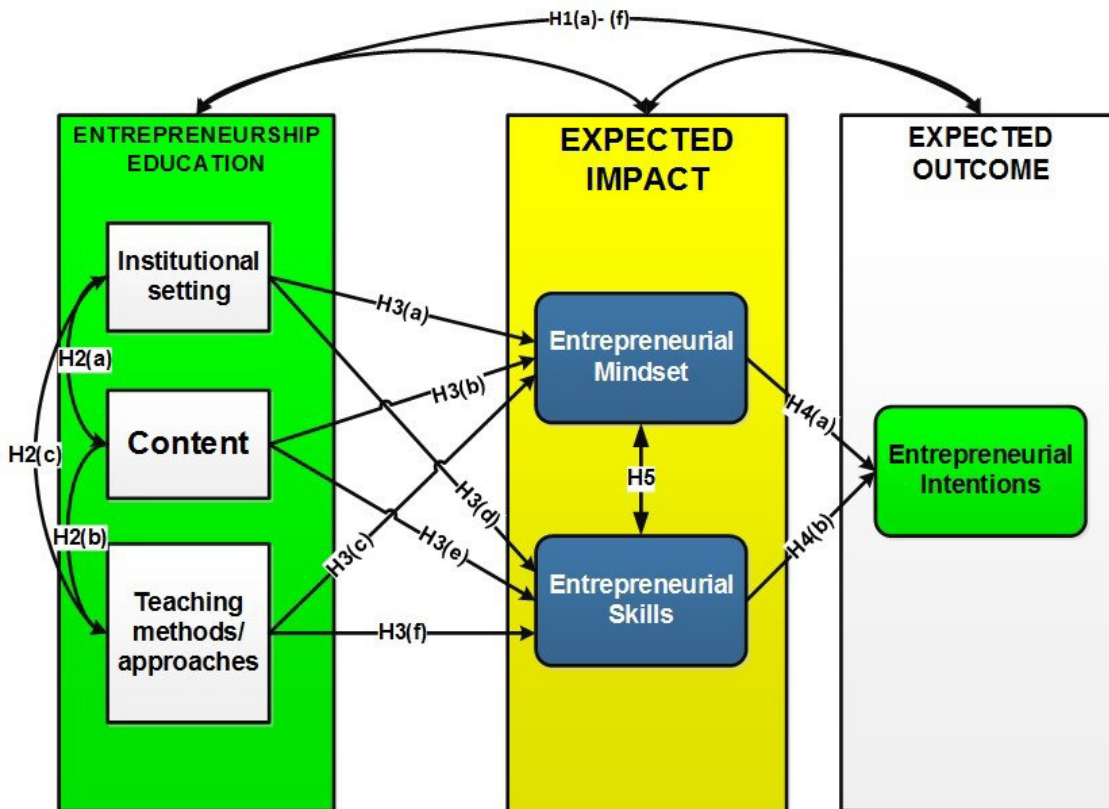


Figure 1.3: Hypotheses Development Model

### 1.6.1 Hypothesis 1

Past researches (e.g. Bae, Qian, Miao & Fiet, 2014; Patricia & Silangen, 2016) have actually proved that entrepreneurship education is related to entrepreneurial intentions. But for the purpose of this study, it is pertinent to empirically explore if the current entrepreneurship education in Nigerian Higher Education Institutions can be related to the entrepreneurial intentions, skills and mindset of students. On this note, the researcher states that:

***Entrepreneurship education in Nigerian Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria are related.***

In this regard, the following sub hypotheses (H<sub>1a-f</sub>) are examined:

**H<sub>1a</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial mindset (EM) of undergraduate students in Nigeria.

**H<sub>1b</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial skills (ES) of undergraduate students in Nigeria.

**H<sub>1c</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial intention (EI) of undergraduate students in Nigeria.

**H<sub>1d</sub>:** There is a positive relationship between entrepreneurial mindset (EM) and entrepreneurial skills (ES) of undergraduate students in Nigeria.

**H<sub>1e</sub>:** There is a positive relationship between entrepreneurial mindset (EM) and entrepreneurial intention (EI) of undergraduate students in Nigeria

**H<sub>1f</sub>:** There is a positive relationship between entrepreneurial skills (ES) and entrepreneurial intention (EI) of undergraduate students in Nigeria

### 1.6.2 Hypothesis 2

According to Fayolle (2013) and Fayolle and Liñán (2014), a number of factors could be used to measure entrepreneurship education programmes. In this study, three of such items are investigated and they are: Institutional setting, Content of the module and Method of teaching the module. As Maritz and Brown (2013, p.235) posited, determining the nature of links/relationship amongst these components provide a deeper insight for developing

framework for teaching entrepreneurship. If this is well articulated and implemented, it is presumed that entrepreneurship education would bear very strong impact in terms of stimulating entrepreneurial mindset and building entrepreneurial skills for the purpose of influencing entrepreneurial intention and action. On this note, it can be hypothesised that:

***The components of entrepreneurship education are inter-related.***

In order to explore the interaction among all the entrepreneurship education components, the following three sub hypotheses are formulated.

**H<sub>2a</sub>:** Institutional setting is related to content of entrepreneurship module

**H<sub>2b</sub>:** Content of entrepreneurship module is related to method of teaching the entrepreneurship module

**H<sub>2c</sub>:** Method of teaching the entrepreneurship module is related to institutional setting

### **1.6.3 Hypothesis 3**

Fayolle (2013) and Fayolle and Liñán (2014) suggested that future researchers in the field of entrepreneurship education can investigate the direct causal link between the entrepreneurship education components and the antecedents of entrepreneurial intentions. The three elements of entrepreneurship education that are investigated in this study are institutional setting, content of entrepreneurship module and teaching methods. These components are presumed to be positively related to the antecedents of entrepreneurial intention (Maritz, Jones, & Shwetter, 2015, p.1022) and should consequently impact on entrepreneurial intentions significantly. On this basis, a main hypothesis and six sub hypotheses are stated below:

***The components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students.***

**H<sub>3a</sub>:** Institutional setting impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3b</sub>:** Content of entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3c</sub>:** Method of teaching entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3d</sub>:** Institutional setting impacts on the entrepreneurial skills of undergraduate students

**H<sub>3e</sub>:** Content of entrepreneurship module impacts on the entrepreneurial skills of undergraduate students

**H<sub>3f</sub>:** Method of teaching entrepreneurship module impacts on the entrepreneurial skills of undergraduate students

#### **1.6.4 Hypothesis 4**

If causal link between skills and mindsets could be established with components of entrepreneurship education, then it can be inferred from existing literature (e.g. John & Park, 2016; Sánchez, 2013) that the entrepreneurial mindset and skills could play a very significant role in shaping the entrepreneurial intentions of students. This assumption as depicted in the conceptual framework of this study informs the formulation of the following sub hypotheses:

***Entrepreneurial mindset and skills impact on the entrepreneurial intentions of undergraduate students.***

Two sub hypotheses are further formulated from this to be investigated. These are:

**H<sub>4a</sub>:** Entrepreneurial mindset of undergraduate students impacts on their entrepreneurial intention

**H<sub>4b</sub>:** Entrepreneurial skills of undergraduate student's impact on their entrepreneurial intention

#### **1.6.5 Hypothesis 5**

As suggested by Fayolle and Liñán (2014), this study investigated the strength of interaction between skills and mindset and compare with the impact of each



on entrepreneurial intention of undergraduate students. This is to ascertain how entrepreneurial mindset reinforces entrepreneurial skills and vice versa. Thus, it is hypothesised:

***Entrepreneurial mindset and entrepreneurial skills of undergraduate students are related.***

## **1.7 ETHICAL ISSUES IN BRIEF**

Considering the possible legal implications that may be associated with using personal data for research purpose, it is important to state what ethical principles that guide the overall conduct of a research was duly followed. As a first step, ethical clearance from the University of the Western Cape (see Appendix 5) was obtained. Furthermore, the following ethical issues are considered: voluntary participation on the part of target audience; anonymity and confidentiality of personal identity of research participants; and non-maleficence and beneficence use of data collected only for the purpose of research.

## **1.8 ORGANISATION OF THE THESIS**

This thesis consists of six (6) chapters outlined as follow:

### **Chapter One: Introduction**

This chapter provides an introduction and motivation for the study; background to the research problem; research questions that guides the overall investigation into the research problem. The objectives for this study are also set out in this chapter.

### **Chapter Two: Background of Entrepreneurship Education in Nigerian Higher Education Institutions**

Contextualised against the backdrop of rising youth unemployment, this chapter provides a panoramic view of entrepreneurship education in Nigerian universities vis-à-vis key objectives. It further explores the subsisting entrepreneurship education model in Nigeria with focus on content, delivery

and institutional setting common to Nigerian higher education institutions (HEIs).

### **Chapter Three: Literature Review**

In order to develop a useful theoretical framework, this chapter presents a critical review using carefully selected literature that argue for entrepreneurship education, exuding the fact that entrepreneurial mindset and skills can be cultivated and stimulated through learning.

### **Chapter Four: Research Design and Methodology**

The chapter presents the research design and methodology adopted for the study with justification for such adoption. The research participants, instruments, data analysis tools used is discussed in greater details.

### **Chapter Five: Results: Presentation and Discussion**

In this chapter, data collected are summarised in tables and charts. Tools like Structural Equation Modelling (SEM) and qualitative content analysis are used to analyse quantitative and qualitative data respectively. Key results of quantitative and qualitative data analyses are triangulated in order to highlight salient findings of the study. The chapter closes with a summary.

### **Chapter Six: Discussion of Findings**

Chapter six highlights which hypotheses were supported – fully or partially – and which hypotheses were not supported, based on the results obtained in chapter five. The implication of each hypothesis testing outcome was also discussed in order to articulate key findings of the study. The key findings were organised and discussed under three major themes. The essence is to connect the findings of this research to theoretical framework, research problem, questions and objectives. With this, it was possible to identify the major contribution of this study to the field of entrepreneurship education and research which are later discussed in chapter seven.

## **Chapter Seven: Summary, Conclusion and Recommendations**

The chapter opens with an introduction and a full summary of previous chapters. The chapter further articulates a conclusion based on salient findings highlighted and discussed in chapter six. Furthermore, the chapter highlights five areas in which this study has made contribution to the body of knowledge; However, a few areas of limitations of the study were also acknowledged. The chapter finally closes with recommendations for policy makers as well as lecturers of entrepreneurship education modules.



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# CHAPTER TWO: ENTREPRENEURSHIP EDUCATION IN NIGERIAN HIGHER EDUCATION INSTITUTIONS

## 2.1 INTRODUCTION

Contextualised against the backdrop of rising youth unemployment, this chapter provides a panoramic view of entrepreneurship education in Nigerian universities vis-à-vis key objectives. It further explores the subsisting entrepreneurship education model in Nigeria with focus on content, delivery and institutional setting common to Nigerian higher education institutions (HEIs).

## 2.2 UNEMPLOYMENT TRENDS AND POLICY RESPONSE

From global, regional and national perspectives, unemployment is one of the indices viewed divergently by different schools of economics. Generally looked upon as a “negative” phenomenon, unemployment sits at the root of some socio-economic challenges such as hunger, civil unrest, labour abuses, social injustices and so on. This therefore explains the reason why efforts, at national and regional levels; and by government and non-governmental organisations, have always been geared at curbing unemployment rates. In fact, providing decent work ranks top on global agenda (International Labour Organisation, 2016). However, the challenge of unemployment has persisted across geographical borders and demographic boundaries despite the various measures across the globe to tackle it (Elder, Kapsos, & Sparreboom, 2015; International Labour Organisation, 2013, 2016). With steady rise in the number of the unemployed across the globe from 171 million in 2007 (5.5%) to 197.1 million in 2015 (5.8%), ILO (2016) predicts a further increase of 3.4 million unemployed people in both 2016 and 2017 (Elder *et al.*, 2015; International Labour Organisation, 2016). What makes this more worrisome for the researcher is the “bleak” future that confronts a significant portion of the global labour force – the youths graduating from our numerous colleges and universities!

### **2.2.1 Rising Global Youth Unemployment Rate**

As per the International Labour Organisation reports (Elder *et al.*, 2015; International Labour Organisation, 2015; International Labour Organisation, 2014, 2015, 2016), youths form about 47 percent population of the global labour force; 54 percent of the sub-Sahara Africa's and 56 percent of Nigeria's labour force (National Bureau of Statistics, 2011). An ILO report (International Labour Organisation, 2015) further states that global youth unemployment rate has steadily risen from 11.7 percent in 2007 to 13.0 percent in 2014; although the rate in the Sub-Saharan Africa and particularly in Nigeria is not as high as the global rate due to rapid economic growth, youth unemployment rate in the Sub-Saharan Africa is however noted to have been on a consistent increase. In fact, it is asserted that the more youths complete tertiary education, the more likely they are to remain unemployed (Elder *et al.*, 2015). This situation is termed graduate unemployment (Ernest, Matthew, & Samuel, 2015; Shadare & Sikirulahi Tunde, 2012).

### **2.2.2 Youth and Graduate Unemployment in Sub-Saharan Africa**

Graduate unemployment is reported by Elder *et al.* (2015) as regional challenge which is particularly notable in the Pacific, Asia, Middle-East, North Africa and Sub-Saharan blocs. In Sub-Saharan Africa for instance, Mohamedbhai (2015) noted that with the greater output of graduates, almost every African country is experiencing higher rates of graduate unemployment. With more than 56 percent of the countries classified as low-income economies, the total population of the Sub-Saharan Africa was estimated at 1.001 billion in 2015; and a working population (15 – 64 years) estimated at 540.54 million people (World Bank, 2016). The youth working population of Sub-Saharan Africa was therefore estimated at over 291 million. Apart from the high rate of long-term youth unemployment (12 months or longer) which was 48.1 percent in 2014. Elder *et al.* (2015, p.26) further added that about 60 percent of youths (who are secondary-school graduates) are unable to secure paid employment while there is as high as 25 percent of graduates who are unemployed. The situation could be worse in some African countries like Nigeria.

### 2.2.3 Youth and Graduate Unemployment in Nigeria

Accounting for more than 18 percent of sub-Saharan Africa's total population, and having a youth population of more than 50 percent (World Bank, 2016) Nigeria is particularly confronted with the challenge of increasing youth and graduate unemployment (Aiyedogbon & Ohwofasa, 2012; Akande, 2014; Fashoyin, 2012). Nigeria's current unemployment woes date back to the economic downturn of the 1980's when ill-fated government policies foreclosed industrialisation necessary to catalyse employment growth (Adawo, 2013). Till date, youth and graduate unemployment queue has grown longer (Shadare & Sikirulahi Tunde, 2012) and the absorption rate, smaller (Ajayi, Adeniji, & Adu, 2008). For instance, the number of unemployed youths in 2012 stood at about 11.1 million (Akande, 2014). By the fourth quarter of 2014, Kale and Doguwa (2015) reported that the rates of youth and graduate unemployment in Nigeria are generally higher than the national rates. As reported by Ogah and Emesini (2013), over 80 percent of graduates in Nigeria are unable to get paid employment on yearly basis. Furthermore, it was reported that at the end of 2015, more than 76 percent of active job-seeking applicants held a degree or higher academic qualification with well over 85 percent falling within the active working population (National Bureau of Statistics, 2015). All these statistics are only a conservative view of the reality of youth and graduate unemployment in Nigeria, portending serious social risk to national security and stability.

With an exception in 2005 when there was a decline, national unemployment in Nigeria grew consistently from 12.6 percent in 2002 to 23.9 percent in 2011, despite fast-paced economic growth (Aiyedogbon & Ohwofasa, 2012; Innocent, 2014). Along with this was the graduate unemployment rate which rose from 25.6 percent in 2003 to 40.3 percent in 2009 leaving nearly 400,000 fresh graduates unemployed on annual basis (Samuel, Ofem, & Ikuenomore, 2012). More alarming is the 2.5 million graduates who were unemployed as at 2008 (Ajayi *et al.*, 2008). Furthermore, an estimated 1.8 million or more youths are said to join the labour market on annual basis (Akande, 2014; National Bureau of Statistics, 2011). The worsening and alarming national

unemployment situation dominated by rising proportion of active educated youths therefore, constituted one of the strongest reasons for instituting the present compulsory entrepreneurship education in Nigerian higher education institutions (HEIs).

### **2.3 ENTREPRENEURSHIP EDUCATION IN NIGERIAN HEIs**

Entrepreneurship education, given its perceived importance, has spread to more countries; and within a country, diffused to more levels of learning – postgraduate, undergraduate, secondary and even elementary (Fayolle, 2013). The cases of emerging countries like Malaysia and Nigeria illustrate this growing trend. In Nigeria for example, entrepreneurship education which began as workshop series at its premier university (University of Ibadan) (Odiba & Baba, 2013), has gained a national spread across all the institutions of higher learning. In order to promote entrepreneurial spirit among its youths, given the rising unemployment rate in Nigeria, the Federal Government in 2006 through its regulatory organ (National Universities Commission - NUC) directed all Universities; and later all polytechnics and colleges (through National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE) respectively) to adopt and commence entrepreneurship-focused courses (Akhuemonkhan *et al.*, 2013). As a way of harmonising efforts as well as increasing participation across board, the National Universities Commission directed all Nigerian universities to introduce the teaching of a uniform entrepreneurship module as a compulsory general course at the undergraduate level latest 2007/08 academic session (Olorundare & Kayode, 2014; TNV, 2015). The Commission further mandated all universities to establish centres for entrepreneurship studies and more recently, approved the compulsory inclusion of entrepreneurship as a course module in all postgraduate programmes.

#### **2.3.1 Main Objective of Entrepreneurship Education in Nigerian HEIs**

Like in the Euro zone (Toledano & Urbano, 2008), engendering entrepreneurial mindset and skills of students are common major objectives of entrepreneurship education. It is believed that when students are equipped

with strong entrepreneurial mindset and skills, they are more likely to undertake entrepreneurial careers after or upon graduation. While there could be variability in this presupposition in real situations, more empirical studies especially a recent one by Yousaf *et al.* (2015) have proven that intention towards entrepreneurial path could be significantly impacted by skills and mindset. Although Yousaf *et al.* (2015)'s analytical tool may be said to be simple when compared with studies that used more sophisticated analytical tools like structured equation model (SEM) (e.g. Liñán and Chen (2009); Peng, Lu, & Kang (2012); Schlaegel and Koenig (2014); Yang (2013)), his findings are however relevant like those other studies.

In Nigerian universities, just as it is in all the higher institutions of learning in the country, the overarching objectives of entrepreneurship education are not too different from elsewhere. A review of the NUC manual reveals three pertinent issues as expectation of the current entrepreneurship education in Nigeria and these are enumerated below.

- a. Stimulation of entrepreneurial mindset in Nigerian undergraduate students
- b. Equipping students with the knowledge and skills that are necessary to start and run a business successfully as well as achieving success in all human endeavours
- c. Fostering entrepreneurial behaviours/intentions upon/after graduation

In consonance with Emeraton (2008) as quoted in Olorundare and Kayode (2014), entrepreneurship education in Nigerian higher education institutions is expected to stimulate an entrepreneurial mindset on one hand, and impart requisite entrepreneurial knowledge and skills on the other hand. It is expected that entrepreneurial mindset and skills will combine together to reinforce entrepreneurial intentions and behaviours on the part of students. This way, Nigerian universities should produce more of truly entrepreneurial graduates that will create high value ventures (i.e. ventures with high growth potentials) which in turn contribute to economic growth and development over time.



### 2.3.2 Model of Entrepreneurship Education in Nigerian HEIs

In order to realise the driving objectives of entrepreneurship education in Nigerian higher education institutions, the government initiated a model for teaching entrepreneurship illustrated in **Figure 2.1**.

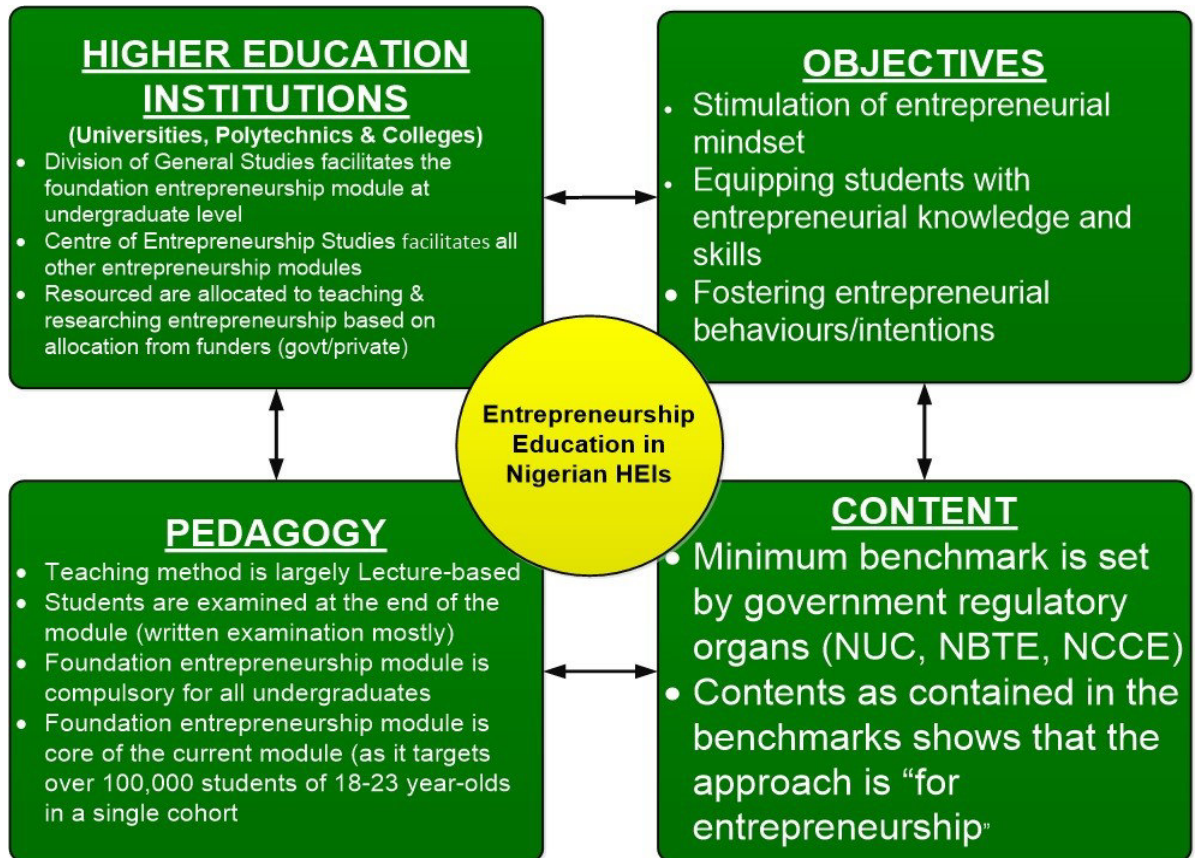


Figure 2.1: Entrepreneurship Education Model in Nigerian HEIs as Initiated by the Federal Government

The entrepreneurship education in Nigerian higher education institutions is modelled on four cornerstones namely: (a) HEIs facilitate the teaching and training; (b) Pedagogical approach is common across the HEIs; (c) Content of the module is centrally designed and to be adopted by each HEI; and (d) HEIs are to address entrepreneurial teaching and training to addressing common objectives. These four cornerstones (HEI, Pedagogy, content and objective) are further explained in the following sub sections.

### **2.3.2.1 Higher Education Institutions**

Paramount to the entrepreneurship education in Nigerian higher education institutions is the higher education institutions which are to facilitate the entrepreneurship policy by teaching the content through a pedagogical process in order to achieve the overall objectives of the initiative. As at July 2016, there was a total of 329 higher education institutions in Nigeria (143 universities, 103 polytechnics and 83 colleges). At most of the institutions, the foundation entrepreneurship is facilitated by already existing Divisions of General Studies. In other words, the Division, under a director, coordinates the teaching and evaluation as well as the general management of the entrepreneurship module. However, a centre of entrepreneurship was later established in most institutions and are charged with other entrepreneurial functions and activities other than teaching and evaluating the undergraduate entrepreneurship module except a few institutions transferred all entrepreneurship initiatives to their centres of entrepreneurship after they were established. In addition, higher education institutions allocate resources to teaching and researching entrepreneurship within the limited resources they get from government and other sources of statutory funding.

### **2.3.2.2 Pedagogical Approach**

The policy on undergraduate entrepreneurship education in Nigeria made it compulsory for all undergraduate students, irrespective of their discipline to register and pass a foundation module in entrepreneurship before graduation. At large, the method of teaching is based on the traditional didactic method while evaluation of students is usually at end-of-semester examination for most of the higher education institutions.

### **2.3.2.3 Content**

Government, through its regulatory organs (i.e. National Universities Commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE)) sets the minimum benchmark for content (see Table 2.1 below for content of the foundation module in entrepreneurship in Nigerian tertiary institutions). This minimum

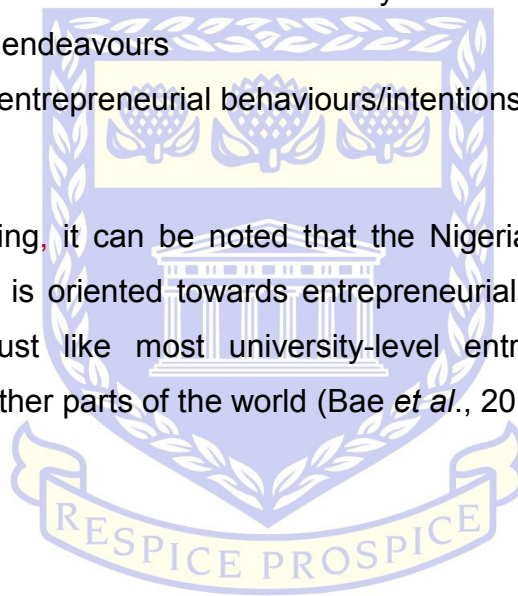
benchmark is encapsulated in a foundation entrepreneurship module which is oriented towards “about entrepreneurship”.

#### **2.3.2.4 Objectives**

Three key objectives of the compulsory undergraduate entrepreneurship module include:

- a. Stimulation of entrepreneurial mindset in Nigerian undergraduate students
- b. Equipping students with the knowledge and skills that are necessary to start and run a business successfully as well as achieving success in all human endeavours
- c. Fostering entrepreneurial behaviours/intentions upon/after graduation

From the foregoing, it can be noted that the Nigerian HEI-entrepreneurship education model is oriented towards entrepreneurial awareness and guiding career choice just like most university-level entrepreneurship education programmes in other parts of the world (Bae *et al.*, 2014).



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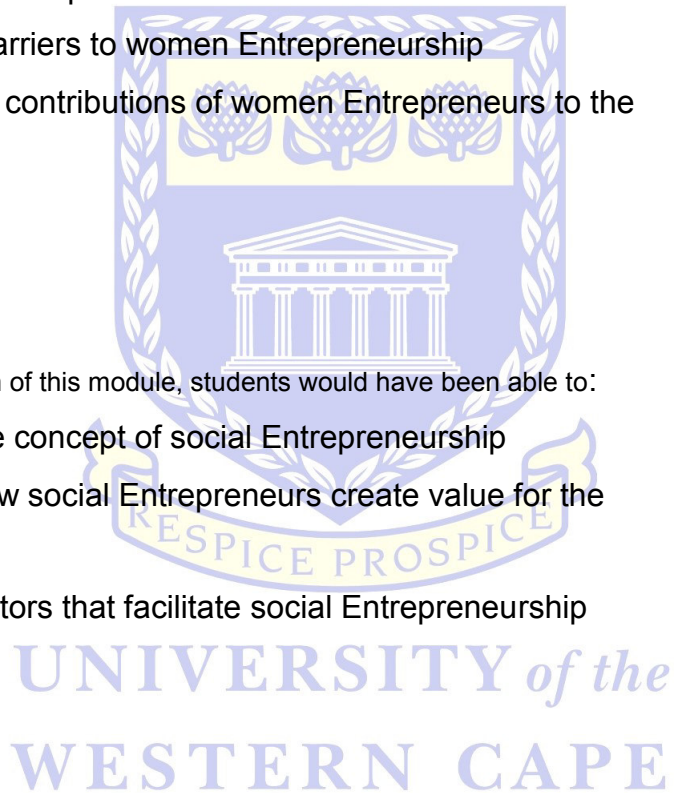
Table 2.1: Content of General (Foundation) Entrepreneurship Module in Nigerian HEIs

Unit	Learning Outcomes	Content
1: Development Entrepreneurship /Intrapreneurship	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Define the concept of Entrepreneurship/Intrapreneurship</li> <li>• Appraise the theories of Entrepreneurship</li> <li>• Examine the concept of Corporate Entrepreneurship</li> <li>• Discuss the Entrepreneurial/Intrapreneurial mind - the strategies, habits, attitudes and behaviours that work for Entrepreneurs/intrapreneurs.</li> <li>• Study Biographies of great entrepreneurs</li> <li>• Explore barriers to Entrepreneurial Culture.</li> </ul>	<ul style="list-style-type: none"> <li>• The concept organizations and theories of entrepreneurship</li> <li>• The Entrepreneurship Culture</li> <li>• Biographical Studies of Entrepreneurs</li> <li>• Barriers to Entrepreneurial practice.</li> </ul>
2: The Nigerian Entrepreneurial Environment	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the Nigerian business environment (political, legal, socio-cultural, economic, natural, technology etc.)</li> <li>• Appraise the cultural issues at work in the entrepreneurial process.</li> <li>• Master how to monitor and identify opportunities/threats and how to deal with such opportunities/threats in the environment</li> <li>• Discuss barriers to Entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>• The Business External Environment (political, legal, socio-cultural, economic, natural, technological etc.)</li> <li>• Identifying Business Opportunities and Threats</li> <li>• Strategies for exploiting opportunities in the environment</li> <li>• Approaches to addressing environmental barriers.</li> </ul>

Unit	Learning Outcomes	Content
3: Creativity and Intellectual Rights	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Define what an intellectual property is and how it is protected</li> <li>• Discuss the Nigerian copyrights laws</li> <li>• Explore how to protect original ideas, concepts and products as well as your enterprise from piracy.</li> </ul>	<ul style="list-style-type: none"> <li>• Intellectual Property and its Dimensions</li> <li>• Copyright Laws in Nigeria</li> <li>• Strategies for Protection of Intellectual Property (original ideas, concepts, products etc.).</li> </ul>
4: Technological Entrepreneurship	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Explain the interface between Entrepreneurship and technology development</li> <li>• Discuss how advances in technology have opened a whole range of new opportunities for Entrepreneurial mindset</li> <li>• Examine the impact of technology on business.</li> <li>• Identify new technology and entrepreneurship opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• The Interface between Technology Development and Entrepreneurship</li> <li>• Technological Development and Entrepreneurial Opportunities</li> <li>• Technological Environment and Business.</li> <li>• New Technology and Entrepreneurship Opportunities</li> </ul>

Unit	Learning Outcomes	Content
5: Management of Innovation	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the concept, nature and types of innovation</li> <li>• Appraise the theories of innovation</li> <li>• Examine critical issues in financing new innovation and new ventures.</li> <li>• Identify change and how it could be successfully managed</li> <li>• Explore the impact of technological change</li> </ul>	<ul style="list-style-type: none"> <li>• The Concept, nature and types of Innovation</li> <li>• Theories of Innovation</li> <li>• Financing Innovation and New Ventures</li> <li>• Change management</li> <li>• Technical Change and management of Innovation</li> </ul>
6: Family Business and Succession Planning	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the concept of family business and the factors that make it unique</li> <li>• Explore the cultural context of the family business</li> <li>• Appraise the complex roles and relationships involved in a family business</li> <li>• Identify entrepreneurial practices that enable a family business to function effectively</li> <li>• Examine the process of managerial succession in a family firm.</li> <li>• Analyze the major issues involved in the transfer of ownership to a succeeding generation.</li> </ul>	<ul style="list-style-type: none"> <li>• The Concept of Family Business.</li> <li>• The Cultural Contexts of Family Business</li> <li>• Roles and Relationship in Family Business</li> <li>• Ownership Transfer and Succession in Family Business.</li> </ul>

Unit	Learning Outcomes	Content
7: Women Entrepreneurship	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the concept and nature of women Entrepreneurship</li> <li>• Examine barriers to women Entrepreneurship</li> <li>• Identify the contributions of women Entrepreneurs to the economy</li> </ul>	<ul style="list-style-type: none"> <li>• The Concept of Women Entrepreneurship</li> <li>• Role orientation and women Entrepreneurial Aspirations.</li> <li>• Contributions of Women to National Socio-economic and Human Development.</li> <li>• Barriers to Women Entrepreneurial Practice</li> </ul>
8: Social Entrepreneurship	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the concept of social Entrepreneurship</li> <li>• Discuss how social Entrepreneurs create value for the society.</li> <li>• Explore factors that facilitate social Entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>• The concept of Social Entrepreneurship</li> <li>• Social Entrepreneurship and Value Creation</li> <li>• The Roles of Non-governmental organizations in Social Entrepreneurship</li> <li>• Social Entrepreneurship and Funding Opportunities</li> <li>• Social Entrepreneurship Enhancement Factors.</li> </ul>



Unit	Learning Outcomes	Content
9: Business Opportunity Evaluation	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Examine opportunity, taking into consideration the criteria used by successful entrepreneurs, "Angels" and venture capital investors in evaluating potentials ventures.</li> <li>• Discuss the difference between an idea and an opportunity</li> <li>• Identify sources of information for finding and screening venture opportunities.</li> <li>• Generate some new venture ideas that will eventually be used in the business planning process.</li> </ul>	<ul style="list-style-type: none"> <li>• Sources of Business Opportunities in Nigeria</li> <li>• The difference between Ideas and Opportunities</li> <li>• Scanning Business Opportunities in Nigeria</li> <li>• Environment and New Venture Idea generation.</li> </ul>
10: Concept of Business and New value	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Describe the concept of business planning</li> <li>• Define the concept of business start-up</li> <li>• Explain the process of opportunity search and identification</li> <li>• Discuss the legal issues of start-ups</li> <li>• Undertake viability analysis of Creation new ventures and new venture financing</li> </ul>	<ul style="list-style-type: none"> <li>• Business planning process</li> <li>• Start-up decision - what motivates people to begin new businesses</li> <li>• Opportunity search and identification</li> <li>• Legal issues at start up</li> <li>• Feasibility analysis of new ventures and new venture financing</li> </ul>



Unit	Learning Outcomes	Content
11: Theories of Growth: An Overview	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Describe the concept of business growth</li> <li>• Explore the strategies for growth (franchising, buy in and buyout)</li> <li>• Examine merger and acquisitions</li> <li>• Discuss the challenges of growth</li> <li>• Analyse viability criteria of new ventures and new venture financing</li> </ul>	<ul style="list-style-type: none"> <li>• Concepts and reasons of growth</li> <li>• Challenges of growth</li> <li>• Strategies for growth (External growth strategies, Franchising, Buy-in and Buy-out)</li> <li>• Mergers and Acquisition</li> </ul>
12: Sources of Funds	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the source of funds for new and entrepreneurial ventures</li> <li>• Appraise the importance of formal and informal sources of funds for new ventures</li> <li>• Explore the concept, method, and type of finances provided by venture capital</li> <li>• Describe the various government initiatives in funding new ventures and small and medium enterprises in Nigeria.</li> </ul>	<ul style="list-style-type: none"> <li>• Internal sources and external sources</li> <li>• Formal and informal sources</li> <li>• Efficiency in the use of resources</li> </ul>

Unit	Learning Outcomes	Content
13: Marketing	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the concept of small marketing</li> <li>• Appraise the fundamental differences between small business marketing and large business marketing</li> <li>• Explore the use of the marketing mix in new ventures</li> <li>• Apply the unique/modern selling proposition of new firms</li> </ul>	<ul style="list-style-type: none"> <li>• Concept of marketing: Small and big business marketing</li> <li>• Marketing mix</li> <li>• Modern marketing tools.</li> </ul>
14: Ethics and Social Responsibility	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Describe the concept and importance of business ethics</li> <li>• Discuss the concept of social responsibility</li> <li>• Apply concepts to the operations and success of ventures</li> </ul>	<ul style="list-style-type: none"> <li>• The importance of ethics in business</li> <li>• Ethical behavior and practices in Nigeria</li> <li>• Community development projects/welfare</li> </ul>
15: New Opportunities for Expansion	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Learn the new technique of E-Commerce; E-business; E-trade</li> <li>• Discuss in a practical way the application of these techniques in real business</li> <li>• Explore the challenges to E-commerce; E-business; E-trade, especially in the context of Nigeria.</li> </ul>	<ul style="list-style-type: none"> <li>• E-commerce</li> <li>• E-business</li> <li>• E-trade</li> </ul>

Unit	Learning Outcomes	Content
16: Managing Transition: From start up to growth	<p>Upon completion of this module, students would have been able to:</p> <ul style="list-style-type: none"> <li>• Discuss the issue of transition in business</li> <li>• Learn about personal discipline that is required to manage a business from start-up to growth</li> <li>• Explore issues related to planning, managing business and decision making in transition Situation</li> <li>• Discuss the stress and pressures, and various resources constraints associated with transitory stage of business growth</li> </ul>	<ul style="list-style-type: none"> <li>• Personal disciplines</li> <li>• Learning</li> <li>• Decision making</li> <li>• Control</li> </ul>

Source: Draft of General Entrepreneurship for Nigerian Universities, 2012



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### **2.3.3 Entrepreneurship Education in the Research Setting**

For most higher education institutions in Nigeria, especially universities, not less than 7 cohorts have been through the compulsory entrepreneurship module ('GST entrepreneurship'). As one of the 143 Nigerian universities (as at April 2016), the selected university (owned by the Federal government) has implemented the directive of the federal government by introducing the compulsory entrepreneurship module since 2008. The module is a 2-credit general course which is being taught to year-two undergraduate students across all faculties, usually in the first semester by a team of facilitators pooled from the faculty of Management. Adapted from the NUC manual, GST 223 covers sixteen (16) topics within 30 hours of lectures in a semester. Some of the topics include: Development of entrepreneurship/intrapreneurship, the Nigerian entrepreneurial environment, Management of innovation, technological entrepreneurship, etc. The questions then are: has participation in the current entrepreneurship education significantly changed students' mindset positively towards entrepreneurship? Has participation in the programme significantly imparted entrepreneurial skills and knowledge? To what extent has the programme reinforced entrepreneurial intentions?

### **2.4 SUMMARY**

An elaborate background to the research problem stated in chapter one has been presented in this chapter with the aim to justify why this study is necessary. Specifically, the chapter discussed unemployment trends at global, regional and national level with references to youth and graduate unemployment challenges in Nigeria and the entrepreneurship education policy aimed at solving the problem. The chapter later reviewed the entrepreneurship education model in Nigerian higher education institutions in relation to the research problem being addressed in this study.

## CHAPTER THREE: LITERATURE REVIEW

### 3.1 INTRODUCTION

There has been much scholastic debate about the veracity [or do I say, legitimacy] of entrepreneurship education but as Abaho, Olomi, and Urassa (2015) and noted, there is more consensus around the fact that entrepreneurship can be taught, at least in part (Kuratko, 2005). To further lay credence to this point, Peter Drucker, a leading American management guru opined that “most of what you hear about entrepreneurship is all wrong. It’s not magic; it’s not mysterious; and it has nothing to do with genes. It’s a discipline and, like any discipline, it can be learned”. This assertion strongly posits entrepreneurship education not only as an academic field of study but vital area of research interests. Recent developments across the political and academic landscapes have further proven this fact. For instance, world leaders rose from the World Economic Forum in 2007 with a firm commitment to improving the state of entrepreneurship education. They expressly pledge to provide the much-needed pedestal for future global actors by means of well-rounded entrepreneurship education. The outlook of this new entrepreneurship education sharply contrasts its antecedent. The following statement culled from the report titled “Educating the next wave of entrepreneurs” is a brilliant reflection of this.

the Global Education Initiative (GEI) of the World Economic Forum in the context of its mission to help create sustainable, scalable and relevant education systems through multistakeholder partnerships, has embarked on a process to advance Entrepreneurship Education as one of the key drivers of sustained social development and economic recovery.....this report addresses entrepreneurship education from [this] broader perspective, likely the first time it has been viewed in such a comprehensive manner. (World Economic Forum, 2009, pp.6-7)

New perspectives from researchers and other experts plus the support of political leaders are shaping new paradigms for entrepreneurship education especially with respect to growing national and regional economies. In chapter two, the background to entrepreneurship education in Nigerian universities and expected outcomes amidst the rising socio-economic challenges were discussed. This chapter will however provide a general meaning and focus of entrepreneurship education, theories that have underpinned researches in entrepreneurship education and the emerging issues needing further research attention.

### **3.2 ENTREPRENEURSHIP EDUCATION: EVOLUTION AND PARADIGM SHIFT**

The history of modern entrepreneurship can be traced to the mercantile age during which time Jean-Baptiste Say coined the term “entrepreneurship” in about 1880 (Harfst, 2013). Since then, there has been increasing acknowledgement of the importance of entrepreneurship for economic growth and development (Kuratko, 2005). Education has been recognised as one of the major barriers to the rapid development of entrepreneurship (Rideout & Gray, 2013). In response to this, the idea of entrepreneurship education emerged with the first research centre having entrepreneurship as a focus, established at Harvard in 1946 and by February 1947, Myles Mace taught the first acclaimed entrepreneurship lecture at Harvard’s Business School (Katz, 2003). Although it has been argued that the history of entrepreneurship education can be traced back to a Japanese professor emeritus, Shigeru Fuji of Kobe University in 1938 (Harfst, 2013; Solomon, Duffy, & Tarabishy, 2014). Kuratko (2005)’s perspective on whether the courses or programmes were entrepreneurship concentrated or not, retraced the root of entrepreneurship education as we now have to 1971 and 1972 when the first Masters of Business Administration and an undergraduate programme with entrepreneurship concentration were respectively launched in the University of Southern California. Ever since then, the number of institutions offering entrepreneurship based programmes as well as the number of students subscribing for entrepreneurship education have grown in leaps and bounds. For instance, Finkle, Kuratko and Goldsby (2006) noted that the number

entrepreneurship education programmes grew from less than 10 in 1972 to over 2,200 by 2006. And it is obvious that the number is far greater today considering government policies across African countries that have spurred the emergence of more entrepreneurship programmes.

While Katz (2003) chronologically identified the events that contributed to the build-up of entrepreneurship education, Neck, Greene and Brush (2014) on the other hand systematically encapsulated the evolution of entrepreneurship education on a theory-practice continuum and presented it in a model they called theory-practice matrix (see **Figure 3.1** below).

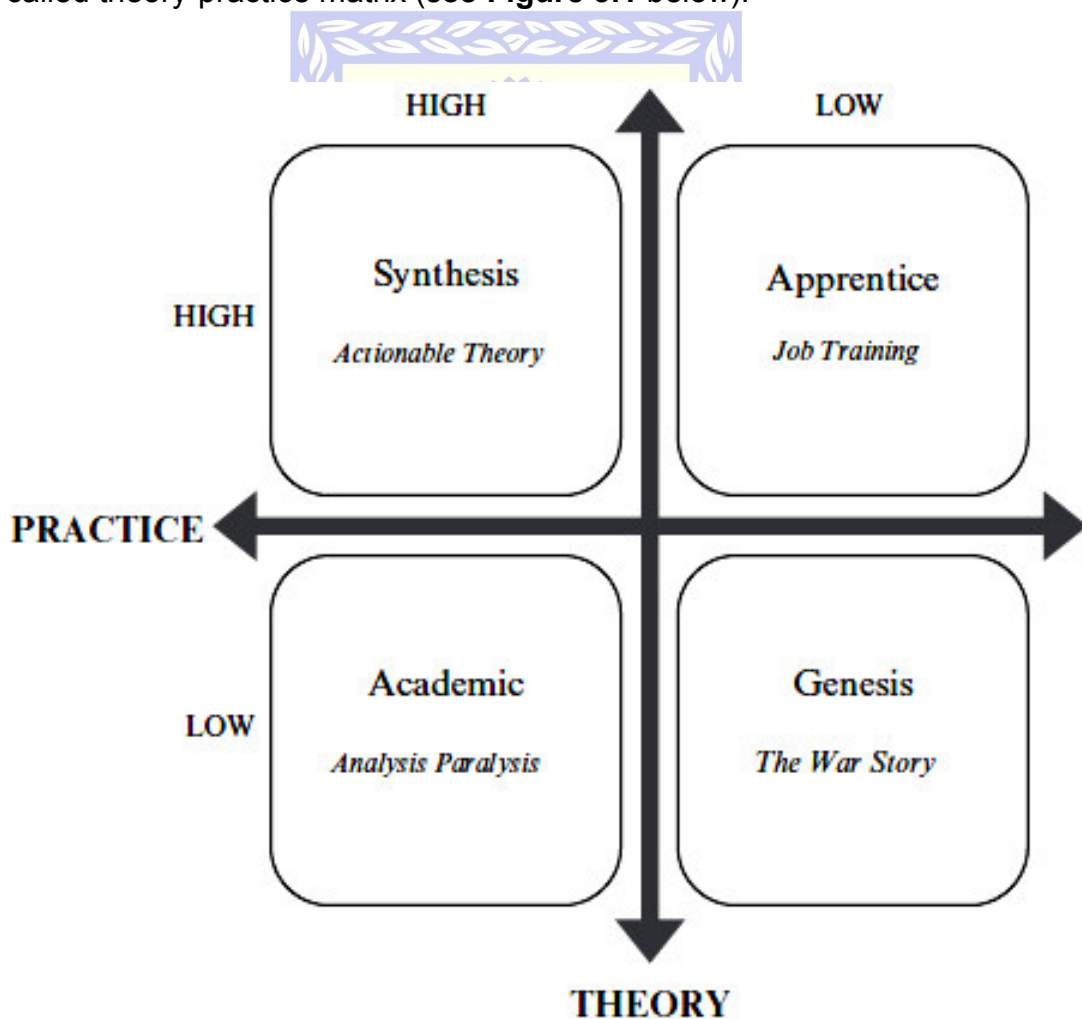


Figure 3.1: Theory-practice matrix  
Source: Neck *et al* (2014)

The arguments for application or articulated theory; action or explanation; practice or pedagogy which have dominated the field of entrepreneurship education (Fayolle, 2008, 2013, Kuratko, 2003, 2005; Neck *et al.*, 2014) have also made it easy to map the evolution of entrepreneurship on the yardsticks of content, theories and pedagogies. From Neck *et al.*, (2014)'s model, four developmental stages can be identified in the evolution of entrepreneurship education beginning from 1938 till 2014 and these are listed and discussed below.

- a. Genesis or Early Infancy: Education about “venturers”
- b. Apprentice or Later Infancy: Education for venturing skills
- c. Academic or Adolescence: Education for cognitive development
- d. Synthesis or Towards Early Maturity: Education for competence and action

### **3.2.1 Genesis or Early Infancy: Education about “venturers”**

Entrepreneurship education was born with creating awareness of those individuals who succeeded as entrepreneurs against the backdrop of the world war. Here focus was more on traits that were assumed to have underlie the success stories of successful entrepreneurs (Neck *et al.*, 2014). Content was unstructured, theories were lacking, and pedagogies were unsystematic. Predominantly, Infant entrepreneurship education was to learn about successful entrepreneurs. But this little beginning however, was sufficient to signal the birth of entrepreneurship education as a field of study even though academics were as now, not interested and thus not involved in it.

### **3.2.2 Apprentice or Later Infancy: Education for Venturing Skills**

At this stage, entrepreneurship education shifted emphasis to imparting venture-creating skills. Reflective of Fiet (2000)'s view as cited in Neck *et al.* (2014), entrepreneurship leaned more towards practice with little or no articulated theoretical foundations for what was being taught. This was the era of the true rebirth of entrepreneurial spirit especially in the United States of America when the number of entrepreneurship departments, units, divisions, centres, faculty, programmes as much as the number of firms creation grew astronomically (Finkle *et al.*, 2006; Kuratko, 2003, 2005). Essentially, this era



of entrepreneurship education focused the student's attention on how to become successful entrepreneur by teaching skills for discovering or creating opportunities and exploring them through efficient resource mobilisation (Solomon *et al.*, 2014). Again, this was not without some criticisms. Common criticisms of entrepreneurship education at this stage include the lack of definitional clarity of concepts, absence of well-defined pedagogical methods and theories. Besides, laying emphasis on firm creation makes entrepreneurship education lopsided.

### **3.2.3 Academic or Adolescence: Education for Cognitive Development**

In a bid to overcome the limitations of the previous eras of entrepreneurship education, academic scholars sprang to dominate the space of research and practice of entrepreneurship education (Neck *et al.*, 2014). This is evident in the growth of academic journals, conferences, compendiums and professorial chairs devoted primarily to advance entrepreneurship education. With academic dominance of entrepreneurship education, more theories have been applied to teaching entrepreneurship. This, according to Chell (2013) has made the field more focused on theory-building. Examples include the theory of planned behaviour and the entrepreneurial competency theory. In Lackeus (2015)'s words, the current entrepreneurship education can be best described as "marginalised innovative pedagogy and separate minor subject status". But the teaching methodologies, especially the case studies approach in this era succeeded largely in producing individuals whose cognitive abilities were cultivated towards entrepreneurial orientation.

Furthermore, Neck *et al.*, (2014) noted that these pedagogies left very limited considerations for application for entrepreneurial action. As cited in Galloway, Anderson, Brown and Wilson (2005), Gibb (1996) had earlier criticised the methods and approach of teaching entrepreneurship as being more of conceptual thinking and critical analysis rather than practical-oriented. Chell (2013) sharing same view further added that mere cognitive skills about the entrepreneurial process has only taken us "a step" from the real world of entrepreneurs and innovators. These criticisms only call for a paradigmatic

review of the current entrepreneurship education. This, as it is hoped, should help address the lack of integrated educational framework which fundamentally answers the fundamental questions of why, what, for whom, how and for what results of entrepreneurship education. The ensuing framework should be grounded on relevant and widely accepted educational and entrepreneurship theories which, so far, has remained a consistent limitation of entrepreneurship education since 1938 (Fayolle, 2008; Fayolle & Gailly, 2008; Fayolle *et al.*, 2006a). In Fayolle (2008)'s view, addressing the lack of universal pedagogical synthesis for entrepreneurship education should be a primary concern to be address if a more matured field of entrepreneurship education would ever evolve.

#### **3.2.4 Synthesis or Towards Early Maturity: Education for Competence and Action**

There are dissenting views about the maturity of entrepreneurship education as field. Arguing from the perspectives of the hallmarks of maturity, Katz (2008) pointed at the more universal standards for designing entrepreneurship programmes; the growth of the field in terms of the number of programmes and schools offering entrepreneurship education; and the number of specialised entrepreneurship programmes growing over time. He concluded that though the field may not have proven its legitimacy, entrepreneurship education can be said to be mature as a field. A critical review of literature such as Fayolle (2008, 2013); Fayolle and Gailly (2008); Fayolle and Liñán (2014); Fayolle and Toutain (2013); Harfst (2013); Kuratko (2003); Lackéus (2015); Neck *et al.* (2014); and the World Economic Forum (2009) exudes contrary views. Some of these authors were unequivocal about their position that the field of entrepreneurship education is yet to mature.

An unbiased assessment of arguments on both sides thus suggests that the field of entrepreneurship education can further grow on the ground of some proposed paradigm shifts. Some of these paradigm shifts are captured in (Neck *et al.* (2014)'s model which, according to them would evolve the era of synthesis (i.e. early maturity of entrepreneurship education) where both theory

and practice strongly tie. This is what Chang and Rieple (2013. p.225) called bringing “together the providers of academic theory and entrepreneurs....[which] thus...moves [entrepreneurship education] from classroom learning to experiential learning, where academic knowledge can be tested in the real world”. To realise this, Chang and Rieple (2013) favoured the “live project” approach to future entrepreneurship education. They argued that live projects will allow entrepreneurs to provide students with real-time, real-world business problems to solve. Students will then develop business solutions that would be examined from entrepreneurs’ practical experiences; educators’ perspectives in terms of theoretical underpinnings of new venture creation; and financiers’ perspective of how attractive the solution is. The crux of the argument is that this wider range of perspectives will broaden the students’ well-rounded experiential learning that is both theoretically and practically sound. A major short coming of this nature of methodology is that the number of participants that can be allowed is so small. In Chang and Rieple (2013)’s study for instance, only 44 students enrolled for the “elective” module and so it will be practicable to take this number through a live project very successfully. But in the quest to produce entrepreneurial graduates through compulsory module that have more than 5,000 students enrolling in a single semester, and in a single institution, live project seems very impracticable!

### **3.2.5 Paradigm Shifts for Redefining Future Entrepreneurship Education**

To achieve a more mature academic discipline in entrepreneurship education, researchers have suggested a few paradigm shifts. In setting the stage for this, Neck *et al.* (2014) advocated for actionable theory that is less of scientific process and more of entrepreneurial method. In their own words, Neck *et al.* (2014) claimed that “the [entrepreneurial] method forces students to go beyond understanding, knowing, and talking [as the case is with many current entrepreneurship modules]. It [proposed form of entrepreneurship education] requires using, applying, and acting. The method requires continuous practice”. Pursuant to the foregoing, Lackeus (2015) suggested that evolving this paradigmatic shift in entrepreneurship education will require the infusion

of involvement that is tailored towards value creation across the entire entrepreneurship education curricular. He is also advocating for a wider meaning of entrepreneurship education proposing a shift in focus on becoming entrepreneur to becoming more entrepreneurial hoping this will help reduce definitional and terminology divergence and ambiguity among researchers.

More specifically, Fayolle (2006a, 2008, 2013) proposed a very robust framework for entrepreneurship education. Basing his suggestions on the pillars of education sciences of Why (objectives, goals), What (contents, theories), For whom (targets, audiences), How (methods, pedagogies), For which results (evaluation, assessment), Fayolle (2008, 2013) expects a more cohesive domain of entrepreneurship education which reflects fundamental changes in nature, practice, impact and outcome.

### **3.3 EMPIRICAL BASIS FOR PARADIGM SHIFT IN ENTREPRENEURSHIP EDUCATION**

An important element of the framework for redefining entrepreneurship education as proposed especially by Fayolle (2008, 2013) is the assessment of entrepreneurship programmes. A good place to start from is evaluating current entrepreneurship programmes within the context of the theory of planned behaviour (TPB) and pin point those areas that must be adjusted in line with the suggested paradigms (Fayolle *et al.*, 2006a).

The theory of planned behaviour, having been cited for more than 42,677 since it was propounded in 1991, has found application in various domains of research such as medicine, management, education and particularly, entrepreneurship. The theory of planned behaviour primarily focuses on how an individual's future behaviour can be predicted based on his/her intention which is influenced by certain factors (Ajzen, 1991). Of the three factors indicated by Ajzen (1991, 2001, 2002), Fayolle *et al.* (2006a) asserted that perceived behavioural control (PBC) is the most important. In fact the study of Rueda, Moriano and Liñan (2015) confirmed this assertion with empirical

results. Furthermore, the argument that perceived behavioural control (PBC) is the same as the concept of self-efficacy where the individuals maintain beliefs about their competence or capability to perform or act towards a particular behaviour, has opened up a new dimension to researching entrepreneurship education (Rueda *et al.*, 2015). Based on the foregoing as well as works of other authors like Krueger, Reilly, and Carsrud (2000), Fayolle *et al.* (2006a) provided some deep insights for further empirical studies that would help shape the future of entrepreneurship education. Discussed in greater details in the following paragraphs, Fayolle *et al.* (2006a) and Fayolle (2013) suggested that certain aspects of entrepreneurship education within the context of the theory planned behaviour may be studied with some moderating variables between entrepreneurship education and entrepreneurship outcomes being introduced.

### **3.3.1 Components of Entrepreneurship Education**

Typical of any educational domain, entrepreneurship education as an academic field has a number of elements critical to its makeup. Fayolle *et al.* (2006a)'s methodology for assessing entrepreneurship education programmes presents a model which indicates the following components of entrepreneurship education: institutional setting, typology of entrepreneurship education, content, and pedagogy. These are discussed briefly below.

#### **3.3.1.1 Institutional setting**

Found to be an important variable of entrepreneurship education (Fayolle *et al.*, 2006a; Fayolle, Gailly, & Lassas-Clerc, 2006b; Mustafa, Hernandez, Christopher, & Chee, 2016; Shirokova, Osiyevskyy, & Bogatyreva, 2015), the design and delivery of future entrepreneurship education, as suggested by Fayolle (2013) and Fayolle and Liñán (2014), must take cognisance of institutional characteristics such as culture, structures, mechanisms and resources that would help foster entrepreneurship programmes (Fayolle & Toutain, 2013). The extent to which these characteristics are available or lacking or harnessed would determine how effective entrepreneurship education would be in shaping entrepreneurial intentions of students.

Specifically, these characteristics include: business incubator, financial and network support initiative for students' venturing, allocated time and space for entrepreneurial development, varieties of entrepreneurship programmes available for students, etc. (Fayolle *et al.*, 2006a). Giving room for more focused definition of what constitutes educational support factor that helps to shape entrepreneurial skills and abilities, Turker and Selcuk (2009) had provided some preliminary empirical evidence of positive impact of institutional support on entrepreneurial intentions.

### **3.3.1.2 Typology for Entrepreneurship Education**

Although there is no generally accepted typology for entrepreneurship education, one important yardstick for drawing typology for entrepreneurship education is making a distinction between training and education (Fayolle *et al.*, 2006a). Whereas training seems to address specific skills need, education seeks to provide a broader range of skills for wider problem-solving purposes. Future entrepreneurship education that aligns with the foregoing implies a typology different from entrepreneurship education for start-up, entrepreneurial awareness and continuing education for entrepreneurs as presented by Liñán (2004) in Fayolle *et al.* (2006a).

### **3.3.1.3 Contents of Entrepreneurship Education**

Entrepreneurship education has so far zeroed on the process of entrepreneurship where identification, evaluation and exploitation of entrepreneurial opportunities as well as harvesting of entrepreneurial investment form the fulcrum of content (Fayolle, 2013). However, the five-level content dimension cited in Fayolle *et al.* (2006a, 2006b) which includes: know-why (objectives and values), know-how (competence), know-who (social capital), know-when (intuition) and know-what (knowledge) is now dominating perspectives on what makes for effective entrepreneurship education content in the near future. To empirically ascertain this, one of the questions to be answered by future research in this domain concerns how contents of entrepreneurship education programs impact upon students' intentions (Fayolle & Liñán, 2014).

#### 3.3.1.4 Pedagogy for Entrepreneurship Education

Pedagogy relates to teaching approach and methods employed in delivering the content of an educational programme and how effective they are. A review of literature according to Fayolle (2013) exudes different pedagogies in entrepreneurship education such as didactical, experiential learning, apprenticeship style, real-world approach and active approach where case studies are predominant. Future pedagogies will however depend on the yet to be harmonised issues such as adequacy of methods and audience; methods and content; methods and objectives; methods and institutional setting (Fayolle, 2013; Fayolle *et al.*, 2006a). More empirical studies are needed in this aspect to determine a more universally acceptable pedagogy for future entrepreneurship education.

#### 3.3.2 Rethinking Entrepreneurship Education Based on World Economic Forum Model

Traversing regional blocs of the world, the World Economic Forum (2009) captured the current trends of entrepreneurship education in a model presented in **Figure 3.2** below. While highlighting what to teach; where to teach; who to teach; and how to teach entrepreneurship education, the model is framed on the continuum of lifelong learning scale that inclusively targets all categories of entrepreneurship education audiences. Although the model encapsulates what is already obtainable in some parts of the world in terms of entrepreneurship education, it however articulates points for paradigm shifts in line with what research experts and scholars (e.g. Fayolle & Liñán, 2014; Fayolle & Toutain, 2013; Neck *et al.*, 2014) in entrepreneurship education had proposed. The focus here is not just to produce entrepreneurs but to rigorously on a large scale, change the mindsets of people across all walks of life – political, business, academia, etc. – and equip them with skills and exposure necessary for creating valuable solutions superior to current economic growth strategies. The model also provides the basis for rethinking entrepreneurship education in a manner that will spur individuals to be entrepreneurial both in thinking and behaving.

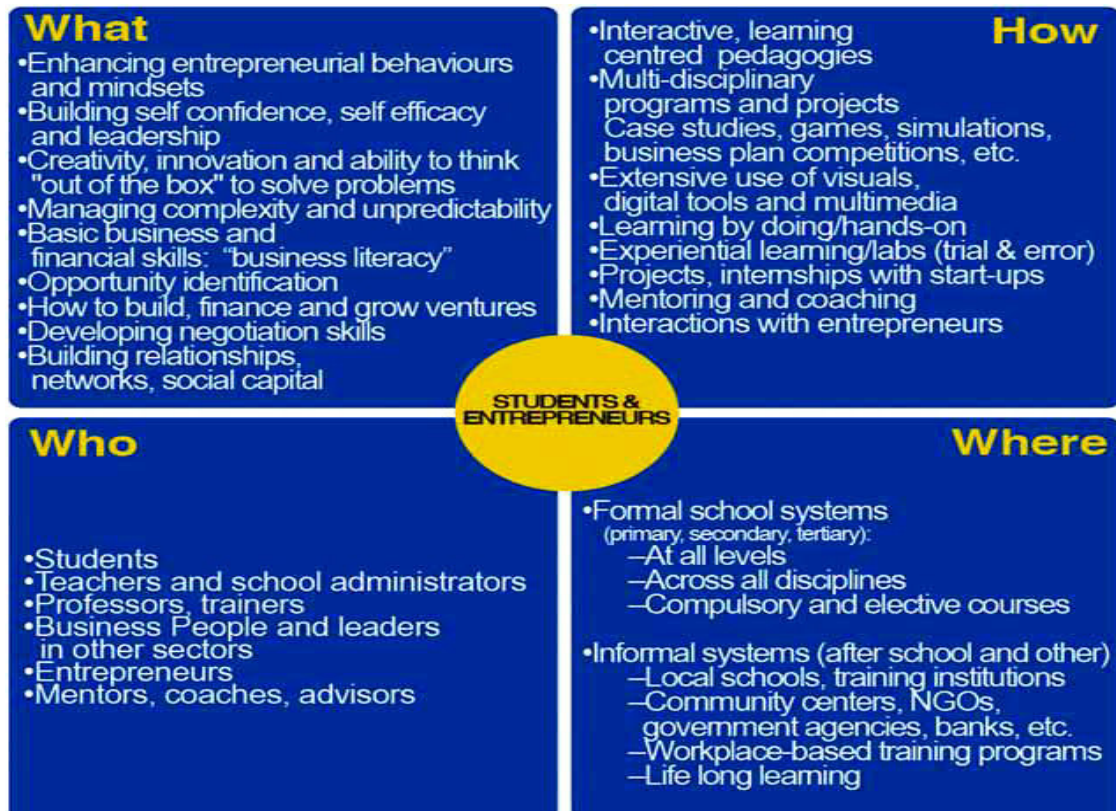


Figure 3.2: Entrepreneurship Education Model  
Source: World Economic Forum (2009)

### 3.3.3 Moderating Variables

Previous studies (e.g. Dickson, Solomon, & Weaver, 2008; Fayolle *et al.*, 2006a; Peterman & Kennedy, 2003) have shown that entrepreneurial education can be linked to entrepreneurial intentions and/or behaviours. In order to assess the impact of entrepreneurship education on entrepreneurial intentions and behaviours, Fayolle (2013) had suggested that some moderators can be introduced so as to make for the limitations of previous studies. Against the backdrop of perceived behavioural control (PBC) as presented in the theory of planned behaviour (TPB) and the concept of self-efficacy in the entrepreneurial competence theory, mindset and skills could act as good moderators between entrepreneurship education and entrepreneurial intentions. In fact, Yousaf, Shamim, Siddiqui, and Raina (2015) in their study substituted perceived behavioural control with entrepreneurial abilities and skills where entrepreneurial abilities are as perceived by individuals. If mindset and skill can be linked to intention, then they can serve as moderators between education and intention. The subsequent sections are therefore



devoted to discussing entrepreneurial mindset and entrepreneurial skills as moderating variables for between entrepreneurship education and entrepreneurial intentions as proposed in the model for this study.

### **3.4 ENTREPRENEURIAL MINDSET: DEFINITIONS AND DELINEATED BOUNDARIES**

The earlier researches in the field of entrepreneurship which focused on individual traits of successful entrepreneurs consequently led to scholarly debates about whether entrepreneurship could be taught or not (Solesvik, Westhead, Matlay, & Parsyak, 2013). After more than a decade, there are more convincing arguments that entrepreneurship can be taught (Abaho *et al.*, 2015). Sequel to this agreeable consensus is the criticism that “entrepreneurial trait” studies are far too weak to provide the needed framework for the design of any relevant entrepreneurship education programme (Duening, 2010). Thus researchers have now turned search light on the concept of “entrepreneurial mindset” as an important mediating variable towards entrepreneurial intention, behaviour and action besides skills and other entrepreneurial resources (Abaho *et al.*, 2015).

According to Financial Times (2015), entrepreneurial mindset refers to a “specific state of mind which orientates human conduct towards entrepreneurial activities and outcomes.” This state of mind is keen on seeing and seizing opportunities in the environment leading to innovative and high value offerings. Network for Teaching Entrepreneurship (2014) argues that this sort of mindset is particularly necessary in today’s global economy where needs and preferences evolve almost faster than the pace of innovation. Ability to perceive opportunities, take initiative and innovate will therefore largely rest on those who possess astute entrepreneurial mindset. With the fact that entrepreneurship can be taught, this study assumes that entrepreneurial mindset which is essentially different from trait can be cultivated through entrepreneurship education.

The confluence of works of psychologists and researchers in entrepreneurship have however sought to provide good foundation for elucidating the concept of

entrepreneurial mindset. On one hand, the works of Veronikas and Shaughnessy (2004); Cutts, Cutts, Draper, O'Donnell, and Saffrey (2010); Dweck (1996, 2008); Levy and Dweck (1999) give the basic understanding that mindset is a set of beliefs and perceptions that involuntarily shape one's attitude and behaviour towards any object or phenomenon. On the other hand, a number of studies and/publications in entrepreneurship provide the understanding that entrepreneurial mindset is an innate cognition which orientates one's conduct towards entrepreneurial activities, pursuits and outcomes (Haynie, Shepherd, Mosakowski, & Earley, 2010; Kim & Tranquillo, 2014; Mitchell, 2007; Pfeifer, Šarlija, & Zekić Sušac, 2014; Reid & Ferguson, 2010, 2011; Rekha, Ramesh, & JayaBharathi, 2015; Richert-Kaźmierska & Lechman, 2014; Solesvik *et al.*, 2013). And there has more interest in this entrepreneurial cognition due to, at least the assumption that it can be nurtured through training and education (Davis, Hall, & Mayer, 2014).

#### 3.4.1 Definitions and Perspectives of Entrepreneurial Mindset

Authors and researchers have presented different perspectives on what entrepreneurial mindset is and it is important to note from the onset that these perspectives are shaped by the scope of, and approach to their studies. In this section, an attempt is made to synthesise well-rounded views on entrepreneurial mindset.

- a. Haynie *et al.* (2010): **Entrepreneurial mindset as adaptable cognition (or “cognitive thinking”)**

Based on the studies of Ireland *et al.* (2003); Krauss *et al.* (2005); McGrath and MacMillan (2000), Haynie *et al.* (2010) defined entrepreneurial mindset as the cognitive ability to adapt to complex and dynamic situation within an uncertain entrepreneurial context. This adaptable cognition, they claim, arise from an objective knowledge of oneself (metacognition) and should lead to rapid and flexible resource mobilisation under uncertain conditions in response to entrepreneurial pressures. This metacognition adaptability is modelled on five elements which include entrepreneurial motivation, awareness, experience, strategy formulation and feedback.

b. *Solesvik et al. (2013)*: **Entrepreneurial mindset as entrepreneurial alertness**

*Solesvik et al. (2013)* view entrepreneurial mindset as an outcome of entrepreneurship education as well as asset for entrepreneurial success. To them, an entrepreneurial mindset is the insightful alertness that fosters swift uncovering of, and tactical exploitation of opportunities in a disequilibrium market which otherwise non-entrepreneurial minds would not see. They further identified three components of this alertness to include: searching for market information, connecting pieces of information to exude opportunities and evaluating the information to determine viability and direction for action. From their empirical study, they reported significant positive associations between entrepreneurial mindset and intention; and between entrepreneurial mindset and entrepreneurship education. Surprisingly, they noted the risk-averseness (product of risk perception) is negatively related to entrepreneurial mindset especially in those students who had participated in entrepreneurship education and therefore suggested more studies be conducted in that regard.

c. *Reid and Ferguson (2010, 2011)*: **Entrepreneurial mindset as a growth oriented mindset**

Dweck (2007)'s "*Mindset: The New Psychology of Success*" provided frame for Reid and Ferguson (2010, 2011)'s definition of entrepreneurial mindset. Against the backdrop of interventions introduced to positively shape the attitude, knowledge and orientation of graduates in relation to innovation and creativity, the duo defined entrepreneurial mindset as essentially including certain characteristics that engender entrepreneurial orientations but these characteristics are cultivated over time. Meaning that there is "shift" in perceptions, beliefs and attitude of the individual which Dweck (2007) calls "growth mindset" and this shift reflects in vision, passion, optimism, persistence, team-orientation, risk-management and tolerance for ambiguity. Fundamentally, this perspective affirms the argument that entrepreneurs can be made because the foundation of entrepreneurial mindset as a growth orientation is cornered on the frame that even "intelligence" can be nurtured through learning and adjustment. And as such, conscious learning and

unflinching resilience towards overcoming challenges are naturally stimulated (Dweck, 2010). However, the results of their study raise question about the interventions to shape entrepreneurial mindset. This calls for further empirical studies to comprehensively assess all the conceivable components of entrepreneurial mindset using strong psychometric instrument and investigate how different institutional entrepreneurial ecosystem stimulates this.

d. *Davis et al. (2014): Entrepreneurial mindset as a creative mindset*

Juxtaposing the personality approach and cognitive approach, Davis *et al.* (2014) defined entrepreneurial mindset as a creative mind with identifiable innate and learnable characteristics such as action orientation, independence and nonconformity in addition to those discussed by Reid and Ferguson (2010, 2011) and Solesvik *et al.* (2013). In their bid to profile an entrepreneurial mindset on a 14-scale instrument, Davis *et al.* (2014) showed how personal qualities and skills could engender creative mindset towards entrepreneurial pursuit.

e. *Wongpreedee, Kiratisin, and Virutamasen (2015): Entrepreneurial mindset as a blend of skills and traits*

Wongpreedee, Kiratisin, and Virutamasen (2015)'s perspective on entrepreneurial mindset is simply a perfect blend between personal traits and certain teachable skills such as social responsibilities and engagement. In their Turkey-based survey, Wongpreedee, Kiratisin, and Virutamasen (2015) identified commitment to learning and open-mindedness are particularly critical in describing and entrepreneurial mindset.

f. *Rekha et al. (2015): Entrepreneurial mindset as behavioural variables*

In their conduct of an empirical study involving selected Indian companies, Rekha *et al.* (2015) defined entrepreneurial mindset as a set of behavioural variables that combine to determine pattern of behaviour towards intrapreneurship. These behavioural variables, like those discussed earlier are: risk propensity, aptitude to learn from experience, inclination to innovate and positive attitude. Rekha *et al.* (2015) further noted that sheer encouragement that guarantees self-confidence as well as exposure to

training and education that are specifically meant to promote entrepreneurial behaviours can spur entrepreneurial mindset, which is considered as being crucial for new product development.

**g. Kim and Tranquillo (2014): Entrepreneurial mindset as personal characteristics that are either innate and or learnable**

Kim and Tranquillo (2014)'s synthesis of engineering design and entrepreneurial mindset succinctly exudes entrepreneurial mindset as a blended mix of growth mindset (considering innate traits and talents as being subject to growth), unique world outlook (to discover unsolved nagging issues), problem solving skills (navigating to the roots of problem) and reflection. Even though they acknowledged that the nature and components of entrepreneurial mindset is still a subject for scholastic debate, they however affirm that entrepreneurial mindset is a mix of personal characteristics that are either innate and or learnable. This makes their perspective a middle point of the "born" and "made" argument.

**h. Karwowski (2014): Entrepreneurial mindset as a creative growth mindset**

With particular interest in knowing the relationship between mindsets and problem-solving aptitude, Karwowski (2014) defined entrepreneurial mindset as a "creative mindset" with a set of beliefs that makes it more malleable relative to creativity. Essentially, his view of entrepreneurial mindset is drawn from Dweck's works on fixed versus growth mindsets. Karwowski (2014)'s study identified that an entrepreneurial mindset is a factor that is more inclined towards growth if both fixed and growth mindset were placed on a continuum.

### **3.4.2 More Concise Components of Entrepreneurial Mindset**

The perspectives and definitions of entrepreneurial mindset highlighted in section 3.4.1 majorly revolves around personal qualities and cognitive skills some of which are founded on trait theory and some other on human capital theory. A cursory look at these perspectives, and like some of the authors themselves had suggested, requires a more robust and concise boundary specification of what really constitutes the concept of entrepreneurial mindset.

Besides contributing to concise definition of the concept, these boundary specifications should also help identify distinction points between entrepreneurial mindset and related phenomenon like entrepreneurial self-efficacy. The entrepreneurial mindset components proposed by Duening (2010) were based on the cognitive research outcomes some of which were discussed in section 3.4.1 as amplified by the Howard Gardner's book, *Five Minds for the Future*. Although these components are yet to be extensively applied as labelled by Duening (2010) in empirical investigations on entrepreneurial mindset afterwards, more cognitive studies have however used sub-cognitive items relating to all or some of Duening (2010)'s entrepreneurial mindset components. It is pertinent to state at this point that Duening (2010)'s thinking about the entrepreneurial mindset components is firmly guided by his tenacious belief that entrepreneurial qualities in people can either be created or enhanced through well-articulated entrepreneurship curricula originally designed to meet such a goal. Although it must be noted that engendering entrepreneurial mindset is not the only focus of entrepreneurship education in its essence.

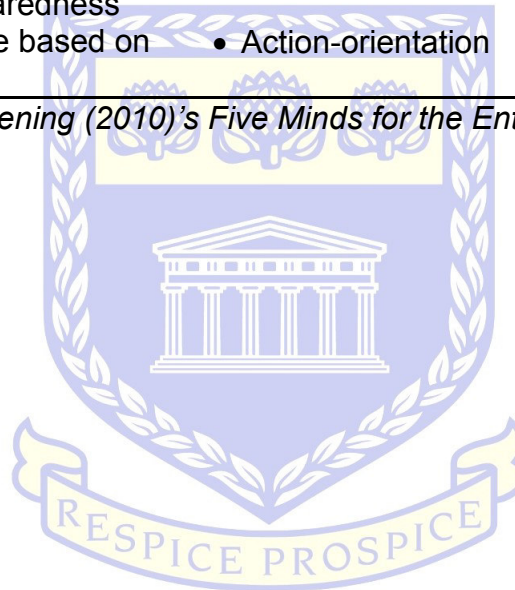
With greater emphasis on laying the much needed intellectual foundations for entrepreneurship education, Duening (2010), from existing literature aggregated a number of cognitive skills usually deployed by entrepreneurs, in line with Gardner's work which describes the "*thinking*" or "*mindset*" for entrepreneurship. This aggregation yielded five categories of minds that succinctly, so far, describe entrepreneurial mindset. These are: "the opportunity-recognising mind", "the designing mind", "the risk-managing mind", "the resilient mind", and "the effectuating mind". Table 3.1 below makes a clear summary of what constitute entrepreneurial mindset according to the cognition school of school of thought with Duening (2010)'s five minds for entrepreneurial future forming the framework. However, there is the need for empirical proof to show how much each of the entrepreneurial mindset components an individual could possess while estimating his/her entrepreneurial mindedness.

Table 3.1: Five Components that Define Entrepreneurial Mindset

MINDSET COMPONENTS	DUENING (2010)'S PERSPECTIVES	SPECIFIC COGNITIVE SKILLS	OTHER AUTHORS WHO SHARE SAME PERSPECTIVES WITH DUENING (2010)
Opportunity-recognising mind	This is a dynamic pattern of deliberate thinking and feelings relative to weighing environmental factors for possible entrepreneurial venturing.	<ul style="list-style-type: none"> <li>• Thorough thoughtfulness</li> <li>• Mental alertness</li> <li>• Self-awareness</li> <li>• Knowledge-seeking</li> <li>• Environmentally sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>• Venkataraman (1997)</li> <li>• Baron (2006)</li> <li>• Wongpreedee, Kiratisin, and Virutamasen (2015)</li> <li>• Haynie <i>et al.</i> (2010)</li> <li>• Solesvik <i>et al.</i> (2013)</li> </ul>
Designing mind	The mental process that creates a superior product as well as the process that will effectively deliver the product. It is a mentality that constantly flexes beyond existing methods and established traditions to create something “new” and “superior”.	<ul style="list-style-type: none"> <li>• Creativity</li> <li>• Open-mindedness</li> <li>• Flexibility</li> <li>• Inspiration (intuitiveness)</li> <li>• Innovativeness</li> <li>• Ingenuity</li> </ul>	<ul style="list-style-type: none"> <li>• Simon (1969)</li> <li>• Jacoby and Rodriguez (2007)</li> <li>• Schumpeter</li> <li>• Karwowski (2014)</li> </ul>
Risk-managing mind	Contingent on risk-minimising adeptness, the frame of mind that is tolerant and willing to live with risk where otherwise non-entrepreneurial mind will be risk-averse.	<ul style="list-style-type: none"> <li>• Adaptability to ambiguity</li> <li>• Risk tolerance</li> <li>• Tact</li> </ul>	<ul style="list-style-type: none"> <li>• Haynie <i>et al.</i> (2010)</li> </ul>
Resilient mind	Maintaining a constant and stable, an undiminishing and unflinching entrepreneurial passion, zest and focus in the face of actual or impending risk, loss, uncertainty,	<ul style="list-style-type: none"> <li>• Perception (intelligence)</li> <li>• Emotional stability</li> <li>• Social awareness</li> <li>• Tenacity</li> <li>• Perseverance</li> </ul>	

MINDSET COMPONENTS	DUENING (2010)'S PERSPECTIVES	SPECIFIC COGNITIVE SKILLS	OTHER AUTHORS WHO SHARE SAME PERSPECTIVES WITH DUENING (2010)
Effectuating mind	setbacks, danger or failure and their attendant consequences. The willingness and preparedness to create and deliver value based on identified opportunities.	<ul style="list-style-type: none"> <li>• Optimism</li> <li>• Action-orientation</li> </ul>	<ul style="list-style-type: none"> <li>• Haynie <i>et al.</i> (2010)</li> </ul>

Source: Duening (2010)'s *Five Minds for the Entrepreneurial Future*



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### **3.4.3 Components of Entrepreneurship Education and Entrepreneurial Mindset**

Even though recent cognitive studies have produced results that promised to further a more structured development of the field of entrepreneurship education (Duening, 2010), there are still missing links to be addressed by further studies (Fayolle, 2013; Fayolle *et al.*, 2006a). One of such missing links is the metric quantification that shows how specific entrepreneurship education components like method of teaching, institutional setting and content relate to and impact on specific entrepreneurial mindset components (Fayolle, 2013; Fayolle & Gailly, 2008; Fayolle *et al.*, 2006a; Fayolle & Liñán, 2014; Fayolle & Toutain, 2013; Lorz *et al.*, 2011). This is fundamental to designing future entrepreneurship education curricular (Duening, 2010; Fayolle, 2013).

### **3.5 ENTREPRENEURSHIP SKILLS: FOUNDATIONS FOR PARADIGMATIC DEFINITION**

The nature of economic changes in the last ten years (i.e. rapid transition to enterprise economy) and the emerging socio-economic challenges they spin across the globe require more than a quick-fix approach and a complete shift from traditional models for solving economic and social problems. Repeatedly, policy makers, academics and business experts have in like manners reiterated their faith in entrepreneurship as holding the key to pragmatically solving emerging social and economic problems (Galloway *et al.*, 2005; Rae, 2010, p.594; Trivedi, 2016, p.790). This faith has placed entrepreneurial skills above, but not as a substitute to, technical skills, leadership skills, people-skills, conceptual skills and the traditional problem-solving skills, literacy and numeracy skills. Entrepreneurship education, which is at the centre, is expected to engender entrepreneurial skills of participants of entrepreneurship education programmes, amongst other things (Cooney, 2012). What then is entrepreneurial skills? How are they different from other types of skills? What are the theories underpinning the understanding and definition of entrepreneurial skills? The questions are answered in the following sub-sections.

### 3.5.1 Defining Entrepreneurial Skills

As noted by Johnson, Snowden, Mukhuty, Fletcher and Williams (2015), there is scant literature on entrepreneurial skills unlike the extensive literature on managerial, leadership, technical and other skill-sets. So, it is challenging to conceptualise in a concise statement, what entrepreneurial skills are. However, from the existing literature, the following general perspectives can be gleaned.

#### 3.5.1.1 Entrepreneurial Skills: Set of Attitude, Strategic, Tactical and Personal Skills

The words of Deakins, Bensemann, and Battisti (2016, p.236): “Entrepreneurial skill incorporates attitudes that have a specific object [intention]” put forth a description of entrepreneurial skills as the ability to harness strategic, tactical and personal skills supported by an enabling attitude towards an entrepreneurial end. In addition to Stuetzer, Obschonka, Davidsson, and Schmitt-Rodermund (2013)’s view that entrepreneurial skills can be stimulated through experience, Deakins *et al.* (2016, p.236) also posited that entrepreneurial skills can be cultivated through communication (meanwhile, education and training involves imparting skills and knowledge through communication). Although a critical look at their perspective may raise some conceptual and epistemological questions, it should however be noted that Deakins *et al.* (2016)’s perspective points to the fact that entrepreneurial skills can be developed through education and that is in congruence with empirical evidences emanating from the human capital theory that skills and education are positively related. Their perspective also links entrepreneurial skills to entrepreneurial intention and action, aligning it models and theories from scholars such as Ajzen (1991, 2001, 2002) and Fayolle *et al.* (2006a).

#### 3.5.1.2 Entrepreneurial Skills: Unique Subset of Skills

Cooney (2012)’s perspective on entrepreneurial skill is very akin to Deakins *et al.* (2016)’s. His perspective, which is presented in **Figure 3.3** is based on the argument that what makes for managerial success does not necessarily guarantee entrepreneurial success and therefore, logically allows

to argue that there are elements that differentiate entrepreneurial skills from managerial skills. Cooney (2012)'s model therefore delineated among managerial, technical and entrepreneurial skills attempting to present boundaries of what makes for entrepreneurial skills. In this boundary specifications, Cooney (2012) viewed entrepreneurial skills as those abilities necessary to create new value (social/economic) pursuant to acting on economic opportunities and these include: innovativeness, risk-taking, inner discipline, change-orientation and persistence. From this model, it can be noticed that Cooney (2012) essentially argues that entrepreneurial skills are a subset of unique capabilities necessary to act entrepreneurially and differently from being a manager or a professional in any field. One important relevance of this perspective is that it links entrepreneurial skills to entrepreneurial process which is a common basis for designing entrepreneurship education programmes.

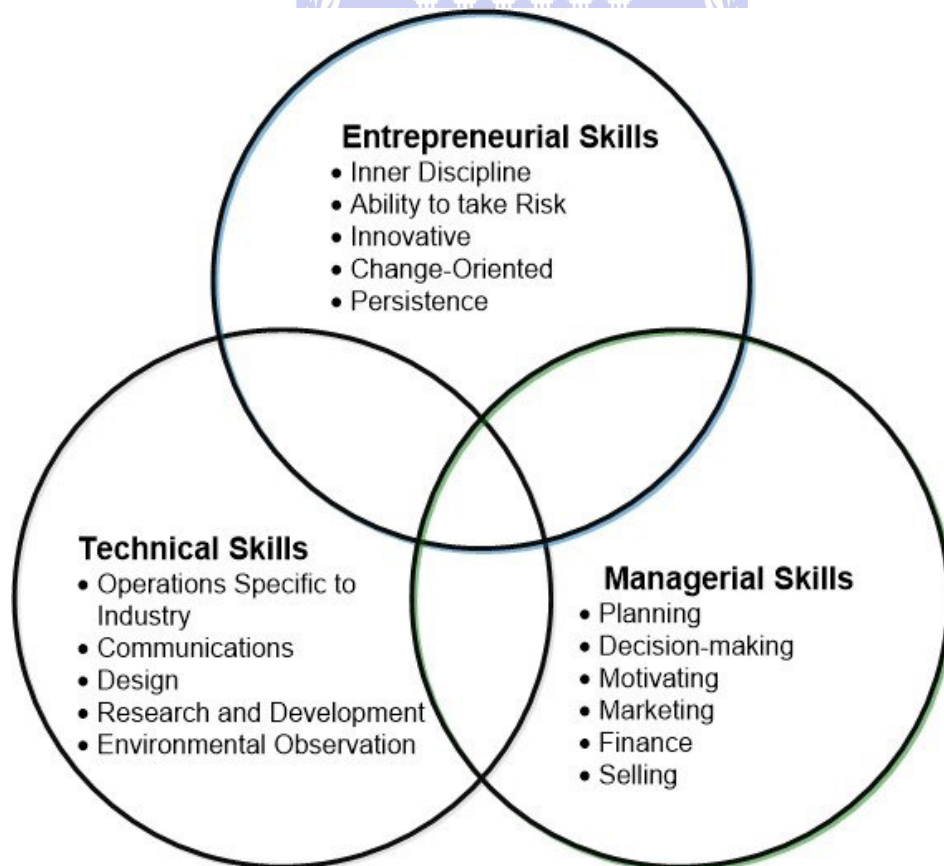
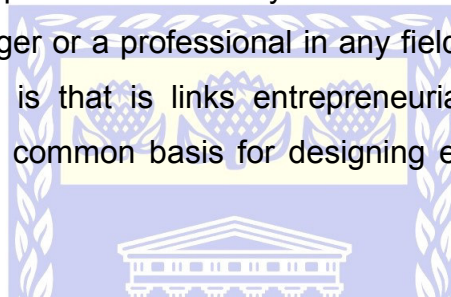


Figure 3.3: Entrepreneurship Skill-sets  
Source: Cooney (2012)

Meanwhile, Ray (1993)'s paper on "Entrepreneurial Attributes, Skills and Training Programmes" had also posited entrepreneurial skills as those abilities required to successfully engaged in the entrepreneurial process. In addition to Cooney (2012)'s list, Ray (1993) particularly highlighted opportunity discovery ability, critical thinking ability, communications, negotiation, interpersonal skills and problem-solving skills as those making up entrepreneurial skills. Although Ray (1993) remarked that what skills would prove most relevant depends on the industry and socio-economic context within which the entrepreneur operates.

#### **3.5.1.3 Entrepreneurial Skills: Adaptation of Management Skills to Suit Entrepreneurial Practice**

The composition of entrepreneurial skills according to Galloway *et al.* (2005) is not too different from Ray (1993) and Cooney (2012)'s except that they added salesmanship, leadership, management of technological innovation, new product marketing (as indicated by McMullan and Long, 1987), confidence, skills in competitive strategy, identifying market opportunities (with reference to Simmons and Mason, 1999), financial acumen and organisation skills. The point of departure in Galloway *et al.* (2005)'s perspective is that entrepreneurial skill is the ability to adapt management skills and competence for entrepreneurial pursuit/practice. Again, this perspective links skills with entrepreneurial action which, according to the Ajzen (1991, 2001, 2002)'s theory of planned behaviour is an outcome of its precursor, intention – which in this case is entrepreneurial intention.

#### **3.5.1.4 Entrepreneurial Skills: Combination of Managerial, Vocational and Personal Skills**

Advocating the need for graduates to acquire "selling" vocational skills for self-employment amidst rising graduate unemployment rate, Ogah and Emesini (2013) presented a perspective of entrepreneurial skills that include the vocational skill dimension. According to the them, entrepreneurial skills is a combination of managerial, vocational and personal skills. Although it can be argued that vocational skills which essentially prepare the students for self-employment is not the core of entrepreneurship especially in this 21<sup>st</sup> century,

Ogah and Emesini (2013) however posited that the blending of vocational skills with managerial and personal skills would enable graduates to successfully establish value-creating firms. Even though firm creation is not the only yardstick for measuring entrepreneurialism of an individual, it remains one of the major baseline factors.

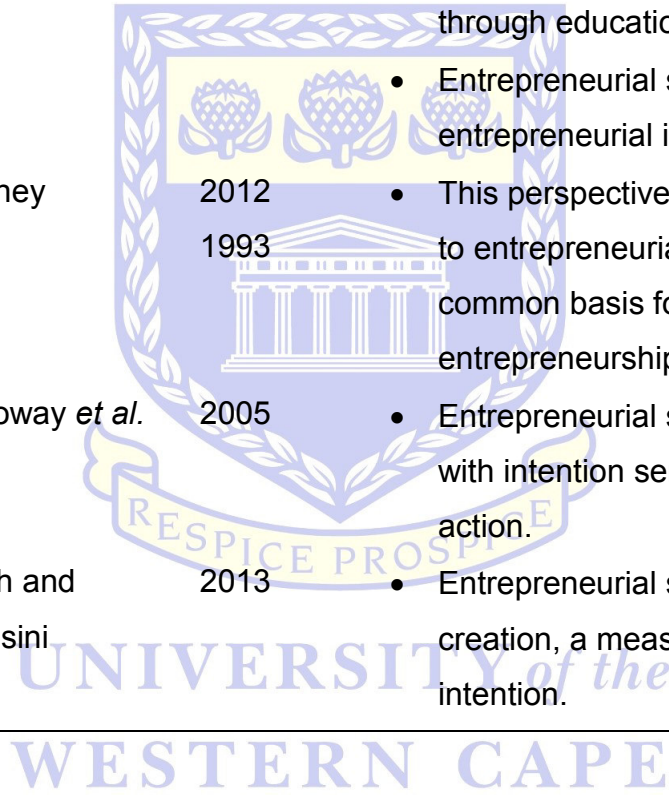
The foregoing are common perspectives on entrepreneurial skills as exuded by literature. They are summarised in tabular form and presented in **Table 3.2** below.



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literature

Table 3.2: Common Perspectives on entrepreneurial skills from existing			
PERSPECTIVES ON ENTREPRENEURIAL SKILLS	AUTHOR(S)	YEAR	RELEVANCE TO FUTURE RESEARCH ON ENTREPRENEURSHIP EDUCATION
Entrepreneurial skills defined as galvanised set of attitude, strategic, tactical and personal skills	Deakins <i>et al.</i>	2016	<ul style="list-style-type: none"> <li>• Entrepreneurial skills can be developed through education and experience</li> <li>• Entrepreneurial skills can be linked to entrepreneurial intention and actions</li> </ul>
Entrepreneurial skills defined as a unique subset of skills	Cooney Ray	2012 1993	<ul style="list-style-type: none"> <li>• This perspective links entrepreneurial skills to entrepreneurial process which is a common basis for designing entrepreneurship education programmes</li> </ul>
Entrepreneurial skills defined as adaptation of management skills to suit entrepreneurial practice	Galloway <i>et al.</i>	2005	<ul style="list-style-type: none"> <li>• Entrepreneurial skills are linked to action with intention serving as an antecedent of action.</li> </ul>
Entrepreneurial skills defined as a combination of managerial, vocational and personal skills	Ogah and Emesini	2013	<ul style="list-style-type: none"> <li>• Entrepreneurial skills are linked to firm creation, a measure of entrepreneurial intention.</li> </ul>



### **3.5.2 Theories Underpinning Entrepreneurial Skills**

With lots of insights that have been drawn from other types of skills while attempting to define entrepreneurial skills, one may say that human capital theory and opportunity recognition theory are major theories underpinning the concept of entrepreneurial skills. The essence of reviewing the theories is to draw insights for concrete conceptualisation of entrepreneurial skills for this study.

#### **3.5.2.1 Human Capital Theory**

As a neoclassical economic postulation, the human capital theory traditionally posited that a nation's economic prosperity, sustainable economic growth and development as well as international competitiveness depend largely on its people (human capital) – that is, how skilful and knowledgeable its people are as compared with those of other nations (Acosta & Celis, 2014; Chell, 2013; Sofoluwe, Shokunbi, Raimi, & Ajewole, 2013). Fundamentally, the theory holds that the quality of human capital accumulated within an economy is valued in terms of the level of skills, knowledge and expertise in individuals requisite for creating economic value (Jones, 2011; Ucbasaran, Westhead, & Wright, 2008). Although the human capital theory presented a macro outlook, its assumptions are however based on a micro-principle which helped to shape new understanding of labour market dynamics. The principle is that, in a truly knowledge-driven economy, individuals would be willing to make additional investment in education, training and experience towards growing their skills and knowledge in order to improve their worth and subsequently, their earning potentials (Jones, 2011). It can be deduced from studies and discussions on human capital theory that education, skill and future prospects (outcome) are strongly linked (Jones, 2011; Ucbasaran *et al.*, 2008). Consequently, researchers have over time analysed and approached their theoretical assumptions around entrepreneurial skills on the basis of this connect while attempting to gain better understanding of the nature of entrepreneurship and entrepreneurial motivation (van Praag, 2006).

This approach, having led to the emergence of theoretical derivations such as entrepreneurship-specific human capital and entrepreneurial capital, is providing foundations for conceptualising entrepreneurial skills which strongly aligns with shifting perspectives on entrepreneurship education (Chell, 2013). An intellectual insight is derivable from the foregoing: entrepreneurial skills is a vital measure and component of entrepreneurial capital within the context of entrepreneurial economy. Investment in the specific predictors such as formal entrepreneurship education, entrepreneurship training, experience and orientation could engender industry-specific or general entrepreneurial skills (Chell, 2013; Stuetzer *et al.*, 2013; Toth, 2012).

### **3.5.2.2 Opportunity Recognition Theory**

Conceptualisations around entrepreneurship in recent years have been oriented towards opportunity (Molaei, Zali, Mobaraki, & Farsi, 2014; Ucbasaran *et al.*, 2008). This rigorous focus on opportunity is not surprising because the entire entrepreneurial process either for nascent or corporate entrepreneurship revolves around being able to identify, explore and exploit opportunities to meet social/economic needs. Thus, opportunity recognition theory embodies growing and/or acquiring the competencies needed for entrepreneurial success through entrepreneurship education. Within the opportunity recognition framework, Krueger (2009) and Hills and Singh (2004) as cited in Molaei *et al.* (2014) have shown empirical evidence that idea generation can lead to identification of entrepreneurial opportunity which in turn could motivate entrepreneurial intentions.

Molaei *et al.* (2014) further amplified Ko and Butler (2006)'s finding that previous knowledge (which may be through education, training or experience) is strongly linked to opportunity identification. From their own views, Johnson *et al.* (2015) associated opportunity identification, exploitation and entrepreneurship skills in a positive sense. Therefore, realisation of opportunity is associated on a range of skills necessary for entrepreneurial success. These empirical findings and theoretical postulations hold serious implications for redefining entrepreneurial skills in the context of proposed



paradigms of entrepreneurship education. Entrepreneurship education could spur competencies that an individual could capitalise on while engaging in the opportunity identification process and this could lead to or even reinforce a latent entrepreneurial intention.

Table 3.3: *Insight for Conceptualising Entrepreneurial Skills from underpinning theories*

<b>Theory underpinning</b>	<b>Insight for Conceptualising Entrepreneurial Skills</b>	<b>Supporting Authors</b>
Human Capital Theory	Entrepreneurial skills are a critical component of entrepreneurial capital within the context of entrepreneurial economy. Investment in entrepreneurship education, training and experience could engender these skills	Jones (2011); Ucbasaran, Westhead and Wright (2008); Chell (2013); Stuetzer <i>et al.</i> (2013); Toth (2012)
Opportunity Recognition Theory	Entrepreneurship education could spur competencies [skills] that an individual could capitalise on while engaging in the opportunity identification process and this could lead to or even reinforce a latent entrepreneurial intention	Molaei <i>et al.</i> (2014); Johnson <i>et al.</i> (2015)

### 3.5.3 Conceptualising Entrepreneurial Skills based on Paradigmatic Insights

In the light of the economic transition from managed to enterprise of the 21<sup>st</sup> century, it is pertinent to provide a more robust framework for conceptualising entrepreneurial skills to portray the core essence of the proposed paradigms encapsulated in the “future [new perspective] entrepreneurship education”. Insights drawn from underpinning theoretical postulations and from Chell (2013, pp.7-9) and Johnson *et al.* (2015)’s perspectives on skills can be combined to develop this framework. The following facts form the hinges of the framework.

- Skills are not the same as abilities, talents and capacities – skills are more of proficiency at performing tasks or certain functions or activities; i.e. expertness (Chell, 2013, pp. 7-8)
- Skills are multi-dimensional constructs (i.e. cognitive, affective, behaviour and contextual) (Chell, 2013, p. 8)

- Sources of skill development include: personal learning, formal education, vocational training and extracurricular activities. This makes skills development span both formal and informal; classroom and non-classroom structures; and a continuous process (Chell, 2013, p. 8).
- Conceptualisation of skill can be contextualised (Chell, 2013, p. 9). Entrepreneurial skills can therefore be conceptualised within two contexts. First, the context of entrepreneurial economy and entrepreneurial capital. Second, within the context of defining entrepreneurship as a process which spans opportunity identification to opportunity exploitation.
- Skills are a subset of competencies where competencies include Knowledge, Skills and Abilities (SKAs) (Chell, 2013, p. 10). And so, entrepreneurial skills (competence) are essentially different from entrepreneurial competency although these are overlapping. As echoed by Yousaf *et al.* (2015), Stevenson and Jarillo (1990) remarked that entrepreneurial skills could result from accumulated knowledge.
- Definition of skill is level-dimensional (individual, job, team, firm).
- Defining entrepreneurial skills along the opportunity recognition theory must encompass both social obligations economic opportunities in order to incorporate the sub-field of social entrepreneurship. This would necessitate reconceptualising opportunity recognition as defining social/economic needs/opportunities (Johnson *et al.*, 2015).

From the foregoing, a framework for conceptualising entrepreneurial skills as indicated in **Figure 3.4** involves the following pillars:

- **Contexts** – these include entrepreneurial process definition, entrepreneurial economy dynamics and entrepreneurial capital theory;
- **Precursors** – extra-curricular activities, education, vocation and experience which all combine in form of lifelong learning;
- **Competencies** – abilities (i.e. creativity, innovation, critical thinking and problem solving, communication and collaboration), knowledge (i.e. knowledge about one's context, profession, etc.) and mindset (i.e. flexibility and adaptability);

- **Continuum** – the clusters of what set of proficiencies are needed to act on opportunities; and
- **End** – the valued social/economic need.

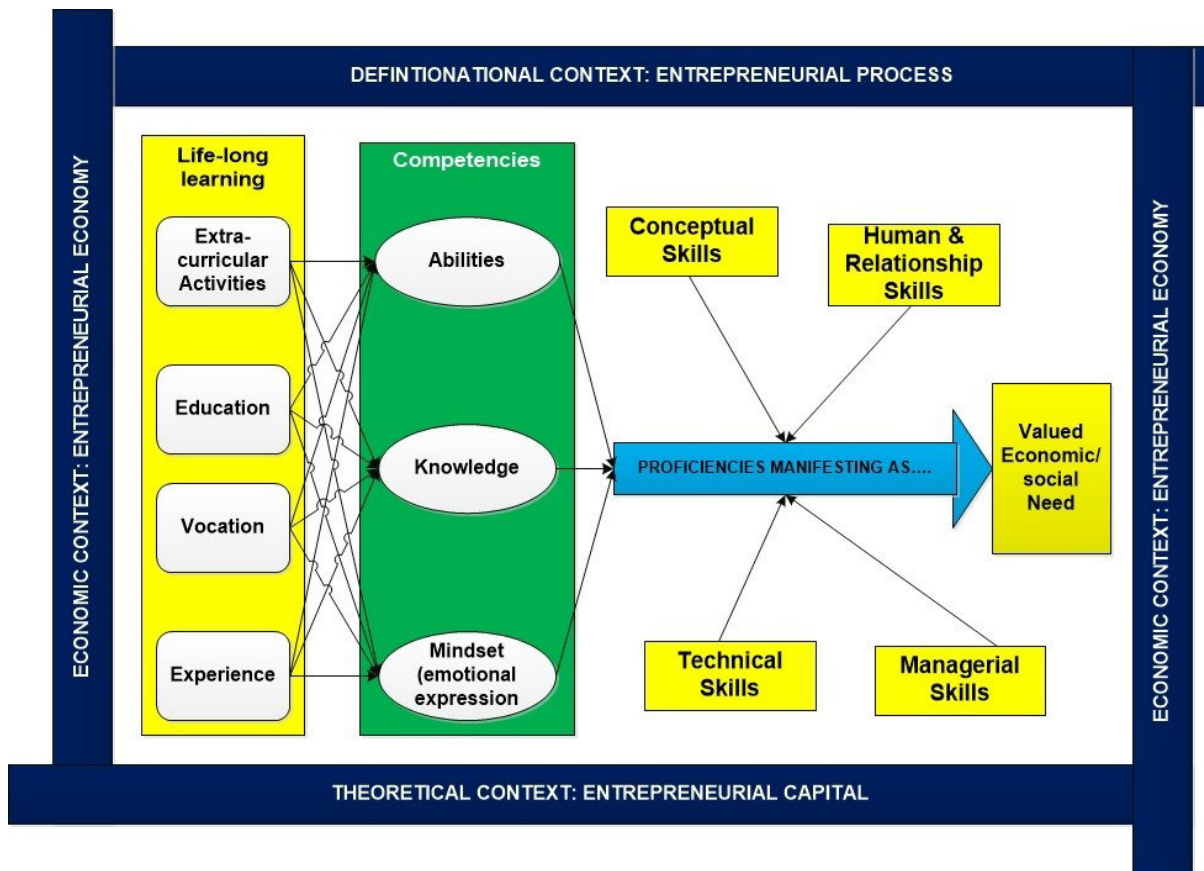


Figure 3.4: Framework for Conceptualising Entrepreneurial Skills  
Adapted from Johnson *et al.* (2015); Chell (2013)

Entrepreneurial skills can therefore be defined as the proficiencies accrued from one's abilities, mindset and knowledge through life-long learning adaptable for conceiving, exploring and realising valued economic/social needs. The adaptation of the proficiencies as conceptual, human and relational and technical skills will be determined by the specific contexts in which the entrepreneurial person (individual or artificial, but not necessarily, a firm-founding/purchasing entrepreneur) operates. From the above framework, the following areas of proficiencies are therefore highlighted as constituting entrepreneurial skills construct for this study:

- Creativity and innovation
- Flexibility and adaptability

- Critical thinking and problem solving
- Communication and collaboration

It should be however noted that empirical testing would be needed to further validate this framework. Besides, what skills are most critical to cultivating entrepreneurialism through education in a particular economy as per this framework is also calling for further research attention.

### **3.6 ENTREPRENEURIAL INTENTIONS (EI)**

Entrepreneurial intentions, according to Bird (1989) and Vozkis (1994) as cited in Fayolle *et al.* (2006a) and Molaei *et al.* (2014), is a product of mental thinking which exudes a blend of rationalism and intuition from a contextual but holistic perspective. Reinforced by certain endogenous and/or exogenous factors, this mental thinking may yield an “inner conviction” that could catalyse behaviour towards entrepreneurial actions sometime in the future (Fayolle *et al.*, 2006a; Thompson, 2009). Termed entrepreneurial intention, this “inner conviction” has served as a performance measurement of entrepreneurship education. Consequently, intention models by authors such as Bird (1988); Shapero and Sokol (1982) and Ajzen (1991, 2001, 2002) have guided the conduct of inquiries that attempted to measure entrepreneurship education using entrepreneurial intention as impact factor. There is ample evidence in literature that empirically explained that entrepreneurship education can ignite entrepreneurial intentions of students although Fayolle and Liñán (2014) recently argued that entrepreneurial intentions ought to be defined in future researches as corporate, social, academic or family entrepreneurship intentions.

#### **3.6.1 Rationale for Using Entrepreneurial Intention as Impact Measure of Entrepreneurship Education**

The need to produce entrepreneurial graduates for new opportunity growth dimensions in an economy has informed the aggressive encouragement and the subsequent massive enrolment of students in entrepreneurship education

programmes (Chang & Rieple, 2013; Díaz-García, Sáez-Martínez, & Jiménez-Moreno, 2015). This is because entrepreneurship education is seen as a precursor to developing the right attitude and skills necessary for entrepreneurial activities that are presumably needed to help stimulate stronger and sustainable economic growth and development in the future. Thus, the expected impact of entrepreneurship education programmes, according to some scholars (e.g. Bird (1988) and Shane and Venkatraman (2000) as cited in Fini, Grimaldi, Marzocchi, and Sobrero (2009), would have been measured in terms of: How many new value-creating firms have been established by how many of the participants of entrepreneurship education programmes? Or still, how many of the participants have initiated new value creation within existing firms? While these expectations are not to be thought of as being outrageous, scholars have repeatedly acknowledged that, apart from some exogenous factors that make up the entrepreneurial ecosystem as described by Isenberg (2011b), time lag between the time of receiving the entrepreneurship education and the time of action/behaviour makes it difficult to actually measure the direct impact of entrepreneurship education (Fayolle *et al.*, 2006a, p. 704; Fini, Grimaldi, Marzocchi, & Sobrero, 2009). So intention – entrepreneurial intention – has been adjudged a best yardstick for measuring the outcome of entrepreneurship education (Fini *et al.*, 2009; Krueger *et al.*, 2000). The rationale for this is encapsulated in the following points:

- Entrepreneurial actions as influenced by entrepreneurship education do not take place immediately. They remain as intentions at best, even long after participating in an entrepreneurship education module (Fayolle *et al.*, 2006a)
- Intentions are good precursors for actions and behaviours. Drawing insights from social psychologists' works such as Ajzen (1991, 2001, 2002), researchers have argued that the pursuit of entrepreneurial career in terms of venture creation, or acting as an intrapreneur is a deliberate, well-reasoned and articulated behaviour or course of action on the part of the rational being (Fini *et al.*, 2009; Molaei *et al.*, 2014; Trivedi, 2016).

- Contextual influences discussed by Fayolle *et al.* (2006a) may also make it difficult to measure the extent to which an eventual entrepreneurial action/behaviour is as a result of previous entrepreneurship education (Fini *et al.*, 2009)
- Much of entrepreneurial activity itself is an intentionally planned behaviour (Krueger *et al.*, 2000).

### 3.6.2 Theoretical Underpinnings of Entrepreneurial Intentions

A number of factors, ranging from psychological characteristics to contextual issues, have been identified to influence the formation of entrepreneurial intentions. In order to find theoretical basis for explaining this formation process, scholars have based their theoretical frameworks on two seminal intention theories/models namely: the Ajzen (1991)'s theory of planned behaviour (TPB); and the Shapero and Sokol (1982)'s entrepreneurial event theory (EET) (Schlaegel & Koenig, 2014).

#### 3.6.2.1 The Theory of Planned Behaviour

The validity as well as the applicability of the theory of planned behaviour propounded by Ajzen (1991) is undoubtable because many empirical studies (both within and outside entrepreneurship domains) have proven this (Kolvereid, Lakovleva, & Kickul, 2006; Lakovleva & Kolvereid, 2009; Liñán, Rodríguez-Cohard, & Rueda-Cantucho, 2011; Rueda *et al.*, 2015). Against the backdrop of scholastic debate that certain human behaviours or actions are volitional, intentions have been argued as their best predictors. The theory, depicted in **Figure 3.5** embodies five major personal and social constructs, namely: attitude towards the behaviour, subjective norm, perceived behavioural control, intention and behaviour. Of the five constructs, three (attitude towards the behaviour, subjective norm and perceived behavioural control) are identified as precursors to intentional behaviours/actions.

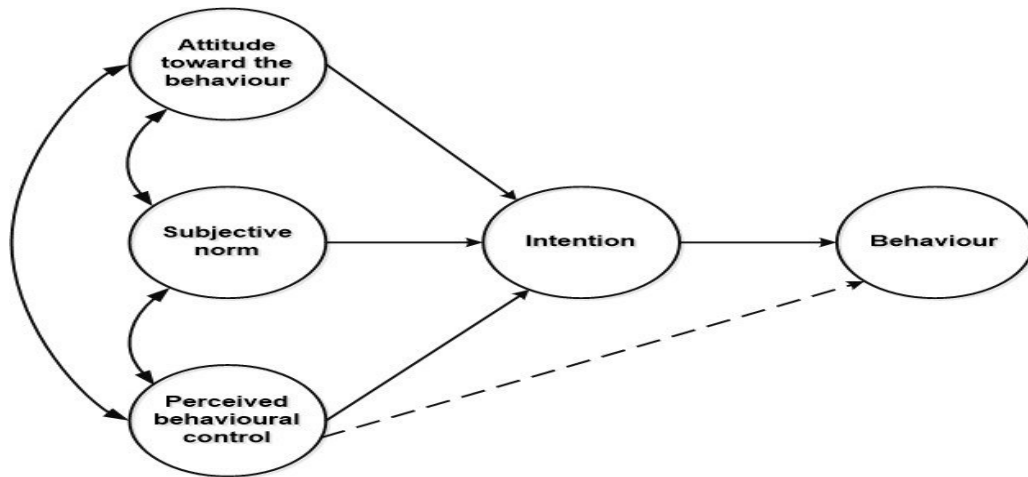


Figure 3.5: Theory of Planned Behaviour  
Source: Ajzen (1991, p.182)

### **Attitude towards the behaviour**

The view, outlook, mindset or opinion of an individual about a phenomenon determines his or her response. So if the view is positive, the behaviour is likely going to be positive and vice versa. Ajzen (1991) posited that the extent to which one favours or disfavours a behaviour determines how likely or unlikely a behaviour or action will be put up. Attitude towards behaviour, according to Fayolle *et al.* (2006a) is similar to Shapero and Sokol (1982)'s perceived desirability in their own model.

### **Subjective norm**

The perception of social acceptance of a behaviour or not, according to Ajzen (1991) exerts a strong influence on the likelihood to perform a behaviour or not especially, when the mark of approval or disapproval is coming from those bear strong influence on one's personal decisions. In as much as human beings live in a social system, subjective norm which arise from beliefs, is a critical factor that would influence the formation of intention

### **Perceived behavioural control**

In an attempt to overcome some of the initial challenge related to describing the nature of perceived behavioural control (PBC) and the measurement of same, Ajzen (2002) introduced the fact that PBC could help explain some of the non-volitional actions. Although perceived behavioural control is associated with concepts such as perceived self-efficacy, it is argued to be

technically different. Whereas perceived behavioural control refers to perception of ease or difficulty to perform a behaviour, self-efficacy refers to the ability to perform a behaviour. It then implies that PBC primarily focuses on the perceived level of control a person has over a behaviour in order to assure success while self-efficacy primarily focuses the perception of abilities required to succeed if one chooses to perform a behaviour.

### 3.6.2.2 Entrepreneurial Event Theory

Akin to Ajzen (1991)'s theory of planned behaviour, the entrepreneurial event theory is another most tested theory in entrepreneurship research. In their theory as presented in **Figure 3.6**, Shapero and Sokol (1982) identified three antecedents of entrepreneurial intent namely: perceived desirability, propensity to act and perceived feasibility.

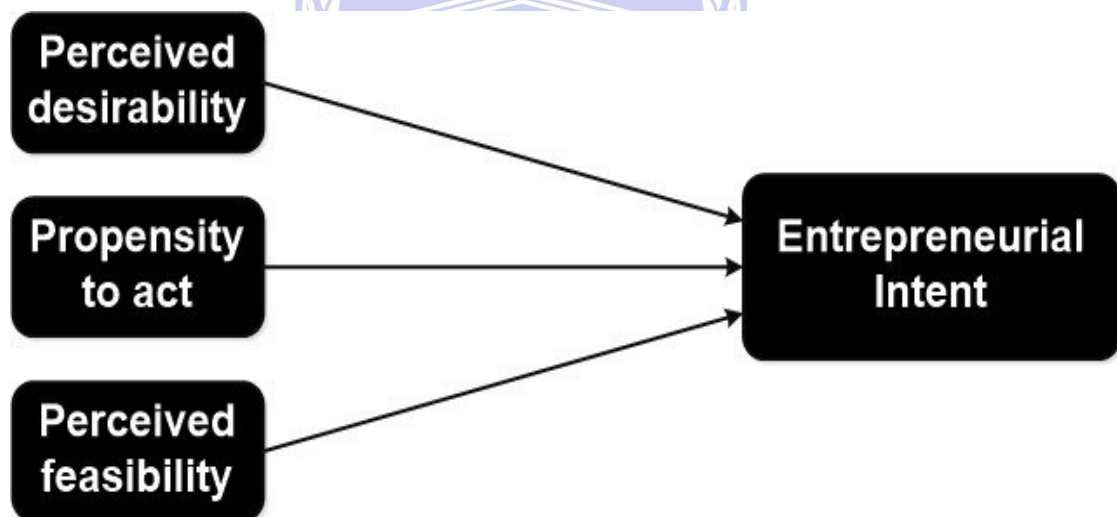


Figure 3.6: Entrepreneurial Event Model  
Shapero and Sokol (1982)

#### **Perceived desirability**

Associated with attitude towards behaviour as in the theory of planned behaviour, the perceived desirability according to Shapero and Sokol (1982) measures the degree to which a person is attracted towards an object, and in this case, entrepreneurial undertaking. The level of attractiveness makes one desire to pursue an entrepreneurial course of action and empirical studies have proved a positive association between perceived desirability and entrepreneurial intention (Yousaf *et al.*, 2015).



### **Propensity to act**

The proclivity to act or demonstrate a particular behaviour as moderated by the perception of control or desire to have control determines one's entrepreneurial intention (Shapero & Sokol, 1982).

### **Perceived feasibility**

The understanding of one's personal capabilities in terms of skills, experience and competence that could help one succeed on an entrepreneurial action or behaviour is a strong influencing or determining factor in the process of forming entrepreneurial intention (Shapero & Sokol, 1982).

### **3.6.3 Defining Entrepreneurial Intentions**

Entrepreneurial intention, like most conceptual issues in the field of entrepreneurship research, have been variously defined although it appears that there are less controversies around entrepreneurial intention. Intention, itself refers to the direction of one's attention towards an object which may lead to achievement of a purpose (Fini *et al.*, 2009, p.4). Upon the premises, entrepreneurial intention can be viewed as the direction of one's attention [awareness, thoughts, concentration, interest] towards an entrepreneurial object [opportunity, career] in order to achieve some purposes [need for achievement, locus of control, independence]. It is noticeable that most definitions of entrepreneurial intention align with objectives and typology of entrepreneurship education programmes, focusing on entrepreneurial outcomes such as starting a business, creating additional value within existing firms or self-employment. And like it was noted earlier, Fayolle and Liñán (2014) have posited that entrepreneurial intentions should be defined in future researches as corporate, social, academic or family entrepreneurship intentions. This position takes entrepreneurial intention purview from a one-sided level-dimension to multi levels (i.e. firm-level, family level) and varied dimensions (i.e. academic, social). Some of these definitions are summarised in Table 3.4 below.

Table 3.4: A Summary of Definition of Entrepreneurial Intentions

Author/s	Definition	Entrepreneurial Outcome
Bird (1988)	EI is the willingness to create new value [profitable	Within-the-firm value creation
Fini <i>et al.</i> (2009)	situations that occur through the enactment of innovative, proactive and risky actions] within existing firms	
Remeikiene, Startiene, and Dumciuviene (2013)	EI is a state of mind the inspires the desire to create a new firm or a new value driver inside existing companies.	New venture creation/ Within-the-firm value creation
Bae, Qian, Miao, and Fiet (2014); Trivedi (2016); Sondari (2014); Alimehmeti and Shaqiri (2015); Lanero, Vázquez, Gutiérrez, and García (2011)	EI is the desire to own or start a business	New venture creation
Zhao, Seibert, and Hills (2005)	EI is the aspiration to either build or acquire a business and grow it into a high-profile firm	New venture creation/Acquisition
Rauch and Hulsink (2015); Yousaf <i>et al.</i> (2015)	EI is the extent one considers becoming an entrepreneur	Becoming an entrepreneur
Thompson (2009)	EI self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future	New venture creation

EI = entrepreneurial intention

### 3.6.4 Measuring Entrepreneurial Intention

Fayolle and Liñán (2014)'s suggestion for defining entrepreneurial intention based on social or academic dimensions and at firm or family level further reduces to a corollary, the traditional conceptualisation of entrepreneurial intention at individual level on the bases of entrepreneurial outcome of venture or value creation, firm acquisition or becoming entrepreneurs. But it can be argued that intention originates from the individual domain and even corporate entrepreneurial intention and culture is only a reflection of an individual's vision, intention and propensities (most of the times, the founder or the chief executive) (Krueger *et al.*, 2000).

Furthermore, Thompson (2009) noted that individual intention still remains very useful while researching entrepreneurial intention. This remark justifies the construction of entrepreneurial intention in the context of this research, on the bases of entrepreneurial outcomes such as venture creation or family business take-over thereby aligning the conceptualisation with the core objectives of the entrepreneurship education being studied. Meanwhile, Thompson (2009) had observed variations in the measurement of entrepreneurial intention. This, he argued, may have been responsible for the variations in the findings on entrepreneurial intentions (although, other social, psycho-cognitive and contextual variables could have been responsible). In order to close this gap however, Thompson (2009) developed a psychometrically-validated measurement scale for quantifying entrepreneurial intentions. In line with Thompson (2009)'s metrication of entrepreneurial intention construct which was supported by Zhao, Seibert, and Hills (2005) and Rueda *et al.* (2015), a study that set out to evaluate students' entrepreneurial intentions after participating in an entrepreneurship education module can adopt some of or all the following as metrics of entrepreneurial intentions:

- Setting up a company in the future
- Search for business start-up opportunities
- Saving money to start a business
- Reading books or willing to learn more on how to set up a firm
- Nursing plans to launch own business

- Spend time learning about starting a firm
- Planning to acquire firm or take over/grow family business

### 3.7 SETTING THE RESEARCH AGENDA

In order to evolve a kind of entrepreneurship education that would assure the production of entrepreneurial graduates, authors and experts (Fayolle, 2013; World Economic Forum, 2009) have suggested that existing entrepreneurship programmes should be reviewed. Fayolle *et al.* (2006a)'s methodology for assessing existing EEPs becomes very useful in this regard. With reference to the setting and background of this study (as discussed in chapter two), the issues raised by Fayolle and Liñán (2014) strongly set a research agenda. The issues, which are discussed below are indicated in **Figure 3.7** below.

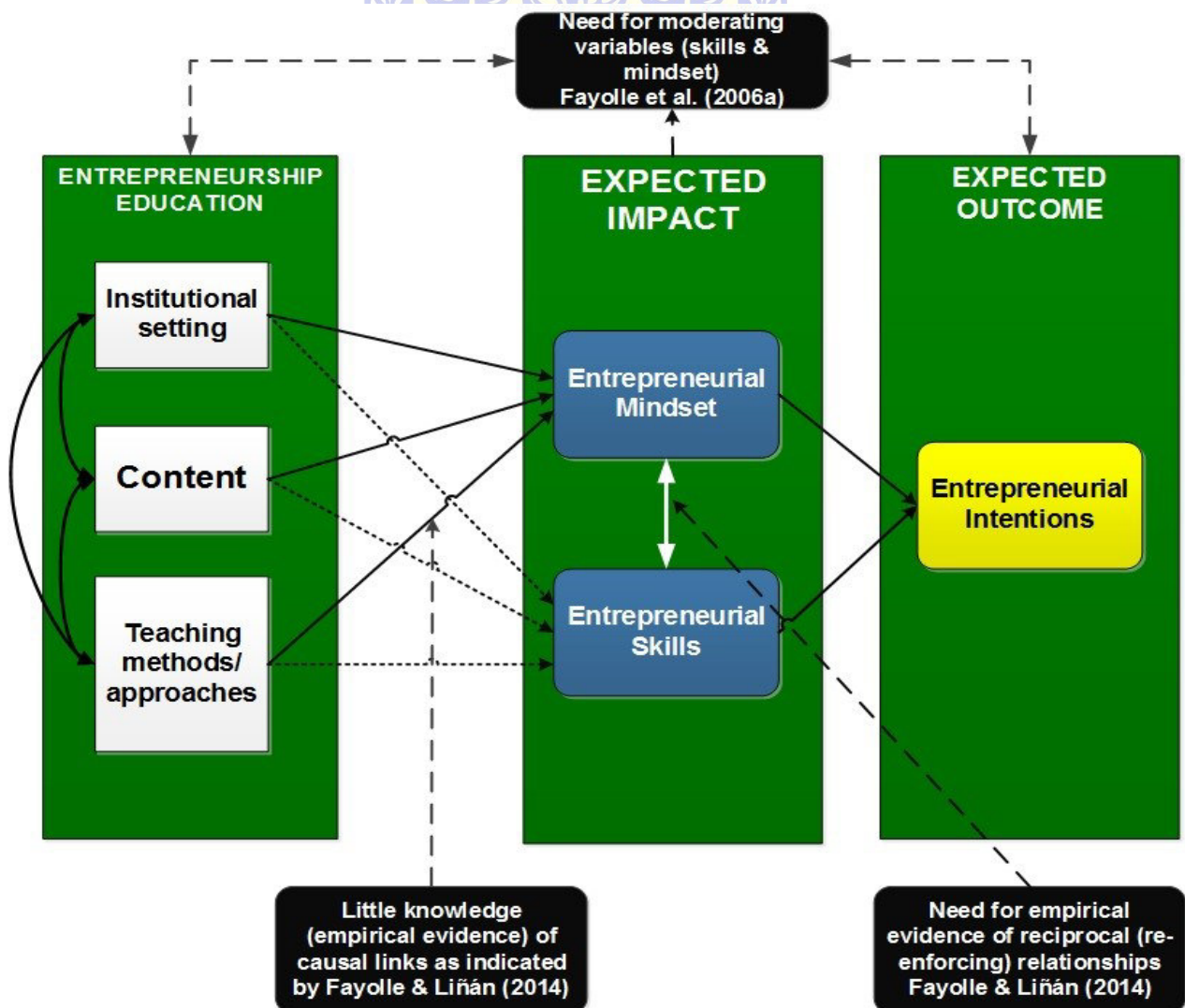


Figure 3.7: Connecting the points in Research Gap  
Source: Fayolle *et al.* (2006a); Fayolle and Liñán (2014)

- There is little subsistence of knowledge (i.e. with empirical evidence) about the potential causal link among some entrepreneurship educational components (i.e. course contents, pedagogical methods, available institutional resources, etc.) and the impact of entrepreneurship education programs on the antecedents of intention and/or behaviour (e.g. attitudes, values, skills, mindset, etc.). Speaking more on non-cognitive skills such as creativity and initiative (Gibbs, 2002, 2004) previously being looked upon as limited to a few individuals are now more pervasive than ever (Moberg, 2014).

Similarly, entrepreneurial mindset that for instance accommodates risk and failure as essential components of the entrepreneurship process, is more entrenched. Just as Zhao, Seibert, and Hills (2005) hinted, risk propensity which is taken as a metric of entrepreneurial mindset can mediate between education and intention towards entrepreneurship.

- Contrary to the empirical findings echoed by Fini *et al.* (2009, p.14) that some factors (e.g. skills) have indirect impact on specific intentions, Fayolle and Liñán (2014) posited that skills can be directly related to intentions and so, empirical contributions in this specific strand may help make up for present lack of practical applicability of some theoretical postulations in the domain of entrepreneurship intention.
- The need to probe some reciprocal relationships in certain education contexts. In the light of the foregoing gaps, there is the need to examine the reciprocating reinforcement between entrepreneurship mindset and skills and how they impact the entrepreneurial intentions of students within a given entrepreneurship education context.

### 3.8 SUMMARY

The gaps identified by Fayolle and Liñán (2014) cannot be evaded by subsequent empirical studies in the growing domain of entrepreneurship education and intention. One important need for addressing these gaps are encapsulated in the thoughts of Fayolle (2013) on the future of

entrepreneurship education. Moreover, there is the need to justify the investment in entrepreneurship education by all stakeholders – government and corporate organisations that fund research in entrepreneurship (World Economic Forum, 2009); students who invest time and resources while participating in entrepreneurship education modules; and institutions that also commit material, human and financial resources.

The Fayolle *et al.* (2006a)'s methodology for assessing entrepreneurship education programmes provides a framework for mapping and researching the empirical disconnects (gaps) put forth by Fayolle and Liñán (2014). **Figure 3.7** above presents some connecting points that could be mapped while measuring the effect of entrepreneurship education on entrepreneurial mindset and skills; and researching intentions towards entrepreneurial career options.



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## CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY

### 4.1 INTRODUCTION

This chapter presents the research design chosen to guide the conduct of investigation into this study's research problem. It also explains the setting and population of the study as well as the data collection instruments and procedures based on the non-biasness needed in a scientific inquiry process. The chapter further goes ahead to highlight the variables of the study and explain the tools used in analysing the data collected. The chapter then closes with a summary of pilot study results while particularly noting the process of reliability and validity testing meant to produce more accurate instruments for main data collection.

### 4.2 RESEARCH DESIGN

Research design, according to Hofstee (2009) is the overall approach that will be used to test stated hypotheses. This therefore makes the choice of research design very important. Hypotheses stem from research problem, questions and objectives. As noted by Creswell (2003a, 2003b, 2013), the research problem and questions provide the basis of choice of a suitable research design. A careful review of the research problem and questions points to the need to combine both the survey-based and correlation-based research designs. The combination fits into this cross-sectional research because surveys are very useful in finding out people's attitude (mindset) and opinions about their skills while correlation helps in determining relationships between two or more variables. Even though Fayolle *et al.* (2006a) had advocated that future researches involving entrepreneurial intentions should adopt the longitudinal model because, as noted by Fayolle *et al.* (2006a) and Krueger *et al.* (2000), the cross-sectional models have been widely used; (Krueger *et al.*, 2000) however maintained that researching intentions using cross-sectional models can still yield valid or robust findings.

**Figure 4.1** depicts the research design and process adapted for this study.

Within the context of mixed methods approach, the cross-sectional survey research design requires that data is collected using certain instruments like structured questionnaires and/or interviews. The data collected from a randomly selected sample allows for scientific generalisation about the particular population the sample appropriately represents (Creswell, 2003a, 2003b, 2009, 2013). The sections 4.3 and 4.4 describe the setting and population of the study as well as the sampling techniques and procedures chosen to assure the utmost randomness required.

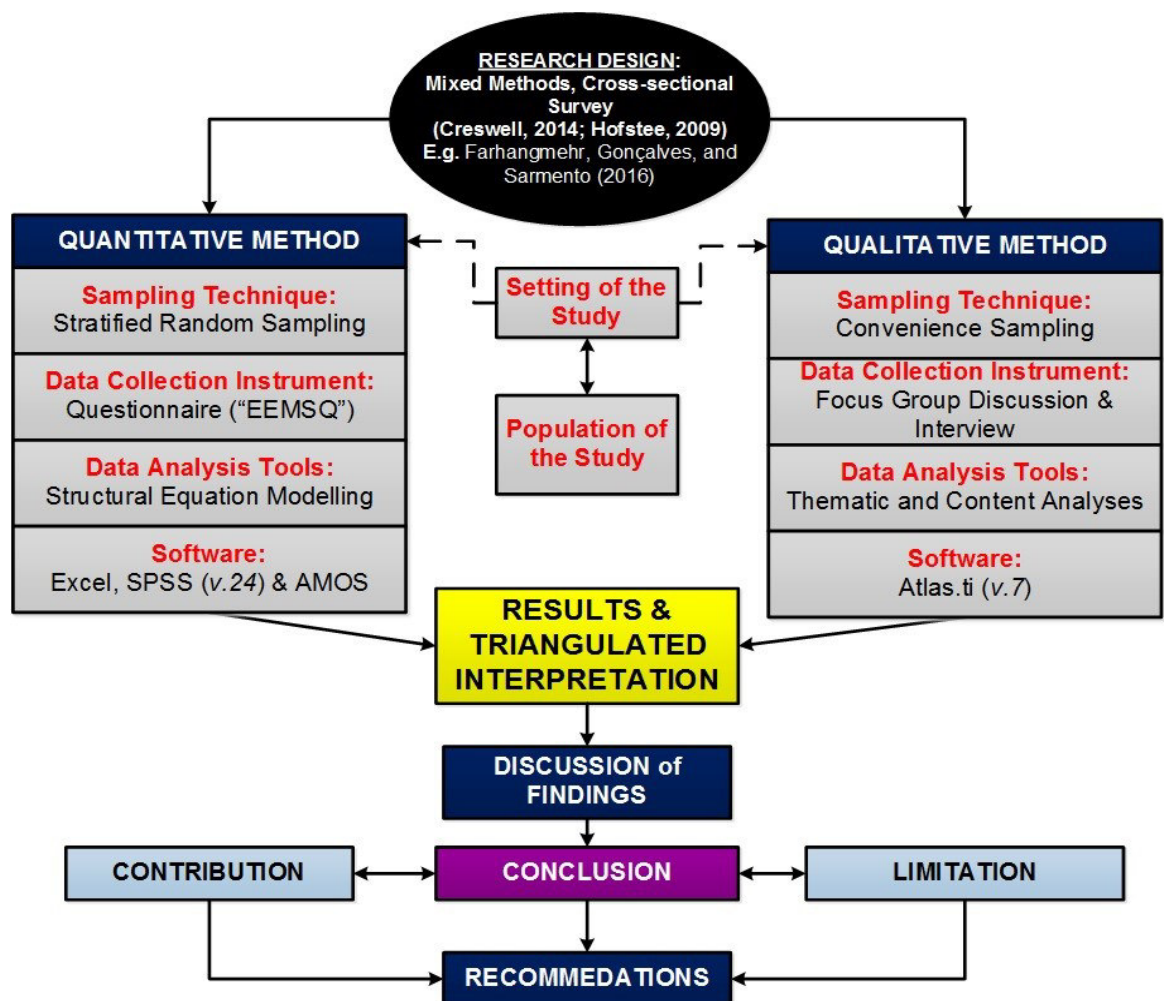


Figure 4.1: Research Design

#### 4.3 SELECTION AND SETTING OF A SUBPOPULATION FOR THE STUDY

The practice of market segmentation allows that an entire larger market be divided up into smaller homogeneous segments from which a representative



sample is drawn for a survey. This is a well-established practice that thus provides the basis for selecting a subpopulation for a study that involves a very large population size (Rundle-Thiele, Kubacki, Tkaczynski, & Parkinson, 2015). The assumptions of homogeneous subpopulations further justify the use of a subpopulation provided homogeneity is statistically proven (Heiser & Meulman, 1992) or reasonably established. Adekiya and Ibrahim (2016) and Farhangmehr, Gonçalves, and Sarmiento (2016) are examples of similar studies that have used subpopulations in their surveys. Typically, there is a great deal of homogeneity among Nigerian higher institutions in terms of curricular (as minimum benchmarked curricular are designed and disseminated by central regulatory bodies like NUC, NBTE and NCCE); quality of funding, infrastructure base, socio-economic context and pedagogy. Based on the foregoing, a federal government owned university located in the middle belt region of Nigeria was selected as a study site for the conduct of this study. The choice of this institution is further justified by the following reasons:

- The selected institution's cosmopolitan composition of both students and staff populations offers a unique setting for conducting a research designed to reflect the ethno-religious and socio-political diversities across Nigeria.
- The entrepreneurship education curriculum at this institution is directly adopted from the minimum benchmark provided by the NUC with very minimal variations both in content and teaching methods.
- The undergraduate students' population that offer the entrepreneurship module on yearly basis in this university is as large as 4,000 students thereby giving room for good sampling.
- Data consistency and well-bounded results interpretation can be obtained from this selected setting.

#### **4.3.1 Setting of the Study Site**

For this study, a federal university located in the middle belt region of Nigeria was chosen as a study site for this research. This university has existed for over 40 years and its alumni have made modest but far reaching impact in

their various spheres across the globe. According to the institution's Division of Academic Planning and Management, the compulsory entrepreneurship education module has been taught for over six years to no fewer than 35,756 students out of which more than more than 20,000 have graduated either in their fourth, fifth or sixth year as at February 2016. The university, as at the time of the study also has twelve faculties (Agriculture, Arts, Education, Engineering, Environmental Sciences, Law, Management Sciences, Medical Sciences, Natural Sciences, Pharmaceutical Sciences, Social Sciences and Veterinary Medicine) and students from all faculties mandatorily enrol for the entrepreneurship education module either in their second year (for University Matriculation Examination (UME) candidates) or in their first year (for Direct Entry (DE) candidates). The module is usually taught by a team of selected lecturers from the faculty of Management Sciences for a duration of fifteen (15) weeks and for a period of two (2) hours per week. Students are grouped into cohorts and at allocated venues, each lecturer in the entrepreneurship team takes turn to teach their topics on a rotational basis from cohort to cohort. A similar system like this is obtainable in most of the country's higher education institutions.

#### **4.4 POPULATION OF THE STUDY**

Considering the audience of the entrepreneurship education at any typical Nigerian higher education institution, the total number of undergraduate students who have offered the module across the 143 universities, 103 polytechnics and 83 colleges is taken to be the periscopic population of the study. UNESCO (2016) estimated over 16 million undergraduate students in all tertiary institutions of education in Nigeria as at 2014. But as earlier stated, a suitable higher education institution was selected as a study site where survey was carried out. This site therefore provided a subpopulation for the study.

As at the time of the survey, only nine (9) out of the twelve (12) faculties at the selected institution have had their students enrolled for the entrepreneurship education module. The remaining three (3) faculties were newly established

and have not had their students enrolled for the module. Table 4.1 below presents the number of second year students across the faculties who have enrolled for the module.

Table 4.1: Academic session by Academic Session Population of Year Two Undergraduate Students Eligible to Participate in Entrepreneurship module

<b>FACULTY</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>
Arts	593	585	621	534	745
Education	753	751	730	806	1094
Environmental Sci.	296	296	296	205	320
Law	597	408	188	177	180
Management Sciences	0	370	295	234	275
Medical Sciences	145	409	353	329	435
Natural Sciences	706	722	788	537	1094
Pharmaceutical Sci.	138	144	173	86	99
Social Sciences	1215	815	951	443	460
<b>TOTAL</b>	<b>4,443</b>	<b>4,500</b>	<b>4,395</b>	<b>3,351</b>	<b>4,702</b>
Teaching Staff	5	5	5	5	5

Source: Division of Academic Planning and Management

Based on the data collected from the Division of Academic Planning and Management of the selection institution, the estimation of the undergraduates who may have participated in the entrepreneurship education as at the time of survey is put at 15,698. The breakdown is presented in Table 4.2 below.

Table 4.2: The Estimated Population of Undergraduate Students Who Have Participated in Entrepreneurship Module

<b>YEAR OF STUDY</b>	<b>No</b>
Year 2	4702
Year 3	4430
Year 4	5516

<b>YEAR OF STUDY</b>	<b>No</b>
Year 5	838
Year 6	312
<b>TOTAL</b>	<b>15,698</b>

*Source: Division of Academic Planning and Management of Selected HEI*

#### **4.5 SAMPLING PROCEDURE/TECHNIQUE AND SAMPLE SIZE**

The sampling procedure was done in two stages namely: sampling for the quantitative survey and sampling for qualitative study.

##### **4.5.1 Sampling Procedure for the Quantitative Survey**

The sampling at this stage was meant to draw a stratified representation from a population of 15,698 undergraduate students across the nine (9) faculties on a proportional basis. The proportional weights were obtained from the faculty population in relation to the estimated population of the study. As per the defined population, only the undergraduates who have completed the module were sampled at both the pilot and main study stages. The stratified random sampling technique was thus employed to select the study participants across the faculties and study levels (year 2 – 6) with the formula provided by Krejcie and Morgan (1970) being used to determine the sample size. The sampling size formula is presented below:

$$s = [X^2 \times NP(1 - P)] \div [d^2(N - 1) + X^2P(1 - P)]$$

Where:

$s$  = required sample size.

$X^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

$N$  = the population size (15,698)

$P$  = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

$d$  = the degree of accuracy expressed as a proportion (0.05).

A sample size of 375 undergraduate students at 95 percent confidence interval was obtained for the survey. However, the targeted audience realised

the importance of the study and were more willing to participate in the survey. Thus, this study recorded 750 participants who received the questionnaires. Out of the 750 questionnaires administered, 738 were returned and only 707 (representing 94% usable response rate) were screened to be useful for analysis.

#### 4.5.1.1 Composition of the Sample

Table 4.3 below shows the stratified sample sizes targeted for the survey. Participants were randomly pooled.

Table 4.3: Targeted Stratified Sample Sizes Across the Faculties

FACULTY	Average No. of Students (2010 - 2015)	Sample Weight	Sample Size per Faculty
Arts	616	14.39	108
Education	827	19.33	145
Environmental Sciences	283	6.61	50
Law	310	7.25	54
Management Sciences	235	5.49	41
Medical Sciences	334	7.81	59
Natural Sciences	769	17.98	135
Pharmaceutical Sciences	128	2.99	22
Social Sciences	777	18.16	136
<b>TOTAL</b>	<b>4,278</b>	<b>100</b>	<b>750</b>

Source: Division of Academic Planning and Management of the Selected HEI

#### 4.5.2 Sampling Procedure for the Qualitative Survey

Triangulation has become an essential part of most surveys partly because of the attempt to make up for the short coming of pure quantitative research thus, making mixed method a more common approach in many surveys (Creswell, 2014; Golafshani, 2003; Johnson & Ogwenguzie, 2004; Yeasmin & Rahman, 2012). The simultaneous triangulation approach was used in this study and this led to the generation of some qualitative data needed to provide explanation for some emerging empirical findings in the study. The main

instrument used for qualitative data collection was personal interview. All lecturers of entrepreneurship module in the selected institution as at the time of this study were interviewed. The interview aimed at collecting lecturers' opinions on the content, teaching methods and institutional setting and how they think these have affected the effective delivery of entrepreneurship education to students. Their opinions on what should be changed were also sampled. To further enrich the qualitative data, two focus group discussions were conducted with students. The discussions also focused on the components of entrepreneurship education being examined in this study (i.e. content of the module, teaching methods and institutional setting) and how they have impacted on students' entrepreneurial mindset, skills and intentions. All these were used in collecting triangulated data for this research.

Out of the original sample size of 375 undergraduates, it was necessary to draw a number of students to participate in focus group discussion. According to Nagle and Williams (2011), the convenience method was used to draw a group of 8 each for the two focus groups. The convenience method was used because during data collection, the researcher identified the readiness, availability and willingness of some students who had participated in the main survey and consequently invited a total of twenty-two (22) for two separate focus group discussions but only 8 turned up for each discussion. All the five lecturers that form the teaching faculty were all interviewed to further enrich the triangulation process of the study.

#### **4.6 DATA COLLECTION METHODS**

Data collection is critical to solving any research problem – achieving objectives and answering research objectives. The nature of the inquiry usually determines what set of data that is required; the type of instruments needed to collect data as well as the procedure to be followed (Creswell, 2013, 2014). An experimental study for instance would need control and treatment group/s and these groups may be observed, interrogated depending on if the elements involved are humans and the group sizes are manageable, and so on. Data collection in this kind of study can be done at multi-stages

through instruments such as observation, interviews, etc. The instruments and procedure employed for data collection in this research are discussed in sections 4.6.1 and 4.6.3 respectively.

#### **4.6.1 Instruments of Data Collection for Quantitative Survey**

Data are extremely important to any research because they ultimately determine whether objectives will be achieved in the end. In the selection and/or design of research instruments, Hofstee (2009) suggested one important consideration: Will instruments collect data relevant to the study's problem? Based on the research model in Figure 1.2 above and the study's major variables, the questionnaire, interview and focus group discussion were employed for data collection.

##### **4.6.1.1 Questionnaire**

A 40-item questionnaire was adapted based on the study variables stated in chapter three which include: entrepreneurship education, entrepreneurial mindset, entrepreneurial skills and entrepreneurial intention. Items in the questionnaire measuring each construct were built around grounded perspectives reviewed in Fayolle *et al.* (2006a), Duening (2010), Network for Teaching Entrepreneurship (2014), Thompson (2009), Johnson *et al.* (2015); Chell (2013). The questionnaire which was titled: Entrepreneurship Education, Mindset, Skills and Intentions Questionnaire (EEMSIQ) was structured into six sections – personal background, entrepreneurial mindset construct, entrepreneurial skills construct, entrepreneurship education construct, entrepreneurial intention construct and general comments (see Appendix 3: . The items in sections (B) to (E) of the questionnaire placed on a 7-point Likert scale from 0 – 6 with “0” indicating “No Score” and “6” indicating “Highest Score”. The full interpretation of scale is given in Table 4.4.

Table 4.4: Likert Scale Rating for the Items in Each Study Construct

Point	Interpretation
0	No Score
1	Low Score
2	Below Average Score
3	Average Score
4	Good Score
5	High Score
6	Highest Score

*Source: Field work (2016)*

### **Section A: Personal Background**

This is the first section of the questionnaire designed to collect basic demographic data from respondents for the purpose of providing an empirical description of the sample in terms of: gender, discipline/faculty, age distribution, previous involvement in entrepreneurship education and/or enterprise management or start-up.

### **Section B: Entrepreneurial Mindset Construct (EMC)**

In order to measure entrepreneurial mindset construct, the five mindsets of Duening (2010) were used as a reference point. 12 statement-items were constructed around cognitive skills that relate to “the opportunity-recognising mind”, “the designing mind”, “the risk-managing mind”, “the resilient mind”, and “the effectuating mind” described in section 3.4.2 and Table 3.1.

### **Section C: Entrepreneurial Skills Construct (ESC)**

Similarly, 12 statement-items adapted from the Johnson *et al.* (2015); Chell (2013) were used to measure the entrepreneurial skills construct. These items are well used in recent studies such as (Farhangmehr *et al.*, 2016; Odia & Odia, 2013).



### **Section D: Entrepreneurship Education Construct (EEC)**

Fayolle (2013) and Fayolle *et al.* (2006a)'s perspectives on entrepreneurship education gave rise to 9 statement-items that were used to measure entrepreneurship education construct in this questionnaire.

### **Section E: Entrepreneurial Intention Construct (EIC)**

Generating a 7-statement-items from the works of Thompson (2009), Rueda *et al.* (2015), Díaz-García, Sáez-Martínez, and Jiménez-Moreno (2015) and Sieger, Fueglistaller, and Zellweger (2011), the entrepreneurial intention construct was measured.

### **Section F: General Comments**

Containing 5 open-ended questions, this section sought to elicit personal opinions of the respondents to reflect their experiences in the process of undergoing the compulsory entrepreneurship module.

#### **4.6.2 Instruments of Data Collection for Qualitative Survey**

Personal interviews and focus group are two instruments used for collecting data for qualitative aspect of this study. They are discussed in detail below.

##### **4.6.2.1 Personal Interview**

Personal interviews with entrepreneurship lecturers were conducted to generate qualitative data for triangulation in the study. Though the interviews were semi-structured, the following issues however were focal points in all the interviews: qualifications or degrees (Diploma, B.Sc., Master's or PhD) held in core entrepreneurship; number of trainings, workshops or conferences attended on entrepreneurship; length of teaching experience on the entrepreneurship module; number of research/publications on entrepreneurship; topics usually taught by the interviewee on the entrepreneurship module; other entrepreneurial activities like personal ventures or helping with other people's ventures. Their opinions, views and perspectives on the undergraduate Entrepreneurship education programme were also elicited to compare with the students' views.

#### **4.6.2.2 Focus Group Discussion**

To further enrich the triangulation process, focus group discussions were conducted. Interviewing members of a population directly affected by a phenomenon is crucial to gaining further insight to any research (Campbell, 2008; Krueger, 2001). This is particularly useful when evaluating a programme such as Entrepreneurship Education Programme (EEP). As a tool for triangulation, focus group discussion proves helpful in generating further data that otherwise maybe missing from questionnaires. As suggested, a range of 6 – 12 participants per group on a repeated basis with a maximum of 12 questions (“Conducting Focus Group Discussions,” n.d.; Eliot & Associates, 2005; Freitas, Oliveira, Jenkins, & Popjoy, 1998; Krueger, 2001; Nagle & Williams, 2011) are ideal for conducting focus group discussions. There were two focus groups involved in this study, drawn from the sample under study. The questions that form the core of the discussions (see Appendix 8.4 on page 229), centred around the content of the entrepreneurship module, the teaching methods and institutional setting and how these have affected their entrepreneurial mindset, skills and intentions.

#### **4.6.3 Procedure of Data Collection**

The first phase of the study involved collecting data for a pilot study aimed at testing the validity and reliability of the questionnaire. This stage is discussed in greater details in section 4.8. After being sure of having a reliable and valid questionnaire for the survey, the researcher proceeded to the next stage where 750 undergraduates were surveyed using the Entrepreneurship Education, Mindset, Skills and Intentions Questionnaire (EEMSIQ).

##### **4.6.3.1 Procedure for Collecting Data using Entrepreneurship Education, Mindset, Skills and Intentions Questionnaire (EEMSIQ)**

A team of 13 research assistants were recruited from all the nine faculties to work along with the researcher on the field during the main study. The research assistants were undergraduates who had also participated in the mandatory entrepreneurship module. The researcher provided them the

requisite training aimed at effective data gathering and provided them with writing pens as they might have need in the field. Research assistants reported to the researcher once or twice a week, and sometimes once in two weeks. The report included remitting and scrutinising completed copies of the questionnaire. This process was carried on until the targeted sample size was reached. Each research assistant was remunerated out of the personal earnings of the researcher.

#### **4.6.3.2 Procedure for Collecting Data using Focus Group**

Towards the end of the survey, two separate focus group discussions were facilitated at two different venues on the campus. The first group (G1) involved 8 undergraduate students (2 male students and 6 female students) in the age brackets 21 – 27 years; while the second group (G2) also consisted of 8 participants (3 male students and 5 female students) in the age brackets 21 – 29 years. Altogether 22 students were invited but only 16 showed for participation in the focus group discussions. Venue and refreshment (paid out of the researcher's personal income) were arranged for the discussions. At each discussion, the researcher engaged the services of an assistant who was paid to help in the electronic recording of the two group discussions as a back up to pen and paper documentation in the researcher's diary. Full transcripts of the discussions were later developed from the recordings and cross-checked for content analysis.

#### **4.6.3.3 Procedure for Collecting Data using Interview**

The personal interviews method was used throughout. Some of the interviews were conducted face-to-face while some while done telephonically. Appointments were set up in advance and reasons for the appointment was given to enable the interviewees to be in the best frame of mind for the interview. Responses from face-to-face interviews were recorded in a research diary maintained by the researcher while the telephonic interviews were recorded using the audio call app installed on the researcher's mobile phone. All the recordings were later transcribed into a word document file as transcripts for further analysis.

## **4.7 DATA ANALYSIS**

The quantitative data collected were coded using codes described in Appendix 6: Codebook for Quantitative Data and captured into SPSS version 20 and later upgraded to version 24 while the qualitative data collected were transcribed and were also coded in Microsoft Excel 2016. With these being done, the datasets were ready to be used for analyses. Tools and software used for analyses are explained in further details in sections 4.7.1 and 4.7.2 below.

### **4.7.1 Tools and Software for Analysing Quantitative Dataset**

Past researches (e.g. Ogah & Emesini, 2013; Parker, 2011) in entrepreneurship have used mean scores and simple percentages, correlation/regression models, Analysis of Variance (ANOVA, Analysis of Covariance (ANCOVA), factor analysis, logistic and multivariate models and the like tools for data analysis. However, several studies similar to this research have used the structural equation model (SEM). Some examples include: Alimehmeti and Shaqiri (2015); Ferreira, Raposo, Rodrigues, Dinis and Paço (2012); Karimi, Biemans, Lans, Chizari and Mulder (2016); Molaei, Zali, Mobaraki and Farsi (2014); Peng, Lu and Kang (2012); Moberg (2014); Lakovleva, Kolvereid and Stephan (2011). As a relational model, structural equation modelling is an advanced form of the generalised linear models that allows a researcher to simultaneously examine the regression equations of more complex relationships such as the one presented in the research model in Figure 1.2. One feature of the Structural Equation Modelling is that it allows for the elimination errors associated with variables/parameters involved in the process of testing a theoretical model thereby giving rise to a more reliable model.

#### **4.7.1.1 Composition of Structural Equation Model**

Typically, the structural equation model (SEM) consists of two main parts namely: the structural part and the measurement parts (Kumar, 2015). The structural aspect of the structural equation model allows that all the constructs

in a study are connected while the measurement part links the observed variables with the latent variables. Four major types of variables that makeup SEM models are:

- *Observed exogenous*: variables in the dataset which are determined by other variables not measured in the SEM model
- *Latent exogenous*: Unobserved variables which are also not determined by other variables not measured in the model
- *Observed endogenous*: Variables in the dataset which are determined within SEM model.
- *Latent endogenous*: Unobserved variables which are not considered as effect in the SEM model.

In addition to these, the error variables too, are usually included in the SEM models. It should be noted that in a situation where indirect effects or causalities are investigated, then the observed variables can act as causal and effect variables in the same model.

#### 4.7.1.2 Assumptions of Structural Equation Model

For the purpose of specification and interpretation of results from analyses, it is pertinent to state the assumptions that critically underlie application of the structural equation model. According to Kline (2012), the following assumptions must be met before applying the structural equation model to analysing any dataset.

- **Data Measurability**: Structural equation modelling supports the use of all the four levels of data measurement i.e. nominal, interval, ratio and ordinal.
- **Causality**: A variable (X) must be causing another variable (Y) before relationship can be inferred. In other words, the causal variable must occur first before the effect variable can exist.
- **Directionality**: the direction of causality must be known. That is, what variable is causing what other variable(s) must be known and specified in the structural equation model.

- **Association:** There should be association between the causal and effect variables. This is usually measure by correlation or covariance estimates.
- **Isolation:** The structural equation model excludes the presumed, notional or real causes of exogenous variables as well as other factors that cause the endogenous factors which are not labelled in the model.
- **Normality:** it is assumed that data for structural equation model testing must have been drawn from normal population and/or would have normalised through statistical techniques such as asymptotic distribution free (ADF) of estimation (Kumar, 2015).

#### 4.7.1.3 Procedure and Model Fitness of Structural Equation Model

The procedure of structural equation modelling analyses entail building a model; testing the model for fitness; improving the model (where necessary, in order to evolve a valid model) and then using the model to test the effects stated in research assumptions and/or hypotheses (Cheung & Rensvold, 2002; Hooper, Coughlan, & Mullen, 2008; Wothke, 2010). Critical to SEM analysis is obtaining goodness-of-fit indices that proves that a proposed model is a very good fit for a study. According to Cheung and Rensvold (2002), amongst so many indices of fitness, some indices are more commonly reported. They however, cautioned against reporting only the favourable ones arguing that reporting a variety of indices will reflect more perspectives on a model fitness. Meanwhile, Hooper *et al.* (2008) had extensively discussed various fit indices highlighting the pros and cons under the categories of absolute, relative, parsimony fitness and non-centrality fit.

Absolute fit indices include chi-square ( $\chi^2$ ), root mean square error of approximation (RMSEA), goodness-of-fit statistic (GFI), adjusted goodness-of-fit statistic (AGFI), root mean square residual (RMR) and standardised root mean square residual (SRMR). In their guidelines, Hooper *et al.* (2008) noted the critical shortcoming of using these indices and that researchers should carefully consider what is best in any given research. For instance, apart from root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR), most of the absolute indices are either very

sensitive to sample size or number of parameters in the model and thus tilting the resulting values. This has made root mean square error of approximation (RMSEA) one of the commonly reported absolute fit indices in entrepreneurship studies based on the structural equation modelling (Chen & He, 2011; Wu & Wu, 2008).

Sometimes called comparative fit, the relative fit indices include incremental fit index (IFI), normed-fit index (NFI), non-normed fit index (NNFI) or Tucker-Lewis index (TLI) and comparative fit index. Because most of the indices are computed using the chi-square value, they tend to show sensitivity to sample size. The non-normed fit index can also be larger than 1 and thus becomes difficult to interpret (Hooper *et al.*, 2008). Comparative fit index (CFI) was however developed by Bentler in 1990 which takes cognisance of different degrees of sample sizes. Ranging between 0.0 and 1.0, the comparative fit index assumes that latent variables in a structural equal model are not correlated. A critical value for a model's fitness on the basis of comparative fit index can be 0.90 and above (Hooper *et al.*, 2008).

Parsimony fit indices such as the Parsimony Goodness-of-Fit Index (PGFI) and Parsimonious Normed Fit Index are usually less important than other fit statistics because they are seen to penalise models for complexity. Although there are no set critical values (Hooper *et al.*, 2008), values around 0.5 are sometimes considered. A summary of some of these fitness indices and their criteria are enumerated in the Table 4.5 below.

Table 4.5: Criteria for Model fit indices

Fit Statistics	CRITICAL VALUES/ NOTES
Chi-square ( $\chi^2$ )	<ul style="list-style-type: none"> <li>• <math>P \geq 0.05</math>: Model is fit</li> <li>• <math>\chi^2 &lt; \text{table value}</math>: Model is fit</li> </ul>
Relative Chi-square	<ul style="list-style-type: none"> <li>• <math>\chi^2/df \leq 5.00</math>: Acceptable</li> </ul>
CFI (Comparative Fit Index)	<ul style="list-style-type: none"> <li>• 0 = poor fit</li> <li>• Close to 1 = very good fit</li> <li>• CFI &gt; .90: good fit</li> </ul>
GFI (Goodness of fit)	<ul style="list-style-type: none"> <li>• 0 = poor</li> </ul>

Fit Statistics	CRITICAL VALUES/ NOTES
index)	<ul style="list-style-type: none"> <li>• 1 = exact</li> <li>• <math>-\infty</math> = poor fit</li> </ul>
AGFI (Adjusted Goodness of Fit Index)	<ul style="list-style-type: none"> <li>• 1=exact fit</li> </ul>
TLI (Tucker-Lewis Index)	<ul style="list-style-type: none"> <li>• 0=poor fit</li> </ul>
Rho_2 (rho_2 order) = NNFI (Non-Normed Fit Index)	<ul style="list-style-type: none"> <li>• Close to 1=very good fit</li> </ul>
IFI (Incremental Fit Index)	<ul style="list-style-type: none"> <li>• 0=poor fit</li> <li>• Close to 1=very good fit</li> <li>• RMSEA=0: exact/good fit</li> <li>• RMSEA&lt;0.05: close fit</li> </ul>
RMSEA (Root Mean Square Error of Approximation)	<ul style="list-style-type: none"> <li>• RMSEA&gt;0.08: Moderate fit; reasonable error of approximation</li> <li>• RMSEA&gt;.10: Poor fit therefore don't employ</li> </ul>
RFI (Relative Fit Index) = RNI (Relative Noncentrality Index)	<ul style="list-style-type: none"> <li>• 0 = poor fit;</li> <li>• Close 1= very good fit</li> <li>• 0 = poor fit</li> </ul>
NFI (Normed-fit index)	<ul style="list-style-type: none"> <li>• Close to 1=good fit</li> <li>• NFI&gt;0.90, 0.95: good fit</li> </ul>

Sources: Hooper et al (2008); Moss (2009)

#### 4.7.1.4 Variable Specifications

There are four main variables being considered in this study and these are: entrepreneurship education, entrepreneurial mindset, intention and skills. The entrepreneurship education is further subdivided into three namely: institutional setting, content of entrepreneurship programme and method of teaching. So, in all, there are seven (7) variables. Table 4.6 below shows the variables and how they are denoted for model specification later in Chapter Five.

Table 4.6: Denotation of Variables for Model Specification

Variable	Denotation
Entrepreneurship Education	EE
Institutional Setting	IS
Content of Entrepreneurship module	CON



<b>Variable</b>	<b>Denotation</b>
Methods of Teaching Entrepreneurship module	MTHD
Entrepreneurial Mindset	EM
Entrepreneurial Skills	ES
Entrepreneurial Intentions	EI

#### **4.7.2 Tools and Software for Analysing Qualitative Dataset**

The search for an alternative standard tool for objectively analysing qualitative datasets have led to the development of qualitative content analysis (Mayring, 2000, 2014) which has increasingly gained wide use over time (Hsieh & Shannon, 2005). Content analysis as a standardised qualitative analytical tool is useful for generating valid and reliable interpretations and inferences from texts produced as transcripts from focus group discussions, interviews, open-ended questionnaires, videos and audios. Images and artefacts too can be analysed using the same tool (Hsieh & Shannon, 2005; Mayring, 2000, 2014; Stemler, 2001). A major advantage of the qualitative content analysis is to help overcome subjective inferences which used to characterise qualitative research. Qualitative content analysis was adopted for handling the qualitative datasets generated from focus group discussions, interviews, and the 5 open-ended questions contained in section F of the EEMSIQ tool (Entrepreneurship Education, Mindset, Skills and Intention Questionnaire).

Hsieh and Shannon (2005) discussed conventional, directed or summative as the approaches to content analysis. While the conventional approach is used to guide how new insights are built about a phenomenon by using unique codes generated from the study participants' own words; the summative approach involves word frequency estimation combined with the analysis of contexts in which each category of word or words occurred. This aspect takes the summative approach from being just quantitative to being qualitative. The directed approach to content analysis on the other hand, also categorised as deductive method by Mayring (2000, 2014), is useful when a study aims at

empirically validating or conceptually extending a theoretical framework. According to Hsieh and Shannon (2005), the directed approach, which is more structured than the conventional methods, can be used to determine predictions about variables or establish relationships among under study. From the foregoing, it is pertinent to state that the deductive approach best fits the research objective and it is therefore adopted for the qualitative content analysis aspect of this study.

As modelled by Mayring (2000) and presented in **Figure 4.2**, the deductive content analysis follows the process of connecting base materials (texts or transcripts derived from interviews, focus group discussions, observations, articles, images, etc.) with previously defined codes derived from existing theory or literature. In other words, the directed approach uses predetermined codes derived from the meanings attached to variables which relate to a theory that underpinned a research. All words, phrases, clauses, sentences or iconic expressions that connect to these codes are then identified. The main idea is to either support or extend the spheres of an existing theory.

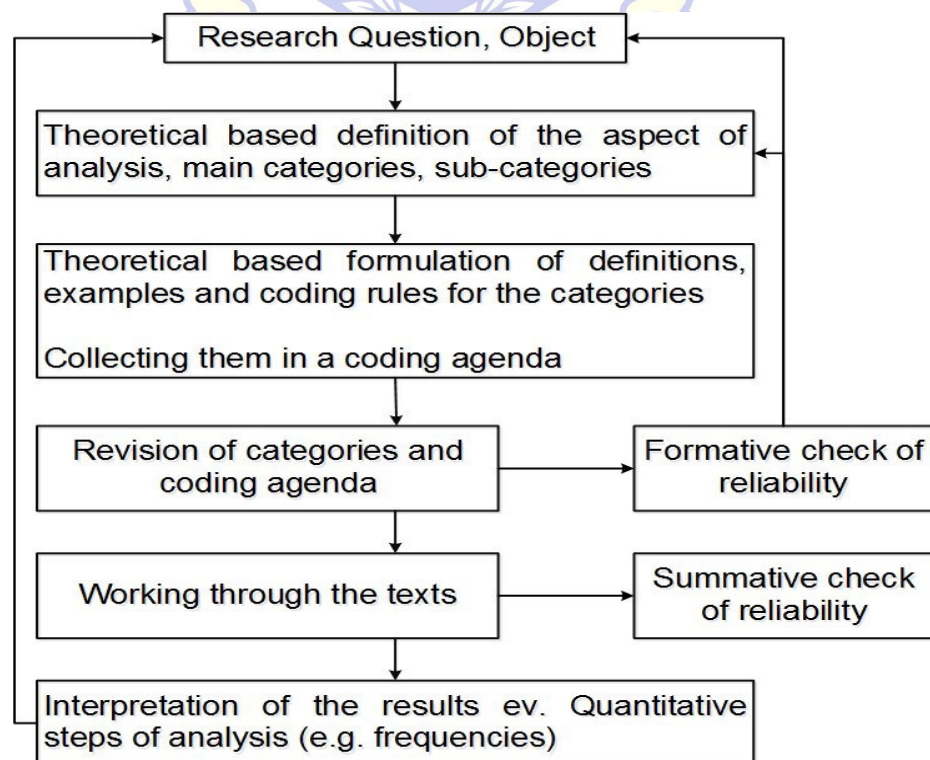


Figure 4.2: Step of deductive category application  
Source: Mayring (2000)

For qualitative content analysis and based on the directed approach, the researcher used ATLAS.ti, version 7.5.12 which was the most recent version as at the time of this study. The software, marketed by ATLAS.ti GmbH, Berlin is one of the world's notable software packages used for qualitative data analysis.

#### **4.8 PILOT STUDY**

As earlier mentioned in sections 4.1 and 4.6.3, a pilot study was conducted with a randomly selected sample of 35 undergraduate students with the aim to test the reliability as well as validate the initial instrument (i.e. EEMSIQ). Validation and reliability testing are both critical steps in empirical studies and this therefore makes pilot study necessary (Barker, Pistrang, & Elliott, 2002; Sechrest, 1984). On one hand, reliability measures the degree of items in a research instrument (i.e. questionnaire) to yield consistent results upon repeated administration to respondents (Weiner, 2007). On the other hand, validity is primarily concerned with whether the variables under study are adequately measured or quantified by the said research instrument (Barker *et al.*, 2002; Sechrest, 1984; Weiner, 2007). There are different techniques and methods for conducting these two activities. The techniques and methods adopted in this study are discussed in the following sections.

##### **4.8.1 Demographics of Pilot Sample**

A pilot sample of 50 was initially targeted but only 43 undergraduate students participated. Out of the 43 completed and returned questionnaires, only 35 were found useful. Of the 35, 20 students (representing 57.1%) were male while 15 (representing 42.9%) were female. It was found out that majority (80%) were within the age bracket of 16 – 25 years while others (20%) are in the age bracket of 26 – 35 years. These are active youth age brackets. The pilot sample also showed that about 46 percent have had previous entrepreneurship education/training and while about 57 percent are currently and/or were previously been involved in venture management. Table 4.7 below is a summary of the descriptive statistics for the pilot study.

Table 4.7: Demographics of Pilot Study Participants

	<b>N</b>	<b>(%)</b>
<b>Gender</b>		
Male	20	57.1
Female	15	42.9
<b>Total</b>	<b>35</b>	<b>100</b>
<b>Age brackets</b>		
16 - 25 years	28	80
26 - 35 years	7	20
<b>Total</b>	<b>35</b>	<b>100</b>
<b>Previous Entrepreneurship Education/Training</b>		
16 - 25 years	12	34.3
26 - 35 years	4	11.4
<b>Total</b>	<b>16</b>	<b>45.7</b>
<b>Previous/current involvement in venture management</b>		
16 - 25 years	17	48.6
26 - 35 years	3	8.6
<b>Total</b>	<b>20</b>	<b>57.1</b>

Source: Field work (2015)

#### 4.8.2 Reliability of the Research Instrument: EEMSIQ

One approach to measuring the reliability of a research instrument is the internal consistency of a questionnaire items. This is especially needful where Likert scales are used (Brown, 2011). The internal consistency method is a widely used approach as seen in Ács, Szerb, and Autio, (2014, 2015); Fatoki and Oni (2014); and Mamman (2013). As a method of measuring internal consistency, the split-half usually utilises the Cronbach's alpha as a test technique which averages the reliability coefficients of some questionnaire items combined in a group. Measured on a scale of 0 – 1, the interpretation of this coefficient value denoted by  $\alpha$ , is given in Table 4.8 below (Gliem & Gliem, 2003).

Table 4.8: Interpretation of Cronbach's alpha score

Where $\alpha$ is:	Interpretation
> 0.9	Excellent
> 0.8	Good
> 0.7	Acceptable
> 0.6	Questionable
> 0.5	Poor
< 0.5	Unacceptable

Source: Gliem and Gliem (2003)

The 40 items in sections B, C, D and E in the questionnaire were tested for internal consistency using the Cronbach's alpha and the results are presented in Table 4.9. Generally, the obtained Cronbach's alpha scores are excellent when compared with 0.7 acceptable score.

Table 4.9: Initial Cronbach's alpha for Study Constructs

Constructs	Number of Items	Cronbach's alpha ( $\alpha$ )
Entrepreneurial Mindset (EM)	12	0.941
Entrepreneurial Skills (ES)	12	0.908
Entrepreneurship Education (EE)	9	0.807
Entrepreneurial Intentions (EI)	7	0.857
<b>All items</b>	<b>40</b>	<b>0.955</b>

The intra-class correlation of items at 95 percent confidence interval was further conducted to test for conformity and consistency of the items as per construct and on the overall. All the intra-class correlation coefficients (ICC) are significant with p-value less than 0.05, and on the overall, the lower and upper bounds difference is 0.059 which is acceptable. The results are summed up in Table 4.10 below.

Table 4.10: Intra-class Correlation Coefficients

Constructs	Intra-class Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	p-value
Entrepreneurial Mindset (EM)	0.941	0.905	0.967	16.92	30	330	0.000
Entrepreneurial Skills (ES)	0.908	0.849	0.950	10.857	28	308	0.000
Entrepreneurship Education (EE)	0.807	0.666	0.904	5.187	23	184	0.000
Entrepreneurial Intention (EI)	0.857	0.766	0.921	6.995	31	189	0.000
<b>All Items</b>	<b>0.955</b>	<b>0.920</b>	<b>0.979</b>	<b>22.070</b>	<b>18</b>	<b>702</b>	<b>0.000</b>

The researcher however, went further to evaluate the individual statistics for all items in each construct and discovered that items em6, es9, es11, ee9 and ei6 had Cronbach's alphas exceeding their group's value (see Table 4.11). Implying that these items needed modification, they were therefore reviewed after careful consideration of the statements in consultation with experts. Table 4.12 shows the reviews of each item so that they would convey the intended meaning to the prospective respondents during the main study.

Table 4.11: Items Needing Review from Pilot Study

Item Code	Constructs	Statements	Item (α)	Group (α)
em6	Entrepreneurial Mindset	I am really scared spending my little resources to pursue a business idea that I learnt from GST 223	.952*	.941
es9	Entrepreneurial Skills	It is sometimes difficult to keep searching for solutions that would count towards my CGPA	.913*	.908
es11	Entrepreneurial Skills	I am sometimes afraid someone may steal my novel ideas	.921*	.908
ee9	Entrepreneurship Education	GST 223 was taught by lectures only	.877*	.807
ei6	Entrepreneurial Intentions	Nothing is more exciting than seeing my ideas turn into reality	.878*	.857

\*coefficients show that the items need review

Source: Field work (2015)

Table 4.12: Reviews of Identified items from EEMSIQ

Initial Statement	Reviewed Statement
I am really scared spending my little resources to pursue a business idea that I learnt from GST 223	I am really scared <b>of</b> spending my little resources to pursue a business idea I learnt from GST 223
It is sometimes difficult to keep searching for solutions that would count towards my CGPA	It is sometimes difficult to keep searching for solutions that would <b>not</b> count towards my <b>CGPA</b>

Initial Statement	Reviewed Statement
I am sometimes afraid someone may steal my novel ideas	I am sometimes afraid that someone may steal my novel ideas <b>if shared</b>
GST 223 was taught by lectures only	GST 223 was taught by <b>lecture-method only</b>
Nothing is more exciting than seeing my ideas turn into reality	Nothing is more exciting than seeing my ideas <b>being turned</b> into reality

\* *Bolden words reflect the reviews done to the first statements.*

*Source: Field work (2015)*

### 4.8.3 Validity of the Research Instrument

Both judgemental and empirical based evidences were used in order ensure the validity of the research instrument (EEMSIQ). For assurance that the questionnaire would adequately measure or quantify the study variables, content and concurrent validity were conducted.

#### 4.8.3.1 Content validity

After the first draft of the questionnaire (EEMSIQ), an expert who holds a PhD in entrepreneurship was consulted via email and telephonically to vet the items. Her inputs were captured in a second draft which was given to two more experts in entrepreneurship and statistics. Their inputs led to the third draft which was used for the pilot study. At each point of review, objectives of the study and the questionnaire items were placed side by side in the context selected literature to decide on the appropriateness of each item. The reviewers also ensured that that all questionnaire items fully exhaust all that are implied by the research objectives.

#### 4.8.3.2 Concurrent validity:

The data collected from the sample 35 undergraduate students during the pilot study made it possible to test for concurrent validity of the questionnaire. Using bivariate correlation, the ensuing inter-item coefficients with their p-



values were compared with the 0.5 correlation benchmark and  $p$ -value $<0.05$  respectively. Inter-item coefficients less than 0.5 indicated weak inter-item interactions but those greater than 0.5 generally indicated strong and positive interaction amongst items. While correlation coefficients with  $p$ -value $\geq 0.05$  were not significant and thus would need review. The results show that all the items for entrepreneurial mindset, entrepreneurial skills, entrepreneurship education and entrepreneurial intentions were generally valid with  $p$  values less than 0.05 and correlation coefficients greater than 0.5 except for item em6, es9, es11, ee9 and ei6 ( $p$ -values were greater 0.05). These were the same items bookmarked for reviews as discussed in section 4.8.2 and in Table 4.11 and Table 4.12.

## **4.9 ETHICAL CONSIDERATIONS**

Ethical issues are pivotal to the conduct of any research of this magnitude. The first step in this regard was to obtain ethical clearance from the University of the Western Cape (see Appendix 5: Ethical Clearance). The clearance was contingent on the following points discussed below.

### **4.9.1 Voluntary Participation and Withdrawal**

Appendix 1: Information Sheet for Participants Appendix 2: Consent Form for Questionnaire. Apart from informing potential participants of the research thrust, significance and objectives, the information sheet explicitly stated that participation in the survey was voluntary. As part of the training given to the research assistants, they were to reiterate the fact that participation was voluntary and in fact, could decide to opt out of the survey even after they have started. This explains a reason for some incomplete copies of the questionnaire.

### **4.9.2 Anonymity and Confidentiality**

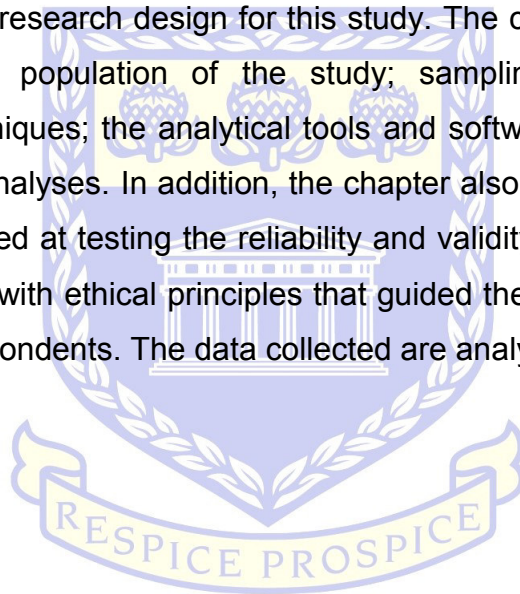
The identities of the participants in this survey have been kept anonymous and confidential in line with ethical standards required. No single person's identity has been explicitly or impliedly revealed in any part of this research report.

### 4.9.3 Non-maleficence and Beneficence

It is important to make it clear that no piece of information given and volunteered by any participant was used in any malicious way. No individual or institution is maligned in way or form in the course disseminating the outcome of the research. Furthermore, all data generated from the survey are used solely and only for this research.

### 4.10 SUMMARY

Adopting the mixed methods approach, this chapter justified the use of cross-sectional survey research design for this study. The chapter further described the setting and population of the study; sampling and data collection procedures/techniques; the analytical tools and software for both quantitative and qualitative analyses. In addition, the chapter also presented the results of a pilot study aimed at testing the reliability and validity of research instrument and later closed with ethical principles that guided the collection and handling of data from respondents. The data collected are analysed in chapter five.



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## CHAPTER FIVE: RESULTS AND FINDINGS

### 5.1 INTRODUCTION

This chapter presents the data collected through instruments such as questionnaire, focus group discussions and interviews. These data are summarised in tables and charts. The ATLAS.ti was employed to perform qualitative content analysis on textual transcripts generated from interviews, discussions and open-ended question items from the questionnaire. While AMOS (version 24) and Statistical Package for Social Sciences (SPSS) were used to execute the structural equation modelling (SEM) for the analysis of quantitative datasets generated from questionnaire. The results of data analysis are highlighted and consequently discussed based on existing literature reviewed in chapter three. The essence is to connect the findings of this research to theoretical framework, research problem, questions and objectives.

### 5.2 STUDY VARIABLES

As illustrated in **Figure 5.1**, this section presents a synopsis of the variables associated with the research problem and objectives as an overview of the theoretical framework that guided the analyses conducted in this chapter. The primary research objective is here restated:

*To develop a structured model to measure the effects of entrepreneurship education on undergraduate students in Nigeria in terms of entrepreneurial mindset, skills and intentions.*

**Figure 5.1** encapsulates the study variables at three levels: main categories of variables, sub-categories and defining indices. The main variables are categorised as: Entrepreneurship education, entrepreneurial impact and entrepreneurial outcome; while each of these are divided into sub-variables (i.e. entrepreneurship education is sub-categorised into module content, teaching methods and institutional setting). There are six sub variables in all. For the purpose of quantification, each sub-variable is defined by specific indices as indicated by existing literature in the main domains of the research variables. More details about these are provided in sections 5.2.1 to 5.2.4.

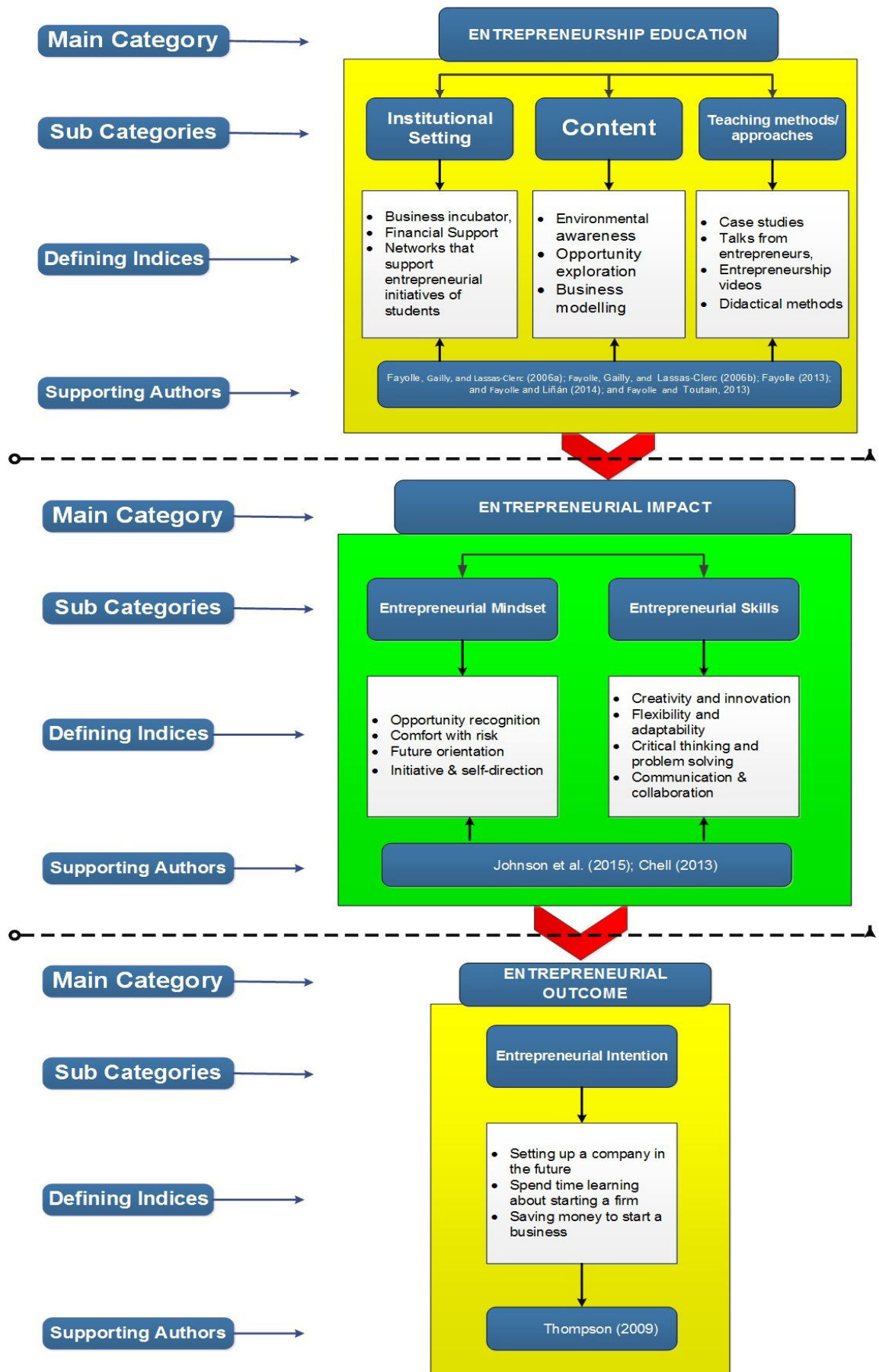


Figure 5.1: Study Variables Defined as categories and sub-categories

### **5.2.1 Entrepreneurship Education**

This is the contextual pedagogical process involved in transmitting entrepreneurial knowledge and competence. According to Fayolle *et al.* (2006a, 2006b); Fayolle (2013) and Fayolle and Liñán (2014); Fayolle and Toutain (2013) entrepreneurship education is an interplay of content, objectives, typology, methods and approach to teaching and institutional setting in which an entrepreneurship education programme is carried on.

### **5.2.2 Entrepreneurial Mindset**

Based on the cognition school of thought, and in line with Gardner's work which described the "*thinking*" or "*mindset*" for entrepreneurship, Duening (2010)'s identified five categories of minds that so far, succinctly describe entrepreneurial mindset. These are: "the opportunity-recognising mind", "the designing mind", "the risk-managing mind", "the resilient mind", and "the effectuating mind". There were more elaborations on these in section 3.4.

### **5.2.3 Entrepreneurial Skills**

Given that skills definition can be contextualised (Chell, 2013, p. 9), this study therefore conceptualises entrepreneurial skills within the context of entrepreneurial economy and against the backdrop of viewing entrepreneurship as a process. The following are thus highlighted as constituting entrepreneurial skills: creativity and innovation; flexibility and adaptability; critical thinking and problem solving; and communication and collaboration. More details about were discussed in section 3.5.

### **5.2.4 Entrepreneurial Intentions**

As discussed in section 3.6 of chapter three, entrepreneurial intention is a product of mental thinking which exudes a blend of rationalism and intuition from a contextual but holistic perspective. This mental thinking can be strengthened by some endogenous and/or exogenous factors to produce an "inner conviction" that could catalyse behaviour towards entrepreneurial actions sometime in the future (Fayolle *et al.*, 2006a; Thompson, 2009). For

this study, metrics such as intention to set up a company in the future; saving money to start a business; and spend time learning about starting a firm were adopted to measure entrepreneurial intentions of undergraduate students.

### **5.3 RESULTS**

Out of the 750 questionnaires administered during the survey, 737 were returned as completed. But after thorough check, 707 questionnaires were found usable representing a 94.42 percent response rate. This high response rate indicates the willingness of the targeted respondents to participate in the study; and more importantly, a reflection of how the issues being addressed by the study are of interest to them. While section 5.3.1 outlined the demographic details and results; section 5.3.2 presented the structural equation model used for testing the five hypotheses. Section 5.3.3 presented the results as well as the interpretation of the test of hypotheses. Section 5.3.4 on the hand explained how the qualitative content analysis model was followed to perform the qualitative content analyses whose results are presented in detail in section 5.3.6.

#### **5.3.1 Demographic Details of Survey Participants**

The demographic background of survey participants is essential to interpreting and discussing the findings of any study as it forms an integral aspect of the results. The following demographic details are discussed.

##### **5.3.1.1 Gender Distribution of Respondents**

The study recorded a participation of male students at 64.8 percent that is almost twice the size of their female counterparts (see **Figure 5.2**). These should be taken as reflection of the level of entrepreneurialism of the students by gender.

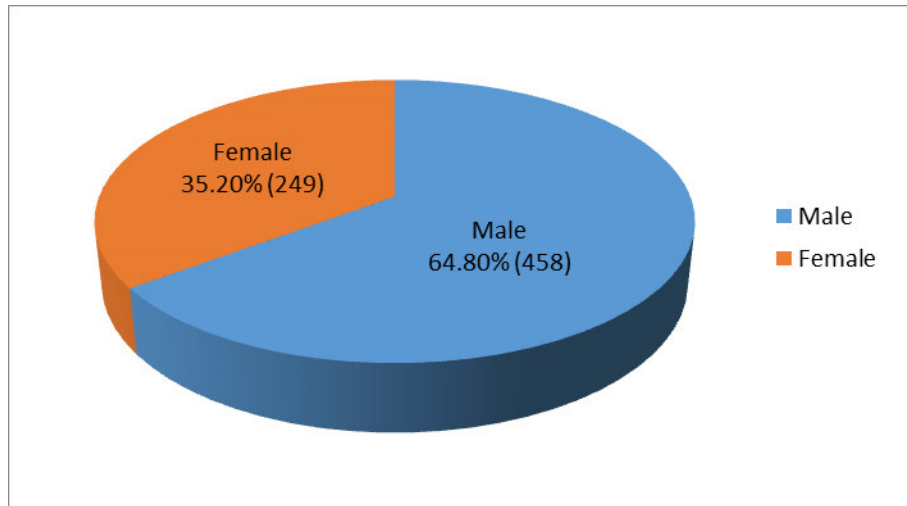


Figure 5.2: Gender Distribution of Respondents  
*Source: Field work (2016)*

### 5.3.1.2 Academic Discipline/Faculty of Respondents

Contrary to the traditional scenario where entrepreneurship modules were common to business and management students, the current model of entrepreneurship education in Nigeria cuts across all disciplines. For this study, a representative sample was drawn and Table 5.1 below shows that students from the Natural Sciences participated most (22.9%) in the study while students from the Pharmaceutical Sciences had the least participation rate (4.1%) in the study. It should however be noted that these rates do reflect the module appreciation level of the students by their academic disciplines.

Table 5.1: Distribution of Participants by Academic Discipline/Faculty

Academic Discipline	Frequency	Percent
Arts	70	9.9
Education	65	9.2
Environmental Science	59	8.3
Law	59	8.3
Management Sciences	96	13.6
Medical Sciences	83	11.7
Natural Sciences	162	22.9
Pharmaceutical Sciences	29	4.1
Social Sciences	84	11.9
<b>Total</b>	<b>707</b>	<b>100.0</b>

*Source: Field work (2016)*

### 5.3.1.3 Age Bracket of Respondents

Figure 5.3 shows that most of the respondents (69.3%) fall within the bracket of 16 – 25 years of age. This is the age bracket where the mind is more malleable to change in favour or disfavour of a course of action. In fact, the pie chart reveals that 98.3 percent respondents are below age 35 years or below, representing a good proportion to be targeted by entrepreneurship education.

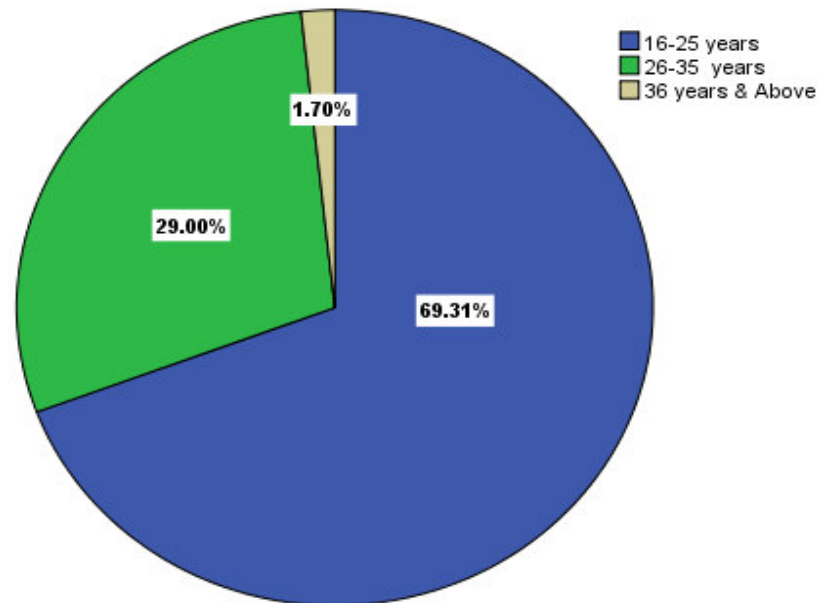


Figure 5.3: Age bracket Distribution of Respondents  
Source: Field work (2016)

### 5.3.1.4 Academic Discipline versus Previous Entrepreneurial Training

Assuming that academic discipline and previous entrepreneurial education/training of respondents are independent, a cross tabulation was done and the results are presented in Table 5.2 and Table 5.3. For instance, Table 5.2 shows a total of 447 undergraduate students representing 63.22 percent. This indicated the sampled students have had entrepreneurial education/training prior to enrolling for the compulsory university entrepreneurial module in their second year as against the 260 students who had not previously undergone entrepreneurial training/education. It is noticeable that students of Arts, Education, Environmental Sciences, Law and Management Sciences had rates of previous entrepreneurship training higher than the calculated sample average of 63.45 percent while core science-based disciplines (e.g. medicine, natural and pharmaceutical sciences) as well as students of Social sciences had rates lower than the sample average.



Table 5.2: Cross tabulation of respondents by academic discipline and previous entrepreneurial education/training

Academic Discipline/Faculty	Previous entrepreneurial education/training				Total
	Yes	%	No	%	
Arts	46	65.71	24	34.29	70
Education	42	64.62	23	35.38	65
Environmental Science	38	64.41	21	35.59	59
Law	43	72.88	16	27.12	59
Management Sciences	69	71.88	27	28.13	96
Medical Sciences	49	59.04	34	40.96	83
Natural Sciences	94	58.02	68	41.98	162
Pharmaceutical Sciences	16	55.17	13	44.83	29
Social Sciences	50	59.52	34	40.48	84
<b>TOTAL (Average)</b>	<b>447</b>	<b>(63.22)</b>	<b>260</b>	<b>(36.78)</b>	<b>707</b>

Table 5.3 shows that  $\chi^2(8) = 9.546, p = 0.298$ . These results show that there is no statistically significant association between respondents' academic discipline and previous entrepreneurial education/training. This implies that previous entrepreneurial education/training did not play a significant role in influencing the choice of academic discipline of respondents as confirmed by these coefficients: Phi = 0.116, Cramer's V = 0.116 and R = 0.067 all indicating very weak association between academic discipline and previous entrepreneurial education/training.

Table 5.3: Contingency statistics for cross-tabulation of academic discipline versus previous entrepreneurial education/training

Statistics	Value	df	p value
$\chi^2$	9.546	8	0.298
Phi	0.116		0.298
Cramer's V	0.116		0.298
R	0.067		0.074

### 5.3.1.5 Academic Discipline versus Previous/Current Involvement in a venture

Similarly, academic discipline of respondents was assumed to be independent of previous/current involvement in a venture. The result of the cross tabulation which are presented in Table 5.4 and Table 5.5 below. Table 5.4 show that only 54.88 percent of the respondents translating to 388 out of 707 were/are previously/currently involved in a venture whether it is owned by family or self.

Table 5.4: Cross tabulation of respondents' academic discipline and their previous/current involvement in a venture

Academic Discipline/Faculty	Previous/current involvement in a venture				Total
	Yes	Percent	No	Percent	
Arts	40	57.14	30	42.86	70
Education	41	63.08	24	36.92	65
Environmental Science	33	55.93	26	44.07	59
Law	30	50.85	29	49.15	59
Management Sciences	64	66.67	32	33.33	96
Medical Sciences	40	48.19	43	51.81	83
Natural Sciences	82	50.62	80	49.38	162
Pharmaceutical Sciences	12	41.38	17	58.62	29
Social Sciences	46	54.76	38	45.24	84
<b>TOTAL (Average)</b>	<b>388</b>	<b>(54.88)</b>	<b>319</b>	<b>(45.12)</b>	<b>707</b>

Table 5.5 which cross tabulates respondents' academic discipline with their previous/current involvement in a venture shows that  $\chi^2(8) = 12.531$ ,  $p = 0.129$ . These results show that there is no statistically significant association between respondents' academic discipline and previous/current involvement in a venture whether it is owned by family or self. In other words, previous/current involvement in a venture is not influenced by respondents' academic bias. The statistics, Phi = 0.133, Cramer's V = 0.133 and R = 0.061, further indicate that there is a very weak relationship between academic discipline and involvement in venturing.

Table 5.5: Contingency statistics for cross-tabulation of academic discipline versus previous/current involvement in a venture.

<b>Statistics</b>	<b>Value</b>	<b>df</b>	<b>p value</b>
$\chi^2$	12.531	8	0.129
Phi	0.133		0.129
Cramer's V	0.133		0.129
R	0.061		0.106

### 5.3.1.6 Previous Entrepreneurial Training versus Previous/Current Involvement in a venture

The results of association between academic discipline and previous entrepreneurial training; and between academic discipline and previous/current involvement in a venture triggered the need to do a cross tabulation between previous entrepreneurial training and previous/current involvement in a venture. One obvious fact noted is that not all people who have had entrepreneurial training/education have been involved in business venturing.

Table 5.6 shows that 302 out of the 447 respondents who have had entrepreneurial training have been or are currently involved in venturing. This represents 67.56 percent and shows a strong impact of previous entrepreneurship training on venturing action.

Table 5.6: Cross tabulation of previous entrepreneurial training of respondents versus their previous/current involvement in a venture

<b>Previous/current involvement in a venture</b>	<b>Previous entrepreneurial education/training</b>		<b>Total</b>
	<b>Yes</b>	<b>No</b>	
Yes	302	86	388
No	145	174	319
<b>Total</b>	<b>447</b>	<b>260</b>	<b>707</b>

Further, Table 5.7 which measures contingency between previous entrepreneurial training of respondents versus their previous/current involvement in a venture, shows that  $\chi^2(1) = 78.946$ ,  $p = 0.000$ . These results show there is statistically significant association between previous entrepreneurial education/training and current/previous involvement in venturing by respondents. Although Phi, Cramer's V and R coefficients (which are all = 0.334) suggest relative weak relationship between previous entrepreneurial education/training and current/previous involvement in venturing, there is an indication that the entrepreneurship module at the undergraduate level could engender entrepreneurial intentions and possibly, actions on the part of participating undergraduate students. This is further discussed later in this chapter.

Table 5.7: Contingency statistics for cross-tabulation of previous entrepreneurial training of respondents versus their previous/current involvement in a venture.

Statistics	Value	df	p value
$\chi^2$	78.946	1	0.000
Phi	0.334		0.000
Cramer's V	0.334		0.000
R	0.334		0.000

### 5.3.2 Structural Equation Model

In view of the primary objective of this study, a structured model (see Figure 1.3) to measure the effects of entrepreneurship education on undergraduate students in Nigeria in terms of entrepreneurial mindset, skills and intentions was developed based on the framework of Fayolle *et al.* (2006a, 2006b). Five research hypotheses were developed from the structured model (see section 1.6) and these were tested through the Structural Equation Model (SEM) using Amos version 24 so as to validate the model.

### 5.3.2.1 Model Specification

The first step in specifying a structural equation model is to identify the variables involved as either exogenous and endogenous; and determining the causal direction and relation among variables. These can be mapped in form of a diagram called path diagram or structural model. The regression coefficients (or weights) of endogenous and exogenous variables and the associated error or disturbance terms can then be estimated through the measurement aspect of the structural model. In general, the structural equation model can take a mathematical equation shown as:

$$\eta = B\eta + L\eta + \varepsilon. \quad \text{Where:}$$

$\eta$  = endogenous variables

$\eta$  = vector of exogenous variables

$\varepsilon$  = error or disturbance term

B, L = regression coefficients or regression weights of endogenous and exogenous variables respectively

### 5.3.2.2 The Structural Model

The pattern of relationships amongst the study variables earlier indicated in Figure 1.2 and Figure 1.3 are presented as structural models shown in Figure 5.4 and 5.5 below. In the first model (Figure 5.4), oval shapes are the endogenous variables which are EE, EM, ES and EI, while the rectangular shapes (labelled as EM<sub>1</sub> – EM<sub>12</sub>, ES<sub>1</sub> – ES<sub>12</sub>, EI<sub>1</sub> – EI<sub>7</sub> and EE<sub>1</sub> – EE<sub>9</sub>.) are the exogenous variables which are measured directly via questionnaire items. The smaller oval shapes labelled as e<sub>1</sub>, e<sub>2</sub>, etc. represent the disturbance terms associated with each of the exogenous variables. The double-headed arrows indicate correlation while the single-headed arrows show impact or contribution of the exogenous variables to the endogenous variables. These legends are applicable to Figure 5.5 except that ES<sub>5</sub>, ES<sub>6</sub>, ES<sub>10</sub>, EI<sub>4</sub> and EI<sub>6</sub> were removed during the process of iteration aimed at generating model good fit. This implies that such items, as originally proposed in the questionnaire will be omitted.

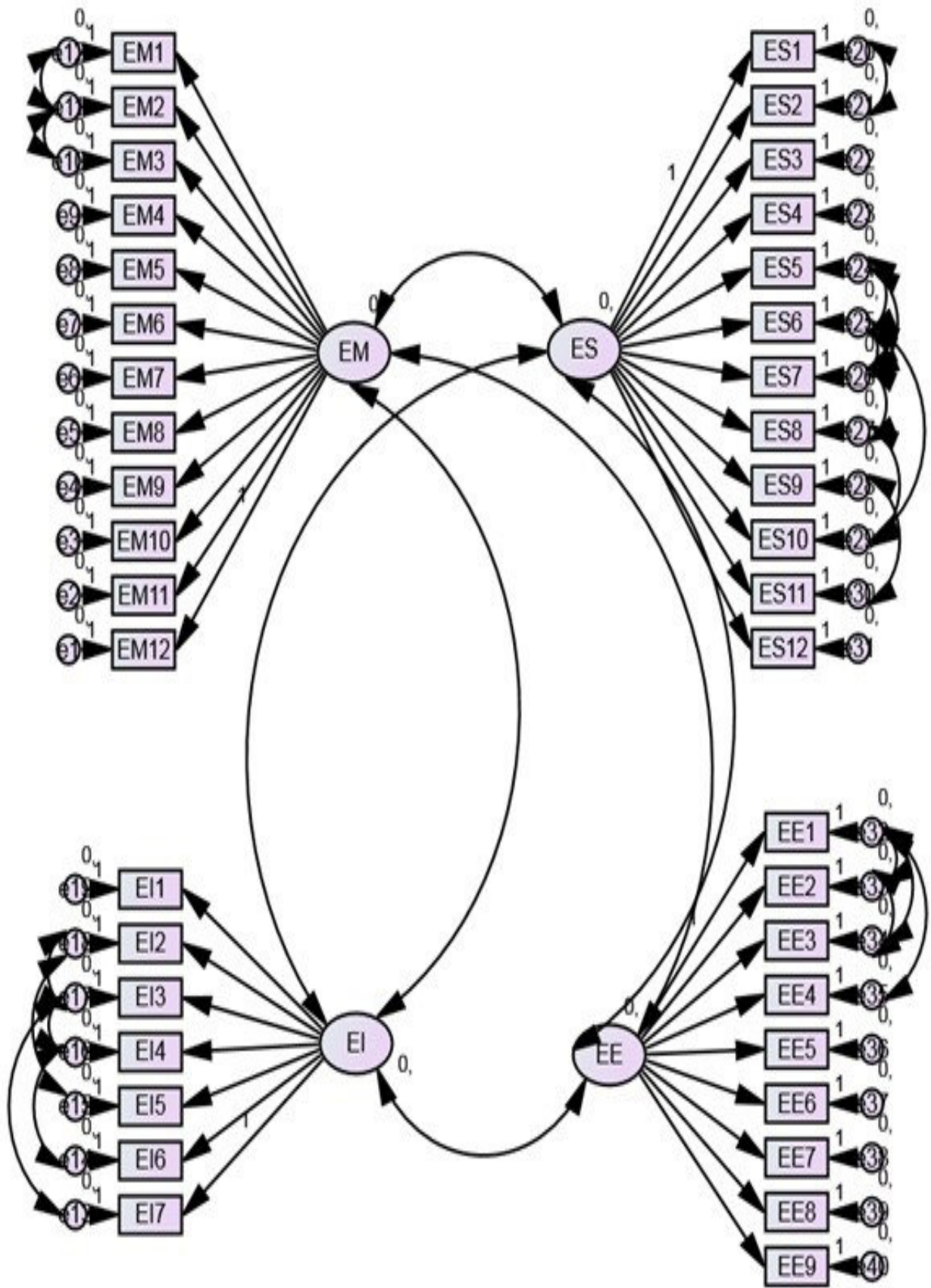


Figure 5.4: Structural Model 1 - Showing interaction between Entrepreneurial Mindset, Skill, Intention and Entrepreneurship Education

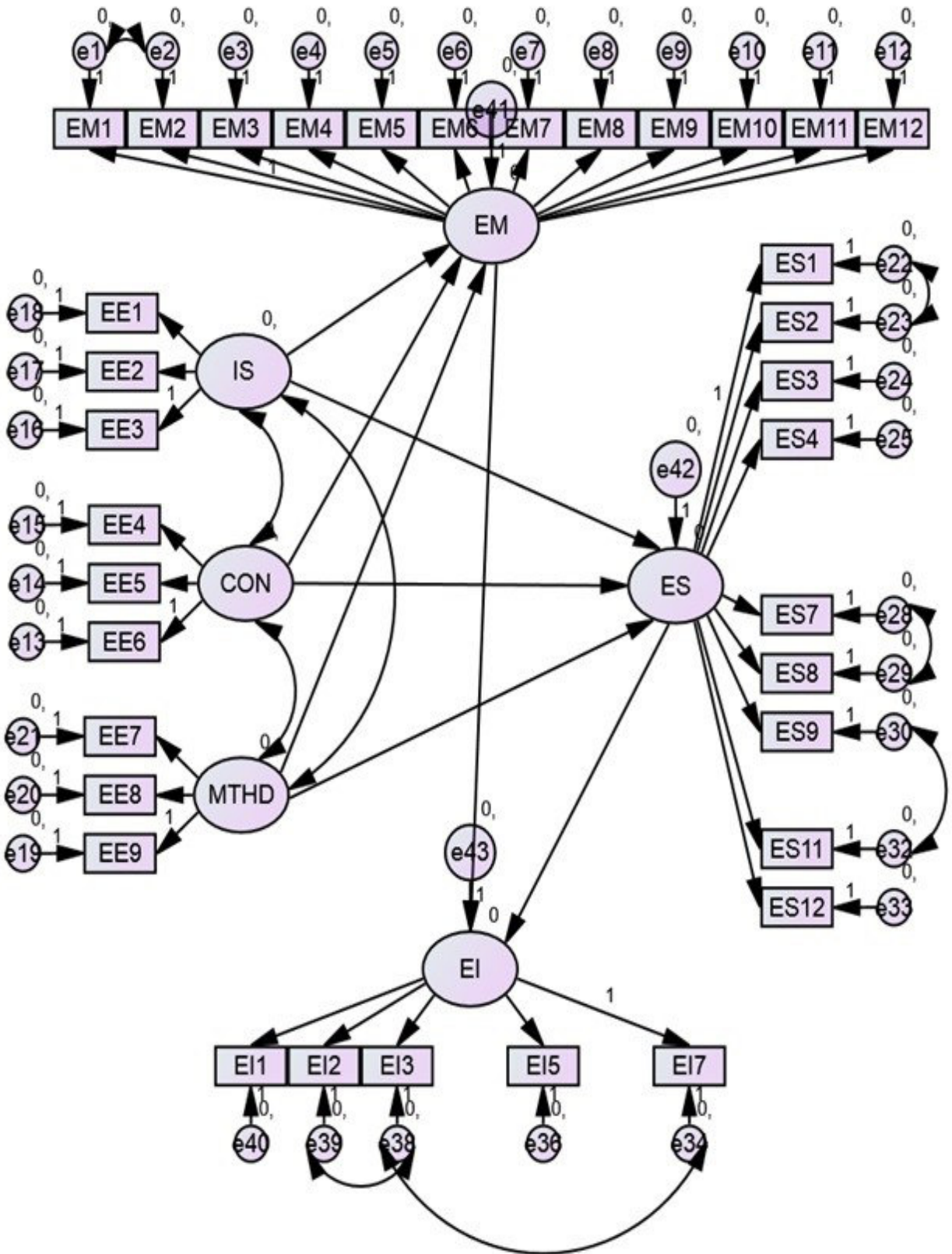


Figure 5.5: Structural Model 2 - Showing interaction between Components of Entrepreneurship Education and Entrepreneurial Mindset, Skill and Intention

### 5.3.2.3 Fitness of the Structural Equation Model

The structural model was tested for fitness based on most acceptable fit statistics earlier discussed in section 4.7.1.3. The obtained values were compared with critical values of fit statistics to ascertain the fitness of the structural model. These indices which are presented in Table 5.8 show that the RMSEA = 0.055, CFI = 0.906, IFI = 0.906, PNFI = 0.792 and PCFI = 0.827 and all these prove that on the overall, the structural model fits the sample data and can be used for hypotheses testing.

Table 5.8: Model Fit Statistics

Fit Statistic	Critical Value	Obtained Value	Model fit
<b>Absolute Fit: RMSEA*</b>	<0.08 (Good fit); 0.08 -0.10 (Moderate fit); >0.10 (Poor fit)	0.055	Good
<b>Incremental Fit: Comparative Fit Index</b>	≥0.90 (Good fit)	0.906	Good
<b>Incremental Fit: Incremental Fit Index (IFI)</b>	≥0.9 (Good fit)	0.906	Good
<b>Parsimony-Adjusted Measures: PNFI</b>	Close to 0.5	0.792	Good
<b>Parsimony-Adjusted Measures: PCFI</b>	Close to 0.5	0.827	Good

\*RMSEA: Root Mean Square Error Approximation

### 5.3.3 Hypotheses Testing and Interpretation

The twenty-six hypotheses grouped into six categories are tested in this section.

#### 5.3.3.1 Hypothesis 1

*Entrepreneurship education in Nigerian Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria are related.*



Under this hypothesis, the following sub-hypotheses are examined:

**H<sub>1a</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial mindset (EM) of undergraduate students in Nigeria.

**H<sub>1b</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial skills (ES) of undergraduate students in Nigeria.

**H<sub>1c</sub>:** There is a positive relationship between entrepreneurship education (EE) and entrepreneurial intention (EI) of undergraduate students in Nigeria.

**H<sub>1d</sub>:** There is a positive relationship between entrepreneurial mindset (EM) and entrepreneurial skills (ES) of undergraduate students in Nigeria.

**H<sub>1e</sub>:** There is a positive relationship between entrepreneurial mindset (EM) and entrepreneurial intention (EI) of undergraduate students in Nigeria.

**H<sub>1f</sub>:** There is a positive relationship between entrepreneurial skills (ES) and entrepreneurial intention (EI) of undergraduate students in Nigeria

## Results

To determine the nature of relationship amongst the variables highlighted in hypothesis 1, covariance factors were estimated and results are presented in Table 5.9 and Table 5.10 below. A covariance of 0 means that the two variables are independent whereas a covariance estimate greater than 0 suggests that a relationship exists. For all the paired variables in hypotheses 1 (a) – (f), the covariances are above 0 and are all positive. This suggests that there is a positive relationship between: EE and EM; EE and ES; EE and EI; EM and ES; EM and EI; ES and EI. However, the significance of each covariance (i.e. estimate in Table 5.9) was evaluated based on two criteria: the critical ratio (CR) and their respective  $p$  values. The rule is: if the  $CR > 1.96$  and/or the  $p < 0.05$ , then the covariance factor is significant. The results show that the CR for all paired interactions are all greater than 1.96 and the  $p < 0.000$  confirming that the covariances are all significant.

Table 5.9: Covariance of paired variables (EM, ES, EI and ES)

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>
EM	<-->	ES	1.313	0.107	12.284	***
EE	<-->	EM	1.023	0.096	10.636	***
EI	<-->	ES	0.803	0.077	10.411	***
EE	<-->	EI	0.545	0.061	8.890	***
EM	<-->	EI	0.736	0.071	10.300	***
EE	<-->	ES	0.930	0.093	9.985	***

The three (\*\*\*) indicates that the p values are less than 0.001 (two-tail test)

Further still, a correlation coefficient usually lies between +1 and -1. A zero-correlation coefficient means there is no relationship; while +1 and -1 show absolute positive and negative relationship respectively. Meanwhile, a correlation coefficient greater 0.5 is strong while less than 0.5 indicates weak relationship. Table 5.10 shows that the correlation coefficients of all the paired variables are strong and positive.

Table 5.10: Correlation coefficients of paired variables (EM, ES, EI and ES)

			<b>Estimate</b>
EM	<-->	ES	0.863
EE	<-->	EM	0.830
EI	<-->	ES	0.831
EE	<-->	EI	0.697
EM	<-->	EI	0.722
EE	<-->	ES	0.796

### Interpretation

The results support the hypothesis that Entrepreneurship education in Nigerian Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria are related and the nature of relationship is positive and strong. In other words, EE and EM are strongly

and positively related; EE and ES are strongly and positively related; EE and EI are strongly and positively related; EM and ES are strongly and positively related; EM and EI are strongly and positively related; ES and EI are strongly and positively related.

Furthermore, these sets of relationships are statistically significant. With entrepreneurship education (EE) being the causal variable in this case, the implication is that the more effective entrepreneurship education is, the more positive impact it would bear on entrepreneurial mindset, skills and intentions of undergraduate students. That means, the entrepreneurship education variables (e.g. content, teaching methods and approach, and an institutional setting that supports the module) must be strengthened positively for entrepreneurship education to bear the potential positive impact on undergraduate students' entrepreneurial skills, mindset and intentions. Besides, less effective the entrepreneurship module is, the less impact it would bear on intention.

### **5.3.3.2 Hypothesis 2**

*The components of entrepreneurship education (content, teaching methods and institutional setting) are inter-related.*

Given that a significantly positive relationship exists between entrepreneurship education and entrepreneurial mindset, skills and intentions of undergraduate students, hypothesis 2 seeks to examine the nature of inter-relationship amongst the components of entrepreneurship education before determining the possible causal links between these components and entrepreneurial mindset, skills and intentions. On this basis, the following sub hypotheses were tested.

**H<sub>2a</sub>:** Institutional setting is related to content of entrepreneurship module

**H<sub>2b</sub>:** Content of entrepreneurship module is related to method of teaching the entrepreneurship module

**H<sub>2c</sub>:** Method of teaching the entrepreneurship module is related to institutional setting

## Results

The results of the hypothesis testing are presented in Table 5.11 and Table 5.12 below. Against the backdrop that a covariance of 0 means independent relationship between two variables; and that critical ratio of a covariance factor greater than 1.96 is significant at  $p$  value less than 0.05, the results indicate that the three components of entrepreneurship measured, namely: content of entrepreneurship education (CON), method of teaching (MTHD) and institutional setting (IS) are all positively related because all the covariance factors are positive (i.e. greater 0). However, it is only the relationship between institutional setting and content that is significant with a critical ratio greater than 1.96 at  $p < 0.001$ . However, the relationships between: method of teaching and content of entrepreneurship education module (CR=1.18;  $p=0.239$ ); and method of teaching and institutional setting (CR=1.18,  $p=0.238$ ) are not statistically significant. Furthermore, Table 5.12 shows that the correlation coefficients of all the paired variables are strong and positive.

Table 5.11: Covariance of paired components of entrepreneurship education (EE)

			Estimate	S.E.	C.R.	$p$
CON	<-->	IS	0.928	0.09	10.355	***
MTHD	<-->	CON	0.085	0.072	1.180	0.238
MTHD	<-->	IS	0.115	0.098	1.180	0.238

The three (\*\*\*) indicates that the  $p$  values are less than 0.001 (two-tail test)

Table 5.12: Correlation Coefficient of paired components of entrepreneurship education (EE)

			Estimate
COM	<-->	IS	0.585
MTHD	<-->	COM	0.905
MTHD	<-->	IS	0.823

## **Interpretation**

The positive relationships among the components of entrepreneurship education suggest that the interaction or interplay among the entrepreneurship education components examined (i.e. content of entrepreneurship module, teaching methods and institutional setting) contribute to the level of effectiveness of entrepreneurship education. However, in this study, it is only the relationship between institutional setting and content of module that is significant. This implies that the resources, structures, culture and mechanisms of a higher education institution significantly impact on the delivery of content of entrepreneurship module. Strengthening institutional support for entrepreneurship therefore would increase the overall effectiveness of entrepreneurship education within an institutional context. These results therefore partly support the hypothesis that *the components of entrepreneurship education are significantly inter-related*.

### **5.3.3.3 Hypothesis 3**

*The components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students.*

Based on the assumption by Fayolle (2013) and Fayolle and Liñán (2014) that there could exist direct causal links between the components of entrepreneurship education and the antecedents of entrepreneurial intention, this hypothesis therefore investigated the nature of relationship and the measure of impact of entrepreneurship education components on the entrepreneurial mindset and skills of undergraduate students. The following six sub hypotheses are tested.

**H<sub>3a</sub>:** Institutional setting impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3b</sub>:** Content of entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3c</sub>:** Method of teaching entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students

**H<sub>3d</sub>:** Institutional setting impacts on the entrepreneurial skills of undergraduate students

**H<sub>3e</sub>:** Content of entrepreneurship module impacts on the entrepreneurial skills of undergraduate students

**H<sub>3f</sub>:** Method of teaching entrepreneurship module impacts on the entrepreneurial skills of undergraduate students

## **Results**

To determine the relationships and the impact of the content of entrepreneurship education (CON), method of teaching (MTHD) and institutional setting (IS) on students' entrepreneurial mindset and skills, six paths in the structural model as shown in Figure 5.5 were measured using regression weight estimates and results are presented in Table 5.13. The standardised regression estimates of -0.61, -0.889 and -0.407 shows that negative relationships respectively exist between institutional setting and entrepreneurial mindset; institutional setting and entrepreneurial skills; and content of entrepreneurship module and entrepreneurial skills. Furthermore, it is only the critical ratios of relationship between institutional setting and entrepreneurial mindset; and institutional setting and entrepreneurial skills that are significant at  $p=0.001$  and  $0.034$  respectively. This implies that institutional setting has significant negative impact on both entrepreneurial mindset and skills.

On the other hand, content and teaching method of entrepreneurship module both have positive impact on entrepreneurial mindset as shown by 0.037 and 1.305 respectively; while method of teaching is the only entrepreneurship education component that has positive impact on entrepreneurial skills as shown by the standardised regression estimate of 2.017. However, none of these impacts are statistically significant as their  $p$  values are greater than 0.05; and at the same time, their critical ratios less than 1.96.

Table 5.13: Parameter Estimates of Regression Weights for components of entrepreneurship education on entrepreneurial mindset and skills

			<b>Estimate</b>	<b>Standardised Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>
EM	<---	IS	-0.466	-0.61	0.146	-3.202	0.001
EM	<---	CON	0.042	0.037	0.335	0.125	0.901
EM	<---	MTHD	16.772	1.305	15.084	1.112	0.266
ES	<---	IS	-0.725	-0.889	0.342	-2.118	0.034
ES	<---	CON	-0.493	-0.407	0.783	-0.629	0.529
ES	<---	MTHD	27.678	2.017	26.65	1.039	0.299

### Interpretation

The meaning of the standardised regression weights between institutional setting (IS) and entrepreneurial mindset (EM) (-0.61,  $p=0.001$ ) is that if IS goes up by 1 standard deviation, EM will go down by 0.61 standard deviations and this is statistically significant at  $p = 0.001$ . Similarly, standardised regression weights between institutional setting (IS) and entrepreneurial skills (ES) (-0.889,  $p=0.034$ ) means that if IS goes up by 1 standard deviation, ES will go down by 0.61 standard deviations and this is statistically significant at  $p = 0.001$ . The implication of the results is that the conditions of institutional setting in this study are opposite to the expected institutional conditions as discussed in the literature. The outcome then is a negative influence. Instead of stimulating the intended entrepreneurial mindset and skills in students, the institutional setting rather inhibits entrepreneurial mindset and entrepreneurial skills.

It can be recalled from the results in hypothesis 2 that there is strong correlation between institutional setting and content of an entrepreneurship module. Since the institutional setting already has a negative impact on entrepreneurial skills, so does content on skills except for mindset. Although this impact is statistically insignificant, it however further proves that the nature of interrelationship amongst entrepreneurship education variables could

influence how entrepreneurship education would impact on the antecedents of entrepreneurial intentions. In other words, the relationship between teaching methods and institutional setting for instance, could significantly determine the extent to which entrepreneurship education module will impact on entrepreneurial mindset and skills, which are antecedents to entrepreneurial intention.

#### 5.3.3.4 Hypothesis 4

*Entrepreneurial mindset and skills impact on the entrepreneurial intentions of undergraduate students.*

Having measured entrepreneurial skills and mindsets and the causal links between them and the components of entrepreneurship education, it therefore becomes necessary to measure how significantly these mediating variables shape the entrepreneurial intentions of students in Nigeria (John & Park, 2016; Sánchez, 2013). Thus, the following sub hypotheses are examined.

**H<sub>4a</sub>:** Entrepreneurial mindset of undergraduate students impacts on their entrepreneurial intention

**H<sub>4b</sub>:** Entrepreneurial skills of undergraduate students impact on their entrepreneurial intention

#### **Results and Interpretation**

The standardised regression weights obtained depict the direct impact measure of entrepreneurial mindset and entrepreneurial skills on entrepreneurial intention of undergraduate students. From Table 5.14, the regression parameters (0.207,  $p = 0.034$ ) means that if EM goes up by 1 standard deviation, EI will go up by 0.207, significant at  $p = 0.034$  with a critical ration of 2.119 greater than 1.96. Similarly, the regression parameters (0.714,  $p < 0.001$ ) means that if ES goes up by 1 standard deviation, EI will go up by 0.714, significant at  $p < 0.001$  with a critical ration of 5.957 greater than 1.96. The results imply that both entrepreneurial mindset and skills significantly impact on students' entrepreneurial intention. However,



entrepreneurial skills seem to bear stronger impact on entrepreneurial intention than entrepreneurial mindset does impact entrepreneurial intention.

Table 5.14: Parameter estimates of regression weights for entrepreneurial mindset and entrepreneurial skills on entrepreneurial intention

			<b>Estimate</b>	<b>Standardised Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>
EI	<---	EM	0.102	0.207	0.048	2.119	0.034
EI	<---	ES	0.330	0.714	0.055	5.957	***

*The three (\*\*\*) indicates that the p values are less than 0.001 (two-tail test)*

### 5.3.3.5 Hypothesis 5

*Entrepreneurial mindset and entrepreneurial skills of undergraduate students are related.*

In order to ascertain how entrepreneurial mindset and skills reinforces each other, as suggested by Fayolle and Liñán (2014), this study investigated the strength of interaction between entrepreneurial skills and mindset vis-à-vis the impact of entrepreneurial skills and mindset on entrepreneurial intention.

### Results and Interpretation

Table 5.15 shows that the interaction between entrepreneurial mindset and skills estimated by a correlation coefficient of 0.863 is significant at  $p < 0.001$  with the critical ratio of 12.284 which is far greater than 1.96. The correlation coefficient measures the degree mutuality or complementary between two or more relationships. A correlation coefficient ranges between +1 and -1. Positive coefficients indicate that the variables involved are highly associated and variance in their values will go in the same direction and comparative magnitude. The 0.863 therefore, indicates that both entrepreneurial mindset and skills are 86 percent more likely to change in same direction and at similar magnitude if the influencing factors change by 100 percent. This implies that there is a significantly positive interaction and reinforcement between entrepreneurial mindset and skills.

Table 5.15: Interaction between entrepreneurial mindset (EM) and skills (ES)

			<b>Covariance</b>	<b>Correlation coefficient</b>	<b>S.E.</b>	<b>C.R.</b>	<b>p</b>
EM	<-->	ES	1.313	0.863	0.107	12.284	***

*The three (\*\*\*) indicates that the p values are less than 0.001 (two-tail test)*

### 5.3.4 Qualitative Content Analysis

Qualitative content analysis of all base materials transcribed from personal interviews and focus group discussions was carried out using the directed or deductive approach. Personal interviews were conducted with lecturers of the entrepreneurship module under study via face-to-face or telephonically. While the focus group discussions were conducted via face-to-face. The interviews and discussions were recorded, with the help of a research assistant, as video and audio clips. The researcher also took notes in a research journal which were compared with clips during transcription. This is to ensure that no vital detail was missing and that valid transcripts were generated for analysis.

#### 5.3.4.1 Transcription and Validation of Transcripts

There were 13 video and audio clips whose total duration is almost 3 hours and 45 minutes and these were saved in formats compatible with ATLAS.ti. The researcher spent more than 35 hours working on the clips and notes taken during interviews and discussions to produce seven (7) transcripts in the Microsoft Word programme. The transcripts amounted to 8,439 words in 24 pages as base materials for qualitative content analysis. The selective protocol was adopted for transcribing the focused group discussions and some of the very lengthy interviews while the smooth read verbatim protocol was used for transcribing some of the personal interviews. The selective protocol entails formulating clear criteria for identifying the portion of the interviews and discussions that are relevant to the research questions. While this method of economic transcription excludes the unnecessary narratives usually associated with interviews and discussions, it also helps to reduce the volume of base materials thereby allowing for more effective content analysis (Mayring, 2014). The smooth read verbatim protocol on the other hand entails

word for word transcriptions but eliminating certain expressions like “uhm”, “em”, “you see”, etc. This is to allow for smooth and coherent transcript which represents the original base material (Mayring, 2014).

Each transcript was then compared with the notes the researcher took during the field work just to re-validate the content of each transcript and that it adequately represents the original materials. Full details about the instruments used for the qualitative study are summarised in Table 5.16.



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Table 5.16: Details of Qualitative Research Instruments

<b>Instrument</b>	<b>Date</b>	<b>Duration</b>	<b>Number Involved</b>	<b>Method of Transcription</b>	<b>Size of base material</b>	<b>Method of documentation</b>
Focus group discussion (1)	7/06/2016	01:27:38	Participants (8); Assistant (1)	Selective protocol	2977 words (8 pages)	Video and audio clips; paper and pen
Focus group discussion (2)	11/06/2016	00:30:29	Participants (8); Assistant (1)	Selective protocol	855 (3 pages)	Video and audio clips; paper and pen
Personal Interview (1)	18/06/2016	00:31:49	Interviewee (1)	Smooth read verbatim transcript	1216 words (3 pages)	Audio clips; paper and pen
Personal Interview (2)	19/06/16	00:25:05	Interviewee (1)	Smooth read verbatim transcript	937 words (3 pages)	Paper and pen
Personal Interview (3)	18/06/16	00:16:45	Interviewee (1)	Smooth read verbatim transcript	859 (2 pages)	Audio clips; paper and pen
Personal Interview (4)	17/11/16	00:21:04	Interviewee (1)	Selective protocol	1064 words (3 pages)	Audio clips; paper and pen
Personal Interview (5)	17/11/16	00:11:59	Interviewee (1)	Selective protocol	531 (2 pages)	Audio clips; paper and pen
<b>Total</b>	<b>n/a</b>	<b>03:44:49</b>	<b>21 people</b>	<b>n/a</b>	<b>8,439 words (24 pages)</b>	<b>n/a</b>

### **5.3.4.2 Background of Lecturers Teaching the Foundation Entrepreneurship Module**

In all the interviews conducted, the lecturers were asked questions relating to their gender, length of teaching entrepreneurship module, research experience and expertise in entrepreneurship, among others. In terms of gender balance, the teaching staff population is male-skewed. Out of five, only one was female. Their years of teaching the module range from two to eight (for two of the lecturers) academic sessions. Considering the lecturers' exposure to entrepreneurship development in terms of conferences and workshops, each lecturer has attended an average of two conferences on entrepreneurship. Some of the conferences/workshops were local while some were international. Meanwhile, the attendance of entrepreneurship workshop ranges from seven for one of the lecturers to none for another. However, the rest of the lecturers have had two entrepreneurship workshop attendances.

Even though none of the lecturers hold a degree or qualification in entrepreneurship, they are all drawn from the business management background specialising in fields such as service marketing, general management, entrepreneurial finance “techno-preneurship”, social and women entrepreneurship. All the lecturers have researched in the field of entrepreneurship with publications varying from two to five articles or conference papers. In addition, all the lecturers interviewed have had experience in either running their own enterprises or helping to start and grow other enterprises.

Table 5.17 summarised the career background of the lecturers teaching the compulsory entrepreneurship module as at the time they were interviewed. This background includes: research and publications focused on entrepreneurship; conferences and workshops on entrepreneurship attended and academic qualifications obtained in core aspects of entrepreneurship. The essence of this background is to generate an overview of lecturers' level of the education, expertise and experience in the field of entrepreneurship.

Table 5.17: Career Background of the Lecturers of Compulsory Entrepreneurship Module

Participants	Gender	Years of Teaching the module	Academic Qualification	Research/ Publications focused on Entrepreneurship	No of Entrepreneurship-related Conferences Attended	No of Entrepreneurship-related Workshops Attended
AF	Female	4	First and Second Degrees (in Business Administration)	4	2	2
AS	Male	2	First and Second Degrees (in Business Administration)	4	2	2
AE	Male	8	First, Second and Third Degrees (in Business/Finance)	5	3	7
AM	Male	8	First, Second and Third Degrees (in Business/HRM)	5	1	2
AU	Male	3	First and Second Degrees (in Business Administration)	2	1	0

### 5.3.4.3 Codes and Code Review

In order to carry out qualitative content analysis, a number of codes were developed to uniquely identify participants in the discussions and interviews on one hand, and to represent the key issues derived from the theoretical framework that underlie this study.

#### Participants' codes

In line with the ethical guidelines for this study as stated in section 4.9, the names and identities of participants in the study are withheld. However, for the purpose of capturing the input of the participants, codes have been developed to uniquely identify each of them and are presented in Table 5.18 below.

Table 5.18: Unique Codes for Identifying the Study Participants

Participant's Code	Participant's Status
AE	Lecturer
AF	Lecturer
AM	Lecturer
AN	Student
AS	Lecturer
AU	Lecturer
BA	Student
BN	Student
CH	Student
EB	Student
EL	Student
FA	Student
GR	Student
JU	Student
KA	Student
KM	Student
MI	Student
OD	Student
RG	Student
TE	Student
VT	Student

## Content Codes and Validation

As earlier discussed in section 4.5.2, the interviews and discussions focused on the content, teaching methods and institutional setting and how they have affected the entrepreneurial skills and mindset of undergraduate students. In order to analyse the content of the seven (7) transcripts, key words or phrases that relate to content, teaching methods and institutional setting were enumerated as codes. The process entails reading through each transcript line by line and picking out words or phrases that connect responses to these codes and are therefore linked to the codes. These keys words used to develop codes for content analysis are presented in Table 5.19 below

Table 5.19: Codes for content analysis

Variable	Key Words/Phrases for Coding
Content of entrepreneurship module	<ul style="list-style-type: none"> <li>• Business Environment Awareness</li> <li>• Business Incubator (Centre for Entrepreneurship Education)</li> <li>• Business Modelling</li> <li>• Business Planning</li> <li>• Opportunity identification</li> </ul>
Entrepreneurial mindset	<ul style="list-style-type: none"> <li>• Comfort with risk</li> <li>• Entrepreneurial initiative and self-direction</li> <li>• Future orientation</li> <li>• Opportunity identification</li> </ul>
Entrepreneurial skills	<ul style="list-style-type: none"> <li>• Communication and collaboration</li> <li>• Creativity and innovation</li> <li>• Critical thinking and problem solving</li> <li>• Flexibility and adaptability</li> </ul>



Variable	Key Words/Phrases for Coding
Method of teaching	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Case studies</li> <li>• Entrepreneurs as Guest lecturers</li> <li>• Lecture delivery</li> <li>• Live projects</li> <li>• Seminars</li> </ul>
Institutional setting	<ul style="list-style-type: none"> <li>• Business Incubator (Centre for Entrepreneurship Education)</li> <li>• Facilities</li> <li>• Network/Linkages for student entrepreneurial initiatives</li> <li>• Student-Initiative Support</li> </ul>

### Review of codes

The codes developed for the qualitative analysis were reviewed in line with the variables of the study and particularly, the indices that define each variable. The codes were reviewed by expert in qualitative content analysis while an expert in ATLAS.ti was consulted to give technical input towards completing the qualitative analysis. All reviews made were factored into the final coding for analysis.

### 5.3.5 Research Questions to be Answered by Qualitative Content Analysis

In order to provide deeper insights for explaining the results of the quantitative analyses and test of hypotheses which are meant to answer the main research question, the qualitative content analysis was undertaken. The main research question addressed in this study is:

*What is the optimal way to measure the impact of as the entrepreneurship education in Nigerian universities on the entrepreneurial mindset, skills and intentions of undergraduates?*

As earlier indicated in the research model (see Figure 1.2) institutional setting, method of teaching and content of entrepreneurship module are particularly examined as components of entrepreneurship education and their impact on students' entrepreneurial mindset, skills and intentions are evaluated. To objectively find answers to the main research question from the qualitative data, the following specific questions are raised:

- To what extent has Institutional setting impacted on the entrepreneurial mindset, skills and intentions of undergraduate students?
- To what extent has method of teaching impacted on the entrepreneurial mindset, skills and intentions of undergraduate students?
- To what extent has content of entrepreneurship module impacted on the entrepreneurial mindset, skills and intentions of undergraduate students?

### **5.3.6 Results of Qualitative Data**

#### **5.3.6.1 Institutional Setting/Entrepreneurial Mindset & Skills**

The specific question addressed here is: To what extent has Institutional setting impacted on the entrepreneurial mindset, skills and intentions of undergraduate students? From the qualitative content analysis, Institutional setting was explored as a node and all nodes connected to it are stated below:

- Facilities – classrooms; laboratories, vocational skill centres, etc. that could be used to facilitate entrepreneurial learning in the university;
- Business incubator (centre for entrepreneurship studies) – what the Centre does to support students' entrepreneurial start-ups.
- Network/linkage for student entrepreneurial initiatives – units or organs of the university that acts as platform for linking or networking students with entrepreneurial initiatives;

- Student-initiative support – institutional provisions that support students’ entrepreneurial initiatives;
- Management support – the disposition and extent of support from the Chief Executive Officer (who is the Vice Chancellor);
- Funding for entrepreneurship research – whether funds are provided to further entrepreneurship research within the university; and
- Lecturer-student ratio – the number of students to one lecturer available to teach the compulsory entrepreneurship module at the undergraduate level.

Figure 5.6 shows the participants discussed institutional setting by referring to all the critical components discussed above although some of them were not previously captured in the literature review like management support, funding and lecturer-student ratio. Comments/quotations of students and lecturers which relate to these components were explored and analysed. There were 113 quotations from the interviews and focus group discussions that directly relate to institutional setting. But these are analysed under the following indices of institutional setting.

#### **(A) Facilities**

##### Groundedness:

There were 16 quotations from both students and lecturers that relate to facilities of the higher education institution offering the compulsory entrepreneurship module at the undergraduate level.

##### Presentations:

Figure 5.7 shows the 16 quotations relating to infrastructural facilities for teaching and researching entrepreneurship education in a Nigerian higher tertiary institution. The researcher asked the following question on institutional setting: “What do you expect to make up institutional setting for entrepreneurial minded undergraduates?” A student from one of the focus group first answered by raising observation about the state of facilities which they think significantly affect the entrepreneurial mindedness of students.

*“Another thing I think that is affecting the entrepreneurial mindedness [mindset] of students in the university is the over-crowdedness of the entrepreneurship classes. Most times, there are no enough seats for students, the public-address system is either not available, or working or loud enough to cover the audience and so the class is very uninteresting...you even hear students say there is no point going for such lectures since they would not hear the lecturers. There is need for more lecturers and facilities so that the classes will be broken down into moderate sizes for effective teaching...”*

This assertion highlights deficit of infrastructural facilities in the university and the impact it has on the entrepreneurial mind of students. This deficit entails:

- *There are no enough seats for students...*
- *The public-address system is either not available, or not working or not loud enough to cover the audience*

The consequences of this deficit are that:

- *the class is very uninteresting...*
- *you even hear students say there is no point going for such lectures since they would not hear the lecturers.*

Then the student concluded by saying that “there is need for...*facilities so that the classes will be broken down into moderate sizes for effective teaching...*

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To corroborate the student’s claim, four out of five lecturers independently stated as follows:

**AS:** “But a big challenge is the class size, then teaching facilities and venues”

**AF:** “Deficit of teaching infrastructure/facilities is the first thing...the very first challenge and that is the problem our university is really faced with”

**AM:** “Though we have a centre for entrepreneurship, we still have lots of infrastructural deficiencies that are not allowing for practical aspect of entrepreneurship.”

**AS:** “The greatest of them is infrastructure/facilities”

**AS:** “See how overcrowded the classrooms are”

**AE:** “I think so far, because of the largeness of that class, we have not been able to do much”

All these imply that there is challenge with facilities which undermines the teaching of entrepreneurship module in the university and this could significantly affect the entrepreneurial mindedness and skills of undergraduate students.

Looking closely at the claim of lecturer **AM:** “*Though we have a centre for entrepreneurship, we still have lots of infrastructural deficiencies that are not allowing for practical aspect of entrepreneurship*”, the researcher decided to visit the Centre for Entrepreneurship and took some photos of the what was available. Two of the photos are presented in **Figure 5.8**. Segment “A” of the figure shows the interior of the vocational skill unit while segment “B” shows the exterior of the Centre. The interior shows that the vocational skill unit is not equipped or perhaps is being equipped. And just as student **OD** said: “*There should also be vocational centres that are well equipped for students*”, one fact becomes obvious: over the period of eight (8) years that the entrepreneurship module has been taught in the institution, the Centre is not equipped with facilities that would aid the development of entrepreneurial skills and mindedness of students.

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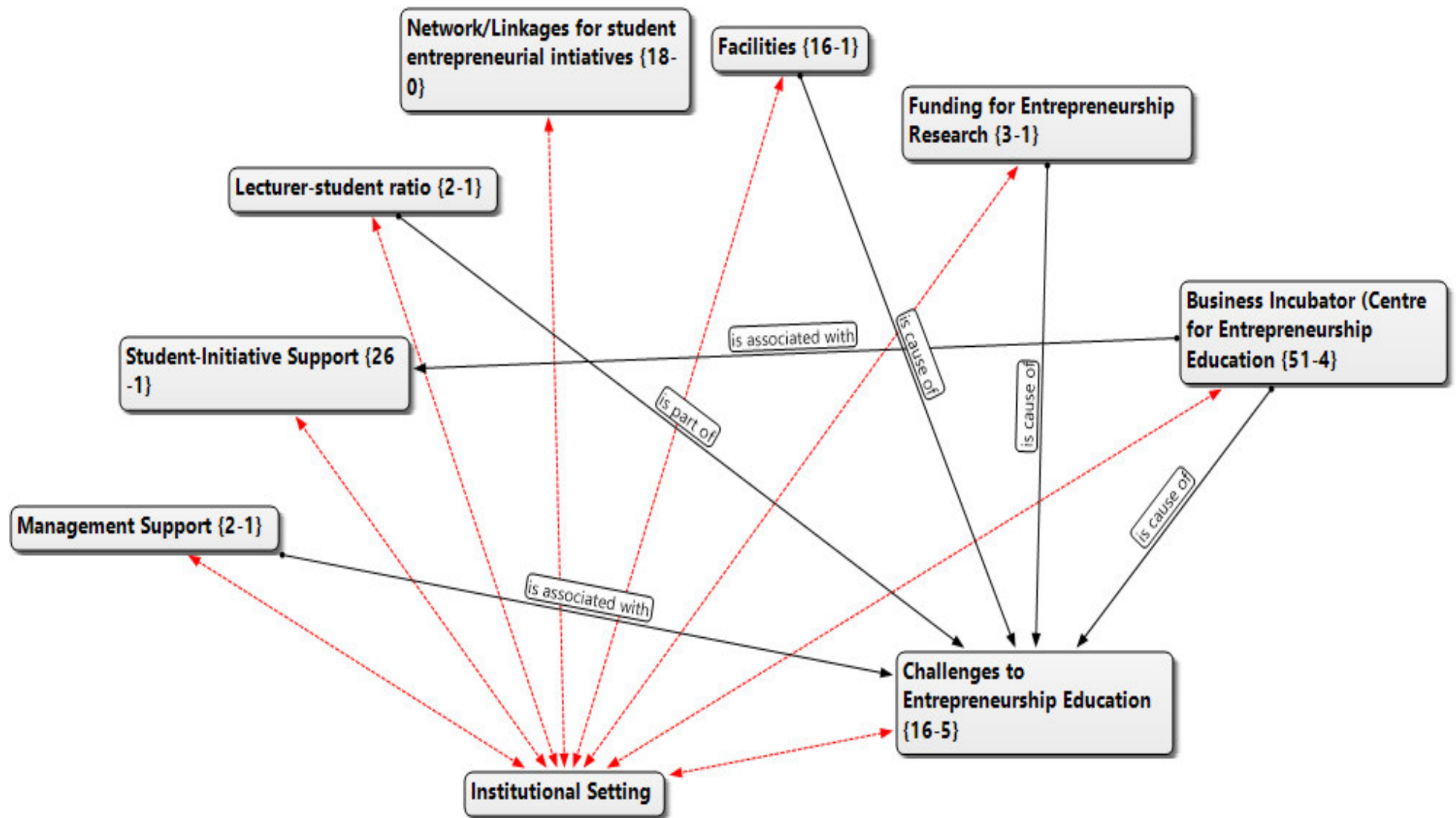


Figure 5.6: The network view of institutional setting codes

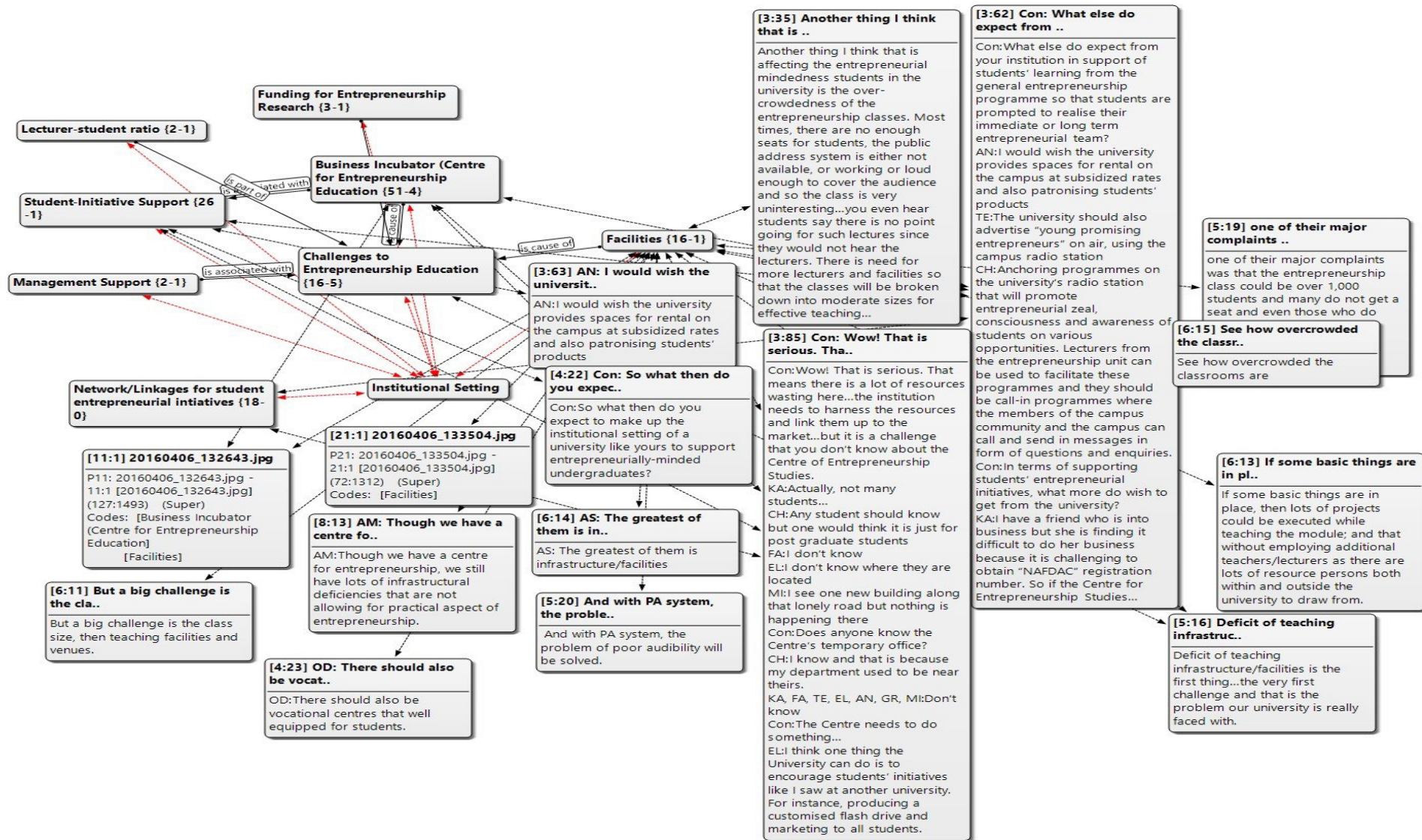


Figure 5.7: The network view showing quotations relating to facilities of institutional setting



(A): Interior: A Vocational Skill Unit



(B): Exterior: Centre of Entrepreneurship Studies

Figure 5.8: Photos of Centre of Entrepreneurship Studies (CES)

## (B) Business Incubator (Centre of Entrepreneurship Studies)

### Groundedness:

There were 51 quotations from both students and lecturers that relate to facilities of the higher education institution offering the compulsory entrepreneurship module at the undergraduate level. These quotations are presented below.

### Presentations:

Figure 5.9 shows the 51 quotations relating to business incubator or centre of entrepreneurship studies and the teaching of entrepreneurship education in a Nigerian higher tertiary institution. The essence is to explore the impact of incubator or the awareness of its existence outside the campus on the entrepreneurial mind and skills of undergraduate students. In the focus group discussions, the researcher asked the following question: *Are you aware of any business incubator on campus or outside the campus?* The responses of the students are given below.

**KA:** How do you mean by business incubator?

**CH:** (Do you mean the kind of business environment around the campus?)



**EL:** Someone who can hatch the idea he/she has accumulated during an entrepreneurship programme.

**VT:** I do not have knowledge of any business incubator around.

**JU:** I too.

**CH:** I am not familiar with it in the business sense of it.

**OD, BA, RG, EB, KM, BN:** No idea at all

The responses of the students to the question on business incubator on or outside the campus simply reveal that the students do not know of any existence of a business incubator. The comments or questions from students in the focus group to the researcher also reflect the fact that they may not have been taught during the essential entrepreneurship module. To ascertain this, the researcher asked this question: "Does it mean you did not come across the term '*business incubator*' during your study of entrepreneurship education? There were "nods of yes" in response to this question. This implies that students have not been taught about business incubator as a critical aid to their entrepreneurial intention. To further confirm if the students understood the point in focus, the researcher asked: "Which means you will not be able to identify a business incubator if you see one?". Again, there were "nods of yes" from participants in the discussion group.

Based on the mandate set by the Federal Government of Nigeria, centres of entrepreneurship were established across Nigerian higher education institutions. These centres are expected to serve as incubators for business start-ups that will, amongst other things, propel students towards entrepreneurial careers upon graduation. So, the researcher then asked this specific question:

"But are you not familiar with the Centre for Entrepreneurial Studies in the University?"

Participants responded to the question as follows:

**FA:** I don't know

**EL:** I don't know where they are located

**KA:** Actually, not many students...

**CH:** Any student should know but one would think it is just for post graduate students

**MI:** I see one new building along that lonely road but nothing is happening there

**CH:** I know but that is because my department used to be near their office

**TE, EL, AN, GR, MI:** Don't know

Apart from **CH** that said he knows of the office because his department used to be close to the Centre and **MI** that said she knows of their new building along a lonely route on campus, all other students in the focus groups said they are not aware if such a Centre exists. Even **CH** and **MI** who seem to know do not however, had any further information about the Centre as what to do and how could help students grow their entrepreneurial mindset and skills. This means that there is little or perhaps no knowledge of the existence, functions and services of the Centre amongst the students. In fact, during one of the focus group discussions, the following short conversation ensued between the researcher and one of the student identified as **AN**.

**Researcher:** ...From your own experience of entrepreneurship studies, have you developed a business idea or you have thought of something to do as a business?

**AN:** Yes...barbing of hair.

**Researcher:** Do you think of doing that in the immediate or later?

**AN:** Yea...in the immediate but gaining access to funds is the issue...

**Researcher:** Have you gone to the Centre for Entrepreneurship Studies for advisory services on how to raise finance for your business idea?

**AN:** No...I don't even if they exist!

**Researcher:** If you knew they existed, would you have gone?

**AN:** Yes of course.

The researcher then turned to the rest of the group members to ask: "So if none of you have had experience of being serviced by the Centre of Entrepreneurship Studies, do you know anyone who has?" To this question, a student identified as **KA** responded:

**KA:** The fact is that the Centre for Entrepreneurship Studies has not educated the university community of their activities and so students do not really know what they do and how they can be of help to any of us...

Some other students in the group added by suggesting the following:

**CH:** It will be good if the Centre can send representative [officials] to departments and faculties to give a general orientation of what they do...

**GR:** The lecturers should also motivate and orientate students during the entrepreneurship class about the activities of the Centre.

**EL:** The Centre can also print and circulate flyers to the university community

**KM:** They should also provide orientation on whatever entrepreneurial services that are available to students who wish to explore such [services].

All these suggestions show that students are not aware of the existence and services of the Centre and how it can aid their entrepreneurial insight and pursuit. Their comments further suggest that the students yearn to know more on how the Centre could help grow their entrepreneurial skills, a sign of their positive attitude and readiness to access whatever entrepreneurial services available at the Centre.

In an interview with the deputy director of the Centre of Entrepreneurship Studies, the interviewee remarked thus: "To solve this [problem of inadequate functionality of the centre for entrepreneurship], we are thinking of building an incubator centre" shows that the institution does not offer business incubation services as at the time of the study. The researcher further probed the interviewee by asking: "Really? So, the university is preparing to build a set up an incubator centre?" The response was: "Yea. That is what we are working on now." The deputy director who is also a lecturer of the entrepreneurship module further said: "Like I have said before, the incubator centre is targeted at helping the undergraduates to develop their entrepreneurial skills." But now, and in fact, for over the past eight (8) years of teaching the module, business incubation had still been non-existent.

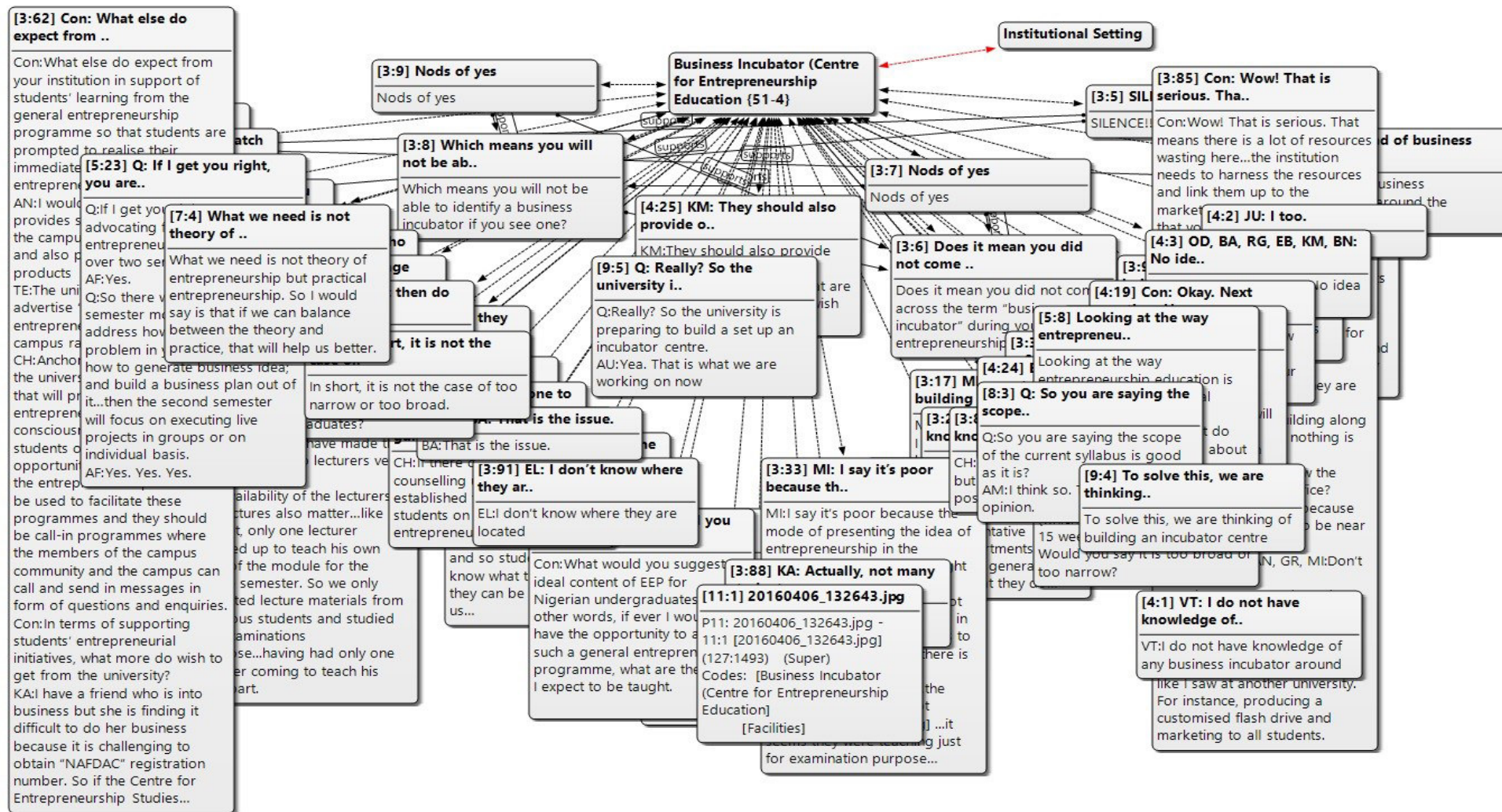


Figure 5.9: The network view showing quotations relating to business incubator (Centre of Entrepreneurship Studies)

### (C) Network/linkage for student entrepreneurial initiatives

It was expected that the centre of entrepreneurship studies should perform the function of helping to find suitable links that students can explore in pursuit of their entrepreneurial initiatives. To this end, the researcher asked some open-ended questions to find if such networking or linkages have been offered to aid students' entrepreneurial initiatives. The questions and responses to these questions are presented below.

#### Groundedness

In all, there were 18 quotations from the transcripts that relate to network/linkage for student entrepreneurial initiatives and these are presented below.

#### Presentations

Figure 5.10 shows the quotations linked to network/linkage for student entrepreneurial initiatives. To open discussion on this index of institutional setting, the researcher asked: "Do you have experience of linkage for business opportunities or you know of anyone's experience?" A student identified as **AN** responded by saying "I am not familiar with any such services on the campus" while others nodded in affirmation. The researcher further asked: "Do you know of a centre/unit in the university that can link you up, at institutional level, to sources of finance where you can secure loans or grants for entrepreneurial pursuit? Or do you have experience of such linkages? Or do you know someone who had experienced that? Again, **AN** responded "I am not familiar with any such services on the campus". Another participant identified as **MI** also said "No...". Then **CH** remarked that "What I think is that if such units or centres exist, the University should have made it known to students so that we could explore the services to facilitate entrepreneurial pursuit for anyone who is interested. But we have not seen any of such...all we know is Faculties, Departments, Physical Facilities unit and other divisions. But I am not familiar with any unit or building where financial services are rendered..." The researcher particularly asked a participant identified as **RG** to comment. The response was: "I have no idea".

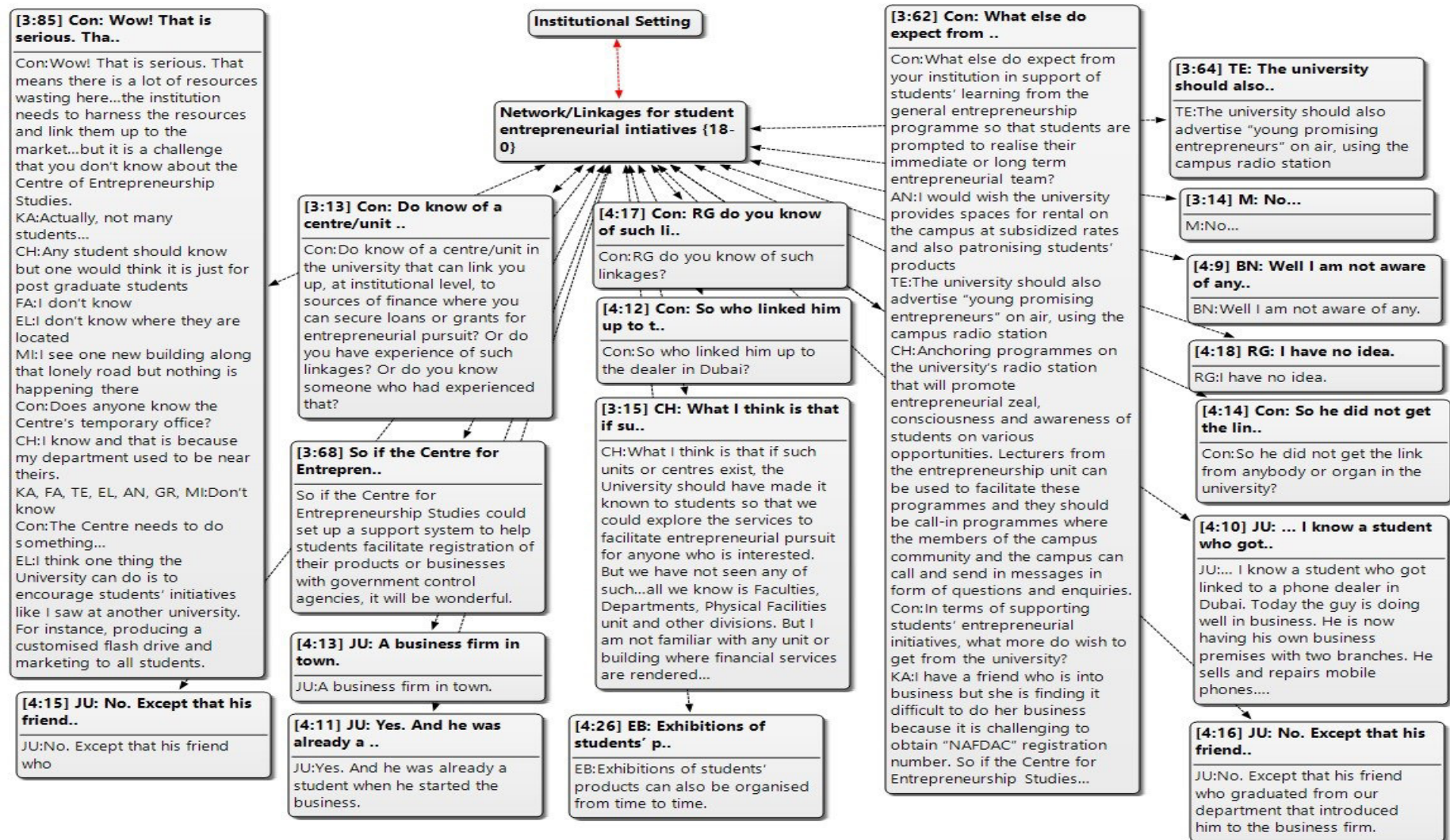


Figure 5.10: The network view showing quotations relating to Network/linkage for student entrepreneurial initiatives

However, a student identified as JU in one of the groups narrated the linkage experience of one his friends who is a student. The following conversation exude the point the researcher was looking for.

**JU:** ... I know a student who got linked to a phone dealer in Dubai. Today the guy is doing well in business. He is now having his own business premises with two branches. He sells and repairs mobile phones....

**Researcher:** Is he still a student?

**JU:** Yes. And he was already a student when he started the business.

**Researcher:** So, who linked him up to the dealer in Dubai?

**JU:** A business firm in town.

**Researcher:** So, he did not get the link from anybody or organ in the university?

**JU:** No. Except that his friend who graduated from our department that introduced him to the business firm.

The above conversation shows that network/linkage for students could strongly change not only their mindset and skills but even determine their success level in entrepreneurial careers. However, as at the time of this study, the institution does not have such services of linkage that could harness students' entrepreneurial initiatives.



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**(D) Student-initiative support**

Closely related to network/linkage for student entrepreneurial initiatives is the student-initiative support. This refers to those institution's internal provisions that support students' entrepreneurial initiatives like soft loans, grants, advisory services, etc. Participants from in the discussions and interviews made comments which are evaluated in this section.

Groundedness

There 26 quotations linked to this code as comments from students and lecturers. This is shown in Figure 5.11.

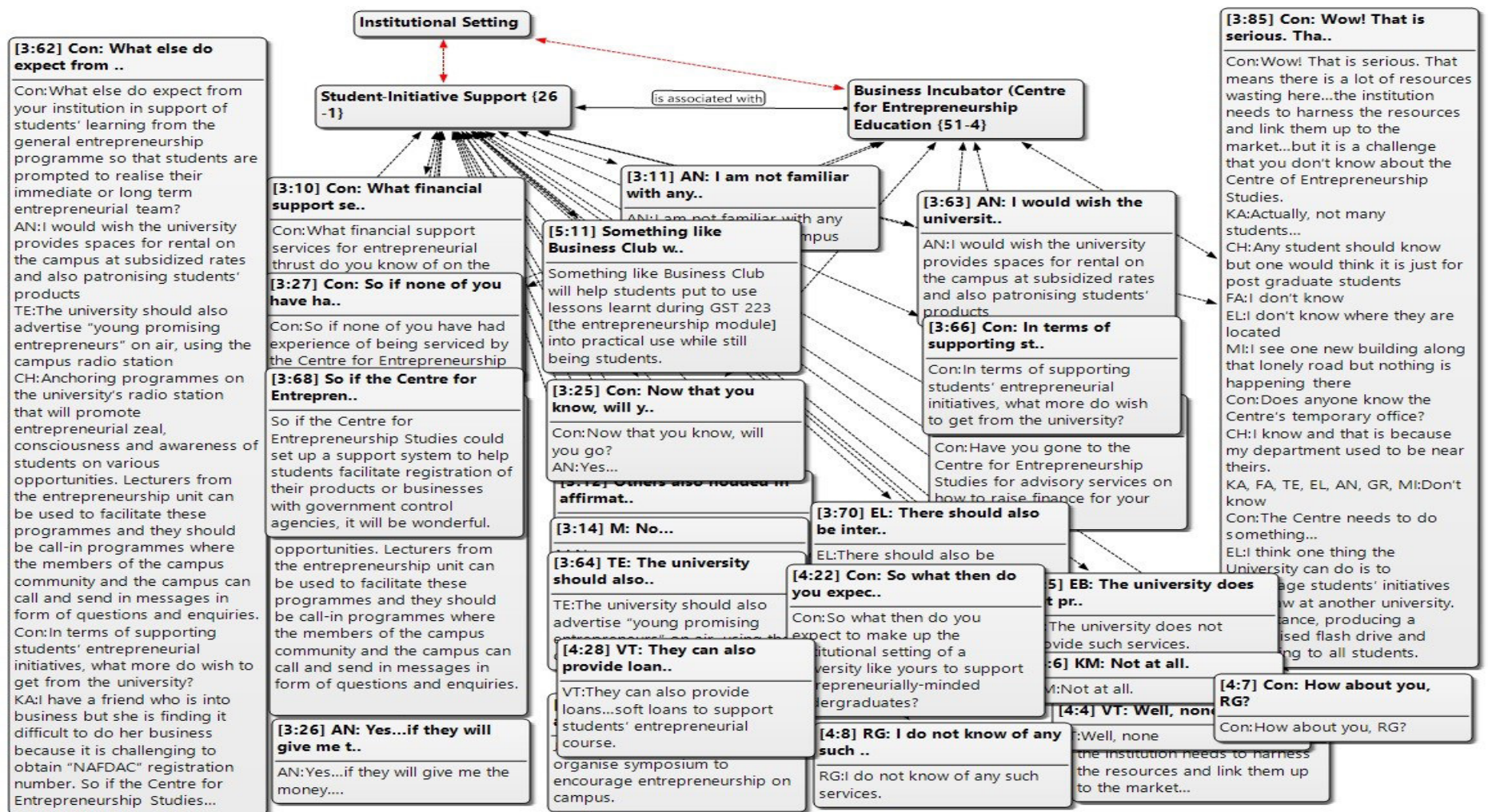


Figure 5.11: The network view showing quotations relating to Students-initiatives support



### Presentation

The researcher asked the groups the following question: “In terms of supporting students’ entrepreneurial initiatives, what more do **you** wish to get from the university?” The essence was to find out what institutional support initiatives are available for students to explore for the nurture of their entrepreneurial initiatives. A student identified as **KA** responded as follow: “I have a friend who is into business but she is finding it difficult to do her business because it is challenging to obtain “NAFDAC (National Agency for Food and Drug Administration and Control)” registration number. So, if the Centre for Entrepreneurship Studies could set up a support system to help students ease registration of their products or businesses with government control agencies, it will be wonderful.” The response shows that helping to get their business ideas through to reality is still lacking in the institution. A lecturer’s response also affirms this by commenting thus: “Something like Business Club will help students put to use lessons learnt during GST 223 [the entrepreneurship module] into practical use while still being students.” In other words, the lecturer is suggesting the university should support students’ entrepreneurial initiatives by fostering a collaboration amongst them and with the Centre of entrepreneurship studies.

### **(E) Other indices of institutional setting**

These other indices relating to institutional setting were not originally intended by the researcher. However, as the interviews progressed, these institutional setting indices emerged as major challenges relating to the delivery of the entrepreneurship module. These include: management support, funding for entrepreneurship research and lecturer-student ratio.

### Groundedness

There were seven (7) quotations that relate to the three indices examined in this section. The comments also reflect the opinions of the lecturers on the factors that have inhibited the capacity of entrepreneurship education in bearing greatest impact on students’ skills and mindset.

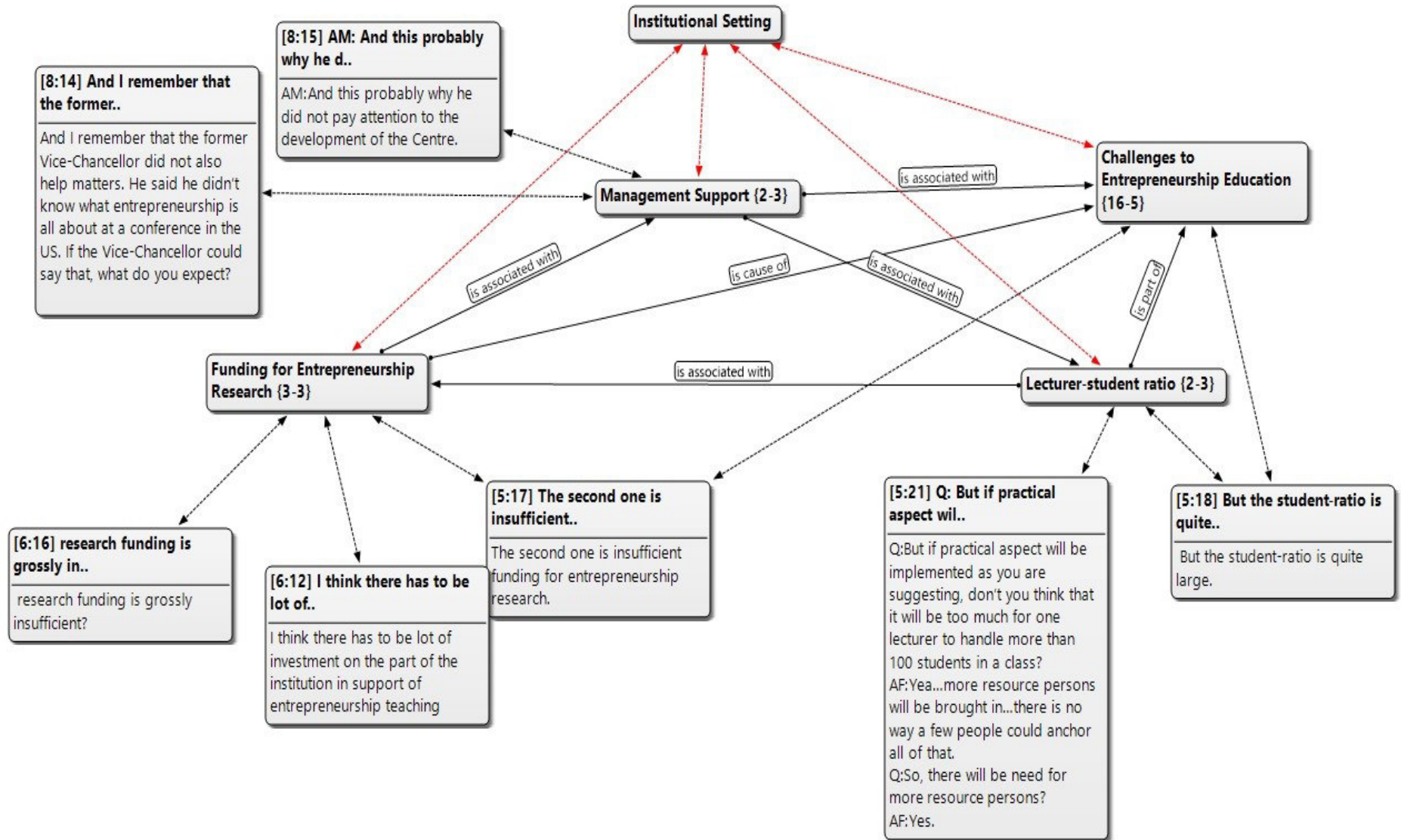


Figure 5.12: The network view showing quotations relating to Students-initiatives support

## Presentation

During the interviews, the researcher asked the lecturers of the entrepreneurship module the (i.e. AM, AF, AE, AS, EF) following question: “In your opinion sir, what do you think are the challenges relating to the teaching of entrepreneurship in your education...?”

The responses given are stated below:

**AM:** I think we have more challenges in terms of capacity especially three of our colleagues who were teaching with us have proceeded on study leave. Apart from being short-staffed, we did not have replacement of competent staff. Sometimes I interact with students at the end of the lectures and some of the students complain that they do not get the best as some lecturers are not competent enough at delivering their materials.

**AF:** I will say that the lecturers are all competent. But the lecturer-student ratio is quite large.

**AE:** I think so far, because of the largeness of that class, we have not been able to do much

**AS:** ...research funding is grossly insufficient. ...I think there must be lot of investment on the part of the institution in support of entrepreneurship teaching...

**AF:** ... The second one is insufficient funding for entrepreneurship research.

**AM:** And I remember that the former Vice-Chancellor did not also help matters. He said he didn't know what entrepreneurship is all about at a conference in the US. If the Vice-Chancellor could say that, what do you expect?

**AM:** And this is probably why he did not pay attention to the development of the Centre.

From the above quotations, the first three comments by lecturers **AM**, **EF** and **AE** indicate that the number of lecturers that is competent and available to teach the entrepreneurship module is way too small compared to population of students. Besides, **AM**'s comment also suggests that there could one or more among the lecturers who do not competently teach the module as his

interactions with students had revealed. Meanwhile lecturers **AS** and **AF** in comments four and five above, independently pointed out the challenge of funding for entrepreneurship research as another major challenge limiting the impact of entrepreneurship education on students' skills and mindset in the institution. Then lecturer **AM** pointed out the challenge of poor management support which has even undermined the development of the centre of entrepreneurship studies.

#### **(F) Rating of Institutional entrepreneurial climate**

Turning to the students, the researcher asked across the group discussions: "How then would you rate your institution's entrepreneurial climate?". The following responses sum up the discussions around institutional setting in terms of facilities available for teaching entrepreneurship module, the Centre of Entrepreneurship Studies, as well as networks and linkages available on the campus to support student entrepreneurship.

**MI:** Poor!

**EL:** Very poor!!

**BN:** Very poor.

**EB:** Really poor.

The researcher then asked: "Why do you say so?" Some of the students responded thus:

**VT:** The school discourages entrepreneurship when they will not allow students to operate business premises around on the campus. They make it so difficult a thing to think of.

**MI:** I say it's poor because the mode of presenting the idea of entrepreneurship in the university has not really caught the keen attention of the learners...the lecturers did not present the course materials in such a convincing manner as to persuade students that there is gain in engaging in entrepreneurial course...the presentation is "dry" [not insightful and motivating] ...it seems they were teaching just for examination purpose...

**FA:** Many students who engage in business and entrepreneurial activities do that not because they were really motivated by the entrepreneurship class but because of their own natural instinct or personal interest...

**EL:** ...even if the classes are not “hands-on”, there is a way the lecturers should have made the entrepreneurship lecturers very motivating...

**GR:** Availability of the lecturers for lectures also matter...like in my set, only one lecturer showed up to teach his own part of the module for the whole semester. So, we only collected lecture materials from previous students and studied for examinations purpose...having had only one lecturer coming to teach his own part

From these responses, the following could be deduced:

- Poor institutional support in terms of policy – as indicated by **VT**'s comments, some students would love to secure spaces on the campus premises at possibly subsidised rates where they can operate their entrepreneurial ideas/businesses. But the institution's policies (short or long term) do not support such entrepreneurial initiatives as students claimed that “...they make it so difficult a thing to think of”. This also reflects the poor management support for entrepreneurship in the institution as lecturer **AM** had suggested.
- Competence of entrepreneurship lecturers – a statement from **MI** is an indication that entrepreneurship is not adequately presented to students in a manner that strongly stimulates their interest, mindset and skills. The comment “I say it's [institutional entrepreneurial climate] poor because the mode of presenting the idea of entrepreneurship in the university has not really caught the keen attention of the learners” really points to this fact. **EL** also decried the incompetence of some lecturers by this comment: ...even if the classes are not “hands-on”, there is a way the lecturers should have made the entrepreneurship lecturers very motivating...
- Entrepreneurial interest despite weak institutional entrepreneurial climate – **FA**'s outright attribution of students' entrepreneurial interests to other sources like natural instinct is a direct allusion to the fact that the institutional entrepreneurial climate has no impact on students' entrepreneurial mindset and skills.

### **(G) Students' Expectations of Entrepreneurial Institutional Setting**

To further engage the participants on the subject of institutional setting, the researcher sought to find out what expectations students have about an ideal entrepreneurial institutional setting by posing the following question:

*“What else do expect from your institution in support of students' learning from the general entrepreneurship programme so that students are prompted to realise their immediate or long term entrepreneurial dream?”*

Students' responses reveal their expectations of an institutional setting necessary to stimulate entrepreneurial mindset and skills in students. These are:

**AN:** “I would wish the university provides spaces for rental on the campus at subsidized rates and also patronising students' products”

**TE:** “The university should also advertise 'young promising entrepreneurs' on air, using the campus radio station”

**CH:** “Anchoring programmes on the university's radio station that will promote entrepreneurial zeal, consciousness and awareness of students on various opportunities. Lecturers from the entrepreneurship unit can be used to facilitate these programmes and they should be call-in programmes where the members of the campus community and the campus can call and send in messages in form of questions and enquiries.”

**KA:** I have a friend who is into business but she is finding it difficult to do her business because it is challenging to obtain “NAFDAC” registration number. So, if the Centre for Entrepreneurship Studies could set up a support system to help students facilitate registration of their products or businesses with government control agencies, it will be wonderful.

**OD:** There should also be vocational centres that are well equipped for students.

**BA:** For me, I will expect that there should be counselling for business-minded students

**KM:** They should also provide orientation on whatever entrepreneurial services that are available to students who wish to explore such.

**EB:** Exhibitions of students' products can also be organised from time to time.

**JU:** The university can also organise symposium to encourage entrepreneurship on campus.

**VT:** They can also provide loans...soft loans to support students' entrepreneurial course.

Deductively, the following points can be articulated as students' expectations of an entrepreneurial institutional setting:

- Mini market or shopping centre – provision of mini market or shopping centre on the campus will enable entrepreneurial students to rent spaces or shops at affordable/subsidised rates. With this, students will be actively engaged in business and thus, develop skills as they would have opportunities to effectuate their entrepreneurial mindset. **AN's** comment allude to this.
- Show-casing students' entrepreneurs – the students think it is an excellent way to launch student-entrepreneurs into the world of business when their institution will show-case to the larger society beyond the campus community by profiling their achievements and successes as student-entrepreneurs on the campus radio, exhibitions, etc. Quotations from **TE** and **EB** particularly exude this fact.
- Institutional linkages and networks – as student **KA** suggested with reference to a student's experience, the undergraduate students expect that their institution provides a platform for them to easily link up with other institutions as they seek to pursue entrepreneurial career. For instance, if a student has developed a product and he/she needs to get it registered with Standards Organisation of Nigeria (SON), National Agency for Food and Drug Administration and Control (NAFDAC), or secure patent right on such product or perhaps he/she seeks to incorporate a firm with Corporate Affairs Commission (CAC), then their institution can help ease any of these as the case may require.

- Entrepreneurship Awareness programme – the students desire that their entrepreneurial minds be thoroughly awakened through entrepreneurship awareness programmes that could take the form of radio programmes being anchored on the campus radio station as suggested by **CH** or entrepreneurship symposia as suggested by **JU**.
- Business Incubation and Vocational Skills Unit – students also expect that the institutional setting for entrepreneurship in their university should include presence of business incubation where according to **BA**, there would be “counselling for business-minded students”. **OD** further added that “there should also be vocational centres that are well equipped for students”.

### **Findings on Institutional Setting**

From all the above statements and deductions, the following can be said about the institutional setting of the higher education institution being understudied.

- Facilities such as lecture halls/theatres and public-address systems made available for teaching entrepreneurship are grossly inadequate.
- A centre of entrepreneurship studies has existed for almost six years as at the time of the study but students have little or no knowledge of its existence and services.
- The centre is not as functional as originally designed
- And because the Centre is not functional as expected, networks and linkages as well student’s entrepreneurial initiative support are non-existent in the institution.
- The institution’s poor management support for entrepreneurship as reflected in funding and policy has also undermined the development of the Centre.
- On the overall, the institution entrepreneurial climate is poor according to the students and lecturers’ assessment.



### Interpretation of findings on Institutional Setting

On the strength of the foregoing points, Institutional setting has not positively affected on the entrepreneurial mindset, skills and intentions of undergraduate students in the university being understudied.

#### 5.3.6.2 Teaching methods/Entrepreneurial mindset and Skills of undergraduate students

The specific question discussed in this section is: *To what extent has method of teaching affected on the entrepreneurial mindset, skills and intentions of undergraduate students?* The objective is to explore the mix of teaching methods adopted for entrepreneurship education in the institution and determine its impact on students' entrepreneurial mindset, skills and intentions. Figure 5.13 shows the possible methods of teaching entrepreneurship education as suggested by Fayolle (2013) and Fayolle and Liñán (2014) and these were investigated as to whether they were being used in the institution or not. These methods include: seminars, live project, assignment, case studies, having practising entrepreneurs as guest lecturers and lecturer delivery. The results of the qualitative content analysis as presented in next paragraphs below.

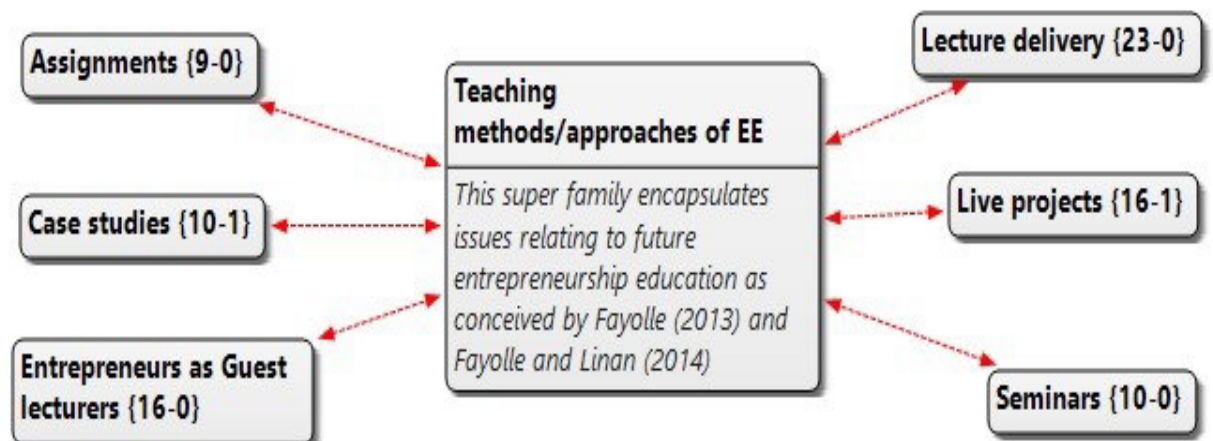


Figure 5.13: The network view showing methods investigated for teaching entrepreneurship

#### Groundedness

There were twenty-three (23) quotations relating to lecture delivery; sixteen (16) quotation relating to entrepreneurs as guest lecturers and live projects

respectively; ten (10) quotations relating case studies and seminars respectively; and nine (9) quotations relating to assignment. In all there were eighty-four (84) quotations relating to teaching methods. Figure 5.14 to Figure 5.17 show the networks of quotations linked to each of these methods.



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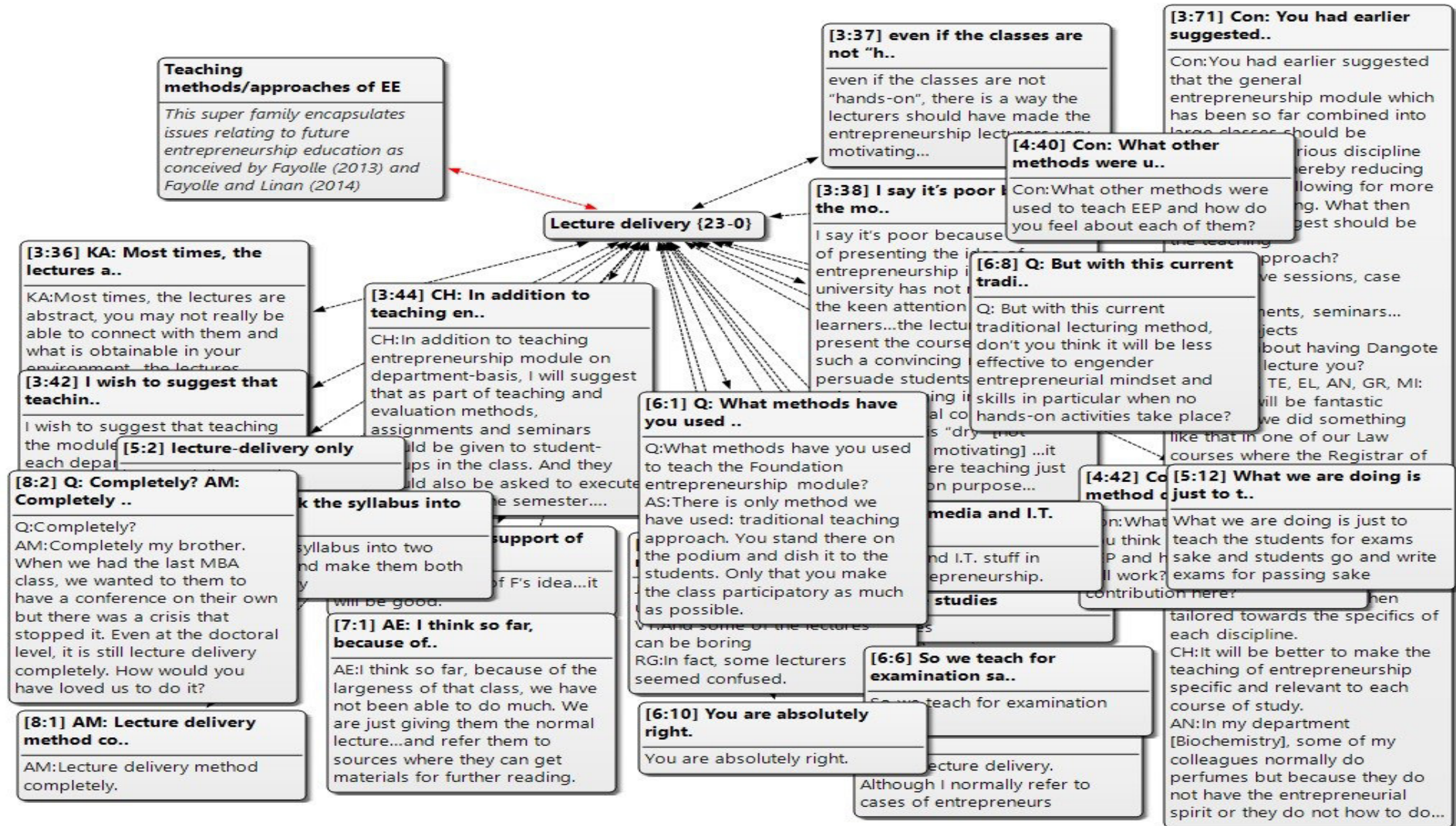


Figure 5.14: The network view showing quotations relating to lecture delivery as a method of teaching entrepreneurship module

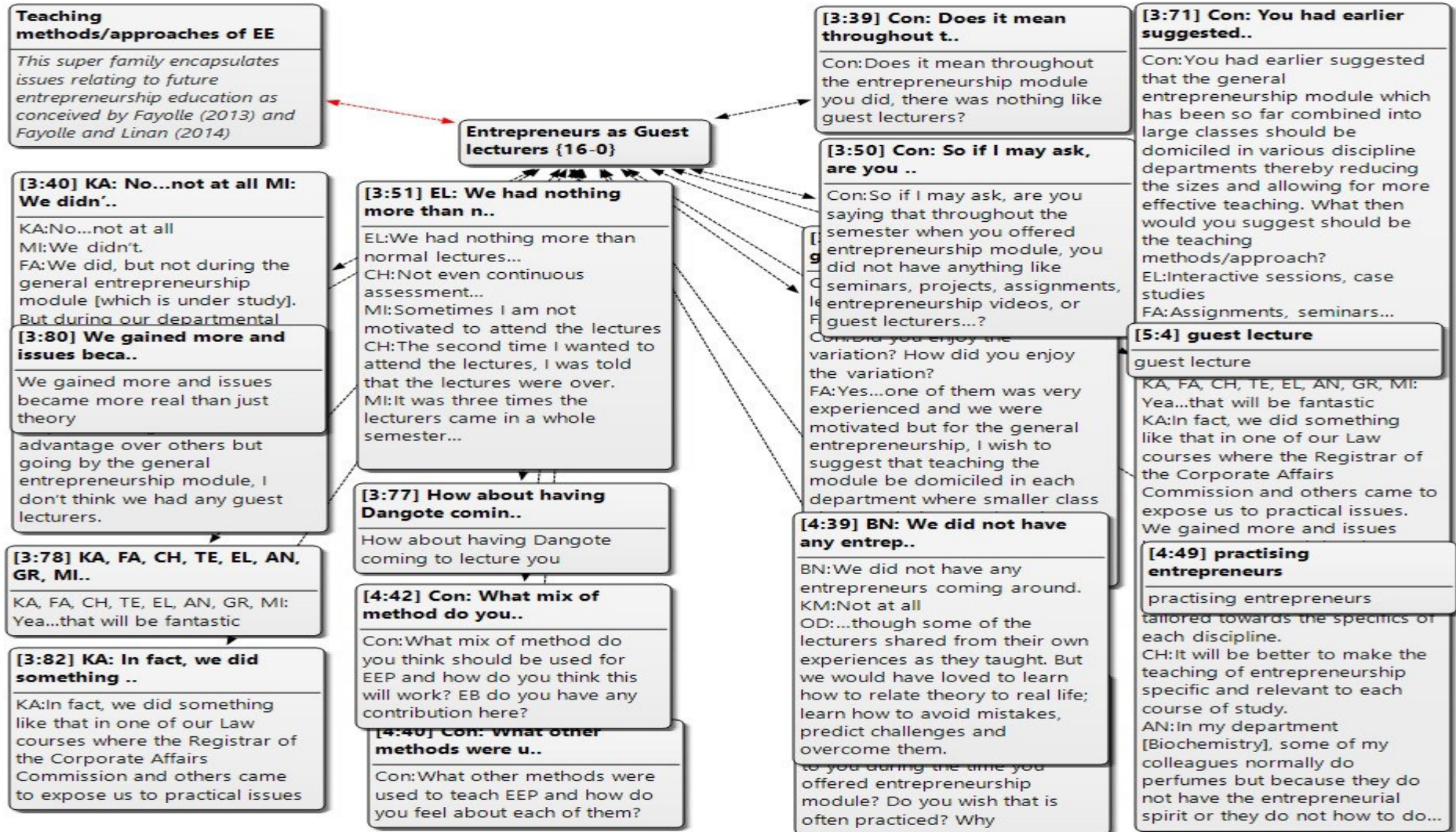


Figure 5.15: The network view showing quotations relating to entrepreneurs as guest lecturers as a method of teaching

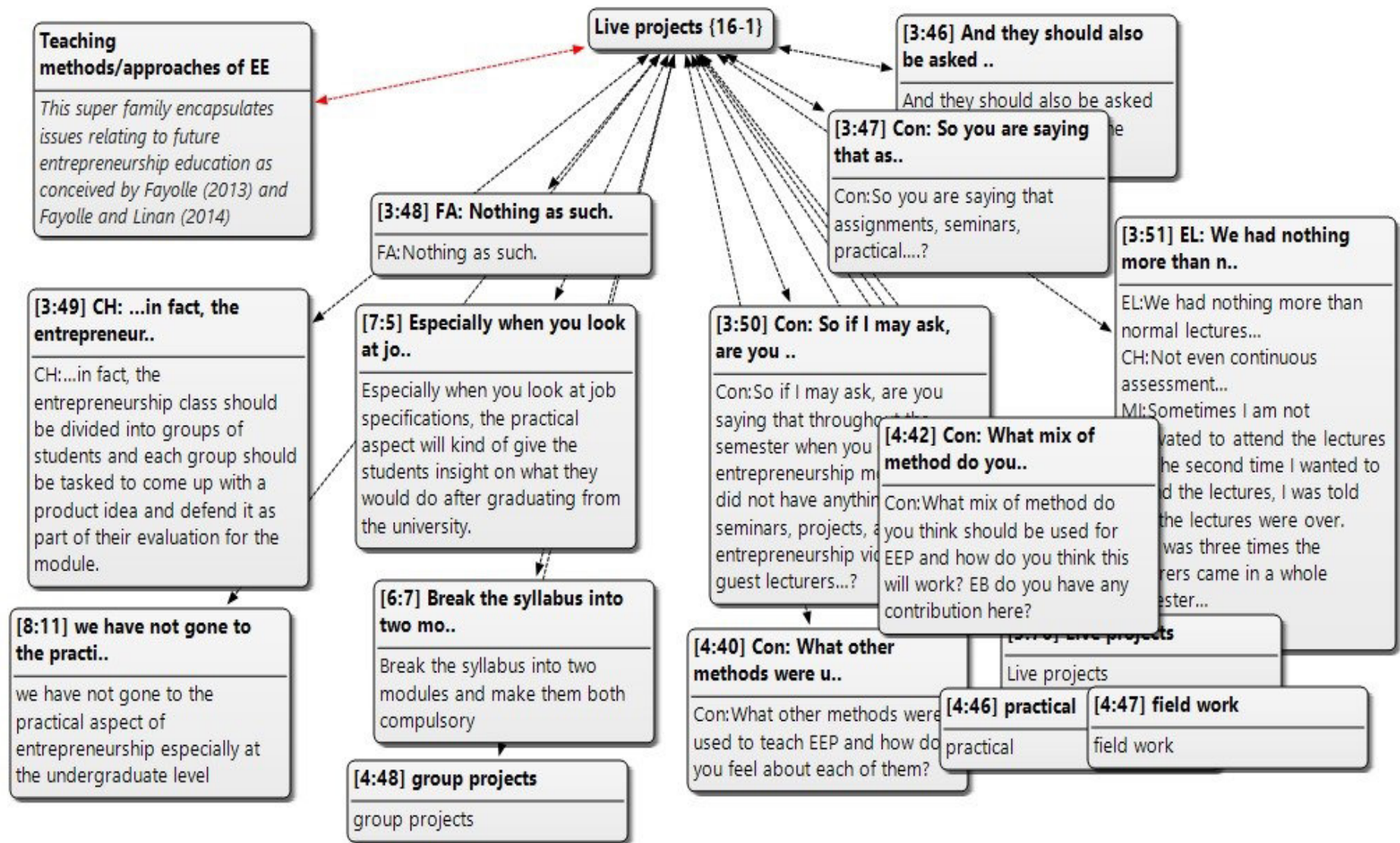


Figure 5.16: The network view showing quotations relating to live projects as a method of teaching entrepreneurship

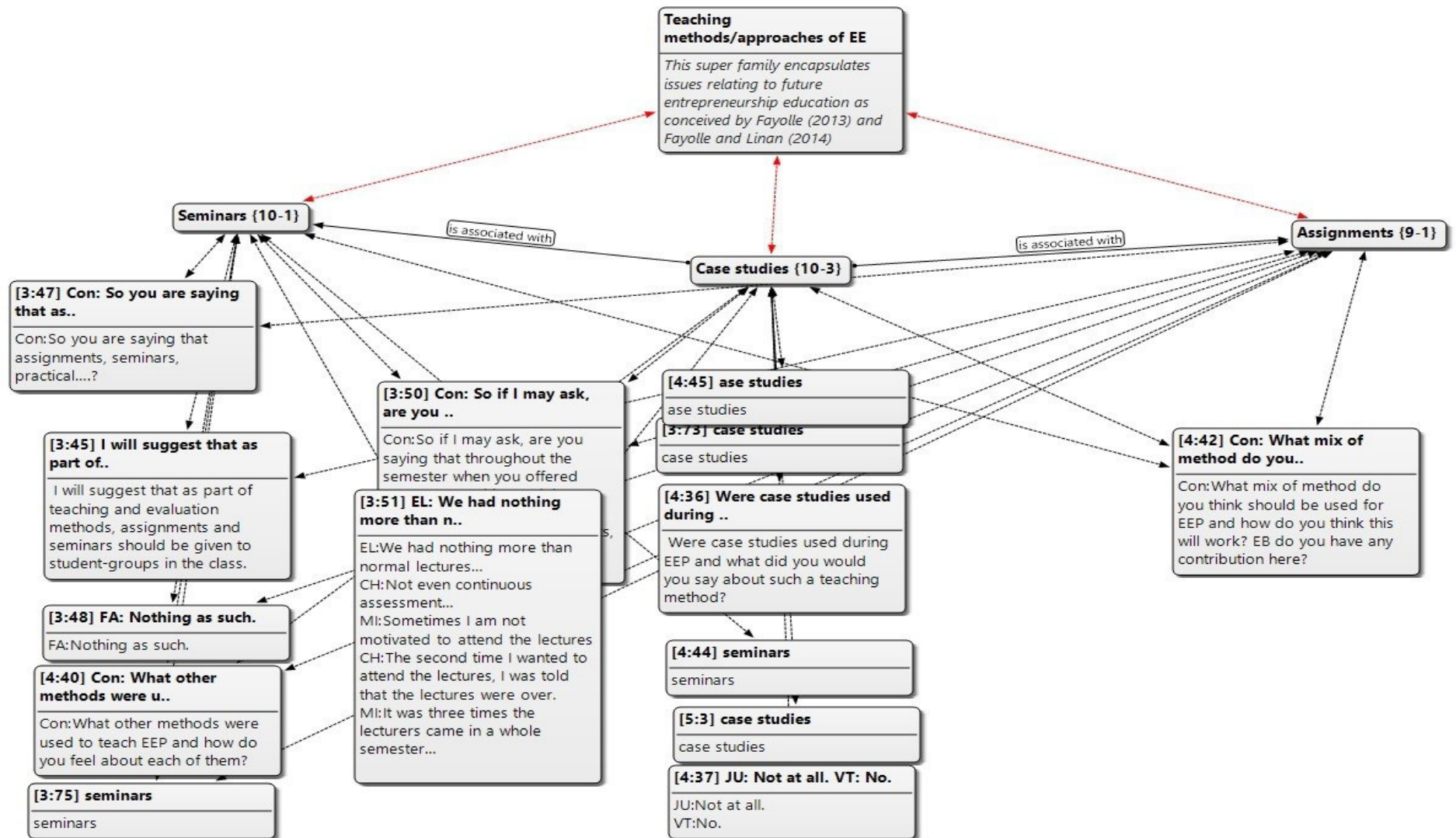


Figure 5.17: The network view showing quotations relating to seminars, case studies and assignment as methods of teaching

## Presentation

The researcher posed questions relating to teaching methods to lecturers during interviews and students during focus group discussion. The lecturers were individually asked: "What methods have you used to teach the compulsory entrepreneurship module?" Below are the responses to the question.

**AF:** Just lecture delivery. Although I normally refer to cases of entrepreneurs...What we are doing is just to teach the students for exams sake and students go and write exams for passing sake.

**AS:** So, we teach for examination sake...

**AE:** I think so far, because of the largeness of that class, we have not been able to do much. We are just giving them the normal lecture...and refer them to sources where they can get materials for further reading.

**AM:** Lecture delivery method completely... we have not gone to the practical aspect of entrepreneurship especially at the undergraduate level.

**AS:** There is only one method we have used: traditional teaching approach. You stand there on the podium and dish it to the students. Only that you make the class participatory as much as possible.

The responses from the lecturer show that only lecturer delivery method has been used to teach the entrepreneurship module since the module was started. This is clear in the comment of **AM** who had taught the module since the time it started "Lecture delivery method completely... we have not gone to the practical aspect of entrepreneurship especially at the undergraduate level". **AE** too had taught the module since its start and his comment also corroborates that of **AM** when he said, "We are just giving them the normal lecture...".

In one of the focus groups, the following conversation on teaching method ensued:

**Researcher:** So, if I may ask, are you saying that throughout the semester when you offered entrepreneurship module, you did not have anything like

seminars, projects, assignments, entrepreneurship videos, or guest lecturers...?

**EL:** We had nothing more than normal lectures...

**CH:** Not even continuous assessment...

**MI:** Sometimes I am not motivated to attend the lectures

**CH:** The second time I wanted to attend the lectures, I was told that the lectures were over.

**KA:** No...not at all

**FA:** We did, but not during the general entrepreneurship module

To further find the understanding of the question, the researcher restated the question this way: So, you are saying that assignments, seminars, practical....? Then **FA** cut in by saying categorically: "Nothing as such." **MI** also added by saying: " We didn't".

A similar question was asked in another focus group discussion, and the following are the responses from the students:

**JU:** Only lecture method was used.

**VT:** And some of the lectures can be boring

**RG:** In fact, some lecturers seemed confused.

The responses from eight students across the focus groups: **EL, CH, MI, KA, FA, JU, VT,** and **RG** show that only lecture method has been used in teaching entrepreneurship module over the period of eight (8) years. This generally further buttress the earlier statements of the lecturers of entrepreneurship module (e.g. **AS, AF, AM** and **AE**). Besides, students expressed the fact that they are not generally impressed or impacted by the lectures. Statements such as "*And some of the lectures can be boring*" from **VT**; and "*Sometimes I am not motivated to attend the lectures*" from **MI** allude to this fact. To cross-validate this fact, the researcher asked in one of the interviews: "But with this current traditional lecturing method, don't you think it will be less effective to engender entrepreneurial mindset and skills when no hands-on activities take place?" **AS** responded by saying: "You are absolutely right. Especially when you look at job specifications, the practical aspect will kind of give the students



insight on what they would do after graduating from the university.” This implies that only lecture delivery is not enough to stimulate entrepreneurial skills and mindset.

The researcher then asked in the focus group discussions: What mix of methods do you think should be used for teaching entrepreneurship module and how do you think this will work? EB do you have any contribution here?

**EB:** I would love that things like seminars, case studies and practical are introduced in the teaching of entrepreneurship

**VT:** Also, field work and group projects can be introduced and these will help us develop real experience of entrepreneurship.

**JU:** They can also bring in practising entrepreneurs as guest lecturers from time to time. That will be very interesting.

**BA:** They should also use multimedia and information technology stuff in teaching entrepreneurship.

In another group where similar question was posed, the following are the students' responses:

**EL:** Interactive sessions, case studies

**FA:** Assignments, seminars...

**EL:** Live projects

**CH:** ...in fact, the entrepreneurship class should be divided into groups of students and each group should be tasked to come up with a product idea and defend it as part of their evaluation for the module.

Then the researcher asked: How about having Aliko Dangote [a leading successful Nigerian entrepreneur] coming to lecture you? The chorus response was “yea...that will be fantastic!” Wondering about the students' thought on the impact of these suggested teaching methods on their entrepreneurial skills and mindset, a chorus response was “of course”.

### **Findings and Interpretation on Teaching Methods**

From the foregoing conversations and data presented, the following points could be deduced:

- Only lecture delivery has been used in teaching entrepreneurship module over the past eight years. Both students and lecturers attest to this fact. This implies that live projects, assignments, seminars, videos and other pedagogical approaches that have been used in some other universities especially in the United States and in the United Kingdom, are largely missing in this institution.
- The lectures have not so much impressed nor affected on the students as some have claimed.
- Students wish that teaching methods other than lecture delivery should be well blended for future delivery on the entrepreneurship module and that this would bear more impact on students' entrepreneurial mindset and skills than lecture delivery alone.

Based on this, it can be asserted that method of teaching has not born the expected impact on the entrepreneurial mindset, skills and intentions of undergraduate students in the institution being understudied.

#### **5.3.6.3 Content of EE/Entrepreneurial mindedness and Skills**

The content of the entrepreneurship module being understudied was highlighted in Table 2.1 of Chapter Two. There were sixteen (16) topics in all ranging from basic concepts of entrepreneurship and its evolution to venturing and management of growth. The essence of this section is to find solution to the question: *To what extent has content of entrepreneurship module impacted on the entrepreneurial mindset, skills and intentions of undergraduate students?* To do this, the researcher did a qualitative content analysis of all the transcripts from interviews and focus group discussions and find quotations from participants which relate to content of entrepreneurship module and its impact on students' entrepreneurial mindset, skills and intentions. The verbosity of this component of entrepreneurship education is explained below.

Groundedness:

From the content analysis of the transcripts, there are 67 quotations that relate to the content of entrepreneurship module being studied; 11 quotations that relate to entrepreneurial skills; and 18 quotations that relate to entrepreneurial mindset. These quotations are mapped in network views shown in Figure 5.18, Figure 5.19 and Figure 5.20.



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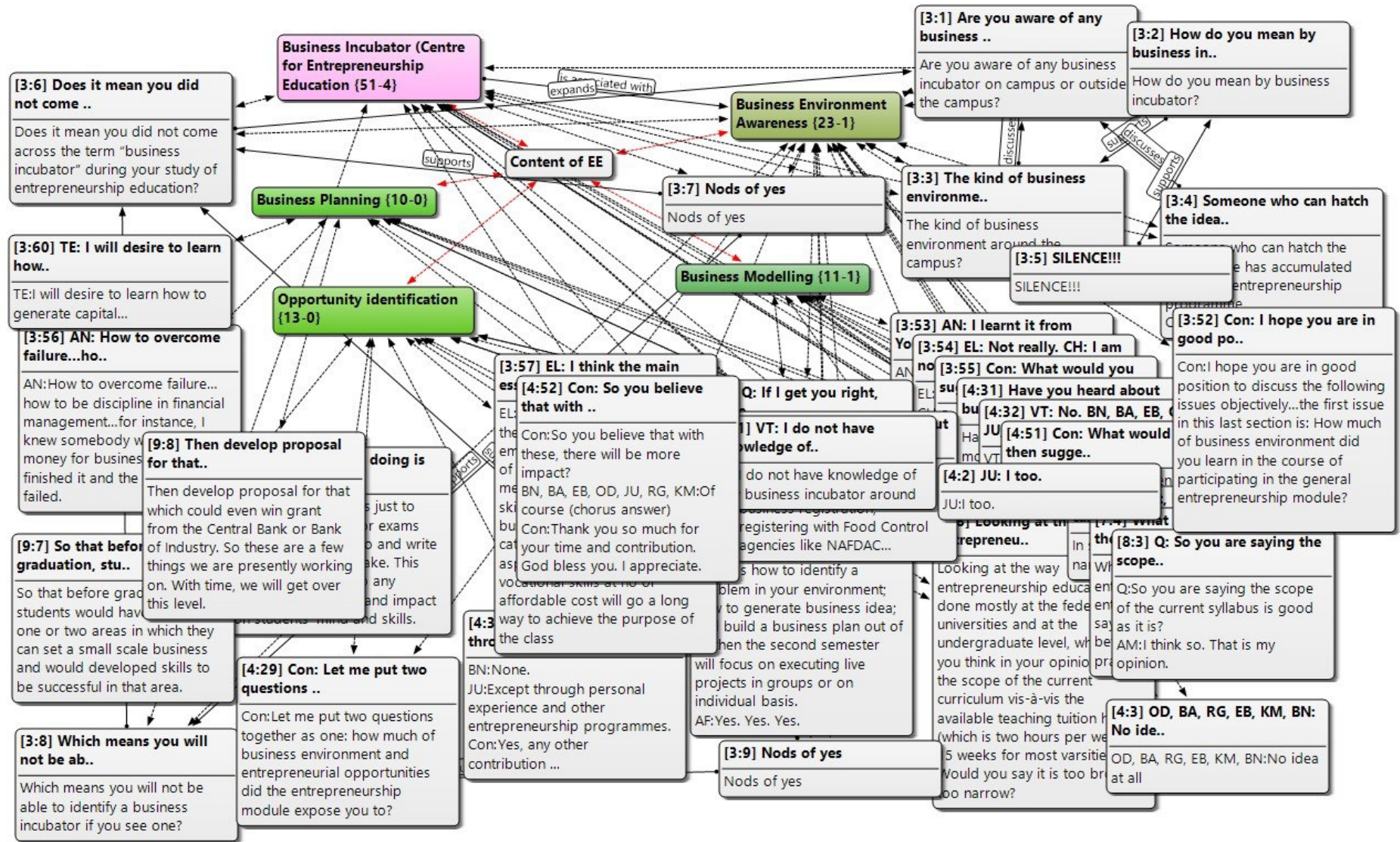


Figure 5.18: The network view showing quotations relating to content of entrepreneurship module

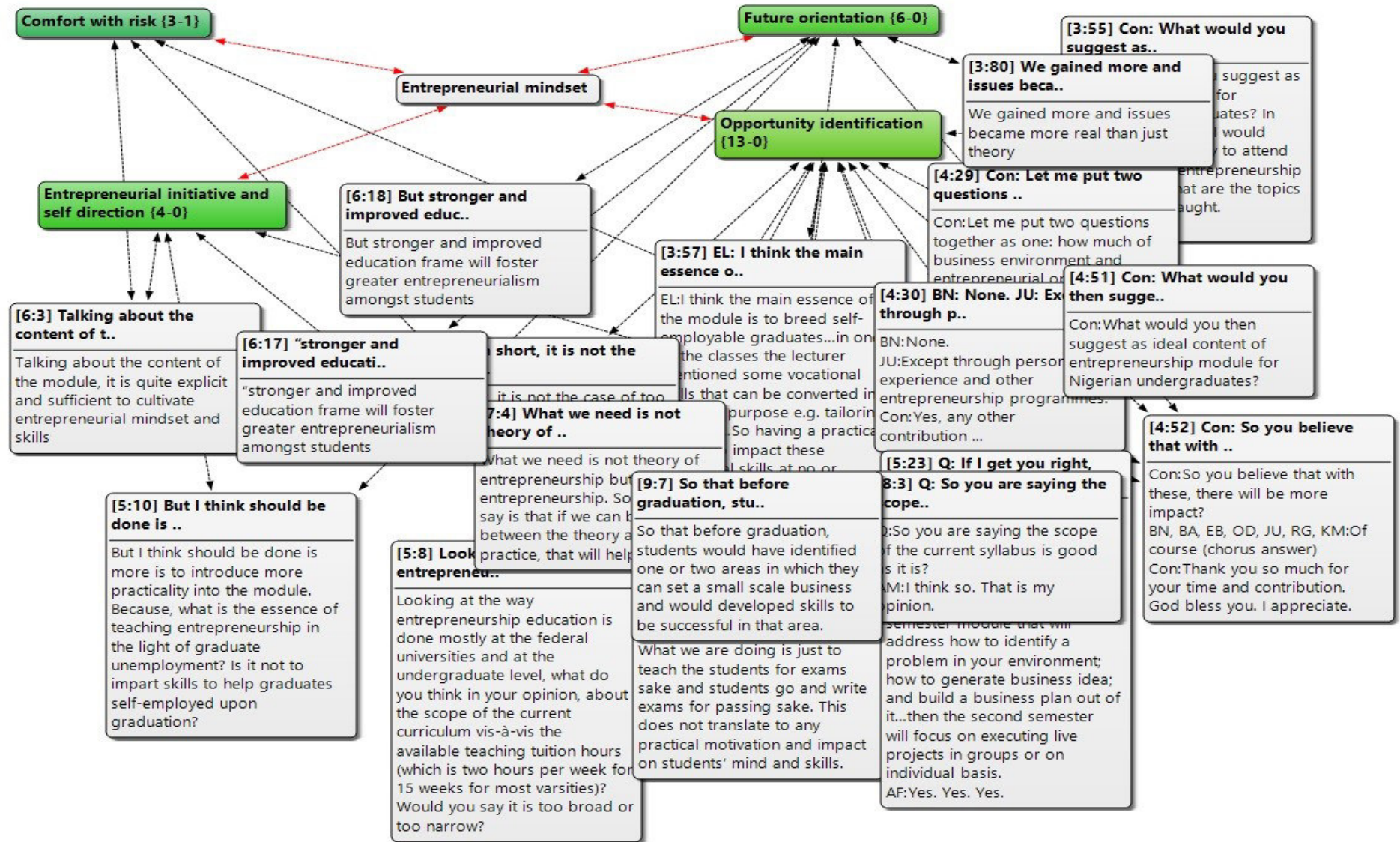


Figure 5.19: The network view showing quotations relating to entrepreneurial mindset of undergraduate students

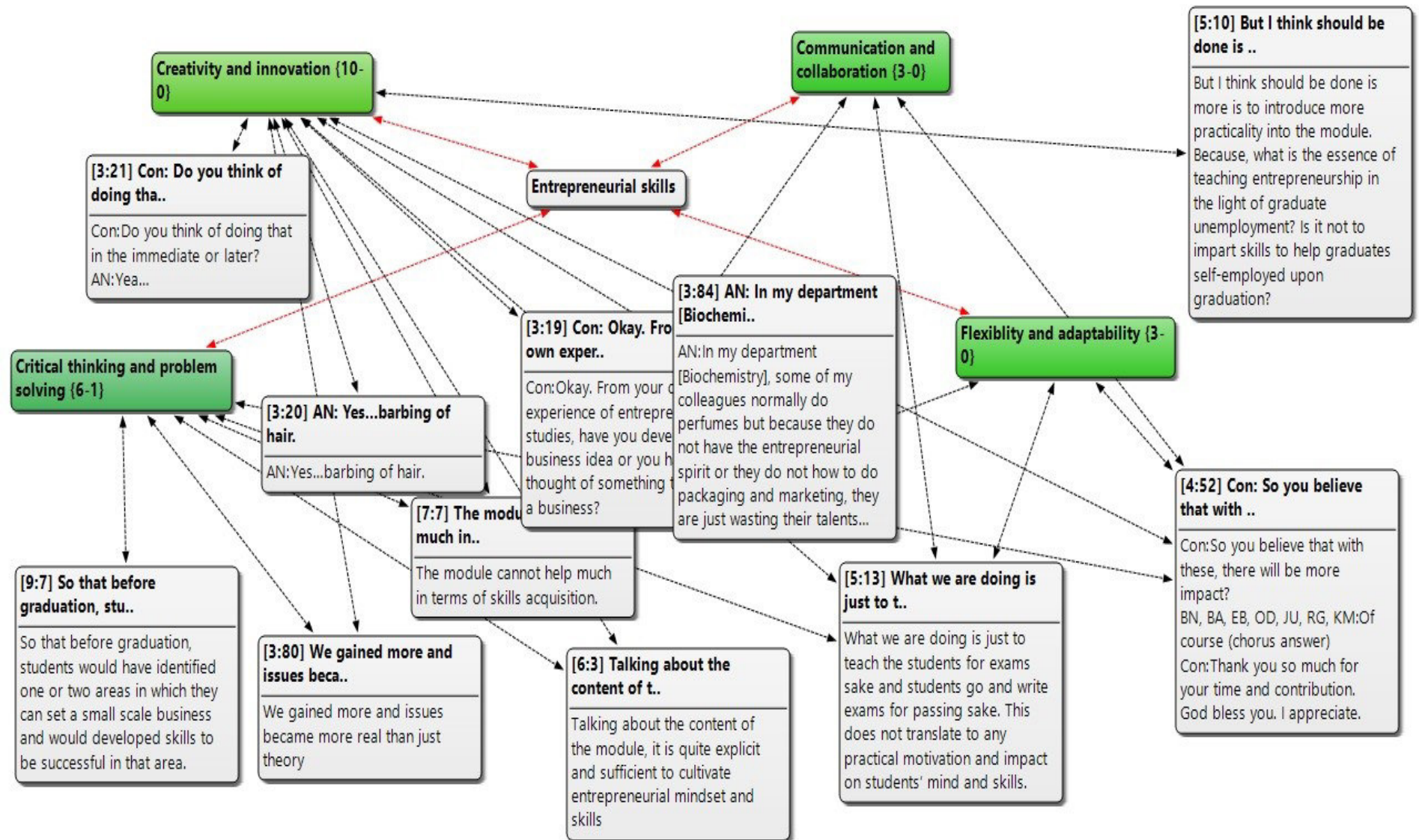


Figure 5.20: The network view showing quotations relating to entrepreneurial skills of undergraduate students

## Presentation

The researcher focused on key issues expected to foster entrepreneurial mindset, skills and intentions of students as per content of an entrepreneurship module. In other words, if students learnt everything but do not learn or cannot remember how to explore entrepreneurial opportunities by being very conversant with their business environment then it means the module is less likely to impact much on their mindset and skills for entrepreneurial intention or behaviour. Similarly, if students do not learn the art of business planning and modelling from an entrepreneurship module, the likelihood exists that the module would significantly impact on the mindset, skills and intention of students.

Based on this assumption, the researcher probed into the content taught from students by asking an opening question on the subject: Does it mean you did not come across the term “business incubator” during your study of entrepreneurship education? The responses were “Nods of yes” from participants. The researcher further asked: Which means you will not be able to identify a business incubator if you see one? Again, the responses were “Nods of yes” with a kind of “we do not learn about this while offering the compulsory module” on the students’ faces!

The researcher further enquired: how much of entrepreneurial opportunities did the entrepreneurship module expose you to? And how much of business environment did you learn while taking part in the general entrepreneurship module? To this, a student identified as **BN** responded saying: None. Another student identified as **JU** commented: except through personal experience and other entrepreneurship programmes. When the researcher attempted to extract more responses by saying “Any more contribution?”, other students in the groups were again silent. Having nothing in the affirmative to add.

Concerning the subject of business modelling, the researcher enquired “Have you heard about business modelling, like Canvass from your entrepreneurship module?” This question elicited the following responses from students:

**VT:** No.

**BN, BA, EB, OD, JU, RG, KM:** No. We were not taught.

However, a student identified as **AN** responded saying “I learnt it from YouWin! [Youth with Innovative Enterprise] And not from the general entrepreneurship programme”. Others were nonetheless silent!

To prompt what the expectations of the students were about they wish to learn from an entrepreneurship module, the researcher asked, “What would you then suggest as an ideal content of entrepreneurship module for Nigerian undergraduates?” the following were some of the responses:

**KM:** How to identify business opportunities...

**BN:** How to do good business plan

**VT:** How to make your business marketable...

**AN:** How to overcome failure...how to be discipline in financial management...for instance, I knew somebody who had money for business but he finished it and the business failed.

**EL:** I think the main essence of the module is to breed self-employable graduates...in one of the classes the lecturer mentioned some vocational skills that can be converted into business purpose e.g. tailoring, catering...So having a practical aspect to impact these vocational skills at no or affordable cost will go a long way to achieve the purpose of the class

**KA:** I have something to say...I like to learn about how to go through the process of business registration, registering with Food Control agencies like NAFDAC...

**TE:** I will desire to learn how to generate capital...

The students’ foregoing comments indicate that they were not taught most of the critical components of the entrepreneurship education. This could be counter validated as the lecturers of this module are specialists in areas such as marketing, entrepreneurial finance, social entrepreneurship and general management. The challenge may rather be more with the earlier fact that the lectures did not really stir the interest of students towards entrepreneurship due to the mode and condition of delivery. Besides, lecture method alone is



too weak to stimulate skills and mindset like lecture **AE** earlier said. And remember that lecturer **AE** had said “What we are doing is just to teach the students for exams sake and students go and write exams for passing sake. So, we teach for examination sake...” **MI**'s comment “...it seems they [lecturers] were teaching just for examination purpose...”; and **GR**'s comment “So we only collected lecture materials from previous students and studied for examinations purpose” both support this inference. Teaching for examination sake does not really bear significant impact on students' skills and future orientation towards a course.

Furthermore, comments from the lecturers relating to students' entrepreneurial mindset and skills further buttress the fact that more is to be blamed on the method of teaching than content in terms of stimulating students' entrepreneurial mindset, skills and intentions. The following seven (7) quotations relating to both sides of the opinions are given below.

**AE:** The module cannot help much in terms of skills acquisition

**AS:** Talking about the content of the module, it is explicit and sufficient to cultivate entrepreneurial mindset and skills of students...[but] 2 hours per week for 15 contacts... is practically and absolutely insufficient to cover about 16 extensive and broad topics laid out in the module. So, you find out only less than a quarter of the content is being taught and that in quick passing. No depth. No foundation. So, we teach for examination sake...

**AF:** What I think should be done more is to introduce more practicality into the module. Because, what is the essence of teaching entrepreneurship in the light of graduate unemployment? Is it not to impart skills to help graduates self-employed upon graduation?

**AF:** What we are doing is just to teach the students for exams sake and students go and write exams for passing sake. This does not translate to any practical motivation and impact on students' mind and skills.

**AS:** But stronger and improved education frame will foster greater entrepreneurialism amongst students

**AE:** In short, it is not the case of too narrow or too broad [referring to the module content] ...What we need is not theory of entrepreneurship but

practical entrepreneurship. So, I would say is that if we can balance between the theory and practice, that will help us better.

**AU:** In which case, before graduation, students would have identified one or two areas in which they can set a small-scale business and would developed skills to be successful in that area

**AM:** I think so... [that the current scope of the module is good as it is]. That is my opinion

The comments of lecturers **AE**, **AF**, and **AU** suggest that more is needed in the module content in terms of including a practical or hands-on aspect. In this case, they are advocating for expansion of the current module. However, **AS** and **AM** is suggesting that the module content is good enough just as it is. However, some aspects of the content should be made hands-on in order to grow the entrepreneurial skills of students. suggest that more is needed in the module content in terms of practical or hands-on aspect. In this case, they are advocating for expansion of the current module.

### **Interpretation**

The call for inclusion of practical component into the content of entrepreneurship module with the expectation that it will impact the needed skills for entrepreneurial career implies that the current content has not significantly impacted on the entrepreneurial mindset, skills and intentions of undergraduate students.

## **5.4 SUMMARY OF FINDINGS**

This section highlights all the main findings that emerged from the quantitative analyses done through structural equation modelling; qualitative data analysis done through the qualitative content analysis as well as the demographic statistics earlier done in this chapter. These findings are stated below.

### **5.4.1 Findings from Quantitative Analyses**

The quantitative results obtained through structural equation modelling in section 5.3.3 can be summarised as follow:

- A significantly positive and strong relationship exists: between entrepreneurship education and entrepreneurial mindset; between entrepreneurship education and entrepreneurial skills; between entrepreneurship education and entrepreneurial intentions; between entrepreneurial mindset and skills; between entrepreneurial skills and intention; and between entrepreneurial mindset and intentions of undergraduate students. These interrelationships show that entrepreneurship education can be directly linked to entrepreneurial mindset and skills. Furthermore, entrepreneurial mindset and skills are antecedents of entrepreneurial intention as caused by entrepreneurship education.
- A strong, positive and significant relationship exists between institutional setting and content of entrepreneurship module; whereas the relationships between: content of entrepreneurship module and method of teaching; and institutional setting and method of teaching are not statistically significant.
- The impact of institutional setting on undergraduate students' entrepreneurial mindset and skills is significantly negative whereas the impact of content and teaching methods are positive but not statistically significant.
- Both entrepreneurial mindset and skills bear significant and positive impact on undergraduate students' intention towards entrepreneurial career. However, entrepreneurial skills account for more variation in entrepreneurial intention than mindset.
- Entrepreneurial skills and mindset of undergraduate are strongly, positively and significantly correlated. In other words, there is a positive interaction or reinforcement between entrepreneurial mindset and skills.

#### **5.4.2 Findings from Qualitative Analyses**

The results obtained through qualitative content analysis in section 5.3.6 are summarised below.

- As components constituting institutional setting, the study explored infrastructural facilities, network/linkages to support students'

entrepreneurial initiatives, student-initiative support, business incubator (centre for entrepreneurship studies), management support and funding for entrepreneurship research with the aim of determining how they have impacted the entrepreneurial mindset, skills and intentions of undergraduate students. Comments from students who have undergone the entrepreneurship module as well as the lecturers indicate that the institutional setting is very weak or even “very poor” to stimulate entrepreneurial mindset nor impact the expected entrepreneurial skills and intentions.

- As far as teaching methods in the higher education institution is concerned, only lecture delivery has been used in over the eight years of teaching the compulsory entrepreneurship module. Comments from students and lecturers overtly attest to this. Furthermore, the mode of lecture delivery and competence of communicating the lessons to the students have made less or perhaps no impression on students’ mind and intention towards entrepreneurship much less, impacting on their entrepreneurial skills.
- While it was discovered that the explicit content of the compulsory entrepreneurship module was sufficient to stimulate mindset and engender skills towards entrepreneurial intentions in undergraduate students, the study also found that a practical component that could really ignite entrepreneurial mindset and skills is totally lacking in the teaching of entrepreneurship module. Thus, content has borne very weak impact on students’ entrepreneurial mindset, skills and intentions.

#### **5.4.3 Useful Insights from Demographic Statistics**

The demographic statistics presented in section 5.3.1 also provide some useful insights that could be used to obtain further confirmation of quantitative and qualitative findings. The following findings are extracted from demographic statistics.

- Most undergraduate students (63.22% of the sampled 707) have had previous entrepreneurial training prior to enrolling for the compulsory entrepreneurship module.

- Even though the previous entrepreneurial training of undergraduate students is positively associated with their academic programmes; it is however not significant.
- A good proportion of undergraduate students (almost 55%) have been or are currently involved in one form of venture management or other.
- The involvement in venture management does not have significant association with the academic programmes of undergraduate students.
- Most undergraduate students (302 Out of 447 representing 67.56%) who have had previous entrepreneurial education/training have been involved in venture management.
- There contingency analysis shows that there is a positive and significant association between undergraduate students' previous entrepreneurship training and their involvement in venture management.

## **5.5 TRIANGULATION OF FINDINGS**

Triangulation has become a common technique in social research (Olsen, 2004; Yeasmin & Rahman, 2012). The process of triangulation entails combining methods or theories in a study to form a convergence on findings that are most reliable and valid. Particularly, the practice of triangulation in social research is aimed at obtaining confirmation of findings which helps to increase validity and credibility of results (Yeasmin & Rahman, 2012). This section therefore juxtaposes the findings from demographic statistics, quantitative and qualitative analyses to articulate convergence of findings from both qualitative and quantitative perspectives.

### **5.5.1 Entrepreneurship Education/Training Impacts Entrepreneurial Intention**

The first set of quantitative analyses done through structural equation modelling was to explore the nature of relationships amongst the study variables which are: entrepreneurship education and entrepreneurial intention, mindset and skills. The results indicate that significantly strong and positive relationships exist amongst all these variables. One implication is that an effective entrepreneurship education/training would positively impact on students' mindset, skills and intentions which would make entrepreneurial

action or behaviour more likely irrespective of one's academic training, orientation or background. The demographic statistics confirm this finding. The demographic statistics show that most undergraduate students (67.56%) who have previously had entrepreneurial training/education prior to enrolling for the compulsory entrepreneurship module have or are currently involved with venture management, their academic discipline notwithstanding.

### **5.5.2 Institutional Setting Supports the Content of Entrepreneurship Module**

Institutional setting, teaching methods and content of entrepreneurship module are the three components of entrepreneurship education that was examined in this study. The quantitative analysis through structural equation modelling explored how institutional setting is related to the content of entrepreneurship module. It was discovered that institutional setting is positively, strongly and significantly related to content. This implies that institutional setting positively and significantly reinforces content; while content in turn reinforces institutional setting. A weak or poor institutional setting will consequently undermine the impact of content or vice versa. The qualitative results support this finding. Both students and lecturers acknowledged the fact that the institutional setting is weak because support systems, facilities and entrepreneurship research funding are grossly lacking or even completely missing in their institution. They therefore rated the entrepreneurial climate in their university as being poor. Meanwhile some lecturers acknowledge that the current syllabus is sufficient except that the institutional setting has inhibited the possibility of teaching the practical components of the entrepreneurship module syllabus. In other words, the impact of the content of an entrepreneurship module on students' entrepreneurial mindset, skills and intentions depends largely on the context of the institution's resources and orientation.

### **5.5.3 Institutional Setting Fosters Teaching Methods**

The relationship between institutional setting and teaching methods was also examined through the structural equation modelling and it was also

discovered that there is positive relationship though statistically insignificant. The qualitative analysis however indicated that due to certain institutional constraints like non-resourceful centre of entrepreneurship, poor lecturer-student ratio, poor support from management, the teaching of entrepreneurship module in the university has been limited to ONLY lecture delivery at the undergraduate level since inception. Comments from the lecturers suggest that they would have loved to combine lecture delivery method with other pedagogical methods such as case studies, live projects, etc. just as much as the students had also desired as reflected in their expectations but limitations arising from institutional setting have not allowed it. This implies that the mix of teaching methods deployed to deliver the content of entrepreneurship module can be positively influenced by the richness of an institution's setting.

#### **5.5.4 Content of Entrepreneurship Module Determines Adopted Teaching Methods**

The findings from the quantitative analysis show that the relationship between content (syllabus) of entrepreneurship module that is being taught and teaching methods are positive, though statistically weak. In other words, the approach and methods adopted for teaching entrepreneurship in the institution was not strongly based on the content requirement of the module. This implies that consideration of what methods and approach to adopt for teaching an entrepreneurship module must be based on the content of the module. Other factors like institution's human, physical and financial resources should be harnessed to sufficiently support the cost implications of such pedagogical methods. The qualitative results corroborate this finding. Four out of the five lecturers stated that the current syllabus does not need any expansion for the entrepreneurship module to bear greater impact on students' mindset, skills and intention towards entrepreneurship. They however argued that institutional setting has limited their ability to implement the practical components of the module thus, they have only used lecture delivery mode over the 8 years' period of teaching the module.

### **5.5.5 Entrepreneurial Mindset and Skills as Antecedents of Entrepreneurial Intention**

To ascertain that entrepreneurial mindsets and skills could act as moderating variables between entrepreneurship education and entrepreneurial intentions, the quantitative analyses further explored the nature of relationship between: entrepreneurial skills and intention; and entrepreneurial mindset and intentions. The quantitative results indicate that the relationships between entrepreneurial mindset and intention; as well as entrepreneurial skills and intentions are both significant and positive implying that the level of entrepreneurial skills and intensity of entrepreneurial mindset both combine to determine how strong a student's entrepreneurial intention will be. Generally, students who took part in the qualitative study show they interest in entrepreneurship has not been fired up and thus, showed less commitment towards entrepreneurial career.

### **5.5.6 Reinforcing Interaction Between Entrepreneurial Mindset and Entrepreneurial Skills**

Some of the students who participated in the discussions stated how they have sought to develop skills in certain vocations as result of their entrepreneurial mindedness, which was influenced partly by their previous entrepreneurial training and the compulsory entrepreneurship module they had undergone. This qualitative finding supports the quantitative finding which indicate that both entrepreneurial mindset and skills are strongly, positively and significantly correlated. That means if an entrepreneurship training or module can be very effective at stimulating a strong mindset towards entrepreneurial career in students, then students, though depending on a given context, could go the extra mile to develop the other requisite skills for actualising their entrepreneurial dreams.

## **5.6 SUMMARY**

This chapter presented the demographic statistics as well as the results of both quantitative analysis (done through structural equation modelling via AMOS) and qualitative analysis (done through qualitative content analysis via



ATLAS.ti). The analyses revolved around four main variables of this study, namely entrepreneurship education, entrepreneurial mindset, skills and intentions. The demographic statistics and the quantitative and qualitative findings were triangulated to articulate salient findings for this study. These salient findings are summarised and discussed in chapter six.



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## CHAPTER SIX: DISCUSSION OF FINDINGS

### 6.1 INTRODUCTION

This chapter highlights the outcome of the hypotheses testing in relation to the objectives of the study to point out the key findings of this research. The key findings are therefore discussed within the context of existing literature on entrepreneurship education and entrepreneurial intention, mindset and skills.

### 6.2 OUTCOME OF HYPOTHESES TESTING VIS-À-VIS RESEARCH OBJECTIVES

As stated in section 1.4, the researcher set out to achieve the following specific objectives:

- To determine the nature of relationship between the entrepreneurship education in Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria.
- To ascertain the inter-relationships among the components of entrepreneurship education.
- To determine the extent to which components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students.
- To determine the extent of impact of entrepreneurial mindset and skills on the entrepreneurial intentions of undergraduate students
- To determine the interaction between the entrepreneurial mindset and entrepreneurial skills of undergraduate students.

#### 6.2.1 Outcome of Hypotheses Testing

To achieve these objectives, five major hypotheses were stated (in section 1.6. and were tested in chapter five. The outcome of the hypotheses testing is highlighted in **Table 6.1**. The results show that only hypotheses one, four and five are fully supported (all sub hypotheses were supported) while hypotheses two and three are partially supported.

Table 6.1: Outcome of Hypotheses Testing

HYPOTHESIS	Result
<i>Hypothesis 1: Entrepreneurship education in Nigerian Higher Education Institutions and the entrepreneurial mindset, skills and intentions of undergraduates in Nigeria are related</i>	<b>Fully Supported</b>
<b>Sub-hypotheses</b>	
<b>H<sub>1a</sub>:</b> There is a relationship between entrepreneurship education (EE) and entrepreneurial mindset (EM) of undergraduate students in Nigeria.	Supported
<b>H<sub>1b</sub>:</b> There is a relationship between entrepreneurship education (EE) and entrepreneurial skills (ES) of undergraduate students in Nigeria.	Supported
<b>H<sub>1c</sub>:</b> There is a relationship between entrepreneurship education (EE) and entrepreneurial intention (EI) of undergraduate students in Nigeria.	Supported
<b>H<sub>1d</sub>:</b> There is a relationship between entrepreneurial mindset (EM) and entrepreneurial skills (ES) of undergraduate students in Nigeria	Supported
<b>H<sub>1e</sub>:</b> There is a relationship between entrepreneurial mindset (EM) and entrepreneurial intention (EI) of undergraduate students in Nigeria	Supported
<b>H<sub>1f</sub>:</b> There is a relationship between entrepreneurial skills (ES) and entrepreneurial intention (EI) of undergraduate students in Nigeria	Supported
<i>Hypothesis 2: The components of entrepreneurship education are inter-related</i>	<b>Partly Supported</b>
<b>Sub-hypotheses</b>	
<b>H<sub>2a</sub>:</b> Institutional setting is related to content of entrepreneurship module	Supported
<b>H<sub>2b</sub>:</b> Content of entrepreneurship module is related to method of teaching the entrepreneurship module	Not Supported
<b>H<sub>2c</sub>:</b> Method of teaching the entrepreneurship module is related to institutional setting	Not Supported
<i>Hypothesis 3: The components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students.</i>	<b>Partly Supported</b>
<b>Sub-hypotheses</b>	
<b>H<sub>3a</sub>:</b> Institutional setting impacts on the entrepreneurial mindset of undergraduate students	Supported
<b>H<sub>3b</sub>:</b> Content of entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students	Not Supported
<b>H<sub>3c</sub>:</b> Method of teaching entrepreneurship module impacts on the entrepreneurial mindset of undergraduate students	Not Supported

<b>HYPOTHESIS</b>	<b>Result</b>
<b>H<sub>3d</sub></b> : Institutional setting impacts on the entrepreneurial skills of undergraduate students	Supported
<b>H<sub>3e</sub></b> : Content of entrepreneurship module impacts on the entrepreneurial skills of undergraduate students	Not Supported
<b>H<sub>3f</sub></b> : Method of teaching entrepreneurship module impacts on the entrepreneurial skills of undergraduate students	Not Supported
<i>Hypothesis 4: Entrepreneurial mindset and skills impact on the entrepreneurial intentions of undergraduate students.</i>	<b>Fully Supported</b>
<b>Sub-hypotheses</b>	
<b>H<sub>4a</sub></b> : Entrepreneurial mindset of undergraduate students impacts on their entrepreneurial intention	Supported
<b>H<sub>4b</sub></b> : Entrepreneurial skills of undergraduate student's impact on their entrepreneurial intention	Supported
<i>Hypothesis 5: Entrepreneurial mindset and entrepreneurial skills of undergraduate students are related.</i>	<b>Fully Supported</b>

Source: Field work (2016)

## 6.2.2 Discussion of Hypotheses Testing vis-à-vis Research Objectives

It is important to discuss the outcome of hypotheses testing enumerated in **Table 6.1** above in the light of research objectives set up for this study to highlight the salient findings for further discussion in the context of existing literature on the entrepreneurship education and entrepreneurial mindset, skills and intention.

### 6.2.2.1 The nature of relationship between the entrepreneurship education in Higher Education Institutions and the entrepreneurial mindset, skills and intentions

The results of the analyses show that the relationships between entrepreneurship education and entrepreneurship mindset, skills and intention are significantly positive. The results also support the fact that significantly positive relationships exist among entrepreneurial mindset, skills and intention. Given the hypothesis is fully supported, this study has been able to prove that the nature of relationship between entrepreneurship education and

entrepreneurial mindset, skills and intention is generally positive and statistically significant.

#### **6.2.2.2 The inter-relationships among the components of entrepreneurship education**

The second objective of the study was to explore the inter-relationship among components of entrepreneurship education. Three relationships were explored and were found to be positive. However, only one of the inter-relationships (i.e. Institutional setting and content of entrepreneurship module) was found to be significant. The partial support of hypothesis two imply that not all inter-relationships among entrepreneurship education components are important to shaping entrepreneurial mindset, skills and intention of students.

#### **6.2.2.3 Impact of components of entrepreneurship education on entrepreneurial mindset, skills and intentions**

As an objective, this study sought to determine the extent to which components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students. The results show that only institutional setting significantly impacts on entrepreneurial mindset and skills; which in turn impact on entrepreneurial intention. Even though the other two components of entrepreneurship education examined (teaching methods and content) indicate positive relationships with entrepreneurial mindset and skills, these relationships are however, not significant.

#### **6.2.2.4 The impact of entrepreneurial mindset and skills on entrepreneurial intentions**

The extent to which entrepreneurial mindset and skills impact on the entrepreneurial intentions of undergraduate students was another objective of this study. The fact that hypothesis for this objective was fully supported proves that entrepreneurial mindset and skills significant impact on entrepreneurial intention of students.

### **6.2.2.5 Interaction between entrepreneurial mindset and entrepreneurial skills**

The results, which fully support hypothesis five also proves that entrepreneurial mindset and skills interact in a positive direction. Which means, positive mindset engenders entrepreneurial skills and vice versa.

## **6.3 KEY FINDINGS**

From the foregoing, the following key findings emanated from this research:

- Entrepreneurship education strongly and positively relates to entrepreneurial intention and this is statistically significant.
- Institutional setting can be either strengthen or undermine the impact of the content of an entrepreneurship module
- Institutional setting can determine what teaching methods adopted for an entrepreneurship module
- Content of entrepreneurship module alone does not significantly determine what teaching methods are adopted for an entrepreneurship module
- Entrepreneurial mindsets and skills are significant antecedents of entrepreneurial intention
- There is a reinforcing interaction between entrepreneurial mindset and entrepreneurial skills

## **6.4 DISCUSSION OF FINDINGS**

The interpretation and triangulation of results in chapter five produced the key findings that have been summarised in section 6.3 of this chapter. The main objective of this study was to develop a structured model to measure the effects of entrepreneurship education on undergraduate students in Nigeria in terms of entrepreneurial mindset, skills and intentions. The structured model was adapted from Fayolle *et al.* (2006a)'s framework, which they recommended for measuring the impact of entrepreneurship education programmes. The essence of this measurement is to provide theoretical and empirical basis for rethinking the design and delivery entrepreneurship education (Fayolle & Liñán, 2014; Fayolle & Toutain, 2013) within a given context. This new entrepreneurship education should assure the generation of

truly entrepreneurial graduates in terms of mindset and skills which orientates their intention towards entrepreneurial career/actions. The salient findings of this study are therefore discussed under the following themes.

#### **6.4.1 Relationship Between Entrepreneurship Education and Entrepreneurial Intention**

Even though there are ample empirical evidences that positive and significant relationship exists between entrepreneurship education and entrepreneurial intention (Malebana & Swanepoel, 2014), Bae *et al.* (2014) however maintained that a critical review of researches that have explored the relationship between entrepreneurship education and entrepreneurial intention exudes some disagreements between theoretical postulation and empirical findings. Contrary to a small but positive relationship between entrepreneurship education and entrepreneurial intentions which Bae *et al.* (2014) reported from a meta-analytical study of 73 entrepreneurship education-entrepreneurial intentions studies, this study reports a significantly strong and positive relationship between entrepreneurship education and entrepreneurial intention (correlation coefficient = 0.697,  $p < 0.001$ ).

Furthermore, Bae *et al.* (2014)'s finding shows that the duration of entrepreneurship education programme, whether as a workshop or semester module, bears almost equally little impact on intention. In other words, even a semester-long entrepreneurship education programme will bear weak impact on entrepreneurial intention of students. This position negate Fayolle *et al.* (2006a)'s theoretical assertion that timeframe of an entrepreneurship education programme matters in terms of the impact of entrepreneurship education on entrepreneurial intention. Meanwhile, this study also contradicts Bae *et al.* (2014) in that it found out that the semester-long entrepreneurship education programme produced very strong and significant impact on students' entrepreneurial intention. To explain this divergence, an insight is drawn from Yousaf *et al.* (2015)'s point of view that entrepreneurial intention is influenced by a wide range of factors other than just entrepreneurship education; and that this influence can be strengthened over time by such

factors e.g. persistent unemployment and general economic situation in a country. This explanation presents a different argument that has been affirmed by Tolentino *et al.* (2014) as cited in Trivedi (2016). They explained that formation of entrepreneurial intention should be understood within psychological and situational contexts.

In general, the finding of the study on the entrepreneurship education-entrepreneurial intention relationship corroborates several other studies like Babatunde and Durowaiye (2014); Fayolle *et al.* (2006a); Patricia and Silangen (2016); Malebana and Swanepoel (2014); and Hattab (2014); Zhang, Duysters, and Clodt (2014). For instance, Fayolle *et al.* (2006a), based on their entrepreneurship education programme assessment methodology, reported a strong and measurable impact of entrepreneurship education on students' entrepreneurial intention although with the caution that variations in results could occur due to context and time difference (i.e. distance between the time entrepreneurship module was taken and time impact is being measured). Their study was done in the context of a one-day entrepreneurship education programme while the time difference was very short (just after the entrepreneurship course). This study is somewhat different in that the entrepreneurship programme in context had lasted a semester whereas measurement of impact, based on when respondents underwent the module, was between six to 48 months. Yet, both studies reported similar findings irrespective of difference in timeframe (duration of entrepreneurship programme) and time difference (time impact was measured).

Similarly, Babatunde and Durowaiye (2014) reported a strong positive relationship between entrepreneurship education and students' entrepreneurial intention although both studies differs slightly in the conceptualisation of entrepreneurial intention. Whereas Babatunde and Durowaiye (2014) conceptualised intentions as "self-employment", this study conceptualised entrepreneurial intention as "everything the student intends to do that will lead to creating a new economic unit". Though a number of studies have used the intention to start new business as a measure of entrepreneurial intentions, Kolvereid *et al.* (2006) however posited that "self-employment" is



better index for measuring entrepreneurial intentions amongst students. Another slight difference between the studies is in the area of methodology. This study used a much larger sample size expected to yield more reliable results; as well as used structural equation modelling which the Babatunde and Durowaiye (2014)'s study did not use.

As indicated by this study, where a significantly strong and positive relationship exists between entrepreneurship education and entrepreneurial intention, it is expected that entrepreneurship education being the causal variable will account for large variation in intention. The empirical findings from a similar study conducted at a Malaysian university by Hamzah, Yahya, Sarip and Adnan (2016) strongly validates this truism. In the light of the foregoing, entrepreneurship education must be strengthened within the context of macro socio-economic variables prevalent in a given context in order to maximally impact students' entrepreneurial intention which would effectively translate into entrepreneurial action/behaviours for national, firm and individual economic benefits.

#### **6.4.2 Institutional setting, teaching methods and content of entrepreneurship programme**

As suggested by Fayolle and Liñán (2014), this study explored the causal links between entrepreneurship education variables and the antecedents of entrepreneurial intentions (entrepreneurial skills and mindsets in this case). It was found out that the entrepreneurial skills and mindset of students can be significantly influenced by institutional setting either positively or negatively depending on its composition, and perhaps how it is perceived by students. A number of researchers have attempted to explore the impact of institutional setting, teaching methods and content on entrepreneurial intentions and/or its antecedents. For example, Hamzah, Yahya, Sarip and Adnan (2016), amongst other variables explored the influence of module content and teaching approaches on entrepreneurial inclination and attitude of students. They found out that module content and teaching approaches strongly and significantly influence students' entrepreneurial inclination contrary to the

positive but weak impact reported in this study. This divergence, as hinted by Ramoni (2015), may be as a result of variation in institutional setting coupled with the possibility that institutional setting strongly impacts content and teaching methods in an institution, Given that conditions of institutional setting are contrary to entrepreneurial spirit as revealed by this study, then the impact of content and teaching methods on mindset and skills could be undermined. This is supported by the significantly negative impact of institutional setting on entrepreneurial mindset and skills as reported in this study. Shirokova *et al.* (2015, p. 394)'s finding which shows that a negative relationship between entrepreneurship education and entrepreneurial intention of students could exist further affirms this position.

One salient finding from the qualitative aspect of this study is that the presentation of entrepreneurship (i.e. transmission of content through the selected teaching methods) was not challenging enough as to ignite the passion and interest of students towards entrepreneurial intentions. This finding is similar to Ifedili and Ofoegbu (2011)'s conclusion . Both studies also converge on some points found to be responsible for this weak impact. These include: poor lecturer-student ratio (1:800) as reflected by large classes; inadequate infrastructural facilities, absence of network/linkages to support students' entrepreneurial initiatives, student-initiative support, dysfunctional business incubator (centre for entrepreneurship studies), poor management support and low or no funding for entrepreneurship research. In fact, both Ifedili and Ofoegbu (2011) and Akhemonkhan, Raimi, and Sofoluwe (2013) agreed that due to inadequate resources allocated to entrepreneurship education, teaching methods not so appropriate to teaching the content of entrepreneurship module has been used. Based on this finding, it will be necessary to strategically boost the funding of entrepreneurship education in Nigeria as Ogah and Emesini (2013) and Olorundare and Kayode (2014) had suggested.

Furthermore, this study corroborates Trivedi (2016)'s finding that positive university environment and support impact students' motivation and skills which would in turn increase their entrepreneurial intention. In other words, the

setting of institutions in which entrepreneurship education is being delivered plays significant role in shaping entrepreneurial intentions of students. Similar position was earlier indicated in separate studies by Autio *et al.* (1997) and Schwarz, Almer-Jarz and Wdowiak (2006). While Autio *et al.* (1997) affirmed that students' entrepreneurial intentions are strengthened by university's environment and support, Schwarz *et al.* (2006) claimed that perception of entrepreneurship-supportive university's environment fosters stronger entrepreneurial intentions amongst students.

#### **6.4.3 Entrepreneurial Mindset and Skills as Antecedents of Entrepreneurial Intention**

The research model that underpinned this study involved the use of moderating variables between entrepreneurship education and entrepreneurial intention similar to the structure of Lakovleva *et al.* (2011)'s model although there are noticeable differences in what variables being studied. In both cases, entrepreneurial intention is being studied in relation to certain antecedents. In this study, entrepreneurial mindset and skills are taken to be antecedents of entrepreneurial intention as suggested by Fayolle *et al.* (2006a). It was discovered that these antecedents (entrepreneurial mindset and skills) both bear strong, positive and significant impact on entrepreneurial intention. This is consistent with the finding of Lakovleva *et al.* (2011) in two perspectives. One, their findings showed that antecedents of entrepreneurial intentions positively and significantly impact on students' entrepreneurial intentions across developing and developed countries. Two, their study also showed that the impact of these antecedents is higher in developing countries than in developed countries. The second perspective is further confirmed by the fact that this current study was carried out in a developing country. More recent studies like Shirokova *et al.* (2015) also confirmed the findings of this study.

Moreover, this study substantiates Malebana and Swanepoel (2014)'s claim that entrepreneurship education shapes the mindset of student which in turn motivates them towards creating new start-ups. Critical to reinforcing this

mindset however, is the range of entrepreneurial skills the student has accumulated either from entrepreneurship education or other sources. While this study's findings support this position, Yousaf *et al.* (2015) are of the contrary opinion. Their findings suggest that entrepreneurial skills of students do not significantly predict their entrepreneurial intentions. They further explained this position by arguing that the process of accumulating entrepreneurial skills spans a period longer than the duration of entrepreneurship education itself; and most often, these skills manifest strongly only when faced with real life challenges. Therefore, entrepreneurial skills do not really matter to the formation of entrepreneurial intention.

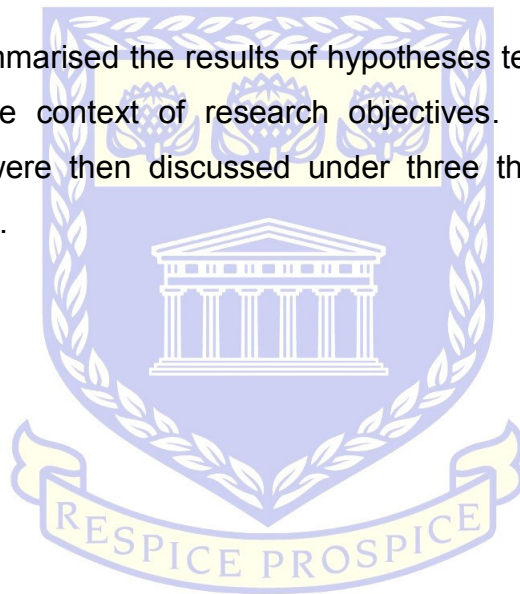
The argument that entrepreneurial skills is inconsequential to the formation of entrepreneurial intention is however refuted by this study as its findings show that entrepreneurial skills even account for more variation in entrepreneurial intention than entrepreneurial mindset. This position is further affirmed by Tolentino, Sedoglavich, Lu, Garcia and Restubog (2014) when they asserted that career adaptability (reflection of one's abilities and interests) is instrumental in the formation of one's entrepreneurial intention. This divergence can be explained by variations in economic, political and social context. In this sense, it is important to take cognisance of the fact that Yousaf *et al.* (2015)'s study significantly differs from this study in terms of economic, political and social setting in which they were conducted. It should not be misconstrued that this study undermines the import of entrepreneurial mindset compared to entrepreneurial skills. The fact that the results show that entrepreneurial mindset strongly impacts on students' entrepreneurial intention sufficiently justifies the position of authors like Ruskovaara, Pihkala, Seikkula-Leino, and Järvinen (2015) that entrepreneurship education should be revamped in terms of content and pedagogical approaches in order to stimulate entrepreneurial mindset, possibly in everyone.

One other fact that should be noted from this study is that students exhibited very strong mindset towards entrepreneurship in terms of finding entrepreneurial opportunities. This finding tallies with Ács, Szerb, Autio and Lloyd (2016)'s recently released report on global entrepreneurship index. In

their work, Ács *et al.*, (2016) measured the entrepreneurial ecosystem of 137 countries across the globe on the framework of three major indices namely: attitude, abilities and aspiration. These indices were further broken into 14 pillars (which include opportunity perception) while the pillars were measured by 18 variables. Their analysis showed that sub-Saharan Africa's strongest area is opportunity perception and that for Nigeria as country, opportunity perception is the second area of strength; and opportunity perception is a key index for measuring entrepreneurial mindset.

## 6.5 SUMMARY

This chapter summarised the results of hypotheses testing and discussed the results within the context of research objectives. These yielded five key findings which were then discussed under three themes in the context of existing literature.



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## **CHAPTER SEVEN: SUMMARY, CONCLUSION AND RECOMMENDATION**

### **7.1 INTRODUCTION**

This is the concluding chapter of this thesis. In this chapter, the researcher summarises the content of chapters one to six while drawing attention to the major findings of this study which were already discussed in chapter six. On this basis of these findings, the chapter draws a conclusion with specific reference to objectives achieved as well as the revised study model. The chapter further highlights specific contributions the thesis has made to the existing body of knowledge in the field of entrepreneurship education, and entrepreneurship in general. Based on the limitations identified in the study, this chapter also makes some recommendations for further studies. The thesis also made call to national and institutional policy makers as well as students, lecturers and administrators of entrepreneurship module for some specific actions.

### **7.2 SUMMARY OF CHAPTERS ONE – SIX**

The first chapter of this thesis presented a background to the research problem which culminated in a primary research question: What is the optimal way to measure the impact of as the entrepreneurship education in Nigerian universities on the entrepreneurial mindset, skills and intentions of undergraduates? Following on from this question, the researcher reviewed critical literature which provided the theoretical framework for modelling the effect of entrepreneurship education on entrepreneurial mindset, skills and intentions. The ensuing model allowed for hypotheses to be developed and further specific research questions to be raised to guide the overall thrust of the study.

Chapter two of this thesis presented the socio-economic context from global perspective narrowed to a national perspective which necessitated the compulsory entrepreneurship education in Nigerian higher education

institutions while focusing on the current model of entrepreneurship education at these institutions.

While chapter three reviewed in-depth, relevant and recent literature on the variables of the study which include: entrepreneurship education, entrepreneurial mindset, skills and intentions with the aim of presenting a gap in literature; chapter four presented the research design and methodology adopted for the study. The sources and tools for data collection; and the tools and software for analyses were decided on in this chapter. Instruments for this study were also validated and tested for reliability.

In chapter five, all the results of analyses were presented and these include: demographic statistics, qualitative and quantitative results. The results were interpreted and presented in a triangulated manner to vividly highlight the major findings of the study which are subsequently discussed in chapter six. Meanwhile, chapter highlights the outcome of hypotheses testing vis-à-vis research objectives to point out the key findings of the study which are discussed under three themes. In the next section, conclusion of this research will be drawn.

### **7.3 CONCLUSION**

The outcome of hypotheses testing being discussed in the light of the research objectives and existing literature in chapter six gives rise to a modified model shown in Figure 7.1 below. The revised model retains only the variables and links that were found significant in impact as supported by the results of hypotheses testing. From the model, it is seen that it is only institutional setting as a sub-variable of the entrepreneurship education that has significant relationship with teaching methods and at the same time significantly impacts on entrepreneurial mindset and skills of undergraduates. Meanwhile, entrepreneurial mindset and skills strongly interact; and they both significantly impact on entrepreneurial intention of undergraduate students. The model also captures competence of entrepreneurship lecturers as a variable that significantly impacts on entrepreneurial skills, mindset and

intention of students as shown by the qualitative results. Although this variable was not originally conceived when conceptualising the research framework, the competence of entrepreneurship lecturers would need more quantitative empirical evidence to corroborate this unexpected finding.

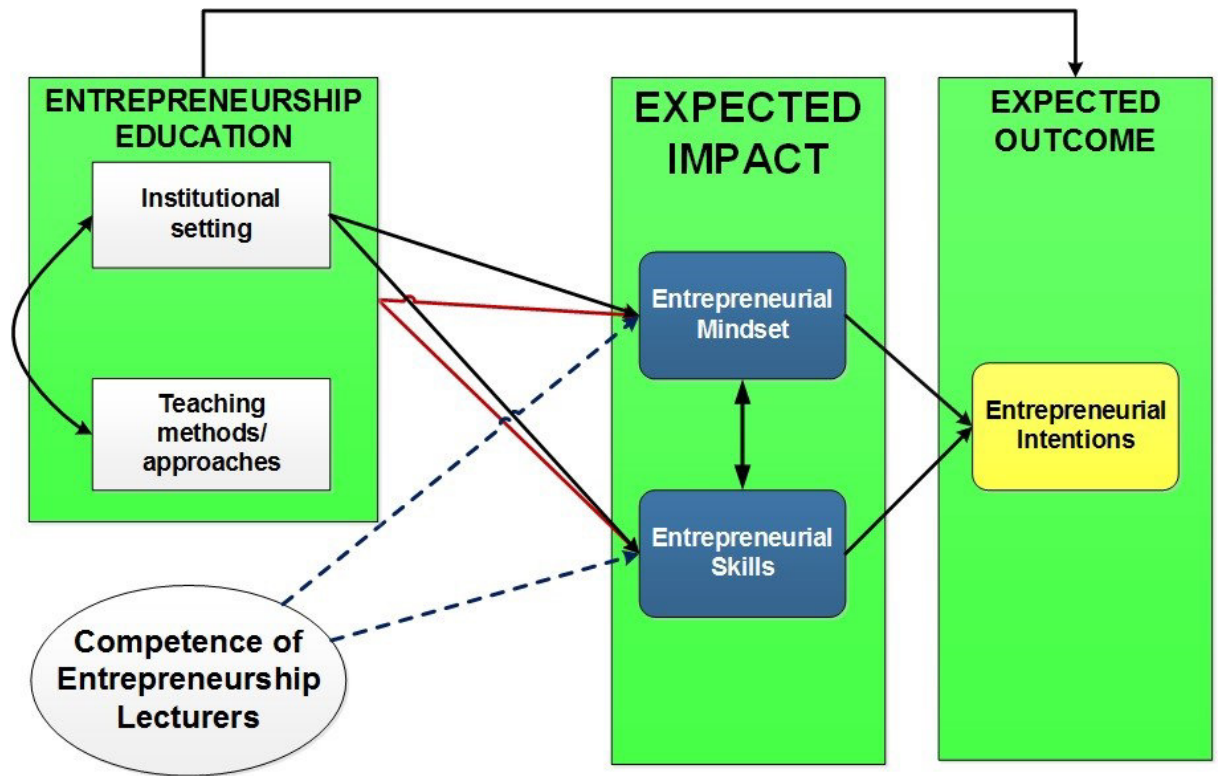


Figure 7.1: Revised Model showing only significant variables and links

From the revised model, the unbroken lines show significant links that were originally conceptualised whereas the broken blue links show significant links but were not originally conceptualised in the initial model but the results of the qualitative analyses validate the links, though more empirical evidence will be needed in the future. On this basis, the following conclusions are drawn from the revised model and subsequently discussed:

- Entrepreneurship education impacts on entrepreneurial mindset, skills and intention;
- Institutional setting is critical in the design of entrepreneurship education; and
- Competence of entrepreneurship lecturers is critical to the effectiveness of Entrepreneurship Education



### **7.3.1 Entrepreneurship education impacts on entrepreneurial mindset, skills and intention**

The analyses of dataset collected from the undergraduates in a Nigerian higher education institution showed that entrepreneurship education potentially impacts on the entrepreneurial mindset and skills, which in turn impact on the entrepreneurial intentions of students. While other factors (e.g. the prevalent socio-economic realities in the country) which were not considered in this study may presumably lay a significant role, this study has sufficiently proven that entrepreneurship education significantly impacts on entrepreneurship education. This further validates the decision by the Federal Government of Nigeria to introduce entrepreneurship education as a compulsory module as being a right step in the right direction. However, there is more to be achieved than has been achieved. A possible trigger for greater achievement of the entrepreneurship education model in Nigerian HEIs is institutional setting and this is discussed in the next point.

### **7.3.2 Institutional setting is critical in the design of entrepreneurship education**

To tackle the growing graduate unemployment in Nigeria, the federal government through the agencies of educational parastatals (e.g. National Universities Commission) and ministry of education constituted a national team to design the current entrepreneurship education model for Nigerian HEIs. In this design, more attention was given to curriculum design than effective implementation strategy especially when one considers the insufficient funding and inadequate human and infrastructural supply to the Nigerian HEIs prior the introduction of the policy. Policy makers did not thoroughly consider the component of institutional setting as the current model of EE was designed to be implemented within the existing insufficient funding and infrastructure context with a plan for only a little corresponding expansion. The result was a further inadequacy of teaching facilities to sufficiently support the delivery of entrepreneurship module syllabus and thus limiting teaching methods to only lecture-delivery. This is far too short of the proposed entrepreneurship education for the next wave of entrepreneurs who will bring

about the much innovation for the greater and sustainable economic growth and development for any country.

According to this study, institutional setting encapsulates: facilities/funding dedicated for entrepreneurship teaching and research, e.g. incubators for start-ups; institutional networks/linkages that promote students' entrepreneurial initiatives; as well as institutional resources that support entrepreneurial initiatives of students. This study has shown that institutional setting is a critical component that determines how strongly entrepreneurship education will impact on the antecedents of entrepreneurial intentions, which are, as per this study, entrepreneurial mindset and skills. Meanwhile, instilling entrepreneurial mindset in students is one of the primary objectives of the Nigerian government for making entrepreneurship education compulsory for undergraduates in Nigerian HEIs. If the current model of entrepreneurship education would bear more significant impact and outcome, as anticipated at policy-making level, then the various institutional settings of host HEIs must be thoroughly restructured. As shown in this study, institutional setting strongly determines to a large extent the teaching methods adopted for delivery of an entrepreneurship education syllabus. In other words, a well-structured entrepreneurship education syllabus will not automatically translate to effective entrepreneurship education if the environment of delivery, which is the institutional setting is not positive and supportive. Thus, at the level of policy making, institutional setting must be seriously considered as each topic is developed during syllabus design and overall entrepreneurship education model formulation.

### **7.3.3 Competence of entrepreneurship lecturers is Critical to the Effectiveness of Entrepreneurship Education**

In addition to institutional setting, this study also shows that the competence of entrepreneurship lecturers is critical to the effectiveness of entrepreneurship education. The competence of entrepreneurship lecturers, was conceived to include: their educational qualifications/research; entrepreneurial experience (involvement in entrepreneurial ventures) and exposure to entrepreneurial

conferences/workshops/training. From the qualitative analyses, it can be concluded that the level of competence of lecturers determine how effectively the lessons are delivered to students besides, the limiting or supportive influence of institutional setting.

### **7.3.4 Achievement of Research Objectives**

From the foregoing,

- the nature of relationship between the entrepreneurship education and the entrepreneurial mindset, skills and intentions have been determined;
- the nature of inter-relationships among the components of entrepreneurship education have been ascertained;
- the extent to which components of entrepreneurship education impact on the entrepreneurial mindset, skills and intentions of undergraduate students has been determined;
- the extent of impact of entrepreneurial mindset and skills on the entrepreneurial intentions of undergraduate students has been determined; and
- the interaction between the entrepreneurial mindset and entrepreneurial skills of undergraduate students has also be determined.

These imply that the stated objectives of the study have been achieved.

## **7.4 CONTRIBUTION OF THE STUDY**

Considering the findings of this study stated and discussed in the light of previous studies, it is pertinent to state that this research has made the following contribution to the fields of entrepreneurship education and entrepreneurial intention. These contribution is discussed below.

### **7.4.1 Alternative model for measuring the effect entrepreneurship education**

This study narrows the search for methodical framework for measuring the impact of entrepreneurship education programmes. The model tested in this study can be applied in any given regional, national or institutional setting with the aim of measuring the impact and outcome of entrepreneurship education. In addition, the model provides the approach of measuring the impact and

outcome of entrepreneurship education programmes within the context of institutional setting. This suggests the possibility of differing levels of impact and outcome of similar entrepreneurship programmes due to unsystematic institutional differences such as attitude of management.

#### **7.4.2 Causal links between entrepreneurship education and antecedents of intention**

Amongst other researchers, Fayolle and Liñán (2014) unequivocally claimed that there subsists little knowledge (with empirical evidence) on the potential causal link among some entrepreneurship educational components (i.e. course contents, pedagogical methods, available institutional resources, etc.) and the impact of entrepreneurship education programs on the antecedents of intention and/or behaviour (e.g. attitudes, values, skills, mindset, etc.). This claim indicated a research space which comprehensive studies such as this have not been carried out. Having explored the interaction among entrepreneurship educational components as well as their causal links with the antecedents of entrepreneurial intentions (i.e. entrepreneurial mindset and skills), the findings of this study have enriched the knowledge on the causal links between some entrepreneurship education variables and their impact on antecedents of entrepreneurial intention. This study aligns with the theoretical postulation of Fayolle and Liñán (2014) that there are causal links between the components of entrepreneurship education and entrepreneurial skills and mindset being the antecedents of entrepreneurial intention.

#### **7.4.3 Entrepreneurial skills are directly related to entrepreneurial intention**

A number of divergences about entrepreneurial skills exist in literature. For instance, Fini *et al.* (2009, p.14) posited that skill has indirect impact on intentions. Yousaf *et al.* (2015) based on their findings, however, opined that entrepreneurial skills of students do not significantly predict their entrepreneurial intentions. These two claims contradict Fayolle and Liñán (2014)'s position that skills can be directly related to entrepreneurial intentions. To narrow the spectrum of argument in this specific strand, empirical evidences are necessary to harmonise theoretical postulations in

this domain of entrepreneurship intention. This study has empirically shown that entrepreneurial skills are directly related to entrepreneurial intentions and they are significant in predicting students' entrepreneurial intentions. But it should be noted that contextual variations could account for divergent opinions in this regard this informing the basis for practical applicability of ensuing theoretical formation in this domain of entrepreneurship.

#### **7.4.4 Reciprocal relationship between entrepreneurial skills and mindset**

As part of the objectives of this study, there was the need to probe some reciprocal relationships in certain education contexts. Specifically, this study examined the reinforcing relationship between entrepreneurship mindset and skills and findings show that the strength of interaction between entrepreneurial mindset and skills is significantly positive and strong. Thus, this study has demonstrated that a reciprocal relationship could exist among the antecedents of entrepreneurial intention. This implication is this contribution is that future entrepreneurship education must target a set of highly correlated variables that interface with entrepreneurial intentions and sufficiently impact them to maximise the impact of entrepreneurship education on entrepreneurial intention.

#### **7.4.5 Endogenous factors can also impact on entrepreneurial intention**

In this study, external factors that also help shape entrepreneurial intention are not explored for the simple reason that most previous studies have done so yielding almost consistent results. In this study, however, entrepreneurial mindset and skills are considered as endogenous forces that could help shape the entrepreneurial intentions of students. Based on the foregoing, this study has proved that endogenous factors too, could play significant role in shaping the entrepreneurial intention of students.

### **7.5 LIMITATION OF THE STUDY**

The researcher however identified some limitations although did not impact on the validity of the results and reliability of findings, but should be pointed out

for applicability, generalisation and replication. These limitations include are discussed below.

### **7.5.1 Data Integrity**

Results of this research are obtained from the data collected for this study. The data are derived from the responses of the study participants (i.e. survey respondents, focus group participants and interviewees). While the targeted participants were considered the most appropriate audience for the study, the researcher could not however, absolutely guarantee that the respondents were in the best frame of mind as at the time they gave their responses to reflect the reality of the study's constructs.

### **7.5.2 Possible significant variations in institutional setting**

The study was carried out at a higher education institution (HEI) in Nigeria which has implemented the compulsory undergraduate entrepreneurship education policy of the federal government like other HEIs in the country. Based on adapted syllabus for the entrepreneurship module, model of entrepreneurship education, system of institutional funding and establishment of a centre of entrepreneurship, the higher institution where the study was carried out quite represents other HEIs in the country. During analysis of qualitative data, it was discovered that institutional setting within the frame of definition adopted in this study may differ significantly because of management support which may in turn impact on the institutional setting indices (e.g. institutional culture and resources deployed for entrepreneurship education) investigated in this study. This variation may have affected some of the results that underlie the findings of this study much significantly.

### **7.5.3 Inherent shortcomings of cross sectional studies**

As with other cross-sectional studies, this study presents a spot measurement of the impact of entrepreneurship education on intention via the moderating variables of skills and mindset. One, the study did not provide the situation immediately after students took the compulsory entrepreneurship module. Two, the sampled respondents did not all take the module at the same time

and so there could have been a smoothing effect in the aggregated data. Three, the study did not follow through on transition of entrepreneurial intention to action. Longitudinal and comparative study plan possibly address these limitations.

## **7.6 RECOMMENDATION**

The findings of this study suggest some theoretical, practical and policy implications which are expressed in form of recommendations in this section under the following sub titles.

### **7.6.1 National and Institutional Policy Makers**

A critical finding of this study is the negative and yet significant influence of institutional setting on students' entrepreneurial mindset and skills. It was also discovered that institutional setting plays significant role in supporting the delivery of the content of an entrepreneurship module as well as determining to a small extent, what teaching methods are adopted for teaching an entrepreneurship module irrespective of what the pedagogy or the content demands. Thus, a dysfunctional institutional setting becomes a major focus for policy makers on entrepreneurship education either at regional, national or institutional level. Policy making on entrepreneurship therefore must strongly focus on repositioning dysfunctional institutional setting from where the entrepreneurship education programme will be discharged. On the strength of this study, dysfunctional institutional setting will significantly undermine the impact of entrepreneurship education.

In corroboration with Akpan *et al.* (2012); Olorundare and Kayode (2014); and Ogah and Emesini (2013), this study highlights a number issues that must be addressed by policy makers in repositioning dysfunctional institutional setting which would help optimise the impact of entrepreneurship education on students' entrepreneurial intentions. These include: support for students' entrepreneurial initiatives (i.e. grants/soft loans); strategic funding of entrepreneurship research; well-equipped and fully functional centres of entrepreneurship studies (which would also serve as incubators); provision of

adequate teaching facilities and infrastructure which would support hands-on-teaching and a richer mix of pedagogical methods.

At institutional level, Trivedi (2016)'s proposal on measures for improving the status of institutional setting very well fits as good recommendations for policy makers. Trivedi (2016)'s proposal highlights:

- creating strong network that connects students with alumni entrepreneurs, legal, technical, marketing experts as well as other successful entrepreneurs;
- maintaining incubation system which focuses mentoring and advisory services for new start-up;
- provision of forums for successful entrepreneurs to share experience for students to draw inspiration, motivation and insight;
- fosters teamplay and collaboration amongst students for entrepreneurial reasons; and
- organisation of business plan competitions, entrepreneurship workshops and conferences.

Meanwhile, at national level, this study advocates for a well-defined strategy that will create a kind of educational system which will churn our graduates with the required entrepreneurial skills and mindset. This according to Mohamedbhai (2015) is necessary for the sustainable economic growth and development, especially in Africa. It abundantly clear that the robustness of institutional setting is supporting entrepreneurship is one of the key factors for entrepreneurship offerings in HEIs (Kabongo & Okpara, 2010, p.306).

### **7.6.2 Entrepreneurship Modules Lecturers**

As earlier suggested by Akhuemonkhan, Raimi, and Sofoluwe (2013), the entrepreneurial competence of entrepreneurship education lecturers is critical to effective delivery of an entrepreneurship programme. Besides investment in training entrepreneurship education lecturers, this study shows the need for lecturers to be self-motivated to grow their entrepreneurial teaching competence. There is also the need for entrepreneurship lecturers to be more



passionate in their engagement and communication of entrepreneurship to students as expectations of students show that they have been less impressed towards entrepreneurship on the account of unconvincing teachers.

### **7.6.3 Further studies**

#### **7.6.3.1 Applicability of the Research Model**

The need to advance the legitimacy of entrepreneurship education as intimated by Katz (2008) has spurred the necessity to measure the impact of entrepreneurship education. While numerous approaches have been evolved for the measurement of this impact thereby creating lack of theoretical consensus amongst researchers, this study has attempted to narrow the divergence by developing a model aimed at modelling the effect of entrepreneurship education on entrepreneurial intention. This model fused principles and insights from theories and framework that underpin a few divergent approaches in previous studies. Thus, it is recommended that future studies aimed at measuring the impact of entrepreneurship education on intention via the moderation of antecedents of entrepreneurial intentions can use the entrepreneurial education-mindset-skill (EMS) model developed in this study to establish its applicability from context to context.

#### **7.6.3.2 Causal Links Between Entrepreneurship Education Components and Antecedents of Entrepreneurial Intentions: More Empirical Evidences**

Apart from the fact that this study is one of the few that have proven the causal links between certain educational components and the antecedents of entrepreneurial intention, this study only principally explored three components (i.e. institutional setting, content and teaching methods) and two antecedents (i.e. entrepreneurial skills and mindset). Although the results of this study show that only one component of entrepreneurship education significantly impacts on these antecedents, further studies in different setting may yield significant variation considering background differences. Perhaps, future studies may want to focus on the realisation of expected entrepreneurship education outcome which is engendering entrepreneurial intention in students must be premised on fostering both entrepreneurial skills

and mindset so effectively within the cohesive tie of content, institutional setting and teaching methods as illustrated in Figure 7.2 below. It is also therefore recommended that future studies in this domain should explore more components such as management support, lecturer-student ratio, competence of lecturers, etc. as well as more antecedents such as attitudes and values.

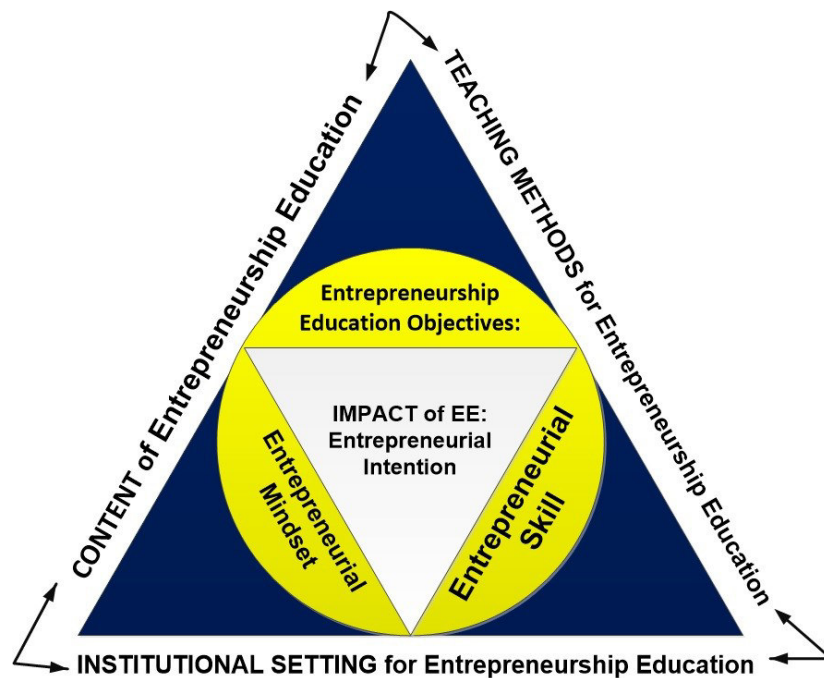


Figure 7.2: Cohesive links that fosters entrepreneurial intention in students

### 7.6.3.3 Profiling Competence of Entrepreneurship Education Lecturers in Relation to Students' Entrepreneurial Mindset, Skills and Intentions

As one of the unexpected findings of this study, it was discovered that the competence of lecturers could bear significant impact on students' entrepreneurial mindset, skills and intentions. Because this was not one of the objectives of this study, sufficient data to concretely validate this finding were not collected. Underscoring the importance of entrepreneurship education teachers' resource base, Ruskovaara *et al.* (2015) hinted on the importance of lecturers' competence in relation to students' entrepreneurial mindset, skills and intention. In consonance with Akhuemonkhan, Raimi, and Sofoluwe (2013), this study's unexpected finding suggests that there is need for further studies which will explore the competence of entrepreneurship lecturers in relation with students' entrepreneurial mindset, skills and intentions. The

competence of entrepreneurship lecturers can be measured in terms of their *education* (core academic qualification and research publications in entrepreneurship), *exposure* (training, workshop, conferences and seminars), and *experience* (past or present involvement with or support for venturing). A model, which may be modified for profiling the competence of entrepreneurship lecturers is presented in **Figure 7.3** below. For this purpose of contributing more to methodology in this research domain, a survey of two or comparable countries can also be done.

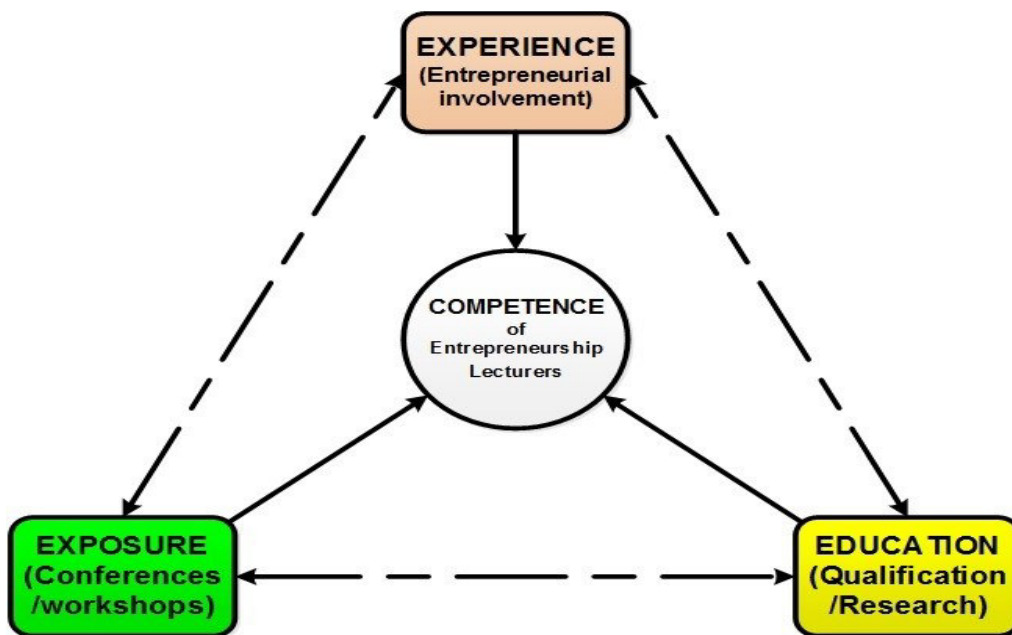


Figure 7.3: 3-E model for measuring competence of entrepreneurship lecturers

#### 7.6.3.4 Relationship between entrepreneurial skills and entrepreneurial intention: Ample empirical evidence needed

The fact that there are divergent views on how entrepreneurial skills are related to entrepreneurial intention and how significant entrepreneurial skills shape entrepreneurial intention implies that ample empirical evidences are needed to establish useful theories for practicable policy formulations. This is especially important because entrepreneurial skills are pivotal objectives in most entrepreneurship initiatives, programmes and policies.

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## APPENDICES

### 8.1 Appendix 1: Information Sheet for Participants

**UNIVERSITY OF THE WESTERN CAPE (UWC)  
FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES  
SCHOOL OF BUSINESS AND FINANCE  
INFORMATION SHEET FOR RESEARCH PARTICIPANTS**

Dear participant,

I am a registered doctoral student in the School of Business and Finance, Faculty of Economic and Management Sciences, University of the Western Cape. You are invited to voluntarily participate in this survey that bothers on the entrepreneurship education in Nigerian universities and the entrepreneurial mindset and skills of undergraduate students.

The title of my thesis is ***Impact of Entrepreneurship Education on Entrepreneurial Mindset and Skills: Empirical Evidence from Undergraduates in Nigeria***

Please take time to read through this information sheet carefully in order for you to be knowledgeable about what is required of you as a research participant in this study.

As a participant who gave consent of your participation in this study, you will be required:

- 1. Complete a questionnaire that will take about 15 minutes at the most in which you will be asked different questions with the aim of reflecting on your own mindset towards entrepreneurship, and skills learned as a result of offering GST 223 (Entrepreneurship Studies)**
- 2. Participate in a short focus group discussion (55 minutes) which will bother on the content, teaching methods and approaches as well as the institutional setting that surround the delivery of GST 223 on a date and at a venue to be set. You will be contacted via sms or voice call if your participation in the focus group would be needed.**

Your participation in this research project is voluntary and your responses will be treated as confidential. It will assist me to achieve the objective of the study which is to develop an analytical model to measure the effects of entrepreneurship education on undergraduate students in Nigeria in terms of entrepreneurial mindset and skills.

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact me at: [3580067@myuwc.ac.za](mailto:3580067@myuwc.ac.za) or +27-63-377-4935; or my main supervisor – Dr Pradeep BRIJLAL at: [pbrijlal@uwc.ac.za](mailto:pbrijlal@uwc.ac.za); or +27-21-959-3219; or my co-supervisor – Dr Bingwen YAN at: [yanb@cput.ac.za](mailto:yanb@cput.ac.za) or +27-72-613-6286; or my HOD – Prof Ricardo PETERS at: [rmpeters@uwc.ac.za](mailto:rmpeters@uwc.ac.za) or +27-21-959-9294.

*I hereby consent voluntarily to participate in this study. I have been given a copy of this form.*

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

## 8.2 Appendix 2: Consent Form for Questionnaire



### Consent Form for questionnaire for undergraduate students in Nigeria

University of the Western Cape

**Title:** Impact of Entrepreneurship Education on Entrepreneurial Mindset and Skills: Empirical Evidence from Nigerian Undergraduates

**Researcher:** Samuel Oladipo OLUTUASE (3580067)

Please initial box

1. I confirm that I have read and understand the information sheet explaining the above research project and I have had the opportunity to ask questions about the project.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. (If I wish to withdraw I may contact the lead researcher at any time)
3. I understand my responses and personal data will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the reports or publications that result for the research.
4. I agree for the data collected from me to be used in future research.
5. I agree for to take part in the above research project.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

*Copies: All participants will receive a copy of the signed and dated version of the consent form and information sheet for themselves. A copy of this will be filed and kept in a secure location for research purposes only.*

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### 8.3 Appendix 3: Entrepreneurship Education, Mindset, Skills & Intention Questionnaire (EEMSIQ)

(This questionnaire is to be filled by students who offered GST 223)

#### Section A: Respondent's Personal Background

Instruction: Please tick appropriately (✓)					
FACULTY		GENDER		Have you attended some entrepreneurship education/training aside GST 223?	
Arts		Male ( )	Female ( )		
Education		AGE BRACKET			
Environ. Sci.		16 - 25 years			
Law		26 - 35 years			
Mgt. Sci.		=>36 years		Yes ( )	No ( )
Medical Sci.		Have you been or you are currently involved in running a venture (whether it's family-owned, self-owned or you were/are working for an owner)?			
Natural Sci.					
Pharm Sci.					
Social Sci.		Yes ( )		No ( )	
	Email			Phone	

**Section B:** On a scale of 0 – 6 (with 0= lowest; 6=highest), rate the following statements.

S/N	Entrepreneurial Mindset Construct (EMC)	←—————→						
		Lowest Score						Highest Score
EM1	GST 223 lectures/materials opened me up to entrepreneurial opportunities	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM2	GST 223 enabled me to discover opportunity I will like to know more about	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM3	I can see the connection between the business environment and GST 223 course	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM4	Fear of possible failure can no longer deter me from entrepreneurial pursuit because GST 223 has helped to bolster my confidence	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM5	I now understand that failure is part of entrepreneurial success	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM6	I am really scared of spending my little resources to pursue a business idea I learnt from GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM7	GST 223 has inspired me to actively think about being self-reliant upon graduation	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM8	I am more positive about entrepreneurial career than before as a result of GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM9	I am focused on pursuing entrepreneurial career as a result of offering GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM10	I am more aware of my potentials for entrepreneurial pursuit after GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM11	I am now more interested and motivated to learn more about entrepreneurship for my future career	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EM12	I am now thinking of how to develop a business idea following my offering of GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )

**Section C:** On a scale of 0 – 6 (with 0= lowest; and 6=highest), rate the following statements.

S/N	Entrepreneurial Skills Construct (ESC)	Lowest Score  Highest Score						
		0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES1	I got certain business ideas from GST 223 class I hope to focus more on, at a later time	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES2	I have developed new ideas for possible business undertaking as a result of offering GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES3	I am now more open to new ideas not previously known or tested around my locality after offering GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES4	Since I offered GST 223 I now think differently about certain assumptions or norms	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES5	Although I have some ideas I wish to pursue, I am willing to explore new ones that may emerge	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES6	I am willing to learn new methods, procedures, or techniques in order to utilise my potentials	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES7	I can think through to a logical end on new ideas coming up in mind	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES8	Any time I notice abnormal situations around, I always look for a solution even without being tasked to do so	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES9	It is sometimes difficult to keep searching for solutions that would not count towards my <b>CGPA</b>	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES10	I feel comfortable sharing my new ideas with those I feel could help shape them better	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES11	I am sometimes afraid that someone may steal my novel ideas if shared	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
ES12	I enjoy working/leading in groups	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )

**Section D:** On a scale of 0 – 6 (with 0= lowest; and 6=highest), rate the following statements.

S/N	Entrepreneurship Education Construct (EEC)	Lowest Score  Highest Score						
		0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE1	Centre for Entrepreneurship Studies (CES) is equipped with staff and funds that can support the development of students' business plans/prospects	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE2	CES had advertised programmes that stimulate students' entrepreneurial initiatives	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE3	CES has networks that can support students' future entrepreneurial success	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE4	I became more conscious of entrepreneurial environment after offering GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )

S/N	Entrepreneurship Education Construct (EEC)	←—————→						
		Lowest Score						Highest Score
EE5	I now can explore my environment for potential entrepreneurial opportunities after offering GST 223	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE6	I am clear-minded on how to apply the Business Model Canvas to possible entrepreneurial ideas	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE7	We often used case studies of successful entrepreneurs during GST 223 classes	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE8	At least one practising entrepreneur served as a guest lecturer during GST 223 classes	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
EE9	GST 223 was taught by lecture-method only	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )

**Section E:** On a scale of 0 – 6 (with 0= lowest; and 6=highest), rate the following statements.

S/N	Entrepreneurial Intention Construct (EIC)	←—————→						
		Lowest Score						Highest Score
E11	I am more than 50% likely to start my own business because of the skills and mindset I have developed from GST 223 materials	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E12	Entrepreneurial mindset and skills are most important consideration for me if I am to start a business in the future	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E13	To start my own company would probably be the best way for me to take advantage of my education/potentials	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E14	I am confident that I would succeed if I started my own business	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E15	It would be easy for me to start my own business with the skills and mindset GST 223 has helped me to develop	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E16	Nothing is more exciting than seeing my ideas being turned into reality	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )
E17	I would rather use my skills to start a business sometime in the future rather than seek employment	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )	5 ( )	6 ( )

**Section F: General Comments**

Do you have any observation about the following you like to comment on?

a. **Competence of GST 223 lecturers:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

b. **Size of the class:** \_\_\_\_\_

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c. Quality of lecture presentation: \_\_\_\_\_

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d. Do you like to make any other comments beside the ones above? \_\_\_\_\_

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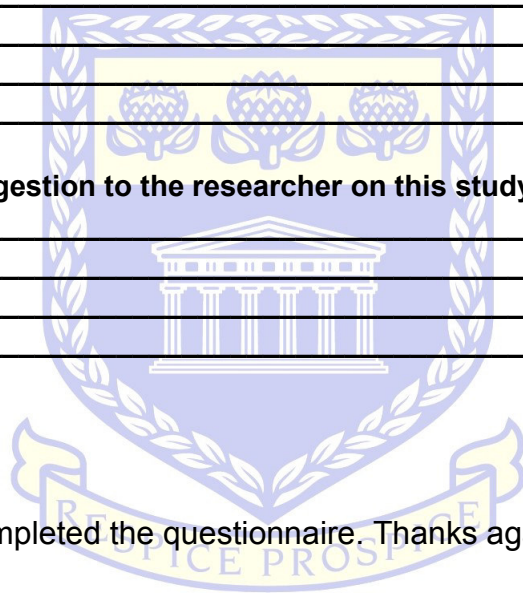
e. Do you have suggestion to the researcher on this study? \_\_\_\_\_

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You have completed the questionnaire. Thanks again for your cooperation.

**Samuel O. Olutuase**  
3580067@myuwc.ac.za

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#### 8.4 Appendix 4: Focus group discussion schedule

(To be attended by selected students, facilitators and administrators of entrepreneurship education within the selected Nigerian university)

Entrepreneurship Education Construct	Duration	Goal / Outcome
Opening: Research background, problem and objectives	5 mins	Acquainting participants with research issues
Highlights of pilot study findings	5 mins	Acquainting participants with research issues
Discussion around institutional setting to support the effectiveness of entrepreneurship education	10 mins	Elicit feasible plan from stakeholder groups
Discussion around content of entrepreneurship education	10 mins	Elicit desirable and feasible content from stakeholder-groups
Discussion around teaching methods and approaches	10 mins	Elicit feasible teaching approaches from stakeholder-groups
General suggestions and conclusion	10 mins	Reaching consensus on all issues discussed
Closing remarks	5 mins	
<b>Total</b>	<b>55 mins</b>	

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## 8.5 Appendix 5: Ethical Clearance



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### DEPARTMENT OF RESEARCH DEVELOPMENT

31 March 2016

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:  
Mr SO Oluase (School of Business and Finance)  
Research Project: Impact of entrepreneurship education on entrepreneurial mindset and skills: Empirical evidence from Nigerian undergraduates.

Registration no: 15/7/178

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

A handwritten signature in black ink, appearing to read 'Josias'.

*Ms Patricia Josias  
Research Ethics Committee Officer  
University of the Western Cape*

Private Bag X17, Bellville 7535, South Africa  
T: +27 21 959 2988/2948. F: +27 21 959 3170  
E: [pjosias@uwc.ac.za](mailto:pjosias@uwc.ac.za)  
[www.uwc.ac.za](http://www.uwc.ac.za)

## 8.6 Appendix 6: Codebook for Quantitative Data

### Notes

Output Created	17-SEP-2016 01:04:00		
Comments			
Input Data	C:\Users\Sam\Desktop\Lastest Corrections UWC Proposal\New Direction\Main Study\Draft Thesis\First Draft\RESULTS\Data set without missing value.sav		
Active Dataset	DataSet1		
Filter	<none>		
Weight	<none>		
Split File	<none>		
N of Rows in Working Data File	707		
Syntax	<pre> CODEBOOK Fac [n] Gender [n] Age [n] Previous_Entre [n] Involvement_venturing [n] em1 [s] em2 [s] em3 [s] em4 [s] em5 [s] em6 [s] em7 [s] em8 [s] em9 [s] em10 [s] em11 [s] em12 [s] es1 [s] es2 [s] es3 [s] es4 [s] es5 [s] es6 [s] es7 [s] es8 [s] es9 [s] es10 [s] es11 [s] es12 [s] ee1 [s] ee2 [s] ee3 [s] ee4 [s] ee5 [s] ee6 [s] ee7 [s] ee8 [s] ee9 [s] ei1 [s] ei2 [s] ei3 [s] ei4 [s] ei5 [s] ei6 [s] ei7 [s] /VARINFO LABEL MEASURE VALUELABELS /OPTIONS VARORDER=VARLIST SORT=ASCENDING /STATISTICS NONE. </pre>		
Res	Processor Time	00:00:00.06	
ourc	Elapsed Time	00:00:00.14	
es			

### Fac

		Value
Standard Attributes	Label	Faculty
	Measurement	Nominal
Valid Values	1	Arts
	2	Education
	3	Environmental Science
	4	Law
	5	Management Sciences
	6	Medical Sciences
	7	Natural Sciences
	8	Pharmaceutical Sciences

**Gender**

		Value
Standard Attributes	Label	Gender
	Measurement	Nominal
Valid Values	1	Male
	2	Female

**Age**

		Value
Standard Attributes	Label	Age
	Measurement	Nominal
Valid Values	1	16-25 years
	2	26-35 years
	3	36 years & Above

**Previous\_Entre**

		Value
Standard Attributes	Label	Previous entrepreneurial education/training
	Measurement	Nominal
Valid Values	1	Yes
	2	No

**Involvement\_venturing**

		Value
Standard Attributes	Label	Previous/current involvement in a venture
	Measurement	Nominal
Valid Values	1	Yes
	2	No

### em1

		Value
Standard Attributes	Label	GST 223 lectures/materials opened me up to entrepreneurial opportunities
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

### em2

		Value
Standard Attributes	Label	GST 223 enabled me to discover opportunity I will like to know more about
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

### em3

		Value
Standard Attributes	Label	I can see the connection between the business environment and GST 223 course
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em4**

Value

Standard Attributes	Label	Fear of possible failure can longer deter me because GST 223 has helped to bolster my confidence
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em5**

Value

Standard Attributes	Label	I now understand that failure is part of entrepreneurial success
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em6**

Value

Standard Attributes	Label	I am really scared of spending my little resources to pursue a business idea that I learnt from GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em7**

		Value
Standard Attributes	Label	GST 223 has inspired me to actively think about being self-reliant upon graduation
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em8**

		Value
Standard Attributes	Label	I am more positive about entrepreneurial career than before as a result of GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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**em9**

		Value
Standard Attributes	Label	I am focused on pursuing entrepreneurial career as a result of offering GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em10**

Value

Standard Attributes	Label	I am more aware of my potentials for entrepreneurial pursuit after GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em11**

Value

Standard Attributes	Label	I am now more interested and motivated to learn more about entrepreneurship for my future career
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**em12**

Value

Standard Attributes	Label	I am now thinking of how to develop a business idea following my offering of GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es1**

Value

Standard Attributes	Label	I got certain business ideas from GST 223 class I hope to focus more on, at a later time
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es2**

Value

Standard Attributes	Label	I have developed new ideas for possible business undertaking as a result of offering GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es3**

Value

Standard Attributes	Label	I am now more open to new ideas not previously known or tested around my locality after offering GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score



**es4**

Value

Standard Attributes	Label	Since I offered GST 223 I now think differently about certain assumptions or norms
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es5**

Value

Standard Attributes	Label	Although I have some ideas I wish to pursue, I am willing to explore new ones that may emerge
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es6**

Value

Standard Attributes	Label	I am willing to learn new methods, procedures, or techniques in order to utilise my potentials
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es7**

Value

Standard Attributes	Label	I can think through to a logical end on new ideas coming up in mind
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es8**

Value

Standard Attributes	Label	Any time I notice abnormal situations around, I always look for a solution even without being tasked to do so
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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**es9**

Value

Standard Attributes	Label	It is sometimes difficult to keep searching for solutions that would not count towards my CGPA
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es10**

Value

Standard Attributes	Label	I feel comfortable sharing my new ideas with those I feel could help shape them better
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**es11**

Value

Standard Attributes	Label	I am sometimes afraid that someone may steal my novel ideas if shared
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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Value

Standard Attributes	Label	I enjoy working/leading in groups
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee1**

Value

Standard Attributes	Label	Centre for Entrepreneurship Studies (CES) is equipped with staff and funds that can support the development of students' business plans/prospects
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee2**

Value

Standard Attributes	Label	CES had advertised programmes that stimulate students' entrepreneurial initiatives
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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**ee3**

Value

Standard Attributes	Label	CES has networks that can support students' future entrepreneurial success
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee4**

Value

Standard Attributes	Label	I became more conscious of entrepreneurial environment after offering GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee5**

Value

Standard Attributes	Label	I now can explore my environment for potential entrepreneurial opportunities after offering GST 223
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee6**

Value

Standard Attributes	Label	I am clear-minded on how to apply the Business Model Canvas to possible entrepreneurial ideas
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee7**

Value

Standard Attributes	Label	We often used case studies of successful entrepreneurs during GST 223 classes
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ee8**

Value

Standard Attributes	Label	At least one practising entrepreneur served as a guest lecturer during GST 223 classes
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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**ee9**

Value

Standard Attributes	Label	GST 223 was taught by lecture-method only
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ei1**

Value

Standard Attributes	Label	I am more than 50% likely to start my own business because of the skills and mindset I have developed from GST 223 materials
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ei2**

Value

Standard Attributes	Label	Entrepreneurial mindset and skills are most important consideration for me if I am to start a business in the future
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ei3**

Value

Standard Attributes	Label	To start my own company would probably be the best way for me to take advantage of my education/potentials
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ei4**

Value

Standard Attributes	Label	I am confident that I would succeed if I started my own business
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

**ei5**

Value

Standard Attributes	Label	It would be easy for me to start my own business with the skills and mindset GST 223 has helped me to develop
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score

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**ei6**

Value

Standard Attributes	Label	Nothing is more exciting than seeing my ideas being turned into reality
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score



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6	Highest Score
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**ei7**

Value

Standard Attributes	Label	
		I would rather use my skills to start a business sometime in the future rather than seek employment
	Measurement	Scale
Labeled Values	0	No Score
	1	Low Score
	2	Below Average Score
	3	Average Score
	4	Good Score
	5	High Score
	6	Highest Score



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## 8.7 Appendix 7: Results of the Pilot Study

(H) Item-Total Statistics	
	Cronbach's Alpha if Item Deleted
GST 223 lectures/materials opened me up to entrepreneurial opportunities	.937
GST 223 enabled me to discover opportunity I will like to know more about	.933
I can see the connection between the business environment and GST 223 course	.937
Fear of possible failure can longer deter me because GST 223 has helped to bolster my confidence	.937
I now understand that failure is part of entrepreneurial success	.935
<b>**I am really scared spending my little resources to pursue a business idea that I learnt from GST 223 (6)</b>	<b>.952</b>
GST 223 has inspired me to actively think about being self-reliant upon graduation	.936
I am more positive about entrepreneurial career than before as a result of GST 223	.930
I am focused on pursuing entrepreneurial career as a result of offering GST 223	.935
I am more aware of my potentials for entrepreneurial pursuit after GST 223	.930
I am now more interested and motivated to learn more about entrepreneurship for my future career	.935
I am now thinking of how to develop a business idea following my offering of GST 223	.931

**\*\*Items needing modification or exclusion from final version of questionnaire**

<b>(I) Item-Total Statistics</b>	
	Cronbach's Alpha if Item Deleted
I got certain business ideas from GST 223 class I hope to focus more on, at a later time	.891
I have developed new ideas for possible business undertaking as a result of offering GST 223	.891
I am now more open to new ideas not previously known or tested around my locality after offering GST 223	.901
Since I offered GST 223 I now think differently about certain assumptions or norms	.895
Although I have some ideas I wish to pursue, I am willing to explore new ones that may emerge	.898
I am willing to learn new methods, procedures, or techniques in order to utilise my potentials	.896
I can think through to a logical end on new ideas coming up in mind	.899
Any time I notice abnormal situations around, I always look for a solution even without being tasked to do so	.897
**It is sometimes difficult to keep searching for solutions that would count towards my CGPA (9)	.913
I feel comfortable sharing my new ideas with those I feel could help shape them better	.899
**I am sometimes afraid someone may steal my novel ideas	.921
I enjoy working/leading in groups	.902

<b>(J) Item-Total Statistics</b>	
	Cronbach's Alpha if Item Deleted

<b>(J) Item-Total Statistics</b>	
	Cronbach's Alpha if Item Deleted
Centre for Entrepreneurship Studies (CES) is equipped with staff and funds that can support the development of students' business plans/prospects	.781
CES had advertised programmes that stimulate students' entrepreneurial initiatives	.765
CES has networks that can support students' future entrepreneurial success	.777
I became more conscious of entrepreneurial environment after offering GST 223	.756
I now can explore my environment for potential entrepreneurial opportunities after offering GST 223	.753
I am clear-minded on how to apply the Business Model Canvas to possible entrepreneurial ideas	.769
I can remember treating case studies of entrepreneurs during GST 223 classes	.790
At least one practising entrepreneur served as a guest lecturer during GST 223 classes	.795
<b>**GST 223 was taught by lectures only</b>	<b>.877</b>

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<b>(K) Item-Total Statistics</b>	
	Cronbach's Alpha if Item Deleted
I am more than 50% likely to start my own business because of the skills and mindset I have developed from GST 223 materials	.846
Entrepreneurial mindset and skills are most important consideration for me if I am to start a business in the future	.821

(K) Item-Total Statistics	
	Cronbach's Alpha if Item Deleted
To start my own company would probably be the best way for me to take advantage of my education/potentials	.842
I am confident that I would succeed if I started my own business	.829
It would be easy for me to start my own business with the skills and mindset GST 223 has helped me to develop	.812
<b>**Nothing is more exciting than seeing my ideas turn into reality</b>	<b>.878</b>
I would rather use my skills to start a business sometime in the future rather than seek employment	.828



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### (L) Codes for Correlated Questionnaire Items

Item No	Question
EM1	GST 223 lectures/materials opened me up to entrepreneurial opportunities
EM2	GST 223 enabled me to discover opportunity I will like to know more about
EM3	I can see the connection between the business environment and GST 223 course
EM4	Fear of possible failure can longer deter me because GST 223 has helped to bolster my confidence
EM5	I now understand that failure is part of entrepreneurial success
EM6	I am really scared spending my little resources to pursue a business idea that I learnt from GST 223
EM7	GST 223 has inspired me to actively think about being self-reliant upon graduation
EM8	I am more positive about entrepreneurial career than before as a result of GST 223
EM9	I am focused on pursuing entrepreneurial career as a result of offering GST 223
EM10	I am more aware of my potentials for entrepreneurial pursuit after GST 223
EM11	I am now more interested and motivated to learn more about entrepreneurship for my future career
EM12	I am now thinking of how to develop a business idea following my offering of GST 223
ES1	I got certain business ideas from GST 223 class I hope to focus more on, at a later time
ES2	I have developed new ideas for possible business undertaking as a result of offering GST 223
ES3	I am now more open to new ideas not previously known or tested around my locality after offering GST 223
ES4	Since I offered GST 223 I now think differently about certain assumptions or norms
ES5	Although I have some ideas I wish to pursue, I am willing to explore new ones that may emerge
ES6	I am willing to learn new methods, procedures, or techniques in order to utilise my potentials
ES7	I can think through to a logical end on new ideas coming up in mind
ES8	Any time I notice abnormal situations around, I always look for a solution even without being tasked to do so
ES9	It is sometimes difficult to keep searching for solutions that would not count towards my <b>CGPA</b>
ES10	I feel comfortable sharing my new ideas with those I feel could help shape them better
ES11	I am sometimes afraid that someone may steal my novel ideas if shared
ES12	I enjoy working/leading in groups
EE1	Centre for Entrepreneurship Studies (CES) is equipped with staff and funds that can support the development of students' business plans/prospects
EE2	CES had advertised programmes that stimulate students' entrepreneurial initiatives
EE3	CES has networks that can support students' future entrepreneurial success
EE4	I became more conscious of entrepreneurial environment after offering GST 223
EE5	I now can explore my environment for potential entrepreneurial opportunities after offering GST 223
EE6	I am clear-minded on how to apply the Business Model Canvas to possible entrepreneurial ideas
EE7	We often used case studies of successful entrepreneurs during GST 223 classes
EE8	At least one practising entrepreneur served as a guest lecturer during GST 223 classes
EE9	GST 223 was taught by lecture-method only
EI1	I am more than 50% likely to start my own business because of the skills and mindset I have developed from GST 223 materials
EI2	Entrepreneurial mindset and skills are most important consideration for me if I am to start a business in the future
EI3	To start my own company would probably be the best way for me to take advantage of my education/potentials
EI4	I am confident that I would succeed if I started my own business
EI5	It would be easy for me to start my own business with the skills and mindset GST 223 has helped me to develop
EI6	Nothing is more exciting than seeing my ideas being turned into reality
EI7	I would rather use my skills to start a business sometime in the future rather than seek employment

**(M) Correlation Matrix of Entrepreneurial Mindset Items**

		EM1	EM2	EM3	EM4	EM5	EM6	EM7	EM8	EM9	EM10	EM11	EM12
EM1	Pearson Correlation	1											
	Sig. (2-tailed)												
EM2	Pearson Correlation	.765**	1										
	Sig. (2-tailed)	0											
EM3	Pearson Correlation	.573**	.682**	1									
	Sig. (2-tailed)	0	0										
EM4	Pearson Correlation	.400*	.632**	.554**	1								
	Sig. (2-tailed)	0.017	0	0.001									
EM5	Pearson Correlation	.553**	.709**	.617**	.682**	1							
	Sig. (2-tailed)	0.001	0	0	0								
EM6	Pearson Correlation	0.232	0.202	0.29	.424*	.380*	1						
	Sig. (2-tailed)	0.181	0.252	0.091	0.011	0.024							
EM7	Pearson Correlation	.668**	.604**	.481**	.529**	.543**	0.247	1					
	Sig. (2-tailed)	0	0	0.004	0.001	0.001	0.158						
EM8	Pearson Correlation	.645**	.682**	.528**	.574**	.647**	.364*	.727**	1				
	Sig. (2-tailed)	0	0	0.002	0	0	0.037	0					
EM9	Pearson Correlation	.382*	.620**	.422*	.566**	.647**	0.304	.410*	.711**	1			
	Sig. (2-tailed)	0.026	0	0.013	0	0	0.081	0.016	0				
EM10	Pearson Correlation	.520**	.791**	.641**	.727**	.756**	0.322	.521**	.730**	.845**	1		
	Sig. (2-tailed)	0.001	0	0	0	0	0.059	0.002	0	0			
EM11	Pearson Correlation	.537**	.768**	.701**	.453**	.477**	0.15	.542**	.670**	.562**	.660**	1	
	Sig. (2-tailed)	0.001	0	0	0.007	0.004	0.397	0.001	0	0.001	0		
EM12	Pearson Correlation	.537**	.699**	.482**	.555**	.497**	0.246	.634**	.854**	.764**	.787**	.792**	1
	Sig. (2-tailed)	0.001	0	0.003	0.001	0.002	0.154	0	0	0	0	0	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**(N) Correlation Matrix of Entrepreneurial Skills Items**

		ES1	ES2	ES3	ES4	ES5	ES6	ES7	ES8	ES9	ES10	ES11	ES12
ES1	Pearson Correlation	1											
	Sig. (2-tailed)												
ES2	Pearson Correlation	.878**	1										
	Sig. (2-tailed)	0											
ES3	Pearson Correlation	.710**	.802**	1									
	Sig. (2-tailed)	0	0										
ES4	Pearson Correlation	.851**	.777**	.660**	1								
	Sig. (2-tailed)	0	0	0									
ES5	Pearson Correlation	.640**	.595**	.555**	.559**	1							
	Sig. (2-tailed)	0	0	0.001	0.001								
ES6	Pearson Correlation	.523**	.584**	.511**	.497**	.782**	1						
	Sig. (2-tailed)	0.002	0	0.002	0.003	0							
ES7	Pearson Correlation	.517**	.594**	.593**	.502**	.568**	.764**	1					
	Sig. (2-tailed)	0.002	0	0	0.003	0	0						
ES8	Pearson Correlation	.636**	.664**	.630**	.630**	.481**	.551**	.709**	1				
	Sig. (2-tailed)	0	0	0	0	0.004	0.001	0					
ES9	Pearson Correlation	0.34	0.232	0.047	0.242	0.211	0.322	0.107	0.105	1			
	Sig. (2-tailed)	0.057	0.187	0.791	0.175	0.239	0.063	0.555	0.556				
ES10	Pearson Correlation	.507**	.497**	.408*	.398*	.741**	.843**	.547**	.482**	0.197	1		
	Sig. (2-tailed)	0.003	0.002	0.015	0.02	0	0	0.001	0.003	0.263			
ES11	Pearson Correlation	0.231	0.094	-0.092	0.162	0.095	0.302	0.112	0.211	.553**	0.152	1	
	Sig. (2-tailed)	0.203	0.599	0.606	0.367	0.599	0.083	0.536	0.23	0.001	0.39		
ES12	Pearson Correlation	.523**	.586**	.469**	.444**	.427**	.463**	.483**	.706**	0.204	.383*	0.298	1
	Sig. (2-tailed)	0.002	0	0.004	0.008	0.012	0.005	0.004	0	0.247	0.023	0.087	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



(O) Correlation Matrix of Entrepreneurship Education Items

		EE1	EE2	EE3	EE4	EE5	EE6	EE7	EE8	EE9
EE1	Pearson Correlation	1								
	Sig. (2-tailed)									
EE2	Pearson Correlation	.765**	1							
	Sig. (2-tailed)	0								
EE3	Pearson Correlation	.575**	.815**	1						
	Sig. (2-tailed)	0	0							
EE4	Pearson Correlation	0.265	.445**	.506**	1					
	Sig. (2-tailed)	0.13	0.009	0.003						
EE5	Pearson Correlation	0.311	.502**	.499**	.932**	1				
	Sig. (2-tailed)	0.074	0.003	0.003	0					
EE6	Pearson Correlation	0.33	.523**	.479**	.699**	.754**	1			
	Sig. (2-tailed)	0.061	0.002	0.005	0	0				
EE7	Pearson Correlation	0.141	0.295	.436*	.657**	.518**	.646**	1		
	Sig. (2-tailed)	0.434	0.096	0.011	0	0.002	0			
EE8	Pearson Correlation	.594**	.472**	0.31	0.305	0.31	0.166	0.147	1	
	Sig. (2-tailed)	0	0.007	0.089	0.089	0.084	0.372	0.429		
EE9	Pearson Correlation	-0.21	-0.184	-0.296	-0.044	0.084	0.085	-0.034	-0.156	1
	Sig. (2-tailed)	0.293	0.368	0.151	0.829	0.683	0.686	0.872	0.455	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

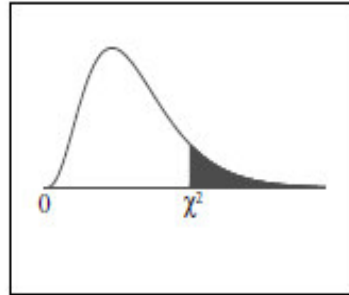
Correlations

		EI1	EI2	EI3	EI4	EI5	EI6	EI7
EI1	Pearson Correlation	1						
	Sig. (2-tailed)							
EI2	Pearson Correlation	.521**	1					
	Sig. (2-tailed)	0.002						
EI3	Pearson Correlation	.482**	.479**	1				
	Sig. (2-tailed)	0.005	0.005					
EI4	Pearson Correlation	.593**	.587**	.537**	1			
	Sig. (2-tailed)	0	0	0.002				
EI5	Pearson Correlation	.798**	.606**	.527**	.623**	1		
	Sig. (2-tailed)	0	0	0.002	0			
EI6	Pearson Correlation	0.247	0.118	0.048	.482**	0.284	1	
	Sig. (2-tailed)	0.166	0.512	0.79	0.005	0.109		
EI7	Pearson Correlation	.362*	.774**	.550**	.701**	.517**	0.168	1
	Sig. (2-tailed)	0.038	0	0.001	0	0.002	0.351	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

## 8.8 Appendix 8: Chi-Square Distribution Table



The shaded area is equal to  $\alpha$  for  $\chi^2 = \chi_{\alpha}^2$ .

<i>df</i>	$\chi_{.995}^2$	$\chi_{.990}^2$	$\chi_{.975}^2$	$\chi_{.950}^2$	$\chi_{.900}^2$	$\chi_{.100}^2$	$\chi_{.050}^2$	$\chi_{.025}^2$	$\chi_{.010}^2$	$\chi_{.005}^2$
1	0.000	0.000	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	79.490
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169

## 8.9 Appendix 9: Results from SEM analysis carried out in Amos

### (A) Notes for Model (Default model)

#### Computation of degrees of freedom (Default model)

Number of distinct sample moments:

Number of distinct parameters to be estimated:

Degrees of freedom (820 - 105):

#### Result (Default model)

Minimum was achieved

Chi-square = 2553.795

Degrees of freedom = 715

Probability level = .000

#### Group number 1 (Group number 1 - Default model)

#### Estimates (Group number 1 - Default model)

#### Scalar Estimates (Group number 1 - Default model)

#### Maximum Likelihood Estimates

### (B) Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 25		-1.413	9999	14781.01	0	9999
1	e 17		-0.606	3.211	7887.862	19	0.382
2	e* 6		-0.345	1.052	5884.3	5	0.743
3	e 1		-0.136	1.038	4128.421	5	0.858
4	e 1		-0.016	0.717	3334.857	5	0.877
5	e 0	901.662		0.507	2946.355	5	0.936
6	e 0	678.215		1.708	2763.64	1	0.632
7	e 0	2579.81		0.729	2603.906	1	1.013
8	e 0	5346.802		0.552	2559.142	1	1.088
9	e 0	8934.333		0.31	2554.527	1	1.166
10	e 0	13268.513		0.18	2553.835	1	1.093
11	e 0	14424.15		0.043	2553.795	1	1.029
12	e 0	14429.698		0.004	2553.795	1	1.002
13	e 0	14517.278		0	2553.795	1	1

(C) Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
EM12	<---	EM	1				
EM11	<---	EM	0.83	0.044	18.779	***	par_1
EM10	<---	EM	0.948	0.046	20.778	***	par_2
EM9	<---	EM	0.95	0.051	18.5	***	par_3
EM8	<---	EM	1.04	0.046	22.781	***	par_4
EM7	<---	EM	0.908	0.046	19.656	***	par_5
EM6	<---	EM	0.154	0.056	2.719	0.007	par_6
EM5	<---	EM	0.636	0.085	7.511	***	par_7
EM4	<---	EM	0.877	0.046	19.208	***	par_8
EM3	<---	EM	0.788	0.045	17.511	***	par_9
EM2	<---	EM	0.959	0.047	20.484	***	par_10
EM1	<---	EM	0.917	0.047	19.663	***	par_11
EI7	<---	EI	1				
EI6	<---	EI	0.851	0.096	8.89	***	par_12
EI5	<---	EI	2.029	0.183	11.105	***	par_13
EI4	<---	EI	0.986	0.103	9.609	***	par_14
EI3	<---	EI	1.272	0.112	11.382	***	par_15
EI2	<---	EI	1.249	0.126	9.949	***	par_16
EI1	<---	EI	2.07	0.189	10.952	***	par_17
ES1	<---	ES	1				
ES2	<---	ES	1.053	0.046	22.679	***	par_18
ES3	<---	ES	1.089	0.054	20.01	***	par_19
ES4	<---	ES	0.987	0.051	19.475	***	par_20
ES5	<---	ES	0.685	0.049	13.991	***	par_21
ES6	<---	ES	0.521	0.041	12.703	***	par_22
ES7	<---	ES	0.58	0.044	13.104	***	par_23
ES8	<---	ES	0.59	0.047	12.443	***	par_24
ES9	<---	ES	0.242	0.054	4.482	***	par_25
ES10	<---	ES	0.532	0.047	11.28	***	par_26
ES11	<---	ES	0.393	0.062	6.35	***	par_27
ES12	<---	ES	0.546	0.052	10.452	***	par_28
EE1	<---	EE	1				
EE2	<---	EE	1.147	0.082	13.908	***	par_29
EE3	<---	EE	1.117	0.077	14.569	***	par_30
EE4	<---	EE	1.629	0.146	11.168	***	par_31
EE5	<---	EE	1.662	0.142	11.677	***	par_32
EE6	<---	EE	1.302	0.121	10.789	***	par_33
EE7	<---	EE	1.278	0.124	10.341	***	par_34
EE8	<---	EE	1.031	0.123	8.384	***	par_35
EE9	<---	EE	-0.025	0.097	-0.256	0.798	par_36

**(D) Standardized Regression  
Weights: (Group number 1 -  
Default model)**

		Estimate
EM12	<--- EM	0.762
EM11	<--- EM	0.683
EM10	<--- EM	0.749
EM9	<--- EM	0.676
EM8	<--- EM	0.81
EM7	<--- EM	0.715
EM6	<--- EM	0.106
EM5	<--- EM	0.29
EM4	<--- EM	0.699
EM3	<--- EM	0.648
EM2	<--- EM	0.744
EM1	<--- EM	0.719
EI7	<--- EI	0.432
EI6	<--- EI	0.454
EI5	<--- EI	0.804
EI4	<--- EI	0.524
EI3	<--- EI	0.572
EI2	<--- EI	0.586
EI1	<--- EI	0.79
ES1	<--- ES	0.707
ES2	<--- ES	0.777
ES3	<--- ES	0.794
ES4	<--- ES	0.785
ES5	<--- ES	0.565
ES6	<--- ES	0.512
ES7	<--- ES	0.53
ES8	<--- ES	0.499
ES9	<--- ES	0.176
ES10	<--- ES	0.452
ES11	<--- ES	0.25
ES12	<--- ES	0.417
EE1	<--- EE	0.441
EE2	<--- EE	0.532
EE3	<--- EE	0.509
EE4	<--- EE	0.805
EE5	<--- EE	0.847
EE6	<--- EE	0.667
EE7	<--- EE	0.599
EE8	<--- EE	0.406
EE9	<--- EE	-0.01

(E) Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
EM	<-	ES	1.431	0.111	12.888	***	par_37
	>						
EM	<-	EE	0.891	0.094	9.484	***	par_38
	>						
EI	<-	ES	0.678	0.075	9.06	***	par_39
	>						
EI	<-	EE	0.444	0.058	7.681	***	par_40
	>						
EM	<-	EI	0.669	0.073	9.209	***	par_41
	>						
ES	<-	EE	0.876	0.095	9.246	***	par_42
	>						
e33	<-	e34	1.396	0.106	13.22	***	par_43
	>						
e32	<-	e34	1.496	0.116	12.875	***	par_44
	>						
e32	<-	e35	-0.179	0.053	-3.374	***	par_45
	>						
e24	<-	e25	0.712	0.061	11.726	***	par_46
	>						
e24	<-	e26	0.643	0.062	10.326	***	par_47
	>						
e14	<-	e16	0.528	0.048	10.887	***	par_48
	>						
e32	<-	e33	1.299	0.11	11.829	***	par_49
	>						
e26	<-	e27	0.324	0.053	6.088	***	par_50
	>						
e25	<-	e26	0.433	0.054	8.039	***	par_51
	>						
e13	<-	e17	0.408	0.059	6.909	***	par_52
	>						
e11	<-	e12	0.375	0.053	7.12	***	par_53
	>						
e10	<-	e11	0.3	0.052	5.825	***	par_54
	>						
e27	<-	e29	0.443	0.067	6.593	***	par_55
	>						
e28	<-	e30	0.785	0.124	6.33	***	par_56
	>						
e25	<-	e29	0.221	0.048	4.634	***	par_57
	>						
e20	<-	e21	0.347	0.061	5.676	***	par_58
	>						
e16	<-	e17	0.227	0.039	5.782	***	par_59
	>						
e17	<-	e18	0.33	0.053	6.176	***	par_60
	>						
e15	<-	e18	-0.228	0.049	-4.696	***	par_61
	>						

(F) Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
EM	1.634	0.139	11.734	***	par_62
EI	0.405	0.072	5.659	***	par_63
ES	1.552	0.149	10.414	***	par_64
EE	0.661	0.113	5.841	***	par_65
e1	1.177	0.07	16.895	***	par_66
e2	1.288	0.073	17.581	***	par_67
e3	1.151	0.068	17.049	***	par_68
e4	1.749	0.099	17.635	***	par_69
e5	0.923	0.057	16.102	***	par_70
e6	1.29	0.074	17.332	***	par_71
e7	3.41	0.182	18.773	***	par_72
e8	7.213	0.386	18.665	***	par_73
e9	1.315	0.075	17.493	***	par_74
e10	1.405	0.079	17.772	***	par_75
e11	1.21	0.069	17.547	***	par_76
e12	1.288	0.075	17.273	***	par_77
e13	1.761	0.097	18.163	***	par_78
e14	1.13	0.063	17.978	***	par_79
e15	0.913	0.066	13.74	***	par_80
e16	1.04	0.057	18.394	***	par_81
e17	1.346	0.073	18.434	***	par_82
e18	1.207	0.073	16.531	***	par_83
e19	1.046	0.071	14.705	***	par_84
e20	1.556	0.093	16.817	***	par_85
e21	1.128	0.071	15.871	***	par_86
e22	1.081	0.07	15.514	***	par_87
e23	0.941	0.059	15.878	***	par_88
e24	1.549	0.087	17.83	***	par_89
e25	1.19	0.064	18.576	***	par_90
e26	1.338	0.071	18.923	***	par_91
e27	1.626	0.087	18.607	***	par_92
e28	2.825	0.151	18.733	***	par_93
e29	1.706	0.092	18.598	***	par_94
e30	3.588	0.192	18.672	***	par_95
e31	2.2	0.12	18.402	***	par_96
e32	2.736	0.151	18.138	***	par_97
e33	2.2	0.122	17.985	***	par_98
e34	2.36	0.131	18.076	***	par_99
e35	0.951	0.064	14.888	***	par_100
e36	0.716	0.053	13.556	***	par_101
e37	1.393	0.081	17.129	***	par_102
e38	1.927	0.109	17.669	***	par_103
e39	3.563	0.194	18.391	***	par_104
e40	3.951	0.21	18.788	***	par_105

(G)Total Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	27.626	-.725	-.492	.000	.000	.000
EM	16.777	-.467	.040	.000	.000	.000
EI	10.825	-.287	-.158	.330	.102	.000
EI1	24.945	-.661	-.365	.760	.235	2.304
EI2	13.157	-.349	-.193	.401	.124	1.215
EI3	13.966	-.370	-.204	.426	.131	1.290
EI5	23.706	-.628	-.347	.723	.223	2.190
EI7	10.825	-.287	-.158	.330	.102	1.000
ES12	14.237	-.374	-.254	.515	.000	.000
ES11	10.631	-.279	-.189	.385	.000	.000
ES9	6.297	-.165	-.112	.228	.000	.000
ES8	14.855	-.390	-.265	.538	.000	.000
ES7	14.905	-.391	-.266	.540	.000	.000
ES4	26.450	-.694	-.471	.957	.000	.000
ES3	29.905	-.785	-.533	1.082	.000	.000
ES2	29.086	-.763	-.518	1.053	.000	.000
ES1	27.626	-.725	-.492	1.000	.000	.000
EE7	11.082	.000	.000	.000	.000	.000
EE8	10.366	.000	.000	.000	.000	.000
EE9	1.000	.000	.000	.000	.000	.000
EE1	.000	.920	.000	.000	.000	.000
EE2	.000	.956	.000	.000	.000	.000
EE3	.000	1.000	.000	.000	.000	.000
EE4	.000	.000	1.308	.000	.000	.000
EE5	.000	.000	1.318	.000	.000	.000
EE6	.000	.000	1.000	.000	.000	.000
EM12	18.193	-.506	.043	.000	1.084	.000
EM11	14.992	-.417	.035	.000	.894	.000
EM10	17.281	-.481	.041	.000	1.030	.000
EM9	17.357	-.483	.041	.000	1.035	.000
EM8	19.001	-.529	.045	.000	1.133	.000
EM7	16.573	-.461	.039	.000	.988	.000
EM6	2.891	-.080	.007	.000	.172	.000
EM5	11.512	-.320	.027	.000	.686	.000
EM4	16.001	-.445	.038	.000	.954	.000
EM3	14.610	-.407	.034	.000	.871	.000
EM2	17.723	-.493	.042	.000	1.056	.000
EM1	16.777	-.467	.040	.000	1.000	.000



## (H) Standardized Total Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	2.015	-.888	-.406	.000	.000	.000
EM	1.308	-.611	.035	.000	.000	.000
EI	1.710	-.761	-.283	.714	.207	.000
EI1	1.370	-.610	-.227	.572	.165	.801
EI2	.885	-.394	-.146	.370	.107	.517
EI3	.900	-.401	-.149	.376	.109	.526
EI5	1.352	-.602	-.224	.565	.163	.790
EI7	.673	-.299	-.111	.281	.081	.394
ES12	.798	-.352	-.161	.396	.000	.000
ES11	.497	-.219	-.100	.247	.000	.000
ES9	.337	-.149	-.068	.167	.000	.000
ES8	.915	-.403	-.184	.454	.000	.000
ES7	.981	-.432	-.198	.487	.000	.000
ES4	1.547	-.682	-.312	.768	.000	.000
ES3	1.603	-.707	-.323	.795	.000	.000
ES2	1.579	-.696	-.318	.783	.000	.000
ES1	1.435	-.633	-.289	.712	.000	.000
EE7	.585	.000	.000	.000	.000	.000
EE8	.459	.000	.000	.000	.000	.000
EE9	.046	.000	.000	.000	.000	.000
EE1	.000	.769	.000	.000	.000	.000
EE2	.000	.838	.000	.000	.000	.000
EE3	.000	.861	.000	.000	.000	.000
EE4	.000	.000	.822	.000	.000	.000
EE5	.000	.000	.855	.000	.000	.000
EE6	.000	.000	.653	.000	.000	.000
EM12	.993	-.464	.026	.000	.759	.000
EM11	.883	-.413	.024	.000	.675	.000
EM10	.977	-.457	.026	.000	.747	.000
EM9	.885	-.414	.024	.000	.677	.000
EM8	1.060	-.496	.028	.000	.811	.000
EM7	.934	-.437	.025	.000	.714	.000
EM6	.142	-.067	.004	.000	.109	.000
EM5	.375	-.175	.010	.000	.287	.000
EM4	.913	-.427	.024	.000	.698	.000
EM3	.859	-.402	.023	.000	.657	.000
EM2	.981	-.459	.026	.000	.750	.000
EM1	.941	-.440	.025	.000	.720	.000

(I) Direct Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	27.626	-.725	-.492	.000	.000	.000
EM	16.777	-.467	.040	.000	.000	.000
EI	.000	.000	.000	.330	.102	.000
EI1	.000	.000	.000	.000	.000	2.304
EI2	.000	.000	.000	.000	.000	1.215
EI3	.000	.000	.000	.000	.000	1.290
EI5	.000	.000	.000	.000	.000	2.190
EI7	.000	.000	.000	.000	.000	1.000
ES12	.000	.000	.000	.515	.000	.000
ES11	.000	.000	.000	.385	.000	.000
ES9	.000	.000	.000	.228	.000	.000
ES8	.000	.000	.000	.538	.000	.000
ES7	.000	.000	.000	.540	.000	.000
ES4	.000	.000	.000	.957	.000	.000
ES3	.000	.000	.000	1.082	.000	.000
ES2	.000	.000	.000	1.053	.000	.000
ES1	.000	.000	.000	1.000	.000	.000
EE7	11.082	.000	.000	.000	.000	.000
EE8	10.366	.000	.000	.000	.000	.000
EE9	1.000	.000	.000	.000	.000	.000
EE1	.000	.920	.000	.000	.000	.000
EE2	.000	.956	.000	.000	.000	.000
EE3	.000	1.000	.000	.000	.000	.000
EE4	.000	.000	1.308	.000	.000	.000
EE5	.000	.000	1.318	.000	.000	.000
EE6	.000	.000	1.000	.000	.000	.000
EM12	.000	.000	.000	.000	1.084	.000
EM11	.000	.000	.000	.000	.894	.000
EM10	.000	.000	.000	.000	1.030	.000
EM9	.000	.000	.000	.000	1.035	.000
EM8	.000	.000	.000	.000	1.133	.000
EM7	.000	.000	.000	.000	.988	.000
EM6	.000	.000	.000	.000	.172	.000
EM5	.000	.000	.000	.000	.686	.000
EM4	.000	.000	.000	.000	.954	.000
EM3	.000	.000	.000	.000	.871	.000
EM2	.000	.000	.000	.000	1.056	.000
EM1	.000	.000	.000	.000	1.000	.000

(J) Standardized Direct Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	2.015	-.888	-.406	.000	.000	.000
EM	1.308	-.611	.035	.000	.000	.000
EI	.000	.000	.000	.714	.207	.000
EI1	.000	.000	.000	.000	.000	.801
EI2	.000	.000	.000	.000	.000	.517
EI3	.000	.000	.000	.000	.000	.526
EI5	.000	.000	.000	.000	.000	.790
EI7	.000	.000	.000	.000	.000	.394
ES12	.000	.000	.000	.396	.000	.000
ES11	.000	.000	.000	.247	.000	.000
ES9	.000	.000	.000	.167	.000	.000
ES8	.000	.000	.000	.454	.000	.000
ES7	.000	.000	.000	.487	.000	.000
ES4	.000	.000	.000	.768	.000	.000
ES3	.000	.000	.000	.795	.000	.000
ES2	.000	.000	.000	.783	.000	.000
ES1	.000	.000	.000	.712	.000	.000
EE7	.585	.000	.000	.000	.000	.000
EE8	.459	.000	.000	.000	.000	.000
EE9	.046	.000	.000	.000	.000	.000
EE1	.000	.769	.000	.000	.000	.000
EE2	.000	.838	.000	.000	.000	.000
EE3	.000	.861	.000	.000	.000	.000
EE4	.000	.000	.822	.000	.000	.000
EE5	.000	.000	.855	.000	.000	.000
EE6	.000	.000	.653	.000	.000	.000
EM12	.000	.000	.000	.000	.759	.000
EM11	.000	.000	.000	.000	.675	.000
EM10	.000	.000	.000	.000	.747	.000
EM9	.000	.000	.000	.000	.677	.000
EM8	.000	.000	.000	.000	.811	.000
EM7	.000	.000	.000	.000	.714	.000
EM6	.000	.000	.000	.000	.109	.000
EM5	.000	.000	.000	.000	.287	.000
EM4	.000	.000	.000	.000	.698	.000
EM3	.000	.000	.000	.000	.657	.000
EM2	.000	.000	.000	.000	.750	.000
EM1	.000	.000	.000	.000	.720	.000

## (K) Indirect Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	.000	.000	.000	.000	.000	.000
EM	.000	.000	.000	.000	.000	.000
EI	10.825	-.287	-.158	.000	.000	.000
EI1	24.945	-.661	-.365	.760	.235	.000
EI2	13.157	-.349	-.193	.401	.124	.000
EI3	13.966	-.370	-.204	.426	.131	.000
EI5	23.706	-.628	-.347	.723	.223	.000
EI7	10.825	-.287	-.158	.330	.102	.000
ES12	14.237	-.374	-.254	.000	.000	.000
ES11	10.631	-.279	-.189	.000	.000	.000
ES9	6.297	-.165	-.112	.000	.000	.000
ES8	14.855	-.390	-.265	.000	.000	.000
ES7	14.905	-.391	-.266	.000	.000	.000
ES4	26.450	-.694	-.471	.000	.000	.000
ES3	29.905	-.785	-.533	.000	.000	.000
ES2	29.086	-.763	-.518	.000	.000	.000
ES1	27.626	-.725	-.492	.000	.000	.000
EE7	.000	.000	.000	.000	.000	.000
EE8	.000	.000	.000	.000	.000	.000
EE9	.000	.000	.000	.000	.000	.000
EE1	.000	.000	.000	.000	.000	.000
EE2	.000	.000	.000	.000	.000	.000
EE3	.000	.000	.000	.000	.000	.000
EE4	.000	.000	.000	.000	.000	.000
EE5	.000	.000	.000	.000	.000	.000
EE6	.000	.000	.000	.000	.000	.000
EM12	18.193	-.506	.043	.000	.000	.000
EM11	14.992	-.417	.035	.000	.000	.000
EM10	17.281	-.481	.041	.000	.000	.000
EM9	17.357	-.483	.041	.000	.000	.000
EM8	19.001	-.529	.045	.000	.000	.000
EM7	16.573	-.461	.039	.000	.000	.000
EM6	2.891	-.080	.007	.000	.000	.000
EM5	11.512	-.320	.027	.000	.000	.000
EM4	16.001	-.445	.038	.000	.000	.000
EM3	14.610	-.407	.034	.000	.000	.000
EM2	17.723	-.493	.042	.000	.000	.000
EM1	16.777	-.467	.040	.000	.000	.000

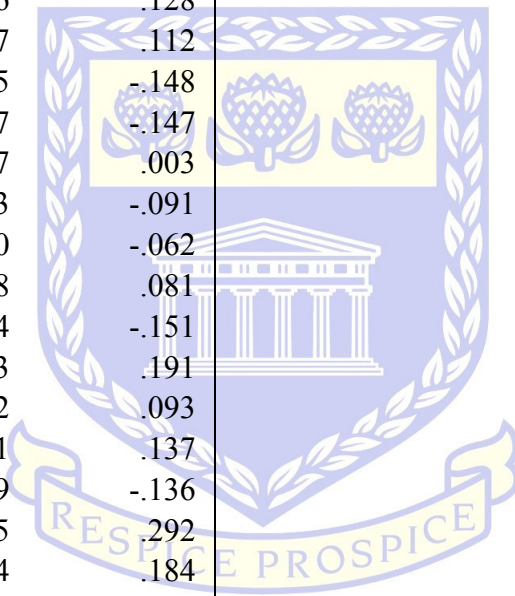
(L) Standardized Indirect Effects (Group number 1 - EE-Assessment Model)

	MTHD	IS	CON	ES	EM	EI
ES	.000	.000	.000	.000	.000	.000
EM	.000	.000	.000	.000	.000	.000
EI	1.710	-.761	-.283	.000	.000	.000
EI1	1.370	-.610	-.227	.572	.165	.000
EI2	.885	-.394	-.146	.370	.107	.000
EI3	.900	-.401	-.149	.376	.109	.000
EI5	1.352	-.602	-.224	.565	.163	.000
EI7	.673	-.299	-.111	.281	.081	.000
ES12	.798	-.352	-.161	.000	.000	.000
ES11	.497	-.219	-.100	.000	.000	.000
ES9	.337	-.149	-.068	.000	.000	.000
ES8	.915	-.403	-.184	.000	.000	.000
ES7	.981	-.432	-.198	.000	.000	.000
ES4	1.547	-.682	-.312	.000	.000	.000
ES3	1.603	-.707	-.323	.000	.000	.000
ES2	1.579	-.696	-.318	.000	.000	.000
ES1	1.435	-.633	-.289	.000	.000	.000
EE7	.000	.000	.000	.000	.000	.000
EE8	.000	.000	.000	.000	.000	.000
EE9	.000	.000	.000	.000	.000	.000
EE1	.000	.000	.000	.000	.000	.000
EE2	.000	.000	.000	.000	.000	.000
EE3	.000	.000	.000	.000	.000	.000
EE4	.000	.000	.000	.000	.000	.000
EE5	.000	.000	.000	.000	.000	.000
EE6	.000	.000	.000	.000	.000	.000
EM12	.993	-.464	.026	.000	.000	.000
EM11	.883	-.413	.024	.000	.000	.000
EM10	.977	-.457	.026	.000	.000	.000
EM9	.885	-.414	.024	.000	.000	.000
EM8	1.060	-.496	.028	.000	.000	.000
EM7	.934	-.437	.025	.000	.000	.000
EM6	.142	-.067	.004	.000	.000	.000
EM5	.375	-.175	.010	.000	.000	.000
EM4	.913	-.427	.024	.000	.000	.000
EM3	.859	-.402	.023	.000	.000	.000
EM2	.981	-.459	.026	.000	.000	.000
EM1	.941	-.440	.025	.000	.000	.000

(M) Modification Indices (Group number 1 - EE-Assessment Model)

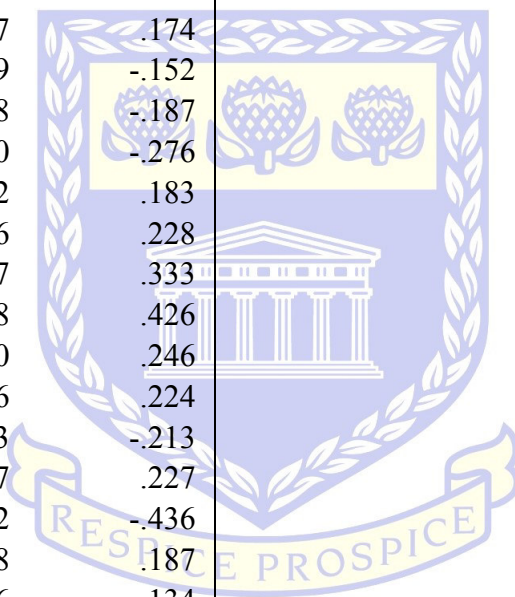
(N)Covariances: (Group number 1 - EE-Assessment Model)

		M.I.	Par Change
e43 <-->	MTHD	24.513	-.002
e43 <-->	IS	19.199	.054
e43 <-->	CON	28.734	.041
e43 <-->	e42	14.058	-.038
e40 <-->	MTHD	8.424	-.004
e40 <-->	IS	11.142	.117
e40 <-->	CON	7.354	.059
e39 <-->	e42	4.437	.061
e39 <-->	e40	7.317	.126
e36 <-->	MTHD	21.162	-.006
e36 <-->	IS	14.106	.128
e36 <-->	CON	27.417	.112
e36 <-->	e42	26.765	-.148
e36 <-->	e39	10.397	-.147
e34 <-->	MTHD	5.767	.003
e34 <-->	IS	5.123	-.091
e34 <-->	CON	6.140	-.062
e34 <-->	e42	5.758	.081
e34 <-->	e40	7.784	-.151
e34 <-->	e39	12.903	.191
e33 <-->	e42	5.492	.093
e33 <-->	e38	4.981	.137
e33 <-->	e36	4.759	-.136
e33 <-->	e34	16.075	.292
e32 <-->	e34	4.274	.184
e30 <-->	e36	4.392	-.141
e30 <-->	e34	5.963	.193
e29 <-->	CON	5.571	-.055
e29 <-->	e42	14.168	.119
e29 <-->	e41	8.681	-.090
e29 <-->	e39	30.133	.274
e29 <-->	e36	6.402	-.125
e29 <-->	e34	19.338	.255
e29 <-->	e33	25.119	.341
e29 <-->	e30	15.413	.289
e28 <-->	e43	6.719	.043
e28 <-->	e38	9.695	.140
e28 <-->	e34	16.319	.216
e25 <-->	IS	5.021	-.073
e25 <-->	e40	8.214	-.128
e24 <-->	e43	22.509	-.078
e24 <-->	e36	9.893	-.144
e23 <-->	e40	8.124	.127



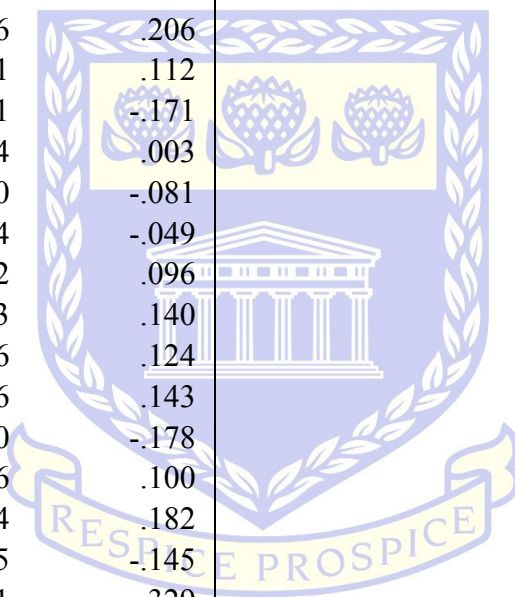
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		M.I.	Par Change
e23 <-->	e32	10.230	-.234
e23 <-->	e25	6.383	-.106
e23 <-->	e24	14.990	.170
e22 <-->	e41	5.491	.072
e22 <-->	e33	7.077	-.184
e22 <-->	e28	10.743	-.166
e21 <-->	IS	7.183	-.119
e21 <-->	e39	4.432	.125
e21 <-->	e36	4.335	.122
e21 <-->	e25	7.293	.153
e20 <-->	MTHD	4.417	-.004
e20 <-->	IS	15.210	.225
e20 <-->	e40	4.997	.174
e20 <-->	e38	4.079	-.152
e20 <-->	e34	4.388	-.187
e20 <-->	e28	12.940	-.276
e19 <-->	e39	4.902	.183
e19 <-->	e38	7.866	.228
e19 <-->	e33	8.717	.333
e19 <-->	e32	9.548	.426
e19 <-->	e30	4.070	.246
e19 <-->	e28	7.326	.224
e19 <-->	e24	6.603	-.213
e19 <-->	e21	4.537	.227
e19 <-->	e20	9.932	-.436
e18 <-->	e29	10.258	.187
e17 <-->	e33	4.376	.134
e17 <-->	e30	4.285	-.143
e17 <-->	e29	7.124	-.136
e16 <-->	e30	4.635	.148
e16 <-->	e25	6.122	-.111
e16 <-->	e21	10.718	-.196
e15 <-->	e42	6.788	-.071
e15 <-->	e41	7.725	.073
e15 <-->	e34	16.241	-.204
e15 <-->	e28	6.863	-.114
e15 <-->	e22	4.573	.103
e15 <-->	e21	5.610	-.133
e15 <-->	e18	10.867	-.168
e15 <-->	e17	5.043	.100
e15 <-->	e16	4.313	.092
e14 <-->	e43	10.291	.046
e14 <-->	e39	4.075	-.081
e14 <-->	e36	7.591	.109



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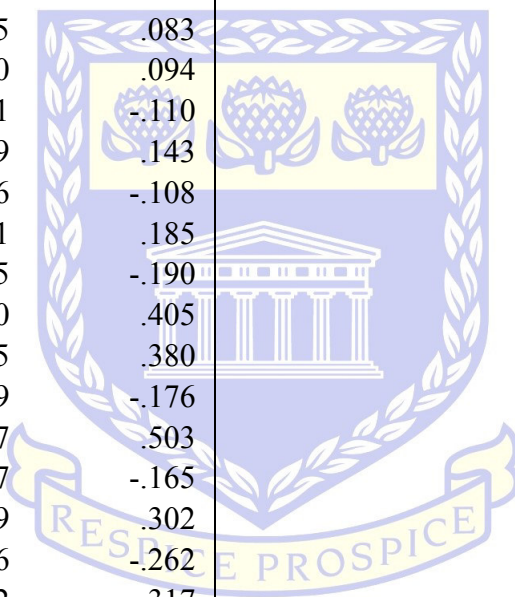
		M.I.	Par Change
e14 <-->	e29	4.805	-.095
e14 <-->	e28	6.584	.103
e14 <-->	e22	12.580	-.157
e14 <-->	e16	7.657	-.112
e14 <-->	e15	7.464	.099
e13 <-->	MTHD	16.469	.006
e13 <-->	CON	21.480	-.110
e13 <-->	e42	17.941	.139
e13 <-->	e43	31.281	.105
e13 <-->	e39	14.962	.200
e13 <-->	e34	18.280	.257
e13 <-->	e32	5.096	.194
e13 <-->	e29	13.386	.206
e13 <-->	e16	4.571	.112
e13 <-->	e15	12.431	-.171
e12 <-->	MTHD	5.504	.003
e12 <-->	IS	5.210	-.081
e12 <-->	CON	4.724	-.049
e12 <-->	e42	10.362	.096
e12 <-->	e40	8.473	.140
e12 <-->	e34	5.086	.124
e12 <-->	e28	9.086	.143
e12 <-->	e21	8.420	-.178
e12 <-->	e16	4.336	.100
e11 <-->	e39	13.794	.182
e11 <-->	e36	8.865	-.145
e11 <-->	e34	33.311	.329
e11 <-->	e33	11.014	.222
e11 <-->	e28	12.949	.176
e11 <-->	e23	4.241	-.097
e11 <-->	e22	5.044	-.122
e11 <-->	e20	7.668	-.226
e11 <-->	e12	10.401	.162
e10 <-->	e23	10.607	.145
e10 <-->	e20	9.673	.242
e10 <-->	e13	5.162	-.119
e10 <-->	e11	8.296	.143
e9 <-->	MTHD	6.310	-.004
e9 <-->	IS	4.544	.090
e9 <-->	CON	5.687	.064
e9 <-->	e42	5.788	-.086
e9 <-->	e25	9.757	-.169
e9 <-->	e21	12.562	-.258
e9 <-->	e15	5.565	.126



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			M.I.	Par Change
e9	<-->	e10	5.539	.134
e8	<-->	e41	5.909	.061
e8	<-->	e40	8.173	-.124
e8	<-->	e39	11.069	-.142
e8	<-->	e36	10.493	.137
e8	<-->	e33	4.452	-.122
e8	<-->	e29	13.415	-.169
e8	<-->	e22	6.135	.117
e8	<-->	e20	4.515	-.151
e8	<-->	e15	9.058	.121
e8	<-->	e13	6.704	-.124
e7	<-->	e42	11.437	-.105
e7	<-->	e41	8.025	.083
e7	<-->	e25	4.040	.094
e7	<-->	e23	5.561	-.110
e7	<-->	e11	7.569	.143
e7	<-->	e10	4.816	-.108
e7	<-->	e8	16.941	.185
e6	<-->	e34	4.525	-.190
e6	<-->	e32	10.080	.405
e6	<-->	e30	11.285	.380
e6	<-->	e29	4.459	-.176
e6	<-->	e20	15.417	.503
e6	<-->	e11	4.097	-.165
e5	<-->	e39	7.279	.302
e5	<-->	e22	4.476	-.262
e5	<-->	e21	4.822	.317
e5	<-->	e19	7.026	.535
e4	<-->	CON	4.671	-.050
e4	<-->	e43	4.522	.038
e4	<-->	e39	5.307	.113
e4	<-->	e29	9.076	.161
e4	<-->	e28	4.558	-.105
e4	<-->	e14	6.975	-.113
e4	<-->	e13	8.417	.161
e4	<-->	e11	6.100	-.129
e4	<-->	e10	9.793	-.156
e3	<-->	e42	4.436	-.067
e3	<-->	e40	4.591	-.109
e3	<-->	e33	4.780	-.149
e3	<-->	e23	5.004	-.107
e3	<-->	e21	12.449	.227
e3	<-->	e12	6.533	-.131
e3	<-->	e11	5.697	-.127



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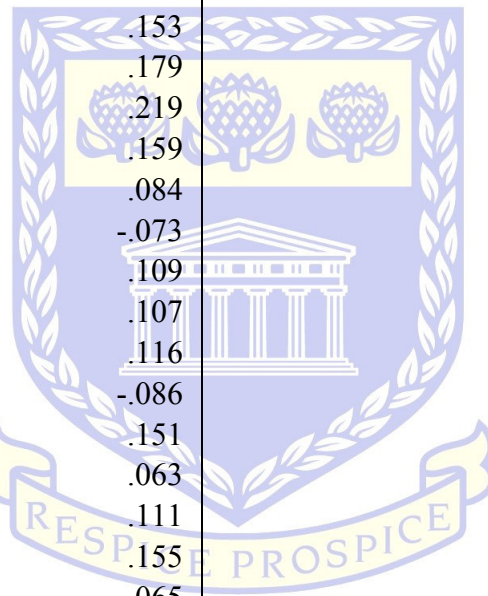
		M.I.	Par Change
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e3	<--> e4	10.932	.177
e2	<--> e34	4.742	-.112
e2	<--> e25	4.526	.090
e2	<--> e22	10.144	.155
e2	<--> e11	10.616	-.153
e2	<--> e3	38.066	.295
e1	<--> e41	10.206	-.088
e1	<--> e32	5.220	-.172
e1	<--> e21	5.073	.132
e1	<--> e16	6.645	-.119
e1	<--> e15	4.394	.090
e1	<--> e13	4.235	.105
e1	<--> e10	6.717	-.119

(O)Variances: (Group number 1 - EE-Assessment Model)

(P) Regression Weights: (Group number 1 - EE-Assessment Model)

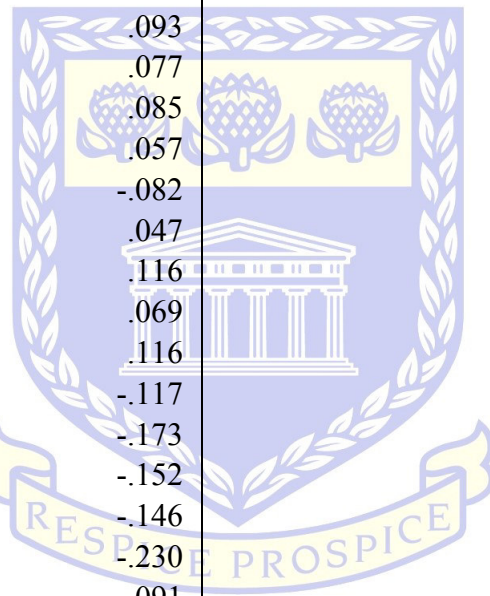
		M.I.	Par Change
EI	<--- IS	4.020	.021
EI1	<--- IS	4.794	.064
EI1	<--- EI2	7.765	.087
EI1	<--- EI7	5.586	-.068
EI1	<--- EE8	6.160	.051
EI1	<--- EE3	4.007	.047
EI2	<--- EI7	12.183	.099
EI2	<--- ES8	32.512	.160
EI2	<--- ES7	9.129	.090
EI2	<--- EE9	4.750	.045
EI2	<--- EE6	5.881	.064
EI2	<--- EM11	4.959	.060
EI2	<--- EM8	5.504	-.060
EI2	<--- EM6	4.020	-.045
EI2	<--- EM5	5.718	.035
EI3	<--- ES7	6.108	.073
EI3	<--- EE9	7.769	.057
EI5	<--- EI2	7.349	-.082
EI5	<--- ES9	4.540	-.052
EI5	<--- ES8	6.379	-.070
EI5	<--- EE7	5.361	.055
EI5	<--- EE5	7.569	.071
EI5	<--- EE6	6.575	.067
EI5	<--- EM8	6.638	.065
EI5	<--- EM4	4.043	.052

			M.I.	Par Change
EI7	<---	EI2	10.583	.116
EI7	<---	ES12	13.384	.109
EI7	<---	ES11	7.153	.066
EI7	<---	ES9	9.053	.085
EI7	<---	ES8	36.093	.196
EI7	<---	ES7	32.368	.198
EI7	<---	EE8	4.492	-.050
EI7	<---	EE4	7.140	-.079
EI7	<---	EE6	6.906	.080
EI7	<---	EM11	15.915	.124
EI7	<---	EM6	4.571	-.056
ES12	<---	EI2	5.822	.101
ES12	<---	EI3	14.701	.153
ES12	<---	EI7	21.578	.179
ES12	<---	ES8	32.754	.219
ES12	<---	ES7	15.191	.159
ES12	<---	EE9	8.636	.084
ES12	<---	EM3	4.028	-.073
ES11	<---	EI7	5.341	.109
ES11	<---	EE9	9.449	.107
ES11	<---	EM6	9.682	.116
ES11	<---	EM1	4.126	-.086
ES9	<---	ES8	13.370	.151
ES9	<---	EE9	4.129	.063
ES9	<---	EM6	11.310	.111
ES8	<---	EI2	21.861	.155
ES8	<---	EI3	4.133	.065
ES8	<---	EI7	15.871	.122
ES8	<---	ES12	20.905	.127
ES8	<---	ES9	16.954	.109
ES8	<---	EE1	4.466	.052
ES8	<---	EE6	5.362	.066
ES8	<---	EM8	7.996	-.078
ES8	<---	EM6	4.879	-.054
ES8	<---	EM3	4.481	-.062
ES7	<---	EI2	4.548	.065
ES7	<---	EI3	22.099	.138
ES7	<---	EI7	26.821	.146
ES7	<---	ES1	5.579	-.056
ES7	<---	EE8	10.879	-.066
ES7	<---	EE9	7.242	.056
ES7	<---	EM12	4.626	.053
ES7	<---	EM11	8.000	.076
ES4	<---	ES8	4.045	.054



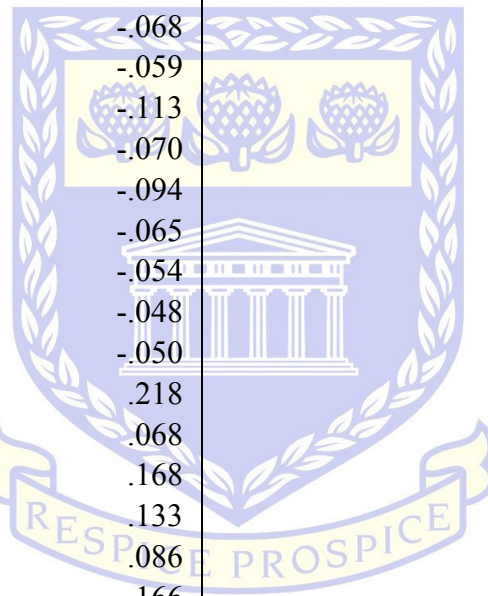
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			M.I.	Par Change
ES4	<---	EE3	6.027	-.055
ES3	<---	EI2	5.437	-.072
ES3	<---	EI5	7.300	-.070
ES3	<---	ES2	7.187	.066
ES3	<---	EE9	6.630	-.054
ES2	<---	EI3	4.561	-.060
ES2	<---	ES11	10.112	-.065
ES2	<---	ES3	4.966	.052
ES1	<---	EI3	5.473	-.076
ES1	<---	ES12	5.821	-.068
ES1	<---	ES7	7.532	-.091
ES1	<---	EM2	6.554	.071
EE7	<---	EI2	5.550	.093
EE7	<---	EI5	5.306	.077
EE7	<---	ES4	6.106	.085
EE7	<---	EE9	4.527	.057
EE7	<---	EE3	7.379	-.082
EE7	<---	EM5	5.938	.047
EE7	<---	EM3	11.358	.116
EE7	<---	EM1	4.407	.069
EE8	<---	IS	5.752	.116
EE8	<---	EI2	5.205	-.117
EE8	<---	EI3	12.457	-.173
EE8	<---	EI7	10.333	-.152
EE8	<---	ES8	9.743	-.146
EE8	<---	ES7	21.080	-.230
EE8	<---	ES4	4.209	-.091
EE8	<---	EE9	9.910	-.110
EE8	<---	EE2	6.843	.104
EE8	<---	EE3	5.825	.094
EE8	<---	EM12	6.253	-.104
EE8	<---	EM11	10.764	-.147
EE8	<---	EM8	7.387	-.115
EE8	<---	EM6	13.637	.138
EE9	<---	EI2	6.066	.136
EE9	<---	EI3	11.433	.179
EE9	<---	EI7	5.334	.118
EE9	<---	ES12	4.551	.098
EE9	<---	ES11	10.502	.124
EE9	<---	ES9	6.751	.114
EE9	<---	ES7	6.133	.134
EE9	<---	ES3	6.627	-.113
EE9	<---	ES2	5.900	-.108
EE9	<---	ES1	5.033	-.096



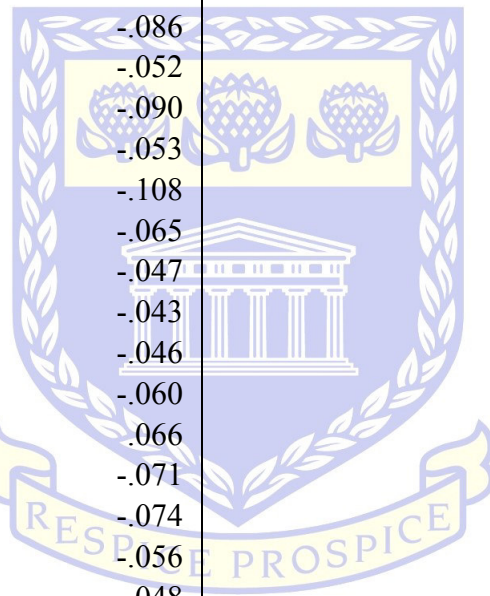
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			M.I.	Par Change
EE9	<---	EE8	12.991	-.131
EE9	<---	EE1	4.287	-.084
EE9	<---	EE2	4.734	-.093
EE9	<---	EE4	4.064	-.092
EE9	<---	EM5	4.805	.059
EE9	<---	EM1	4.620	-.099
EE1	<---	ES8	4.128	.067
EE1	<---	EE4	8.058	-.084
EE2	<---	ES12	6.163	.065
EE2	<---	ES4	4.346	.057
EE2	<---	EE4	5.720	.062
EE2	<---	EM2	4.102	.052
EE3	<---	EE7	7.850	-.068
EE4	<---	EI3	4.451	-.059
EE4	<---	EI7	17.717	-.113
EE4	<---	ES8	6.989	-.070
EE4	<---	ES7	11.089	-.094
EE4	<---	EE6	6.870	-.065
EE5	<---	ES1	6.880	-.054
EE5	<---	EE3	5.572	-.048
EE5	<---	EM4	4.979	-.050
EE6	<---	EI	6.387	.218
EE6	<---	EI1	5.841	.068
EE6	<---	EI2	23.728	.168
EE6	<---	EI3	16.309	.133
EE6	<---	EI5	8.582	.086
EE6	<---	EI7	27.290	.166
EE6	<---	ES11	7.176	.064
EE6	<---	ES8	19.067	.138
EE6	<---	ES7	6.771	.088
EE6	<---	EE8	4.191	.046
EE6	<---	EE3	5.048	.059
EE6	<---	EM4	4.609	.063
EM12	<---	EI1	4.103	.052
EM12	<---	EI7	4.492	.062
EM12	<---	ES7	8.876	.092
EM12	<---	EE7	6.070	-.061
EM12	<---	EM11	5.387	.064
EM11	<---	EI2	11.478	.110
EM11	<---	EI3	7.991	.088
EM11	<---	EI7	31.618	.169
EM11	<---	ES12	8.761	.080
EM11	<---	ES8	4.413	.063
EM11	<---	ES7	13.377	.117



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		M.I.	Par Change
EM11 <---	ES1	4.246	-.052
EM11 <---	EE8	7.131	-.057
EM11 <---	EM12	4.042	.053
EM11 <---	EM6	4.045	-.048
EM11 <---	EM2	6.055	-.066
EM10 <---	ES2	5.239	.057
EM10 <---	EE8	9.015	.061
EM10 <---	EM11	4.296	.056
EM10 <---	EM4	4.727	-.057
EM10 <---	EM1	5.184	-.059
EM9 <---	ES8	4.866	-.076
EM9 <---	ES4	5.564	-.077
EM9 <---	EE7	8.416	-.086
EM8 <---	EI1	5.133	-.052
EM8 <---	EI2	10.125	-.090
EM8 <---	ES12	5.051	-.053
EM8 <---	ES8	17.252	-.108
EM8 <---	ES7	5.433	-.065
EM8 <---	EE8	6.389	-.047
EM8 <---	EE1	4.148	-.043
EM8 <---	EE2	4.304	-.046
EM8 <---	EE6	6.155	-.060
EM8 <---	EM7	7.835	.066
EM7 <---	ES8	5.656	-.071
EM7 <---	ES7	5.454	-.074
EM7 <---	ES2	4.541	.056
EM7 <---	EE1	4.010	-.048
EM7 <---	EM8	5.138	.061
EM6 <---	ES11	17.147	.147
EM6 <---	ES9	18.590	.175
EM6 <---	EE8	13.253	.123
EM5 <---	EI2	7.203	.200
EM5 <---	ES8	4.690	.148
EM5 <---	ES7	4.042	.147
EM5 <---	EE7	4.019	.117
EM5 <---	EE9	7.114	.136
EM4 <---	IS	4.765	.068
EM4 <---	EI2	5.315	.076
EM4 <---	ES8	5.232	.069
EM4 <---	EE1	5.962	.059
EM4 <---	EE3	4.100	.051
EM4 <---	EE6	4.759	.061
EM4 <---	EM3	5.932	.070
EM3 <---	ES12	4.707	-.060



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			M.I.	Par Change
EM3	<---	EE7	7.302	.071
EM3	<---	EM4	5.279	.065
EM3	<---	EM2	20.309	.123
EM3	<---	EM1	5.683	.066
EM2	<---	EI7	4.189	-.056
EM2	<---	ES1	6.068	.056
EM2	<---	EM11	5.471	-.060
EM2	<---	EM3	20.626	.117
EM1	<---	ES11	4.214	-.043
EM1	<---	EE7	5.727	.057
EM1	<---	EE4	4.720	.054
EM1	<---	EE6	5.666	.062

(Q) Model Fit Summary

(R) CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
EE-Assessment Model	87	1700.351	543	.000	3.131
Saturated model	630	.000	0		
Independence model	35	12881.441	595	.000	21.649

(S) RMR, GFI

Model	RMR	GFI	AGFI	PGFI
EE-Assessment Model	.143	.867	.846	.747
Saturated model	.000	1.000		
Independence model	.950	.188	.140	.178

(T) Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
EE-Assessment Model	.868	.855	.906	.897	.906
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

(U) Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
EE-Assessment Model	.913	.792	.827
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

(V) NCP

Model	NCP	LO 90	HI 90
EE-Assessment Model	1157.351	1036.754	1285.532
Saturated model	.000	.000	.000
Independence model	12286.441	11920.605	12658.656

(W) FMIN

Model	FMIN	F0	LO 90	HI 90
EE-Assessment Model	2.408	1.639	1.468	1.821
Saturated model	.000	.000	.000	.000
Independence model	18.246	17.403	16.885	17.930

(X) RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
EE-Assessment Model	.055	.052	.058	.003
Independence model	.171	.168	.174	.000

(Y) AIC

Model	AIC	BCC	BIC	CAIC
EE-Assessment Model	1874.351	1883.701	2271.161	2358.161
Saturated model	1260.000	1327.701	4133.449	4763.449
Independence model	12951.441	12955.202	13111.077	13146.077

(Z) ECVI

Model	ECVI	LO 90	HI 90	MECVI
EE-Assessment Model	2.655	2.484	2.836	2.668
Saturated model	1.785	1.785	1.785	1.881
Independence model	18.345	17.827	18.872	18.350

(AA) HOELTER

Model	HOELTER	HOELTER
	.05	.01
EE-Assessment Model	249	259
Independence model	36	38

Execution time summary

Minimization:	.512
Miscellaneous:	4.057
Bootstrap:	.000
Total:	4.569



## 8.10 Appendix 10: Transcript of Interview 1

Date of Interview: June 18, 2016.

Interviewee: **AF** (A lecturer of the compulsory undergraduate entrepreneurship module)

Interviewer: Researcher (denoted as **Q** in the transcript)

**Q:** I know you have been teaching entrepreneurship studies for some time now. But precisely for how long have you been teaching the module?

**AF:** About four years. That is four academic sessions.

**Q:** Your first degree is in what discipline?

**AF:** Business Admin.

**Q:** How about your second degree?

**AF:** Business Administration too.

**Q:** Have you attended trainings, workshops or conferences that are focused on entrepreneurship?

**AF:** I have attended two workshops and two conferences

**Q:** Since you have been teaching entrepreneurship, what have methods have you been using...like: lecture-delivery only; or case studies; or guest lecture or...

**AF:** Just lecture delivery. Although I normally refer to cases of entrepreneurs

**Q:** Did you take active part in the development of the present curriculum of the general entrepreneurship module?

**AF:** No. I did not.

**Q:** Have you done researches or have publications on entrepreneurship?

**AF:** Yes.

**Q:** Like how many?

**AF:** Four

**Q:** What were some of the issues you addressed?

**AF:** The first, I looked at the cultural effect on family business...it was a master's research. In the second paper, I looked at informal sector women and economic growth checking whether they are opportunity-based or necessity-based. In the third paper, I looked at entrepreneurial education for women in the informal sector; and I co-authored a paper on entrepreneurial literacy and women.

**Q:** I think the women entrepreneurship is an emerging area that needs strong models for research.

**Q:** Apart from teaching entrepreneurship, have you been involved in business start-up or helped in venture set up and management?

**AF:** Yes. I have started mine and it has been successful. And I have encouraged others to start.

**Q:** So, I can say you are a successful teaching and practicing entrepreneur. By the way, do you have a website for your business?

**AF:** Yes, I do.

**Q:** Two or three more questions to go please. Looking at the way entrepreneurship education is done mostly at the federal universities and at the undergraduate level, what do you think in your opinion, about the scope of the current curriculum vis-à-vis the available teaching tuition hours (which is two hours per week for 15 weeks for most varsities)? Would you say it is too broad or too narrow?

**AF:** I wouldn't not say it is too broad or too narrow. But I think should be done is more is to introduce more practicality into the module. Because, what is the essence of teaching entrepreneurship in the light of graduate unemployment? Is it not to impart skills to help graduates self-employed upon graduation? Something like Business Club will help students put to use lessons learnt during GST 223 [the entrepreneurship module] into practical use while still being students. That is how the module will make practical impact. What we are doing is just to teach the students for exams sake and students go and write exams for passing sake. This does not translate to any practical motivation and impact on students' mind and skills. Only a few students out of personal drive meet me personally for business advice...

**Q:** So, you are saying the curriculum should be expanded to incorporate practical aspect of business?

**AF:** More practical... But you know that the students are supposed to do a practical entrepreneurship module in 300 Level but most students do not offer because it is elective. I wish the university will make it compulsory.

**Q:** What do you think is the greatest challenge to entrepreneurship education in Nigerian universities? Lope-sided student-teacher ratio;

**AF:** Deficit of teaching infrastructure/facilities is the first thing...the very first challenge and that is the problem our university is really faced with. The second one is insufficient funding for entrepreneurship research. I will say that the lecturers are all competent. But the student-ratio is quite large.

**Q:** Yea...that is true. Just like when I was interacting with the students, one of their major complaints was that the entrepreneurship class could be over 1,000 students and many do not get a seat and even those who do somewhere in the middle do not really get to hear the lecturers clearly due to poor audibility. And after two weeks, they don't get to see the lecturers coming for classes...

**AF:** That is not true. How many of them come lecturer...the students don't come for lectures. When you go to the Multi-Purpose Auditorium, the place is practically empty...except for Social Sciences that come. And with PA system, the problem of poor audibility will be solved.

**Q:** But if practical aspect will be implemented as you are suggesting, don't you think that it will be too much for one lecturer to handle more than 100 students in a class?

**AF:** Yea...more resource persons will be brought in...there is no way a few people could anchor all of that.

**Q:** So, there will be need for more resource persons?

**AF:** Yes.

**Q:** Don't you think there is need to redesign the entire entrepreneurship education module?

**AF:** Like?

**Q:** In terms of content, mode of delivery, class size, and other issues...so that the module is effectively taught and the intended skills and mindset are well passed on to the students.

**AF:** As you know, the module was designed by NUC as a compulsory for all undergraduate students. Already some of the students have fifteen, sixteen, seventeen or eighteen course units for session. So, they are already overloaded and discouraged. What I think is that the current curriculum is sufficient to give students the basic idea of how to be self-sufficient...but students should be required to execute a project before graduation. This way, they will be able to put their skills to work.

**Q:** Are you saying that the general entrepreneurship module should be made optional while the practical module is made compulsory?

**AF:** No. You cannot make the general entrepreneurship module optional because that is the foundation...that is where you can learn about entrepreneurship and know what entrepreneurship all about...then the practical module will open up their minds and they would better appreciate what they have learnt in the foundation module.

**Q:** If I get you right, you are advocating for two modules of entrepreneurship education over two semesters...

**AF:** Yes.

**Q:** So, there will be a first semester module that will address how to identify a problem in your environment; how to generate business idea; and build a business plan out of it...then the second semester will focus on executing live projects in groups or on individual basis.

**AF:** Yes. Yes. Yes.

**Q:** But do you think that the two-hour-per week contact is sufficient for the current curriculum?

**AF:** Yes, I think so because the students are already so overloaded. Increasing the teaching hours will mean redesigning various academic disciplines to allow for more work load for students to achieve.

**Q:** Okay. Which do you advise Nigerian universities to adopt in promoting entrepreneurship education? Centric and decentric models.

**AF:** I will advise a hybrid of both the centric and decentric models...but for now, since we are still young, I will advise the centric model because entrepreneurship concepts and tools can be applied generally to all disciplines. Then with time, we can adopt the hybrid of centric and decentric models.

**Q:** Thank you so much for your time. I do appreciate it.

**AF:** Okay. Thank you. Regards...

## 8.11 Appendix 11: Transcript of Interview 2

Date of Interview: June 19, 2016.

Interviewee: **AS** (A lecturer of the compulsory undergraduate entrepreneurship module)

Interviewer: Researcher (denoted as **Q** in the transcript)

**Q:** Thank you for granting this interview. First, I wish to know how long you have been teaching the foundation entrepreneurship studies.

**AS:** I have been teaching for two academic sessions as replacement of a colleague who have been teaching for three years before he went on study leave.

**Q:** What are your majors in your first and second degrees?

**AS:** My degree was in Business Management while my second degree was MBA with a specialisation in entrepreneurship.

**Q:** How many entrepreneurship-focused trainings, workshops or conferences have you attended?

**AS:** I have attended had one conference and two workshops.

**Q:** What methods have you used to teach the Foundation entrepreneurship module?

**AS:** There is only method we have used: traditional teaching approach. You stand there on the podium and dish it to the students. Only that you make the class participatory as much as possible.

**Q:** Did you take active part in the curriculum development of the current foundation entrepreneurship module?

**AS:** No. I did not, but I took active part is writing the proposal that established the Centre of Entrepreneurship Studies and I have been active is researching and teaching at the centre. I completed another proposal to establish an institutional entrepreneurship concern sometimes in 2015. Still awaiting Management decision on the recommendations.

**Q:** Have you done researches or have publications on entrepreneurship?

**AS:** Yes. Like four.

**Q:** What were some of the issues you addressed?

**AS:** One looked at the entrepreneurial intentions of graduates after offering the compulsory entrepreneurship module. The other ones focused on entrepreneurial intensity of medium scale organisations; entrepreneurship system in Nigeria and the economy.

**Q:** Apart from teaching entrepreneurship, have you been involved in business start-up or helped in venture set up and management?

**AS:** Oh Yes. I have been involved in helping small and medium scale organisations grow entrepreneurially...I did some consultancy job for a firm this year (2016).

**Q:** That means you the experience of what you teach...

**AS:** Yes...Yes...

**Q:** Considering the way entrepreneurship education is carried on in most Nigerian universities with particular reference to the undergraduate module, what do you think about the scope of the current curriculum vis-à-vis the available teaching tuition hours (which is two hours per week for 15 weeks for most varsities)?

**AS:** Talking about the content of the module, it is quite explicit and sufficient to cultivate entrepreneurial mindset and skills I students; hopefully, this should stimulate strong entrepreneurial intention and actions amongst undergrads. But two things are the biggest challenges. One is "time". 2 hours per week for 15 contacts, translating to 30-hour teaching sessions at the maximum. That is practically and absolutely insufficient to cover about 16 extensive and broad topics laid out in the module. So, you find out only less than a quarter of the content is actually being taught and that in quick passing. No depth. No foundation. So, we teach for examination sake...

**Q:** So, what do you think should be done to tackle this?

**AS:** Very simple. Break the syllabus into two modules and make them both compulsory. Now you must also note the fact that most academic programmes are already overloaded. So, a long term, holistic solution would be needed. That will mean complete overhaul of curricular design well blended with entrepreneurship education at various academic programmes. Meanwhile, in the immediate, key and fundamental entrepreneurial issues like opportunity perception, start-up skills and business environment should be rigorously focused on at the Foundation level of the module. Then over a mid-term period, we can work out plan to modulate academic programmes to accommodate extra 2 credit unit without technically adding further pressure on academic work load. This way, other parts of the current module can be effectively taught. You see, the object is not just teaching but building entrepreneurial acumen and stimulate entrepreneurial orientation. So, we must keep our eye just on that...

**Q:** But with this current traditional lecturing method, don't you think it will be less effective to engender entrepreneurial mindset and skills in particular when no hands-on activities take place?

**AS:** You are absolutely right. But a big challenge is the class size, then teaching facilities and venues. I think there has to be lot of investment on the part of the institution in support of entrepreneurship teaching. If some basic things are in place, then lots of projects could be executed while teaching the module; and that without employing additional teachers/lecturers as there are lots of resource persons both within and outside the university to draw from.

**Q:** So, what then do you think is the greatest challenge to entrepreneurship education in Nigerian universities?

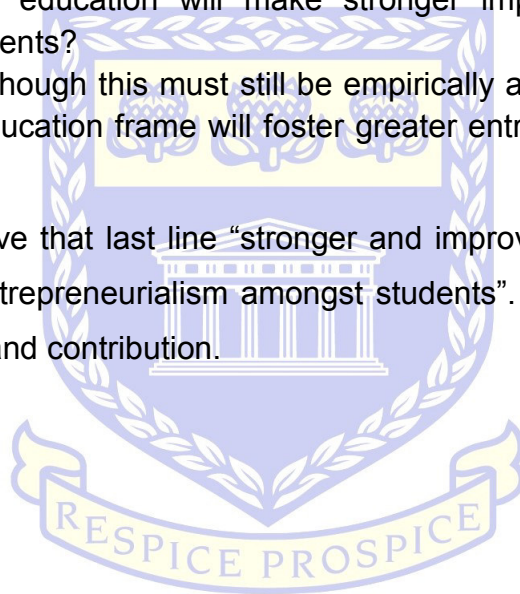
**AS:** The greatest of them is infrastructure/facilities. Even if you have the best crop of lecturers, beautifully designed curriculum, how would implement it well if there is no good supporting environment. See how overcrowded the classrooms are. Is that good conducive learning environment or what? The lecturers are good...but how much can then do without institutional support to make the module excel at its objective?

**AS:** Which other issue do you think of when the facilities are acutely inadequate and research funding is grossly insufficient? These are two big issues.

**Q:** Interesting. So, you believe once these two things are settled, entrepreneurship education will make stronger impact on entrepreneurial intentions of students?

**AS:** Why not. Although this must still be empirically ascertained. But stronger and improved education frame will foster greater entrepreneurialism amongst students.

**Q:** Beautiful. I love that last line “stronger and improved education frame will foster greater entrepreneurialism amongst students”. Thank you so much for your time, input and contribution.



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## 8.12 Appendix 12: Transcript of Interview 3

Date of Interview: June 18, 2016.

Interviewee: **AE** (A lecturer of the compulsory undergraduate entrepreneurship module)

Interviewer: Researcher (denoted as **Q** in the transcript)

**AE:** Hello, how are you? And your family?

**Q:** We are fine sir. Thank you for granting this interview. I like to ask a few questions in relation to the entrepreneurship course you have been teaching. For how long have you been teaching the module sir?

**AE:** Well, I can't be very precise now but it is over twelve years...because I started teaching entrepreneurship when B.Sc. Social Works was introduced in the department of Sociology. And that was before entrepreneurship was introduced as compulsory general course.

**Q:** Ok sir. Is your first degree in Business or Entrepreneurship?

**AE:** My degree was B.Sc. Management Studies.

**Q:** How about your second-degree sir?

**AE:** My second degree is an MBA.

**Q:** Sir is your PhD programme Entrepreneurship-focused or Management-focused?

**AE:** There is an area called general management...this includes management in private sector, public sector...in short it is not specific and just as the name implies, it is general. It is not specific on an area.

**Q:** How many entrepreneurship-focused trainings, workshops or conferences have you attended, sir?

**AE:** I have attended some local workshops on entrepreneurship. Like up to six or seven. As for conferences, I have actually presented papers at two or three conferences on entrepreneurship.

**Q:** I want to find out what major methods of teaching that have been adopted for the general entrepreneurship module.

**AE:** I think so far, because of the largeness of that class, we have not been able to do much. We are just giving them the normal lecture...and refer them to sources where they can get materials for further reading. But in recent time, particularly at 400 Level [only Business students, aside the General Entrepreneurship], in addition to the normal lecture, we group the students to do and present a feasibility to the class for assessment. That is drawing up business plan.

**Q:** I also want to know if, apart from teaching entrepreneurship in the class, you have started your own entrepreneurial venture or helped in business start-ups?

**AE:** Yea...for more than 10 years ago, started service-based business setup. Then in addition to that, I also run a management consultancy firm. I

have organised workshops for private and public firms. As a result of interaction with people, you gain insight on what to even impact to students. When you do similar things and gain experiences, there is no how, as you are lecturing, you are likely to bring to bear some of those experiences. The practice itself as avenue...it kind of add value to the teaching aspect of the subject matter.

**Q:** Looking at the current curriculum of the module and the time available to cover the topics in the course of one semester, do you think the curriculum is too wide and therefore it should be narrowed down to certain things or too narrow and therefore should be expanded?

**AE:** No. In short, it is not the case of too narrow or too broad. I went to some other universities and discovered that they are doing more of practical aspect than our own university. We do more of theory. What we need is not theory of entrepreneurship but practical entrepreneurship. So, I would say is that if we can balance between the theory and practice, that will help us better.

**Q:** So, you are saying that the current one-semester module should incorporate practical aspects?

**AE:** For the current module, that might not be possible to introduce practical aspects because of the largeness of the class. But if we can go further and introduce practical modules like some universities do at higher level of study. Then as they go higher and graduate, if they [the students] can put those knowledge and skills into practice that will be more rewarding, particularly to the students. Especially when you look at job specifications, the practical aspect will kind of give the students insight on what they would do after graduating from the university.

**Q:** That means you are trying to say that the current entrepreneurship module alone as it is, is not sufficient to stimulate entrepreneurship mindset and engender entrepreneurial skills, and intentions in...

**AE:** ...at all. The module cannot help much in terms of skills acquisition. Entrepreneurship is not just about theory but it is about doing. So, if you learn all the theories and do not know how to do something, you are not enterprising.

**Q:** If you are to introduce the practical component to stimulate the skills like problem-solving skills, opportunity identification skills....

**AE:** These are the practical aspect we are talking about and we need to bring in experts in various areas to teach the students in practical ways....

**Q:** Okay. If you are to bring in the practical components, then participation will reduce from say one thousand students to hundred.

**AE:** Yes.

**Q:** That means about nine hundred students will be left out?

**AE:** Well I do not know the exact ratio but everybody will still need the introductory, foundational course like we are doing at the moment. And from



there it is possible to carry the students along even from the introductory to the practical component.

### 8.13 Appendix 13: Transcript of Interview 4

Date of Interview: November 11, 2016.

Interviewee: **AM** (A lecturer of the compulsory undergraduate entrepreneurship module)

Interviewer: Researcher (denoted as **Q** in the transcript)

**Q:** Good afternoon sir. May I please ask you a few questions if you are...? I just have a few questions to ask in relation to the like to ask a few questions in relation to the entrepreneurship course you have been teaching.

**AM:** Yea...go ahead, go ahead.

**Q:** I understand that you have been teaching entrepreneurship education (this GST 223) for some time. I just want to find out for how long you have been teaching sir?

**AM:** I have been teaching the entrepreneurship module from the commencement...

**Q:** And that will be for how many years now? Like say, six years or so?

**AM:** At the undergraduate or postgraduate level?

**Q:** Undergraduate level sir.

**AM:** Let me calculate...since the time Prof R. G. was director...I think it is about 8 years now.

**Q:** That will be 8 academic sessions?

**AM:** Yes sir.

**Q:** Okay sir. I am aware that your first and second degrees are in Management but I like to find out what your area of specialisation is especially at PhD level.

**AM:** Marketing. Particularly service marketing.

**Q:** I know you have plenty publications but I just want to find out, do you have publications that are focused on entrepreneurship?

**AM:** Yes...like the one was on entrepreneurship...

**Q:** So, like how many of them in total?

**AM:** There are five in total...I have two chapters in a book and three articles.

**Q:** How many entrepreneurship-focused trainings, workshops or conferences have you attended, sir?

**AM:** I have attended one conference in Ghana and two workshops locally. There was a conference I would have attended but I could not.

**Q:** Sir, I know that lecture delivery is a method adopted for teaching entrepreneurship but what other methods have you being using?

**AM:** Lecture delivery method completely.

**Q:** Completely?

**AM:** Completely my brother. When we had the last MBA class, we wanted to them to have a conference on their own but there was a crisis that stopped it. Even at the doctoral level, it is still lecture delivery completely. How would you have loved us to do it?

**Q:** Yea...live project is an option but I do not know how the university will manage that with the large class sizes. Then individual or group projects too can be introduced

**AM:** That is true. Like for the PhD students, their examination is completely project. Yea...for the past two years now, we have been examining the PhD students by entrepreneurial projects. This year, I was the one who graded them. Some of the projects this year was very good...one was trying to solve transportation problem in the university and there was another one that was trying to solve the problem of sanitation. But the rest of the course is done based on lecture. Another challenge at the doctoral level is that the class is growing.

**Q:** Wow! Quite interesting. Another issue sir: I looked at the syllabus of the entrepreneurship module and discovered that there are more than 15 topics to be covered in just 15 weeks. Is that not too much for the available time period? What do you think?

**AM:** That is true. Although some of the topics are brief and could be covered in a short period. Although we have more time with the regular students than with the part time students.

**Q:** So, you are saying the scope of the current syllabus is good as it is?

**AM:** I think so. That is my opinion.

**Q:** Sir, did you take part in drawing up the entrepreneurship curriculum?

**AM:** No. you know that the curriculum was drawn up by NUC and brought to us. So, we just adopted it except that later on we added one or two topics after two years of commencement.

**Q:** Apart from teaching entrepreneurship, do you have some entrepreneurial involvements like helping start-ups or perhaps you have your own business?

**AM:** Yes...I helped in my wife's business.

**Q:** That is like family business?

**AM:** Exactly.

**Q:** In your opinion sir, what do you think are the challenges relating to the teaching of entrepreneurship in your education? Like infrastructure, competence and expertise of entrepreneurship educators, research funding?

**AM:** I think we have more challenges in terms of capacity especially three of our colleagues who were teaching with us have proceeded on study leave. Apart from being short-staffed, we did not have replacement of competent staff. Sometimes I interact with students at the end of the lectures and some of the students complain that they do not get the best as some lecturers are not competent enough at delivering their materials.

**Q:** Oh no. That is a pity.

**AM:** In fact, one of the students raised the problem of some lecturers as being incompetent.

**Q:** So, would you say that this is the biggest challenge?

**AM:** No. Our biggest problem is infrastructure. Then the next is the competence and capacity of lecturers to deliver. Another challenge is that we have not gone to the practical aspect of entrepreneurship especially at the undergraduate level.

**Q:** Yes...what could be hindering the commencement of practical aspect of entrepreneurship in the university at the undergraduate level?

**AM:** Though we have a centre for entrepreneurship, we still have lots of infrastructural deficiencies that are not allowing for practical aspect of entrepreneurship. And I remember that the former Vice-Chancellor did not also help matters. He said he didn't know what entrepreneurship is all about at a conference in the US. If the Vice-Chancellor could say that, what do you expect?

**Q:** That is serious. But, that is really surprising.

**AM:** And this probably why he did not pay attention to the development of the Centre.

**Q:** But how about the research proposals for entrepreneurial activities that were submitted on his table according to what one of the one of the lecturers said?

**AM:** Do you know that he even made a nasty statement at one of the Senate meetings that people just think that entrepreneurship is just all about the production of these "small, small things". So, we did not get enough motivation from the management. Some of the other universities are doing better. We hope for improvement over the next five years.

**Q:** Yes. Hopefully. Thank you so much for your time. I do really appreciate. Regards to the family.

**AM:** Thank you. Regards to your family too.

The logo of the University of the Western Cape is a circular emblem. It features a central shield with a building facade, flanked by two figures. Above the shield are three crowns. The shield is surrounded by a laurel wreath. Below the shield, the words 'UNIVERSITY of the WESTERN CAPE' are written in a serif font. The logo is overlaid on the text of the interview.  
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## 8.14 Appendix 14: Transcript of Interview 5

Date of Interview: November 11, 2016.

Interviewee: **AU** (A lecturer of the compulsory undergraduate entrepreneurship module)

Interviewer: Researcher (denoted as **Q** in the transcript)

**Q:** Good afternoon sir. I will be asking a few questions very quickly in relation to the entrepreneurship education you have been teaching.

**AU:** That is okay. What are your questions.

**Q:** Sir, your PhD was in what area of specialisation?

**AU:** Corporate governance and financial management

**Q:** Since you have been teaching the module, what do you think are the biggest challenges and what do you think should be done to resolve them?

**AU:** Actually, the immediate biggest problem is that of attitude towards entrepreneurship on part of students. Most of the students do not believe in entrepreneurship. They are not willing to listen when you talk to them on the need to imbibe entrepreneurial mind; the need for them to be self-employed; the need to set and do something for themselves. That is a big attitudinal problem. I have been discussing with the Director of the Centre of Entrepreneurship on possible things we can do to get our students oriented towards entrepreneurship like a foremost university in this area. Secondly, we also have challenge with lecturers. If you are teaching entrepreneurship, how much of entrepreneurship ideas do you have? How would you be able to teach effectively. To solve this, we are thinking of building an incubator centre.

**Q:** Really? So, the university is preparing to build a set up an incubator centre.

**AU:** Yea. That is what we are working on now. These are two crucial areas. Although mine own area is entrepreneurial finance. But finance is also a crucial area of entrepreneurship.

**Q:** That is true. Do you have publications on entrepreneurship sir?

**AU:** Yes, I have two articles but they are majorly on entrepreneurial finance. One has just been published.

**Q:** That means you have been attending conferences and workshops on entrepreneurship?

**AU:** yes of course. I just returned from a conference at Minna, Nigeria.

**Q:** So, how many conferences on entrepreneurship have you attended in all?

**AU:** Just one. The I went for in Kenya is not directly on entrepreneurship.

**Q:** So, for how long have you been teaching the undergraduate entrepreneurship module?

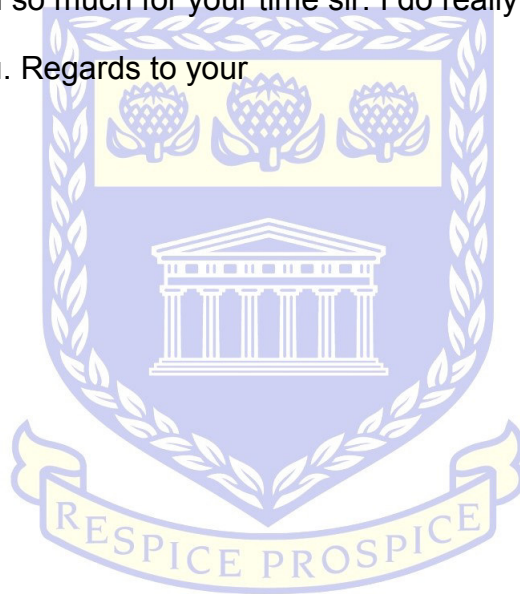
**AU:** This is now my third session.

**Q:** Okay. I just to want to ask, what other way, apart from lecture-delivery, do you think the current module can be managed in order to introduce some practical components?

**AU:** Like I have said before, the incubator centre is targeted at helping the undergraduates to develop their entrepreneurial skills. We are collaborating some SMEs and the process is on course. This will help direct students' orientation towards selected entrepreneurial activities. So that before graduation, students would have identified one or two areas in which they can set a small-scale business and would developed skills to be successful in that area. Then develop proposal for that which could even win grant from the Central Bank or Bank of Industry. So, these are a few things we are presently working on. With time, we will get over this level.

**Q:** Thank you so much for your time sir. I do really appreciate.

**AU:** Thank you. Regards to your



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## 8.15 Appendix 15: Transcript of Focus Group Discussion 1

Date of Interview: April 20, 2016.

Participants: **8 Students** (who had undergone the compulsory undergraduate entrepreneurship module)

Convener: Researcher (denoted as **Con** in the transcript)

**Con:** Are you aware of any business incubator on campus or outside the campus?

**KA:** How do you mean by business incubator?

**Con:** It seems you (K) do not have idea...

**Con:** Does any have an idea?

**CH:** The kind of business environment around the campus?

**EL:** Someone who can hatch the idea he/she has accumulated during an entrepreneurship programme

**Con:** Any more idea?

SILENCE!!!

**Con:** Does it mean you did not come across the term “business incubator” during your study of entrepreneurship education?

Nods of yes

**Con:** Which means you will not be able to identify a business incubator if you see one?

Nods of yes

**Con:** Business incubator is an organisation, company or unit that helps individuals galvanise their ideas into starting a business... but I am really surprised that you do not know this...let us go to the next question

**Con:** What financial support services for entrepreneurial thrust do you know of on the campus? ...Financial support services here actually mean guiding and helping to facilitate the securing of needed “borrowed” funds for entrepreneurial activities.

**AN:** I am not familiar with any such services on the campus

Others also nodded in affirmation

**Con:** Do know of a centre/unit in the university that can link you up, at institutional level, to sources of finance where you can secure loans or grants for entrepreneurial pursuit? Or do you have experience of such linkages? Or do you know someone who had experienced that?

**M:** No...

**CH:** What I think is that if such units or centres exist, the University should have made it known to students so that we could explore the services to facilitate entrepreneurial pursuit for anyone who is interested. But we have not seen any of such...all we know is Faculties, Departments, Physical Facilities unit and other divisions. But I am not familiar with any unit or building where financial services are rendered...

**Con:** But are you not familiar with the Centre for Entrepreneurial Studies in the University?

**MI:** Yea...I know the building but I don't have an idea of what happens there.

**EL:** I even heard that students are to pay for enrolling for training they are interested in...

**Con:** Okay. From your own experience of entrepreneurship studies, have you developed a business idea or you have thought of something to do as a business?

**AN:** Yes...barbing of hair.

**Con:** Do you think of doing that in the immediate or later?

**AN:** Yea...in the immediate but gaining access to funds is the issue...

**Con:** Have you gone to the Centre for Entrepreneurship Studies for advisory services on how to raise finance for your business idea?

**AN:** No...I don't even if they exist!

**Con:** If you knew they existed, would you have gone?

**AN:** Yes of course.

**Con:** Now that you know, will you go?

**AN:** Yes...if they will give me the money....

**Con:** ...but you need to know that there is no "Father Christmas" anywhere that will give money to do business just like that...rather, you may get funded

by angel investors who will ask for a stake in your business and demand returns...

**Con:** So, if none of you have had experience of being serviced by the Centre for Entrepreneurship Studies, do you know anyone who has?

**KA:** The fact is that the Centre for Entrepreneurship Studies has not educated the university community of their activities and so students do not really know what they do and how they can be of help to any of us...

**CH:** It will be good if the Centre can send representative [officials] to departments and faculties to give a general orientation of what they do...

**GR:** The lecturers should also motivate and orientate students during the entrepreneurship class about the activities of the Centre.

**EL:** The Centre can also print and circulate flyers to the university community

**Con:** How then would you rate your institution's entrepreneurial climate?

**MI:** Poor!

**EL:** Very poor!!

**Con:** Why do you say so?

**MI:** I say it's poor because the mode of presenting the idea of entrepreneurship in the university has not really caught the keen attention of the learners...the lecturers did not present the course materials in such a convincing manner as to persuade students that there is gain in engaging in entrepreneurial course...the presentation is "dry" [not insightful and motivating] ...it seems they were teaching just for examination purpose...

**FA:** Many students who engage in business and entrepreneurial activities do that not because they were really motivated by the entrepreneurship class but because of their own natural instinct or personal interest...

**EL:** ...even if the classes are not "hands-on", there is a way the lecturers should have made the entrepreneurship lecturers very motivating...

**GR:** Availability of the lecturers for lectures also matter...like in my set, only one lecturer showed up to teach his own part of the module for the whole semester. So, we only collected lecture materials from previous students and studied for examinations purpose...having had only one lecturer coming to teach his own part.



**Con:** What do you expect to make up IS for entrepreneurial minded undergraduates?

**MI:** Another thing I think that is affecting the entrepreneurial mindedness students in the university is the over-crowdedness of the entrepreneurship classes. Most times, there are no enough seats for students, the public-address system is either not available, or working or loud enough to cover the audience and so the class is very uninteresting...you even hear students say there is no point going for such lectures since they would not hear the lecturers. There is need for more lecturers and facilities so that the classes will be broken down into moderate sizes for effective teaching...

**KA:** Most times, the lectures are abstract, you may not really be able to connect with them and what is obtainable in your environment...the lectures should have been in such a way where they can invite entrepreneurs as guest lecturers to teach some of the topics...

**Con:** Does it mean throughout the entrepreneurship module you did, there was nothing like guest lecturers?

**KA:** No...not at all

**MI:** We didn't.

**FA:** We did, but not during the general entrepreneurship module [which is under study]. But during our departmental entrepreneurship module as Accounting and Management students [where they are small and manageable classes], we had guest lecturers and it was very interesting...so we have advantage over others but going by the general entrepreneurship module, I don't think we had any guest lecturers.

**Con:** So how many guest lecturers did you have?

**FA:** Three [guest lecturers].

**Con:** Did you enjoy the variation? How did you enjoy the variation?

**FA:** Yes...one of them was very experienced and we were motivated but for the general entrepreneurship, I wish to suggest that teaching the module be domiciled in each department where smaller class sizes are being taught. It is better to have 160 in a class than have 500 or more in a class.

**AN:** I'm in support of F's idea...it will be good.

**CH:** In addition to teaching entrepreneurship module on department-basis, I will suggest that as part of teaching and evaluation methods, assignments and seminars should be given to student-groups in the class. And they should also be asked to execute a project for the semester....

**Con:** So, you are saying that assignments, seminars, practical....?

**FA:** Nothing as such.

**CH:** ...in fact, the entrepreneurship class should be divided into groups of students and each group should be tasked to come up with a product idea and defend it as part of their evaluation for the module.

**EL:** Yea, we did something like that [referring to C's suggestion] but only in our department-based entrepreneurship module...limited to only students of Business Management. The lecturer divided the class into groups and asked each group to look for something new in their environment and then develop a product idea in form of business plan. The only challenge was that the lecturer was not available to really evaluate and make input in order to validate whatever the groups had done. Besides, time was not very short. However, this sort of teaching methods is employed in teaching the general entrepreneurship module, then it will make more impact on students.

**Con:** So, if I may ask, are you saying that throughout the semester when you offered entrepreneurship module, you did not have anything like seminars, projects, assignments, entrepreneurship videos, or guest lecturers...?

**EL:** We had nothing more than normal lectures...

**CH:** Not even continuous assessment...

**MI:** Sometimes I am not motivated to attend the lectures

**CH:** The second time I wanted to attend the lectures, I was told that the lectures were over.

**MI:** It was three times the lecturers came in a whole semester...

**Con:** I hope you are in good position to discuss the following issues objectively...the first issue in this last section is: How much of business environment did you learn in the course of participating in the general entrepreneurship module?

**CH:** ...you see...after doing entrepreneurship course school, students generally have like two, three, four or even five years to graduate...

**Con:** Let me make the question clearer...knowing to successfully register business in the Nigerian environment, get quoted eventually on the Nigerian Stock Exchange, are some of the issues about the business environment...so how much of this did you learn from the programme?

**EL:** Most of the lecturers just came and read the handout...characteristics of an entrepreneur....

**Con:** So, from that what did you pick in relation to business environment?

**EL:** We were taught how to establish a business...how to innovate in a new business...the class was more of theory...I should be risk oriented...

**Con:** I am sure you understand the question now...so any more responses?

**AN:** I learnt how to discover the immediate need of my environment and how to meet it?

**Con:** So, did you discover one?

**AN:** Of course, That's barbing business on the campus I thought of...

**EL:** I also discovered one too

**AN:** One must be focused. Thinking big and starting small...

**Con:** Yea...I love that...

**CH:** For me personally, I learnt motivation. I remember the first lecture I attended...the lecturer was very vibrant and caught my attention...he compared the cases of the founders of DELL, Microsoft and IBM and brought out what made them succeed. I was motivated ...learning from the cases...

**FA:** How to study my environment and then develop product to meet what problem I have seen or I look at the existing product and think of how to develop a variant of it that better meets the market

**CH:** ...I also learnt more personally from radio programmes.

**AN:** I also drew entrepreneurial insights from the lecture materials as I read on my own...

**EL:** I remember now...a lecturer boosted my confidence in entrepreneurship as she taught on women entrepreneurship. She particularly said 'ladies can pursue entrepreneurship...it is not meant for men only'

**FA:** The entrepreneurship class also exposed me to combining studies with entrepreneurial activities. So, after a particular lecture, my friends and I came together to brainstorm on what we can do and we came up with ideas of what we do sell to meet students' needs on campus...I also learnt that I must know how to relate well with my course mates if I must succeed

**GR:** From the little I learnt from the programme, I realised that I can either think of what business to start in the immediate or later. So, I decided to register with a catering school because I intend to start catering business in the future after graduation...

**EL:** How to solve the problem of society with your own business and/or product

**CH:** An entrepreneur must be sociable and must know how to interact with people, creating good rapport with people around, must be approachable...

**Con:** How about you M [it looked like she had wanted to say something]?

**MI:** What I learnt has been said.

**Con:** Did you learn about business modelling during the general entrepreneurship programme?

**AN:** I learnt it from YouWin! And not from the general entrepreneurship programme.

**Con:** Has anyone heard about CANVASS?

**EL:** Not really.

**CH:** I am not familiar with it in the business sense of it.

**Con:** You may want to find out more about it...now, if the general entrepreneurship programme has exposed you to how to identify business opportunities then how are you going to model your idea into a successful business? The Canvass is meant to guide you.

**Con:** What would you suggest as ideal content of EEP for Nigerian undergraduates? In other words, if ever I would have the opportunity to attend such a general entrepreneurship programme, what are the topics I expect to be taught.

**AN:** How to overcome failure...how to be discipline in financial management...for instance, I knew somebody who had money for business but he finished it and the business failed.

**EL:** I think the main essence of the module is to breed self-employable graduates...in one of the classes the lecturer mentioned some vocational skills that can be converted into business purpose e.g. tailoring, catering...So having a practical aspect to impact these vocational skills at no or affordable cost will go a long way to achieve the purpose of the class

**KA:** I have something to say...

**Con:** Yes...we are discussing what should be content of EEP.

**KA:** I like to learn about how to go through the process of business registration, registering with Food Control agencies like NAFDAC...

**Con:** So, you are saying that there should be more of business incubation in the course

**TE:** I will desire to learn how to generate capital...

**Con:** What else do expect from your institution in support of students' learning from the general entrepreneurship programme so that students are prompted to realise their immediate or long term entrepreneurial team?

**AN:** I would wish the university provides spaces for rental on the campus at subsidized rates and also patronising students' products

**TE:** The university should also advertise "young promising entrepreneurs" on air, using the campus radio station

**CH:** Anchoring programmes on the university's radio station that will promote entrepreneurial zeal, consciousness and awareness of students on

various opportunities. Lecturers from the entrepreneurship unit can be used to facilitate these programmes and they should be call-in programmes where the members of the campus community and the campus can call and send in messages in form of questions and enquiries.

**Con:** In terms of supporting students' entrepreneurial initiatives, what more do wish to get from the university?

**KA:** I have a friend who is into business but she is finding it difficult to do her business because it is challenging to obtain "NAFDAC" registration number. So, if the Centre for Entrepreneurship Studies could set up a support system to help students facilitate registration of their products or businesses with government control agencies, it will be wonderful.

**CH:** If there can be guidance and counselling unit in the Centre established to just counsel students on their entrepreneurship intentions.

**EL:** There should also be interactive sessions.

**Con:** You had earlier suggested that the general entrepreneurship module which has been so far combined into large classes should be domiciled in various discipline departments thereby reducing the sizes and allowing for more effective teaching. What then would you suggest should be the teaching methods/approach?

**EL:** Interactive sessions, case studies

**FA:** Assignments, seminars...

**EL:** Live projects

**Con:** How about having Dangote coming to lecture you?

**KA, FA, CH, TE, EL, AN, GR, MI:** Yea...that will be fantastic

**KA:** In fact, we did something like that in one of our Law courses where the Registrar of the Corporate Affairs Commission and others came to expose us to practical issues. We gained more and issues became more real than just theory. The general entrepreneurship course can be modified that way and then tailored towards the specifics of each discipline.

**CH:** It will be better to make the teaching of entrepreneurship specific and relevant to each course of study.

**AN:** In my department [Biochemistry], some of my colleagues normally do perfumes but because they do not have the entrepreneurial spirit or they do not how to do packaging and marketing, they are just wasting their talents...

**Con:** Wow! That is serious. That means there is a lot of resources wasting here...the institution needs to harness the resources and link them up to the market...but it is a challenge that you don't know about the Centre of Entrepreneurship Studies.

**KA:** Actually, not many students...

**CH:** Any student should know but one would think it is just for post graduate students

**FA:** I don't know

**EL:** I don't know where they are located

**MI:** I see one new building along that lonely road but nothing is happening there

**Con:** Does anyone know the Centre's temporary office?

**CH:** I know and that is because my department used to be near theirs.

**KA, FA, TE, EL, AN, GR, MI:** Don't know

**Con:** The Centre needs to do something...

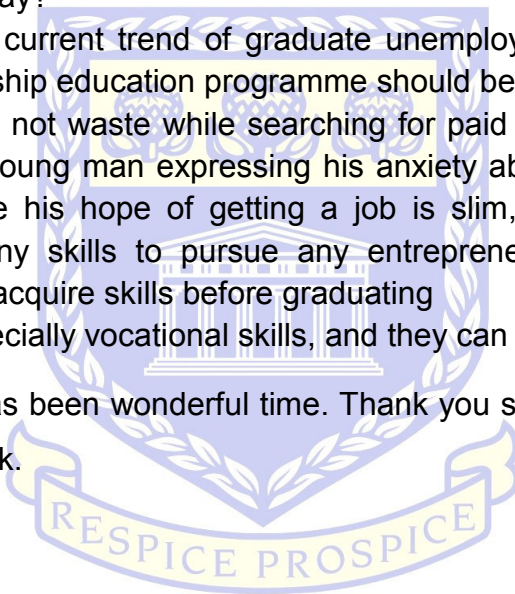
**EL:** I think one thing the University can do is to encourage students' initiatives like I saw at another university. For instance, producing a customised flash drive and marketing to all students.

**Con:** I think we have had good and nice time. Does anyone have a question or something to say?

**CH:** Given the current trend of graduate unemployment in Nigeria, I think the entrepreneurship education programme should be taken more seriously so that brains would not waste while searching for paid employment that do not exist. I heard a young man expressing his anxiety about securing a job after graduation...while his hope of getting a job is slim, he is not at the same equipped with any skills to pursue any entrepreneurial activities. I would encourage us to acquire skills before graduating

**EL:** Yes...especially vocational skills, and they can be lucrative.

**Con:** Wow! It has been wonderful time. Thank you so much. I think we need to take some drink.



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## 8.16 Appendix 16: Transcript of Focus Group Discussion 2

Date of Interview: June 07, 2016.

Participants: **8 Students** (who had undergone the compulsory undergraduate entrepreneurship module)

Convener: Researcher (denoted as **Con** in the transcript)

**Con:** You are welcome to this discussion and I thank you for finding time to come. We will be discussion issues relating to the entrepreneurship module you took t your 200 level. So, feel free to respond to the questions that will be raised. My first question is: Are you aware of any business incubator on campus or outside the campus?

**VT:** I do not have knowledge of any business incubator around.

**JU:** I too.

**Con:** Yes, who else does.

**OD, BA, RG, EB, KM, BN:** No idea at all

**Con:** That is okay. Let us move to the next question. What financial support services for entrepreneurial thrust do you know of on the campus?

**VT:** Well, none.

**EB:** The university does not provide such services.

**KM:** Not at all.

**Con:** How about you, RG?

**RG:** I do not know of any such services.

**Con:** Okay. Do you have experience of linkage for business opportunities or you know of anyone's experience? ...BN, do you like to say something?

**BN:** Well I am not aware of any.

**JU:** ... I know a student who got linked to a phone dealer in Dubai. Today the guy is doing well in business. He is now having his own business premises with two branches. He sells and repairs mobile phones....

**Con:** Is he still a student?

**JU:** Yes. And he was already a student when he started the business.

**Con:** So, who linked him up to the dealer in Dubai?

**JU:** A business firm in town.

**Con:** So, he did not get the link from anybody or organ in the university?

**JU:** No. Except that his friend who graduated from our department that introduced him to the business firm.

**Con:** RG do you know of such linkages?

**RG:** I have no idea.

**Con:** Okay. Next question: How would you evaluate the entrepreneurial climate of your institution?

**BN:** Very poor.

**EB:** Really poor.

**VT:** The school discourages entrepreneurship when they will not allow students to operate business premises around on the campus. They make it so difficult a thing to think of.

**BA:** That is the issue.

**Con:** So, what then do you expect to make up the institutional setting of a university like yours to support entrepreneurially-minded undergraduates?

**BA:** For me, I will expect that there should be counselling for business-minded students

**KM:** They should also provide orientation on whatever entrepreneurial services that are available to students who wish to explore such.

**OD:** There should also be vocational centres that well equipped for students.

**EB:** Exhibitions of students' products can also be organised from time to time.

**JU:** The university can also organise symposium to encourage entrepreneurship on campus.

**VT:** They can also provide loans...soft loans to support students' entrepreneurial course.

**Con:** Let me put two questions together as one: how much of business environment and entrepreneurial opportunities did the entrepreneurship module expose you to?

**BN:** None.

**JU:** Except through personal experience and other entrepreneurship programmes.

**Con:** Yes, any other contribution ...ok let us continue. Have you heard about business modelling, like Canvass from your EEP?



**VT:** No.

**BN, BA, EB, OD, JU, RG, KM:** No. We were not taught.

**Con:** What would you then suggest as ideal content of entrepreneurship module for Nigerian undergraduates?

**KM:** How to identify business opportunities...

**BN:** How to do good business plan

**VT:** How to make your business marketable...

**Con:** Thank you for your contributions. Intelligent ones indeed. A few more questions to go. Were case studies used during EEP and what did you would you say about such a teaching method?

**JU:** Not at all.

**VT:** No.

**Con:** How about Live Entrepreneurs coming to speak to you during the time you offered entrepreneurship module? Do you wish that is often practiced? Why

**BN:** We did not have any entrepreneurs coming around.

**KM:** Not at all

**OD:** ...though some of the lecturers shared from their own experiences as they taught. But we would have loved to learn how to relate theory to real life; learn how to avoid mistakes, predict challenges and overcome them.

**Con:** What other methods were used to teach EEP and how do you feel about each of them?

**JU:** Only lecture method was used.

**VT:** And some of the lectures can be boring

**RG:** In fact, some lecturers seemed confused.

**Con:** What mix of method do you think should be used for EEP and how do you think this will work? EB do you have any contribution here?

**EB:** I would love that things like seminars, case studies and practical are introduced in the teaching of entrepreneurship

**VT:** Also, field work and group projects can be introduced and these will help us develop real experience of entrepreneurship.

**JU:** They can also bring in practising entrepreneurs as guest lecturers from time to time. That will be very interesting.

**BA:** They should also use multimedia and I.T. stuff in teaching entrepreneurship.

**Con:** So, you believe that with these, there will be more impact?

**BN, BA, EB, OD, JU, RG, KM:** Of course, (chorus answer)

**Con:** Thank you so much for your time and contribution. God, bless you. I appreciate.