Threshold Concepts, Flipped Classroom and Academic Achievement in Economics among Senior Secondary School Students in Lagos State, Nigeria

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Being a MSc (Ed) Thesis Submitted to the Department of Arts & Social Science Education, Faculty of Education, Lead City University, Ibadan, Oyo State, Nigeria

In Partial Fulfilment of the Requirements for the Award of Master of Science Education MSc (Ed) in Economics

2023

Certification

This is to certify that Abidat Oluwashola MOHAMMED with matriculation number LCU/PG/002773 carried out this research work titled "Threshold Concepts, Flipped Classroom and Academic Achievement in Economics among Senior Secondary School Students in Lagos State, Nigeria" in the Department of Arts and Social Science Education, Faculty of Education, Lead City University, Ibadan, Oyo state, for the award of Master of Science Education, MSc (Ed) in Economics and that this has not been previously submitted.

Prof Senimetu Ileuma (Supervisor)	**Date**
Prof Senimetu Ileuma (Head of Department)	**Date**

Dedication

This research work is dedicated to Almighty Allah, my husband, and my entire family.

Acknowledgement

I wish to acknowledge first, the Lead City University, Ibadan for the opportunity given to me to register for Master of Science Education, MSc (Ed) in Economics. I am particularly appreciative of the ambience created to receive lectures, attend seminars, participate in conferences, conduct researches, use of materials in the university library and a host of other amazing sojourn, which are all contributors to the success of this programme. Apart from the university library, I extend my appreciation to Lagos State University e-library, the West African Examination Council (WAEC), the head of administration in Lagos State Education District V, the principals, as well as all senior secondary school teachers and students who were all tremendously helpful in the collection of data for this research.

My profound gratitude is extended to the Department of Arts and Social Science Education, ably headed by Prof Senimetu Ileuma, who doubles as my supervisor, for providing enabling environment, academic supervision, emotional support and making the required edits as I was preparing this research work. I am particularly indebted to the Provost of Postgraduate College, Prof Afolakemi Oredein and my ever-approachable Postgraduate Coordinator of Faculty of Arts and Education in person of Dr Mojirade Ayantunji. Also, to all my lecturers in the Faculty of Arts and Education, in person of Prof Philias Yara, Dr Amaka Akuche, Dr Olabisi Killian, Dr Oluyomi Pitan, Dr Toyin Oyedeji, Dr Sabina Obi and my lecturers in the Faculty of Social and Management Sciences, in person of Dr Sola Ogunjimi, Dr Femi Alimi, and Dr Sunday Tunmibi, who taught me during the course of my academic programme, their contributions to my life are greatly appreciated. I must not fail to acknowledge Dr Adeyemi Ebo, Dr David Seyi, Mr Moyosore Beckley and the departmental secretary in person of Mrs Flora Tope.

My heartfelt gratitude goes to my beloved husband, Prof M.O.B. Mohammed whom I fondly call my “King” for his financial and moral support. Of important appreciation also is to my charming prince, Junior Professor Mustapha Oreoluwa Bryan (MOB) Mohammed for his cute and adorable engagement whenever I pick up my laptop to work on this thesis. I shall not fail to remember my dear parents, Dr Hamzat Oladipupo Edu and Mrs Kudirat Adunni Edu as well as my siblings Royhan, Ziyadat, Gufran and Abrar for their prayers and encouragements.

I must not but acknowledge the contributions of my friends and colleagues whom we travel together to Oyo State in pursuit of our postgraduate programmes, Mrs Mariam Hassan and Mrs Ore Elizabeth. Last but by no means the least is my sincere appreciation to the eminent authors and writers whose works were used as complimentary materials for the review of literature. Even though the institutions and people named above helped with this research work, I alone am to be blamed for any errors that may have been made.

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List of Acronyms

Abbreviation	Meaning
ALTASA	Active Learning, Teachers' Attitude towards Economics and Students' Academic Achievement
GCE	General Certificate Examination
LGA	Local Government Area
NERDC	Nigerian Educational Research and Development Council
OECD	Organisation for Economic Cooperation and Development
PPMC	Pearson Product Moment Correlation
TFAEQ	Threshold Concept, Flipped Classroom and Academic Achievement in Economics Questionnaire
WAEC	West African Examinations Council
WASSCE	West African Senior Secondary Certificate Examination

Chapter One

Introduction

1.1 Background to the Study

Topmost among the main priorities of any reasonable human being are making rational financial decisions and making the best use of the scarce resources at hand. This crucial decision-making affects all fields of study and facets of daily life, which supports the necessity of a subject that can offer a solid knowledge base for well-informed opinions on important financial issues. There is only one subject here: Economics. The aims of teaching economics in senior secondary schools include, but are not limited to: helping students understand some fundamental economic concepts and fostering economic reasoning so that they can apply it to their daily lives as citizens, workers, and consumers, enabling students to understand their role in nation-building and sensitizing them to the economic issues that the country is facing today, and providing students with the fundamental tools of economics and statistics to analyze such issues[1,2,3,4]. The teaching-learning process is a key activity in which both the teacher and the students must actively participate. While teachers take all steps, they deem necessary to facilitate learning, students engage in some learning activities, as prescribed by teachers or self-paced. Being prepared with the fundamental knowledge and abilities that will allow such a society to capitalize on the collective knowledge of economics held by its citizens is one of the key indices that would make any society better understand the nature of economic problems and how to make logical economic decisions[5].

As the importance of economics to the country has grown over time, there is a fundamental need to promote economics as a subject and, as a result, economic education as a course in the curriculum of senior secondary schools and higher institutions, respectively. Economics focuses on how people behave, using the assumption that people behave rationally and look

for the greatest possible amount of benefit or utility. Education in economics aims to produce responsible citizens and capable decision-makers[6]. The senior secondary school curriculum in Nigeria includes it as a humanities topic. Nigerian languages, English-language literature, geography, politics, Christian religious studies, Islamic studies, history, visual arts, music, French, and Arabic are additional topics in this area[7]. Economics is the foundational topic for any aspiring higher education students in Nigeria who seek to pursue social science, management science, and commercial degrees, as it is a requirement for entry into their desired programs and institutions and must be passed at the credit level[8].

One of the factors that affect a school's reputation is the quality of its economics students. The task is to continually enhance the curricula so that students' learning and the growth of their skills, which are a result of the quality of teaching and learning, distinguish them. The intricate process of learning evaluation, which aims to gain knowledge about what the students learn, what the teacher teaches, and the implemented percentage of the curriculum, is currently an integral part of the crucial educational process, which calls for the teacher to have in-depth knowledge, skill assessments, and an understanding of the main goals of the curriculum. Additionally, it is a component of the teaching process; reflection, choice-making, value judgment regarding accomplishments, changing the idea of evaluation as a prerequisite for approval and promotion, putting emphasis on the evaluation of academic achievement as a top priority, and understanding how much and how students have learnt to advance their academic achievement in Economics[8,9].

Academic achievement in Economics (especially in West African Senior Secondary Certificate Examination (WASSCE)), has been dwindling in the last two decades, which is often a fall out of the fact that, most students often find themselves in a state of confusion,

giving answers that lack authenticity, rather than writing the correct use of concepts and terminologies that would earn them full marks. Supporting this is the findings which averred that the percentage of senior secondary school leavers that are not eligible for admission into tertiary institutions each year because of failure in Economics at the senior school certificate examination is very high[8]. This assertion was also buttressed in a number of WAEC Chief examiners' report, where it was pointed out among others, that there was a drop-in students' achievement in Economics when compared to previous years in Nigeria. Similarly, many candidates struggled to articulate their views when attempting to respond to questions by using the proper economic terminology, which led to poor academic achievement in Economics for those years.[10,11,12].

The drop in students' achievement in Economics is also evident in the data obtained from West African Examinations Council (WAEC) on Nigerian state-based analysis of the candidates who obtained credit passes (A1 – C6) in Economics for the period of five years 2018 to 2022. In this data, Lagos state was ranked 14th position in the number of candidates who obtained credit passes as a percentage of the number of candidates who sat for the examination each year (2018 - 2022), where the state recorded 77.2%, 71.3%, 81%, 83%, and 69.0% for the year 2018 – 2022 with a mean percentage of 76.3%. Whereas, in a similar study which evaluated achievement of credit passes by candidate in Nigeria, between the period of 2014 – 2018, Lagos State was ranked 8th position[30]. What variable is then responsible for the drop in Students' academic achievement in Economics in Nigeria and Lagos State in particular?

Over the years, there have been numerous research endeavours about the factors that affect students' economics achievement. A substantial amount of these research efforts indicates

that schools have a significant influence on students' academic achievement, with teachers being responsible for a large proportion of that influence[5,8,13]. Whereas there are several opportunities for students as well as all citizens of a nation to meaningfully live in a changing economic environment by the study of Economics. The main goals of teaching economics in senior secondary schools are to: help students comprehend certain fundamental economic ideas and foster economic thinking so that students may apply it to their daily lives as citizens, employees, and consumers. Furthermore, it helps students understand their role in nation-building and makes them aware of the economic problems the country is currently facing. Also, it aids in their comprehension of how many economic sectors are interconnected and should advance simultaneously through deliberate and well-coordinated efforts. Students who study economics have a deeper awareness of how development affects the environment and are given the fundamental tools of economics and statistics to assess economic issues. Students who study economics get familiar with the various criteria for classifying the global economy and discover why some nations are wealthy while others are not, as well as the current economic issues and how they are being addressed[5,8,9].

The objectives for teaching economics mentioned above serve to remind students that every civilization faces several basic economic problems. Economist often divides these problems into three categories: What to produce? How to produce? And for whom to produce? The solutions to the problems in the highlighted areas can be found in Economics, and they may even be resolved by studying Economics. As most nations now consider Economics to be a fundamental subject, many students now take examinations in this area at the end of their senior year of high school. To put it another way, the demand that Economics be taught and learned in schools is proof that it has a big influence on students' development as knowledgeable individuals in society[5,9].

Students' learning achievements are a basic criterion by which all teaching and learning activities are measured since they determine whether the objectives of teaching Economics are met. The most significant education indicator that interests stakeholders is the degree of academic achievement of students, which is assessed by achievement tests, examinations, and observations. This explains why student accomplishment is highly valued by almost all education stakeholders. However, the standard of instruction and learning paraded in schools determines students' learning and academic progress[8]. The amount of economic activity is greatly influenced by economic education, which raises business output and sales volume. Every senior secondary school graduate should have been adequately prepared for higher education and should have acquired the pragmatic economic skills required to eliminate poverty, create jobs, and generate wealth. In doing so, they would have strengthened the fundamentals of their ethical, moral, and civic values that they had already learned at the basic education level[6].

As a result of its comparative value to human lives, it is expected that every student will view Economics as precise, interesting, simple, and important to practical aspects of life. Ironically, it appears that this is not the case since many students consider economics to be a difficult, abstract, and nearly impossible subject to excel in. This perceived difficulty may emerge from various difficult topics that are inherent in economics, some of which are threshold concepts and act as openings or doorways to mastering the subject[9].

Every subject has threshold concepts, which are ideas or learning opportunities that might be compared to opening a doorway to mastery of the subject. These ideas bring a new viewpoint on the subject and enable the perception of things that were previously inaccessible. The

fundamental conceptual change or learning that a learner must undergo in order to view the world from the perspective of a specific subject is known as a threshold concept. Conceptual change in this context means learning in such domains where the pre-instructional conceptual structures of the learners must be fundamentally restructured in order to allow understanding of the intended knowledge, that is, the acquisition of Economics concepts[14]. A threshold needs to be reached for the student's viewpoint to change. When students cross the threshold from their old ways of thinking into a new one that is necessary, this state of mind is known as the liminal space and it involves a change in the learner's worldview or phenomenology1[15,16,17]. A threshold concept would also be so fundamental that it would help students of economics "make sense" of many previously unconnected concepts and incorporate them into the subject. It would also help them communicate Economics-specific terms more effectively[17,18].

There are several threshold concept characteristics that the teacher of economics must pay particular attention to since these features will directly affect how they will teach and grade their students. For instance, when a student exhibits and expresses a profound mastery of discipline techniques and viewpoints, such fundamental changes in thinking should be visible (reconstitutive). This presents a problem to the instructor in terms of developing assessments that can differentiate between such fundamental shifts and much less fundamental and peripheral comprehension[19]. The point here is not that all the changes brought about by "thinking like an economist" can be attributed to or explained by a single, threshold concept. Although essential, threshold ideas do have boundaries[21,24]. Given all these factors, some students may find it difficult to understand true threshold concepts. Besides that, students will advance to higher levels of understanding at varying rates, take different learning paths, and

frequently only "partially" cross the threshold that changes their perspective; the concept of liminality captures this last idea[19,21,24].

The idea of threshold concepts therefore should be of particular interest to professional Economics disciplines, such as accounting, business, management, human resources, law, and finance, among others, as it is closely related to the question of how a "student" becomes a "professional". The emphasis in a discipline like Economics is on the conceptual and behavioural changes a student of must make before they can begin to "think like an economist" and perhaps later before they can come to be regarded as, and to view themselves as, "an Economist"[22]. Numerous recent studies have highlighted common topics across a variety of disciplines that are thought to be threshold concepts and may present students with difficulties[16,18,23,25]. In several of these research endeavors, examples of threshold concepts from a range of disciplines have been specifically investigated. These examples include the concept of opportunity cost in Economics, photosynthesis in Biology, enthalpy in Chemistry, and static electricity in Physics. According to the research, these concepts have proven to be counter-intuitive and even transformative in nature[25].

The concept of a threshold concept focuses on the influence that learning a specific concept would have on students and the transformation in understanding that would ensue from such learning. It has value for teachers in two ways: it involves a concept, the application of which is thought to be crucial to demonstrate understanding, and it gives teachers information about whether a student genuinely understands the discipline's fundamental concepts. It throws opens new perspectives for the student to observe the world, which increases its potential relevance. The research on threshold concepts puts the spotlight on the difficulties that students encounter while trying to establish disciplinary frames in their cognition. "This

variation reflects threshold concepts' prime concern on higher education learning research and last years of secondary schools"[26].

Speaking of the senior year of high school, numerous academics have investigated first-year college students' knowledge of important economic concepts. The identification of threshold concepts, their characteristics, and their influence on teaching and learning in higher education have been given more attention than anything else. The latter two years of senior secondary school appear to receive almost no attention, even though they constitute the prerequisite for learning the subject. A spillover of what students acquired in their secondary schools is the disposition that students demonstrated in any subject at the higher institution, from memorization to possessing a thorough grasp. The success of students' academic achievement therefore depends on research into the conceptual frameworks that underpin the study of economics and how they are taught in secondary schools[4].

Memorisation is frequently used as a solution when students do not seem to be able to connect the dots in any subject. Most Economists would agree that while memorisation may be sufficient in some subjects, it is not the case in Economics. Economics has become more popular because of its scientific language, which enables the expression of complex ideas in comparably straightforward, abstract terms[13]. This is why, economics is seen as a serious and difficult subject and there are many evidences to support the claim that applying economic reasoning to straightforward economic problems might divert attention from more challenging ones[27]. It makes complete sense that Meyer and Land chose to begin their first round of project interviews (on threshold concepts) with teachers of economics on the faculty. They have presumably seen the difficulties that the Economics teachers face and the level of students' knowledge about the subject. The need for students to grasp the meaning of

fundamental terms and concepts; the ability to apply economic concepts in particular circumstances, which calls for the development of the capacity to "think like an Economist" or, to a lesser extent, to understand "the economic way of thinking" are among the challenges discovered[17].

The use of incorrect terminologies, inadequate graphical analysis, and failure to elaborate on ideas are among the problems faced by students in economics examinations, according to the chief examiners of the West African Examinations Council (WAEC), who have observed these over time[10,11,12]. Despite the fact that there are numerous other issues that may be attributable to teachers, schools, and society, these reports tilted towards attributing the blames of poor academic achievements in economics to students. The other factors that might be responsible include, but are not limited to, unskilled Economics teachers in schools, poorly instituted curricula, a lack of relevant and important instructional materials, ineffective teaching methods, poor student assessment, and teachers' attitudes toward Economics[8].

The attitude of an individual is a mentally and biologically produced state of disposition that motivates their behavior in situations that are both directly and indirectly related to it[27]. Attitude development through experience is a conviction held internally that affects one's behaviour. Since a person's attitude toward a notion or item impacts how they think, feel, and want to act toward that notion or object, a student's impression of the teacher's attributes may affect how they feel about economics or any other subject they are learning in school[5]. Most frequently, students evaluate their teachers based on their intelligibility, professional experience, communication skills, and overall classroom management abilities. Students are more likely to have trust in, respect for, and admire a teacher who scores highly on these indices in their opinion[27].

Teachers' attitude towards Economics seems to be having domineering effects on the academic achievement of students in Economics as it has been reported in literature as having linked to poor academic achievement of Economics students in Nigeria in terms of accomplishing the teaching task, negative attitude to work and poor teaching habits[5,28]. Teaching is a noble profession and an art of supporting students in learning through a dedicated effort from teachers who are willing and able to devote their entire attention to the assignment. It is a multifaceted task that originates from the foundational knowledge needed for effective teaching, which is rooted in the liberal arts and fields of science. Secondary school teachers ought to be capable of deciphering concepts, terminology, and theories in comprehensible language owing to the complexity of instruction. As a result, teachers are crucial for the success of any country's educational system and serve as the hubs around which it revolves. The effectiveness of teachers is a crucial component of students' academic achievement[6]. The low academic achievement of students in Economics can be plausibly attributed to several factors connected to teachers' attitude, including the frequency of tardiness and absenteeism, the inability to complete the syllabus, and the quality of the assignments given to students[28].

The continuance of these weaknesses in students' academic performance and their grasp of economics in exams necessitates a reconstruction of knowledge through interaction between knowledge components and modes of instruction. To study its effects on students' understanding of the subject-specific terminology and to inform improved academic achievement in Economics examinations, it is necessary to teach Economics using a threshold concept-informed curriculum. Three recommendations for course layout can assist students cross the threshold: they should be able to internalize and explain concepts in their

own words; they should be encouraged to participate in peer assessment to appease their fears by recognizing that other students are experiencing the same difficulty as them, which will encourage them to cross the liminal space; and they should engage with the material frequently (recursive approach) as well as engage in a variety of learning activities (excursive approach). For the learning process to continue, it is important for students to be able to refer to the course materials whenever it is convenient for them. An accompanying active learning in a flipped classroom, which is widely accepted for students understanding, must be incorporated in teaching. Finding the linkages between the framework theory of threshold concept and the flipped classroom in the field of Economics will help find an appropriate theoretical foundation for curriculum reform and renewal[6,25].

In a flipped classroom, students watch lectures online outside of class rather than sitting through an entire period of lesson time, and then complete activities through active learning in class. It is described as a "pedagogical strategy in which students consolidate what they have learnt through classroom activities with the aid of peers and teachers and learn new information through brief videos, podcasts, and e-books as well as the internet outside of class"[6,29]. Quizzes, individual exercises, pair group exercises, and resource persons are just a few examples of the many active learning methods that the flipped classroom incorporates into instruction[24]. During flipped classroom, the contact and substantial learning activities that take place during the face-to-face time are the most significant aspects the classroom learning. This technique of instruction is carried out in such a way that it puts the topic under consideration to the forefront so that the economics students can actively participate in the classroom activities and shift from naïve to think like an Economist, thus students can work out the unsolved and difficult questions with classmates or teachers rather than get the basic information passively in class[6]. This is in direct conformity with the transformative nature of

threshold concepts, and it also explains why a curriculum informed by threshold concepts and the flipped classroom technique are the greatest matches for teaching economics.

More importantly for the Economics teacher, knowing and determining whether students have even started to understand threshold concepts in Economics may give the teacher a chance to distinguish between students who utterly understand the economic approach and those who have only learnt to recite the jargon. Also, it helps by giving the teachers important details on the students' understanding of the material and, consequently, potential strategies for facilitating their learning[15].

The adoption of flipped classroom and the introduction of threshold concept as a theory to reinvigorate the curriculum for senior secondary school students studying economics could mean the difference between success and failure in their WASSCE as well as when they eventually enlist as undergraduates in economics or a related field. Pursuant to this, the researcher decided to examine the individual and combined effects of the threshold concept and the use of the flipped classroom on senior secondary school students' academic achievement in Economics in Lagos State, Nigeria. This would be done by examining the agreement of Economics teachers with the identified topics in the subject that can open a new way of viewing Economics and the use of flipped classroom in teaching the subject. Opinions of senior secondary school student were also sought on the attitudes of their teachers and correlated with their academic achievement in Economics. Discussion and recommendations of this study would also be presented in order to reduce the rate at which secondary school students display phobia for Economics and thereby upscaling academic achievement in Economics.

1.2 Statement of the Problem

The data received from the West African Examination Council (WAEC) on the Nigerian state-based analysis of the candidates who achieved credit passes (A1 - C6) in Economics over the period of five years from 2018 to 2022 reveals the deterioration in students' academic achievement in Economics. Whereas the degree of academic achievement of students in WASSCE is often the key education indicator that stakeholders are interested in. In order to demonstrate their understanding of the subject matter in their examination responses, economics students are expected to use a set of specific concepts. However, most students frequently have a common misconception and often write answers that lack authenticity rather than using the correct concepts and terminology that would earn them full marks. The WAEC Chief Examiners' report noted, among other things, that there has been a decline in students' economics achievement compared to previous years[10,11,12]. Also, that a good number of candidates failed to use the correct economic terminologies in providing answers to the questions they attempted, thereby making it difficult to put forward their points[10,11,12]. In an effort to give a remedy for this frailties, teachers and lecturers are frequently subjected to series of seminars, workshops and conferences on the best teaching methods, teaching aids, and attitudes toward the subject and students. These, however, does not seem to be sufficient, since students continue to grapple with their understanding of the terminology specific to economics and repeat the same errors year after year for a variety of reasons. Meanwhile, the topics included in the Economics are meant to prepare students who chose to study Economics for prosperity in the current economy. Poor understanding of Economics can have negative effects on students' academic achievement as well as their ability to address the microeconomic and macroeconomic problems facing a developing country like Nigeria. Thus, it becomes vital to promote a conceptual difference in the way economics is taught and learned by reframing the curriculum through the lenses of threshold

concepts and flipped classroom. The thrust of this study therefore is to identify the threshold concepts inherent in Economics and examine their effects if deployed in classroom teaching to demystify the difficulties and abstractions in Economics learning to the students.

1.3 Aim and Objectives of the Study

The aim of this study is to investigate the effect of threshold concepts and flipped classroom on academic achievement in Economics among senior secondary school students in Lagos State, Nigeria. Specifically, the objectives of this study sought to:

i. identify the average level of Lagos State senior secondary school students' academic performance in Economics in WASSCE over five years period (2018 – 2022).
ii. examine the perception of Economics teachers on identified Threshold Concepts in Economics in Lagos State Education District V.
iii. ascertain the extent at which students have mastered the identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V.
iv. ascertain the usability of the active learning in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V.
v. examine the joint influence of threshold concepts and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V.
vi. examine the relative influence of threshold concepts and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V.
vii. examine the perception of Economics students on teachers' attitude towards Economics as it affects their academic achievement in Economics in Lagos State Education District V.

1.4 Research Questions

The following research questions guided the researcher in the conduct of the study:

1. What is the average level of Lagos State senior secondary school students' academic performance in Economics in WASSCE over five years period (2018 – 2022)?
2. What is the perception of Economics teachers on identified threshold concepts in Economics in Lagos State Education District V?
3. To what extent have students mastered the identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V?
4. What is the usability of the active learnings in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V?

1.5 Hypotheses

In this study the researcher hypothesized that:

$H_0$1 There will be no significant joint influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V.

$H_0$2 There will be no significant relative influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V.

$H_0$3 There will be no significant relationship between students' perception of their teachers' attitude towards Economics and their academic achievement in Economics in Lagos State Education District V.

1.6 Significance of the Study

The findings from this research work would be useful to a considerable extent to the teachers in the humanities department in senior secondary schools as they would identify what it means for students to be stuck in the learning of certain concepts which are threshold in Economics. The knowledge of threshold concepts would widen the pedagogical content knowledge of teachers in Economics. Teachers would be able to design lesson notes and plans to focus teaching and learning on threshold concepts in Economics combined with the use of flipped classroom method of teaching to enhance transformative teaching and learning.

Senior secondary school students as well as students of higher institutions in Economics department and related disciplines would have a transformed view of Economics and the world at large, because of grasping threshold concepts in Economics. There would be assess to the transformative aspects of learning, by way of flipping classes and making optimal use of classroom activities. This would improve student' ability to be active and innovative rather than students' ability to mimic understanding.

Another beneficiary of the findings of this study is the Nigerian Educational Research and Development Council (NERDC) who will benefit from the outcomes of placing premium to threshold concepts and the incorporation of active learning in flipped classroom in the theme details in senior secondary schools' Economics curriculum. The results of this research work would be useful for development of a guide to economics educators on economics curriculum development using threshold concepts and flipped classroom. Lastly but not in any way the least is the fact that this study would reveal the needs of senior secondary school students and their teachers in the teaching and learning of Economics to the ministry of education, which could be used for policy formulation and implementation.

1.7 Scope of the Study

This study focuses on senior secondary schools in Lagos State Education District V. The scope is delimited to three variables which are Threshold Concepts, Flipped Classroom and Academic Achievement in Economics. In the Threshold Concepts, the focus will be on three main identified topics from literature, i. e. Demand and Supply, Opportunity Cost, and Price Determination. On the Flipped Classroom, the focus is on the active learning employed in Economics classrooms such as quizzes, individual exercises, group/pair activity, and resource person. The students' level of Achievement in Economics however will be the scores of senior secondary school students in WASSCE over a five-year period and the scores of the achievement test instrument developed by the researcher.

1.8 Limitation of the Study

Limitation of this study was observed in the aspect of manifest apathy displayed by teachers/students towards questionnaires in some cases, wherein some of the respondents were reluctant to provide responses to the items. Also, some teachers and students seem to have given socially acceptable responses for social desirability bias and/or fear of victimization. To counteract this scenario, the researcher created rapport with the respondents and explained to them the need for the study, while also assuring them of utmost confidentiality of their identities. On the achievement test, most of the students displayed common phobia for examinations. In this regard, the researcher assured the students that the test is purely for research purposes, which gave them a little bit of motivation to write something in the achievement test.

1.9 Operational Definition of Terms

Academic Achievement: The measurement of the amount of academic content that students learn in Economics in their senior secondary school, as a result of learning the topics drawn from the curriculum.

Threshold Concepts in Economics: Topics in Economics which open new ways of viewing the subject and often serve as starting point to understanding other topics and Economics as a whole. Among which are demand and supply, opportunity cost, and price determination.

Flipped Classroom: This is an instructional process wherein students watch lectures online outside of class time, instead of spending entire periods listening to the teacher passively, and then use class time to do activities. Flipped classroom incorporates various forms of active learning into teaching, among which are quizzes, individual exercises, group/pair activity, and resource person.

Conceptual Change: The change in academic achievement of senior secondary school students, that would ensue from teaching Economics with a focus on threshold concepts and flipped classroom.

Secondary School Students: This is defined operationally as senior secondary school students in SS 2 in Lagos State Education District V, who offer Economics.

Teachers: Economics teachers in senior secondary schools in Lagos State education District V.

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Chapter Two

Literature Review

This chapter discussed the theoretical anchorage of the study – the theory of Conceptual Change for threshold concepts and the theory of Mastery Learning for flipped classroom approach. It would also discuss the conceptual review, empirical review of past studies in order to provide answers to the research questions of the study and the conceptual framework, which would explain the concepts/variables in the study as well as the relationship between them that needs to be studied. And lastly, the summary of gaps in literature would be discussed. This section is discussed under the following headings;

2.1 Conceptual Review

2.1.1 Threshold Concept

2.1.1.1 Characteristics of Threshold Concept

2.1.1.2 Identification of Threshold Concept

2.1.1.3 Threshold Concepts in Economics

2.1.1.4 Integrated Threshold Concept Knowledge and its Principles

2.1.2. Flipped Classroom

2.1.2.1 The Comparison between Traditional Classroom and Flipped Classroom

2.1.2.2 Ways Flipped Learning can Improve Academic Achievement

2.1.2.3 Practical Suggestions on the Ways of Using Active Learning in a Flipped Classroom

2.1.3 Academic Achievement

2.1.3.1 Determinants of Academic Achievement

2.1.3.2 Measuring Academic Achievement

2.1.4 Economics Education in Secondary Schools

2.1.4.1 Goals/Objectives of Secondary School Economics

2.1.4.2 The Nigerian Economics Curriculum

2.1.4.3 Economics Curriculum Innovation and Renewal

2.2 Theoretical Framework

2.2.1 Theory of Conceptual Change

2.2.1.1 Conceptual Change and Epistemology

2.2.1.2 Conceptual Change and Ontology

2.2.1.3 An Affective View of Conceptual Change

2.2.1.4 A Planned Perspective of Conceptual Change

2.2.1.5 A Socio-Cultural View of Conceptual Change

2.2.1.6 Multidimensional Views of Conceptual Change

2.2.1.7 Conceptual Change and Threshold Concept in Economics

2.2.2 Mastery Learning by Benjamin Bloom

2.2.2.1 The Mastery Learning's Central Principles

2.2.2.2 Mastery Learning's Processing Methodologies

2.2.2.3 Analysis of Mastery Learning

2.2.2.4 Mastery Learning in the Flipped Classroom and Its Educational Relevance

2.3 Review of Empirical Studies

2.3.1 Threshold Concepts and Academic Achievements in Economics

2.3.2 Flipped Classroom and Academic Achievements in Economics

2.3.3 Teachers' Attitude and Academic Achievement in Economics

2.3.4 Students' Weaknesses in Economics Examinations and Remedies from the Standpoint of Chief Examiners' reports

2.4 Conceptual Framework

2.5 Summary in Gaps of Literature Reviewed

2.1 Conceptual Review

A cursory look at the topic of this research work shows that there are three variables therein namely; Threshold Concepts, Flipped Classroom and Academic Achievement in Economics which will be explained as below;

2.1.1 Threshold Concept

The threshold concept from literature has been articulated in such a way that it is described as an entry point that students must pass through in order to properly understand a subject (in this context, Economics). The interval during which a learner is coming to terms with a threshold concept is referred to as the "liminal space" in literature on threshold concepts. Having "crossed through the threshold", the students are now able to understand the concepts and techniques that were previously not discerned in a new way[1].

When the notion of threshold concept was still in its early stages of development, Meyer and Land provided the definition of the term that has now come to be regarded the conventional one. "A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress"[9].

Whenever the word threshold concept is discussed, this definition provides a basis for discourse. It gives an accurate illustration of what the concept implies without any ambiguity. It therefore represents a classical definition of threshold concept.

The threshold concept framework was developed by Meyer and Land to assist students better understand crucial learning concepts in a range of subjects. This was conducted between 2001 and 2003 at the University of Durham in the United Kingdom, while they were in cahoots of a professional development project. Since then, whenever the threshold concept is perhaps the focus of discussion, contemporary literatures have cited their work. The team began their initial round of interviews with Economics teaching staff during the course of this research to identify threshold concepts. The authors have since then developed the idea in a number of articles; some were written by the two authors alone, while others were done in partnership with other writers like Baillie, Timmerman, Shanahan, Davies, and a vast number of others. The threshold concept has also been researched across a wide range of academic fields, including mathematics, physics, engineering, law, economics, biology, computer science, and many more[1].

Threshold concepts enable a shift in perspective, gradually shifting from a teaching-centered to a learning-centered perspective of a subject. These concepts focus on topics that, when fully grasped, would expose to the learner the connections between ideas that were formerly imperceptible, making it extremely difficult for the students to return to their initial mimicking. As a result of understanding a threshold concept, there may be a transformed internal viewpoint of the subject matter, subject landscape, or even world view, according to the first authors to write about this concept[9]. The Idea of threshold concept does not mean that a single concept is enough to cause or explain all the changes entailed with “thinking like

an Economist". The threshold concept does not imply that one concept can bring about or account for all the changes associated with "thinking like an economist". Although, threshold concepts are essential, they do have bounds, and these borders indicate that concepts have various meanings depending on the discipline. For students to be able to grasp other discipline-specific threshold concepts, they would likely need to first understand the fundamental themes connected with economics[7].

2.1.1.1 Characteristics of Threshold Concept

There are five characteristics that help to further explain what the threshold concept entails: transformative, integrative, irreversible, bounded, and potentially troublesome. However, over the past ten years, three additional qualities, reconstitutive, discussive and liminality have been added. The explanation for each characteristic component is provided below:

a. **Transformative –** A threshold concept is transformative in the sense that, once grasped, it causes a marked change in students' comprehension of the subject matter. Understanding the threshold concept leads to a considerable transformation. It can change students' perspectives on the subject, on themselves, or on the rest of the world[9,16,17].

b. **Irreversible –** These are conceptual shifts that are unlikely to be forgotten or unlearned. Once grasped, a threshold concept is often irreversible; the learner is unlikely to forget it. One of the challenges teachers have is going back in time to their own "innocent" days when they were still learning and didn't fully grasp certain threshold concepts. The worldview of students completely changes as they cross the threshold from naivety. It becomes nearly impossible to return to prior ways of thinking once the threshold concept is grasped[9].

c. **Integrative –** Students can connect dissimilar aspects of a subject once they have grasped a threshold concept[16]. Suddenly, students get the whole picture. They can see how

specifics or a group of ideas mesh. All manner of things make logical sense instantaneously.

d. **Bounded –** The limits and frontiers that separate one threshold from another serve to define the academic and disciplinary domains. The likelihood of a threshold concept being bounded is that "every conceptual space will have terminal frontiers, bordering with thresholds into new conceptual areas". The presentation of a threshold concept in a curriculum may have an intrinsic propensity to attract congealed understandings since it can be a sort of disciplinary property. This is an important point to keep in mind. This suggests a perspective on curriculum design that strives for a research-minded approach to mastery with always room for examining the concept itself. By maintaining a sense of their transitory explanatory power, one can best resist an essentialist view of threshold concepts[12].

e. **Troublesome –** It requires reconfiguring previous understanding, a shift in one's self image in connection to the discipline, and it could even seem counter-intuitive. Threshold concepts are troublesome in that they are challenging for students to comprehend. When newly experienced, they are not entirely apparent or comprehensible. According to this perspective, the predominance of a "common sense" or intuitive knowledge of a threshold concept can hinder mastery of it. It might be challenging to persuade students to flip their intuitive perceptions because doing so may require an uncomfortable emotional shift[17].

f. **Discursive –** This demand for both the ability to actively engage with the topic's high-level narratives. A threshold will involve a more developed and extensive use of language[11,14]. For instance, students of Economics will be able to decipher and correctly employ a variety of subject-specific terms.

g. **Reconstitutive –** This is a shift in the learner's individuality; after comprehending a threshold concept, learners now perceive themselves as subject-matter experts. The

transformative and discursive aspects already mentioned imply that grasping a threshold concept may include a change in learner perception. Such reconstruction may be more likely to occur over time and to be subsequently seen as such[18].

h. **Liminality –** The concept of liminality has compared mastering a threshold concept to a "rite of passage" that requires navigating a liminal or transitional space; "in short, there is no simple passage in learning from "easy" to "difficult"; mastery of a threshold concept often involves messy journeys back, forth, and across conceptual terrain"[12,18].

2.1.1.2 Identification of Threshold Concept

When attempting to identify threshold concepts, it is advised to review the four categories listed below. This approach helps in ensuring that the threshold concepts serving as the framework for course and/or curriculum (re)design are the ones that are most essential for nurturing students[19]. They are:

a. **Consulting existing research:** The framework of the threshold concept has been extensively written about in a variety of academic disciplines. There are several research studies that provide the knowledge base for the framework that teachers, students, and other stakeholders could consult in order to discover threshold concepts within any curriculum.

b. **Consulting with other teachers:** Teachers' responses to a series of open-ended or closed-ended questionnaires can be used to identify threshold concepts, which will lead to a revision of the curriculum. Teachers may have discussions and analyze student work presented in the form of assignments, projects, exams, and responses to prior questions on relevant topics in order to gauge how students are learning.

c. **Consulting with students:** Students are capable of determining what makes learning challenging and what doesn't. It is essential to ask them pertinent questions during an interview, questionnaire, poll, or focus group to get their viewpoint on threshold concepts.

d. **Consulting with professionals in the field and community members:** Professionals' opinions are frequently not included in discussions on threshold ideas, even though doing so will make programmes more relevant[9]. There are many disciplinary methodological techniques that needs to be expanded in order to identify threshold concepts effectively.

2.1.1.3 Threshold Concepts in Economics

Several works of literature have identified several topics that are viewed as economics threshold concepts[7, 8, 9,11,13,20]. A few of them are discussed below:

a. Opportunity Cost

According to scholars, the notion of "opportunity cost" is a threshold concept in economics[8,11,20]. Opportunity cost is the term that describes the absence of the benefits that could have been obtained from the most valuable of the forgone alternatives. In the first year of senior secondary school in Nigeria, it is one of the subjects offered in "Meaning of Economics and Related Concepts"[2]. With little focus on the issue itself, students learn this topic together with some concepts like wants and needs and choices. This is despite the fact that, if grasped, the notion may change how students make personal decisions and assess other economic ideas. Take into account how the notion of opportunity cost supports not only theories of production possibility frontiers but also "related concepts" like consumer choice, demand schedules, the decision to supply, perfect competition, efficiency, comparative advantage, incentives, price signals, and markets in general, to name just a few. This serves as an illustration of how integrative the concept is. Since the students are only teenagers and are not supposed to think like economists, the teacher are not to blame for this. They were

oblivious, however, that if this notion was grasped, it might drastically alter the way that students make decisions for themselves[11].

Opportunity Cost has all the traits of threshold concepts. On a deeper level, it is troublesome for many students who have problems not only recognizing the next best choices but also with the notion that those alternatives must be evaluated using a common currency. These challenges are frequently overlooked in a cluttered curriculum as students, teachers, and textbooks race to the next "related concept"[1]. Then, students must acquire these ideas, frequently without ever really making the connection between them and the fundamental concept of opportunity cost. The result can be a student who scores high in examinations by only knowing how to recite *the jargon* and give technical answers but lacks a thorough knowledge of the ideas and discipline. If the evaluation techniques employed encourage memorization and scripted responses rather than intelligent connections and applications, this "gap" in comprehension is unlikely to be discovered. The idea of opportunity cost is so troublesome that some scholars have said even PhD holders may have difficulty applying it correctly[21].

b. Theory of Demand and Supply

This subject is often seen as a significant advancement in the theory of economic thought, much like *opportunity cost*. Therefore, it is not surprising that it regarded as a threshold concept in Economics. The relationship between the quantities of goods that producers are willing to sell at specific prices and the quantities that customers seek to buy is demonstrated by the demand and supply theory. Students may find it particularly challenging when using the core tools of economic analysis, such as graphs and tables. Some students find it

incredibly difficult to construct graphs, while others grapple with the interpretation of tables. Even worse, some students struggle with the usage of both tools[4,5].

c. Price Determination

The interplay between marketplaces determine prices. students must think like the individual supplier in order to comprehend the concept of price determination, as well as put the overall market into consideration. Three phenomena, A, B, and C were used to illustrate the formation of a framework in the individual's economic thinking, where the author links demand, supply, individual company, and price control, in order to explain how price determination becomes a threshold concept. Learning these categories and expressing how they relate to one another will help students approach the threshold concept appropriately[14].

2.1.2 Flipped Classroom

Instead of sitting through long periods of teaching, students participate in activities during class time using the flipped classroom method of instruction. It is differentiated by a reversal of the "chalk and talk" approach of teaching, in which students attend lectures in the classroom and then do their assignments at home. The "flipped" component of flipped classroom refers to the practice of having students watch or listen to lessons at home while completing "homework" in the classroom. It can be described as the pedagogical approach in which students consolidate what they learned through classroom activities with the aid of classmates and teachers and learn new information outside of the classroom through concise videos, podcasts, e-books, and the internet[6,15]. Another definition of a flipped classroom is a dynamic, interactive setting where teachers support students in applying concepts and engaging creatively with the curriculum content[22].

The interaction and substantive learning activities that take place in face-to-face time are the most significant features of flipped classroom and teaching. Jonathan Bergmann and Aaron Sams introduced the flipped classroom in 2007 when they started videotaping their in-person lectures so that students could view them at home. The students who didn't miss class were later found to be watching the videos. Students interacted more in class as a result. Aaron Sams, Jonathan Bergmann were the pioneers of the flipped classroom. They view it as a teaching strategy that primarily advocates having student's complete homework or participate in class activities outside of what is typically done in the classroom[22]. With active learning in flipped classroom, students would discover that they could acquire help anytime they require it. In the literature that analyzes this pedagogical technique, the recorded video that students see during flipped classrooms frequently refers to the active participation it promotes. Salman Kahn, who founded the Kahn Academy, a free online platform with videos covering a variety of themes and courses, including Economics is largely responsible for the idea and success of this concept[13,23]. This method of instruction is carried out in such a way that it puts the subject being studied to the forefront in order for the students to actively participate in the classroom activities, transforming their state from naïve to thinking like an economist.

2.1.2.1 The Comparison between Traditional Classroom and Flipped Classroom

From the standpoint of the fundamental elements of teaching modalities, several academics compare the Traditional Classroom with the Flipped Classroom. The elements include: the function of the teacher, the function of the student, the way in which instruction is carried out in class—its pace and content—the way in which instruction is applied, and the way in which instruction is evaluated[15]. The outcome is represented in table 2.1.2.1.1:

Table 2.1.2.1.1: Comparison between Traditional Classroom and Flipped Classroom

Parameters	Traditional Classroom	Flipped Classroom

Role of teachers	Expert in both knowledge and class	Instructor and stimulator
Role of students	Passive learner	Active learner and researcher
Teaching methods in class	In-class instruction and homework completion	Studying in advance and discussing issues in class
Time distribution in class	Spending most of time in teaching	spending most of the time talking with other students
Teaching contents in class	Teaching and imparting knowledge	Question-Answer study
Application of teaching methods	Presenting learning contents	Independent learning and cooperative learning
Teaching evaluation	Paper test	Evaluation using a range of indicators

Source: Adopted from Deng (2019)

The major difference between a traditional classroom and a classroom that has been "flipped" reflects the various roles that teachers and students play in the learning process. In a typical classroom, teachers passively instruct their students using textbooks. Students in the flipped classroom take on the role of true master learners, acquiring knowledge through independent study and discussing learning challenges with teachers and peers. Instead of being the authority and knowledge owner, teachers today serve as instructors and learning stimulators for their students[15].

The Traditional Classroom uses in-class instruction and homework after class as its primary teaching strategies. There are less interactions in class as a result of students serving as "containers" of knowledge by paying attention to their teachers during class and completing their homework afterwards. The purpose of the flipped classroom is to give students a glimpse of what they will study so they are prepared. They can address the issues raised in their preview at this time as well as the teacher-designed discussion questions concerning the material[15].

The Traditional Classroom and the Flipped Classroom are very different from one another in terms of how class time is distributed. In a traditional classroom, teachers spend the most of their time instructing, whereas in a "flipped classroom," students and teachers spend most of their time discussing[15]. Table 2.1.2.1.2 shows the time distribution comparison between traditional classroom and flipped classroom.

Table 2.1.2.1.2: Time Distribution Comparison between Traditional Classroom and Flipped Classroom

Classroom / Classroom Activities	Traditional Classroom	Flipped Classroom
Teaching Activities	5 mins	5 mins
Pre-class activities	15 mins	——
Trying to manage homework	——	10 mins
Evaluating comprehension of previous instructional video	25 mins	——
Teaching new content	——	20 mins
Group discussion/presentation	——	10 mins

Source: Adopted from Sam and Bergmann, 2013

In the traditional classroom, explaining the textual points becomes the main work when it comes to teaching content, and most teachers see teaching textbooks as their only goal. All teaching activities have been centered on language points, and all learning activities have been centered on the passive learning of the student. Because of this, schools have been places where teachers are experts in everything and where students only study for exams. The traditional classroom views knowledge as the object of study[24]. In the flipped classroom,

knowledge is approached from the standpoint of human development, with students being the true intellectual subject of knowledge. This means that students are not the repository for knowledge.

The teacher is the source of knowledge in the traditional classroom, and the main responsibility is to provide the teaching material. Students become the masters of their own learning through the flipped classroom. In each instructional modality, teaching assessment is a crucial component. Different teaching approaches have a wide range of evaluation techniques, as well as significance. In a traditional classroom, a teacher's primary responsibility is to explain language concepts, whereas a student's primary learning responsibility is to acquire knowledge. The primary means of evaluating instruction is still through the exam papers. The only benchmark used to assess students' aptitude is their grades. The Educational Department works hard to modify evaluation techniques for the so-called Quality-Oriented Education under the traditional instructional models. There are, however, a few significant adjustments to the assessment techniques. The comprehensive development of students' knowledge, skills, methodologies, emotional attitudes, and values is a goal of the new curriculum reform. The conventional paper test ignores other factors and can only assess what students have understood. The traditional test paper is not entirely disregarded by the Flipped Classroom; in fact, it helps teachers gauge how much of the curriculum the students have understood. Additionally, the flipped classroom provides a thorough assessment of students from several perspectives[15].

2.1.2.2 Ways Flipped Learning Can Help to Improve Academic Achievement

- It enables the focus of class time to be more on active and collaborative learning. Students can complete course content in a flipped classroom at a speed that suits their preferred

learning style. They develop time control and active planning skills consequently.

- Quizzes, individual exercises, group/pair activities, and resource persons are just a few of the active learning methods that are included into instruction as part of an integrated approach known as the "flipped classroom". During a flipped classroom, an instructor can target the various teaching styles in a class by using a variety of delivery techniques[13].
- Flipped classroom instruction can also enable students to make up for missed learning. Students are still able to catch up on information by watching the lecture from the previous week online at their convenience, even if they may miss out on the application and deeper levels of learning that may be gained during class time.
- Students are more engaged in a flipped classroom than they are in other asynchronous online classrooms or platforms. The teacher can use class time to help students better understand concepts or strategies they have acquired online whenever they are having trouble applying them. This will help the students have a more comprehensive understanding of the subject. Moreover, by explicitly demonstrating or articulating learning objectives in class while having students use the information, they have learned online, an instructor can meet the needs of both the students' "goals-defined" and "experience-defined" needs.

2.1.2.3 Practical Suggestion on the Ways of Using Active Learning in Flipped Classroom

An effective technique for an Economics teacher to implement active learning in a flipped classroom as an instructional design in the teaching learning process may be to teach the concept of "Opportunity Cost" It is possible to take the subsequent actions.

Teachers' Activities:

- design and record a video on opportunity cost
- instruct students to watch and listen to the clip at home.
- play the same clip of the in the classroom with the students.
- use the content of the clip to engage students on the meaning of Opportunity Cost.
- lead students to discuss the topic based on their understanding of the clips watched.
- create deeper learning experiences using class activities such as quizzes, individual exercises, group/pair activity and any other suitable classroom activities for the topic under consideration.

Students' Activities:

- watch and listen to the video on opportunity cost designed by the teacher at home.
- read physical or digital texts on the topic in order to finish all the tasks given by the teacher, in order to participate in an online discussion with the teacher
- perform research on the opportunity cost online
- discuss the topic in the classroom with the teacher or classmate, share answers and write down those unresolved and difficult questions, all based on what they are able to grasp from the clips watched.

2.1.3 Academic Achievement

Academic achievement is the quantity of academic material a student can learn in a given length of time. This can refer to any method a student has met short- or long-term academic objectives while enrolled in a programme. To determine a student's achievements, tests and evaluations are typically administered[25]. When offered programmes that provide enough

support and instruction based on evidence, students have the opportunity to attain learning excellence at age-appropriate levels[26,45].

Each teacher is required to teach their students a specific set of academic standards for each grade. Every year, this acts as a checklist for the teachers and a foundation upon which they can develop lesson plans. The student's capacity to grasp these instructional criteria determines academic achievement. The teachers are given a lot of importance in this. Academic underachievement in students can occur for a variety of reasons, including classroom instruction, sensory impairment-related learning difficulties (weaknesses in vision or hearing), and/or the learning environment[26].

2.1.3.1 Determinants of Academic Achievement

Numerous determinants, including but not limited to those listed below, can make or mar students' academic achievement in a variety of courses and disciplines;

Classroom Instruction

Academic achievement among students can differ depending on the teacher's approach to classroom instruction. Teachers can have a significant impact on a student's ability to learn. The effectiveness of classroom instruction greatly influences student achievement. This relates to how well teachers are able to communicate information to their students and the part they play in the learning process. The curriculum that teachers create is based on the teaching standards. If they are unable to convey these ideas to the students, they will be unable to help them reach their academic objectives[29].

The central figures in the classroom are the teachers. They are in charge of comprehending each student's particular learning requirements. They must also be able to spot when a student is having difficulty in a subject. To fully grasp the subjects, some students might require a different method, while others would require the instructor to pay them more attention. Effective teachers try different approaches to engage all the students in the classroom. This means catering the teaching style to the students to ensure that they are paying attention and retaining the information. A great deal of responsibility is placed on teachers, as they are the leaders within the academic community. There is no doubt that classroom instruction is one the factors causing the difference in retention for the students and it greatly affect their academic achievement[26,46].

Learning Disability

Students who have learning difficulties may find it difficult to excel in the classroom. Because one or more learning-related cognitive processes are impaired, students with learning disabilities struggle academic achievement areas. An individual learning disability is distinguished by the persistence of the issue despite proper training and assistance. A student's IQ has nothing to do with a learning problem. Students with learning disabilities may experience challenges at any level of intelligence, are lifelong, and frequently have a family member who also struggles with learning. • do not react to intervention in the manner that is anticipated. A learning disability place students at a serious disadvantage if it is not detected and treated, and they have little chance of reaching their academic potential[25].

Learning Environment

An investigation of the connection between environment and process is required to come to a consensus on how the social and physical characteristics of learning environments impact the quality of learning processes. In formal educational environments, the teaching-learning process cannot happen in a vacuum. It happens because different elements of the learning environment interact with one another. Teacher, students, material, learning method, and learning circumstance are all components of the teaching-learning process in a learning environment[27]. In a school environment where academic achievement and the desire to learn are valued, respected, and rewarded, students and instructors collaborate effectively. Students perform better academically in an environment where learning is valued for its own sake. The school is a distinctive setting where children's future, training, and personality development—which are crucial for a community's future assets—are built and managed by effective teaching strategies, suitable physical environments, and supportive psychological environments[28]. Healthy environments and role models are essential for students who are socializing in order to improve their overall performance[29]. As a result, a learning environment that is tidy, peaceful, and pleasant is crucial. Additionally, every conscientious educator should prioritize building an ideal learning environment because comfort should be a mix of a number of elements, such as temperature, lighting, and noise management, among others[30]. The location of pupils inside the school grounds, the design of their classroom, and the accessibility of instructional resources all affect how much their learning could be improved. By promoting effective teaching and learning, it is thought that a school with a healthy learning environment helps to foster the expected learning outcomes that will support increased academic achievement[42].

A healthy learning environment also has a workable student to teacher ratio. A study on secular secondary schools that looked at how class size affected the academic achievement on

national public exams discovered that class size, the number of students enrolled overall in the classes being examined, and the type of school had a significant impact on students' performance at lower levels. Nevertheless, it is clear that the number of teachers per 100 students had a negative impact on students' performance, indicating that the larger the class, the lower the pass rate[50].

Socioeconomic Background

A person's income, occupation, and social background are all factors that make up their socio-economic background. Success and the likelihood of a successful future are significantly influenced by socioeconomic background. The term "socioeconomic background" refers to a person's or a group's position on the socioeconomic scale, which is determined by a variety of social and economic factors, including income, the level and type of education, the type and prestige of occupation, the location of residence, and, in some societies or parts of society, ethnic origin or religious background. Socioeconomic background investigations frequently turn up concerns with privilege, power, and control as well as unequal access to resources[49].

Studies examining the relationship between pupils' socioeconomic status and academic achievement have typically produced depressing results, especially in developing country like Nigeria. For instance, using longitudinal methods, researchers who have followed children' vocabulary development have discovered that growth trajectories for children of different socioeconomic backgrounds start to diverge early on, and that by the time the children start school, the influence of socioeconomic background on both cognitive abilities and behavior is already well established. Additionally, children in primary and middle schools who have parents with low incomes, low levels of education, who are unemployed, or who hold low-

status jobs are less likely to succeed academically than children from more socioeconomically privileged homes. They are also less likely to participate in academic activities[50].

Analyzing the link between students' socioeconomic status and academic achievement aids in understanding how educational opportunities are distributed. Based on student achievement, the relationship between schools and policies shows how equally the advantages of education are distributed across students from various socioeconomic backgrounds, whether as a result of the schools themselves or other social interactions and policies. Students from backgrounds that are more socioeconomically privileged perform better in general. The gradient line's rising slope demonstrates this conclusion[49,50].

School Location

The term “school location” refers to a school’s physical location, the kinds of buildings it has, how they are used, how many students and teachers are enrolled there, as well as other factors that are taken into account while creating a rational school map in both urban and rural areas. Since most teachers prefer schools in urban regions with social amenities to rural schools where population is low and only subsistence life is practiced, school location has a significant impact on the facilities available, the number of teachers, and the number of students[51]. One of the biggest factors affecting students' overall academic achievement is their school's location. Studies have revealed that location of the institution, particularly in the urban regions, has a positive relationship with academic achievement, while rural locations seem to imply negative relationships. Additionally, the location of the school has an impact on the hiring of talented teachers, since many of them prefer to work in urban areas[50,51].

Gender

As some professions still have sex stereotypes, sociocultural differences between boys and girls in Africa continue to be present in the educational setting. Since rural families depend on their children for aid and survival, they refuse to send them to secondary schools. Some parents are also reluctant to assign their daughters to male teachers out of concern for promiscuity[51]. In a study that investigated the connection between gender and academic achievement in secondary school students, it was discovered that the competition among schools, the number of students in each class, the type of school, and single-sex education all had a significant impact on the students' performance. While boys-only schools were positively correlated with the results of public exams, academic achievement was inversely correlated with girls-only schools. In a related study, male students performed better than female students, even though quality of performance was inversely proportional to average performance as male students performed better than female students. This is plausible due to the greater proportion of male students who took the exams[50,51].

2.1.3.2 Measuring Academic Achievement

Academic achievement can be measured in a variety of ways because it is characterized by various indicators of educational progress. The connections between academic achievement and its determinants, such as intellect, motivation, and personality, have been shown to vary depending on how academic achievement is measured, as shown by individual research and meta-analyses. Therefore, it is crucial to distinguish between the various academic achievement measures[45]. Teachers and school officials frequently measure students' progress by evaluating at classroom learning outcomes, continuous assessment scores as well as terminal and progressive examinations (i.e. school examinations and WASSCE)[46]. The

measurement of academic achievement in any subject area which is widely acceptable around the world is usually categorised into three – diagnostic, formative and summative. This will be given broader explanation under Bloom's Mastery learning in the section 2.2.2.

Defined goals are utilized as a defining element of academic achievement since it must be measurable. The level of academic achievement a student has achieved is quantified throughout a period of time. In order to evaluate an achievement, testing and assessments are frequently used. Academic achievement is graded through assessments like Continuous Assessment (CA) and Grade Point Average (GPA). Academic achievement is determined by the student's capacity to pass tests and exams and varies depending on the lesson plan. This comprehension could be of a certain field of knowledge, like Economics. Alternately, it could be a broad intellectual idea used in a variety of contexts, like critical thinking[26].

2.1.4 Economics Education in Secondary Schools

Economics focuses on human behavior under the presumption that individuals act rationally and seek the greatest amount of utility or benefit. The goal of economics education is to create ethical individuals who can make sound decisions. It is covered as a humanities topic in Nigeria's senior secondary school curriculum. Additional topics in this area include English literature, geography, politics, Christian and Islamic religious studies, history, visual and performing arts, French, and Arabic. Because it is a prerequisite for enrollment in their desired programs and institutions and must be passed at the credit level, economics is the fundamental subject for any aspiring higher education students in Nigeria who wish to pursue social science, management science, and commercial degrees[2,52,53].

Because the first few schools to offer economics in the West African School Certificate Examination [WASCE] saw unexpectedly positive results, its popularity quickly increased when it was added to the secondary school curriculum. The quantity of applicants who offered economics in succeeding WASCE years was positively correlated with the quality of the results in that subject. In contrast to the majority of secondary school topics, economics was introduced into the Nigerian secondary school curriculum in 1966[54].

Furthermore, given that economics was introduced as a secondary school subject in Nigeria in 1966, it is safe to say that the popularity of the subject increased significantly thereof. In addition, several changes have been observed in secondary school economics. The following are some of the changes: The need for change and innovation has always been present in the educational systems of emerging countries, and policy changes have been occurring since independence[54].

2.1.4.1 Goals/Objectives of Secondary School Economics

Economics is concerned with human behaviour such as how people earn their living and make a choice between alternatives to satisfy their wants. It focuses on the study of firms and the government whose activities are geared to the production of goods and services for the satisfaction of human want since economics is concerned with human behaviour. Economics is one of the electives or group of subjects expected to be studied at the Senior Secondary School (SSS) level under the new National Policy on Education. This curriculum was initially being designed by the Comparative Education Study and Adaptation Centre (CESAC) to meet the requirements of Economics in the system at the time. The guiding principle of this curriculum was the need to equip graduates of the Senior Secondary School with the basic knowledge and skills that will enable them to better appreciate the nature of economic

problems in any society. In the light of this philosophy, the following was the set objectives for the Economics course:

i. To equip students with the basic principles of Economics necessary for useful living and for higher education,
ii. To prepare and encourage students to be prudent and effective in the management of scarce resources
iii. To raise students respect for the dignity of labour and their appreciation of economic, cultural and social values of our society and
iv. To enable students to acquire knowledge for the practical solution of the economic problems of society; Nigeria, developing countries and the world at large.

The Nigerian Curriculum is now being designed by the Nigerian Educational Research and Development Council (NERDC) which has new objectives for Economics in Senior Secondary Schools as stated below:

i. Understand basic Economics, principle, and concepts as well as the tools for sound economic analysis. To help students comprehend certain fundamental economic ideas and foster economic thinking so that students may apply it to their daily lives as citizens, employees, and consumers.
ii. Contribute intelligently to discourse on economic reforms and development as they affect or would affect the generality of Nigerians. Also, the curriculum has the objective to assist students understand their role in nation-building and makes them aware of the economic problems the country is currently facing.
iii. Understand the structure and functioning of economic institutions.
iv. Appreciate the role of public policies on national economy.

v. Develop the skills and also appreciate the basis for rational economic decision. It aids in their comprehension of how many economic sectors are interconnected and should advance simultaneously through deliberate and well-coordinated efforts.

vi. Become sensitized to participate actively in national economic advancement through entrepreneurship, capital market, and so on. Students who study economics have a deeper awareness of how development affects the environment and are given the fundamental tools of economics and statistics to assess economic issues.

vii. Understand the role and status of Nigeria and other African countries in international Economics relationships and appreciate the problems encountered by developing countries in their effort toward economic advancement. Students who study economics get familiar with the various criteria for classifying the global economy and discover why some nations are wealthy while others are not, as well as the current economic issues and how they are being addressed[52].

It is apparent how crucial economics education is for every nation. It enables people to understand basic economic concepts and ideas as well as to appreciate and work to improve the state of the economy for their own social welfare. As a fundamental ability, understanding economics is necessary for good citizenship. He claims that studying economics has a number of advantages for pupils, including[54].

(i) The Cultural Values: - As a subject area, economics is intriguing because it has some inherent qualities, such as strong logic. It links students to the fundamentals of daily life and also addresses almost universal events like the International Monetary Fund (IMF), the Structural Adjustment Programme (SAP), and others.

(ii) Intellectual Training: - Since economics requires people to approach problems in a way that is typically unfamiliar to them, it also contributes to intellectual development. Economics is not essentially a body of information; rather, it is a method, not a doctrine, a mental tool, and a way of thinking that enables its users to reach the right conclusions.

(iii) Vocational Training: - Since economics requires people to approach problems in a way that is typically unfamiliar to them, it also contributes to intellectual development. Economics is not essentially a body of information; rather, it is a method, not a doctrine, a mental tool, and a way of thinking that enables its users to reach the right conclusions.

2.1.4.2 The Nigerian Economics Curriculum

Economics curriculum was introduced to the educational system in Nigeria as a policy document and academic program to provide an understanding of the current state of, and efforts to develop the curriculum, material, and pedagogical techniques of Economics used in the teaching of Economics at all educational levels; as well as the research to determine the efficacy of alternative instructional techniques in Economics, the level of economic literacy. The Reconstructionism Philosophical Foundation (RPF), which promotes that the curriculum should be constantly changed to meet changes in society, believes that the economics curriculum should teach students to conduct critical analyses, interpret, and evaluate social problems, and bring about change in society[52]. These themes and topics in the Nigerian Economics curriculum are presented in tabular form below:

NIGERIAN EDUCATIONAL RESEARCH & DEVELOPMENT COUNCIL

...the think-tank of the Nigerian Education

E-CURRICULUM THEME DETAILS

Today : 2/14/2023

SUBJECT : ECONOMICS **CLASS LEVEL :** SSS 3

THEME 3 : STRUCTURE OF THE NIGERIAN ECONOMY

	Topic	Performance objectives	Contents	Teacher's Activities	Student's Activities	Teaching &Learning Material	Evaluation Guide
1	Petroleum and the Nigerian Economy	1 Stress the growth of the petroleum industry in Nigeria. 2 Discuss adequately the impact (positive and negative) of petroleum on the Nigerian economy. 3 Explain the role of the NNPC and OPEC in the production and marketing of petroleum products.	1 Development of petroleum industry. 2 Contribution of petroleum to the Nigerian economy (positive and negative). 3 Role of NNPC and OPEC in the exploration, production, refining, marketing and distribution of petroleum products	1 Arrange a class debate on the role of NNPC in the exploration distribution and marketing of Petroleum products in Nigeria.	1 Discuss the positive and negative contributions of the petroleum industry to the Nigerian economy.	1 Arrange an excursion to a refinery in your location.	1 State the contributions of OPEC and NNPC to the economic development of Nigeria. 2 List and explain the contributions of petroleum to Nigeria's economic development

Figure 2.1: E-curriculum of Nigerian Secondary School Economics

Source: NERDC, 2023

Figure 2.1 is the typical theme details of Nigerian secondary school curriculum. The topics under each theme are itemized in seven columns. The column for topics is followed by that of performance objectives which detailed the expected learning outcomes of the topics, for the class under consideration. This is followed by the components of the lessons that would make up the content, and followed by teachers' activities, students' class activities as well as teaching and learning materials that would be used during lesson delivery. Assessment of learning objectives is the last aspect of the curriculum details.

Table 2.1.4.2.1: SSS 1 Economics Curriculum in Nigerian Secondary Schools

Themes		Topics
Theme 1	Principles of Economics	Meaning of Economics and related concepts Basic tools of Economic Analysis Concept of Demand and Supply

		Theory of Production
Theme 2	Economic Systems	Basic Economics Problems
Theme 3	Business Organizations	Firms and Industry
Theme 4	Population, Labour Market and Human Capital Development	Population Labour Market
Theme 5	Structure of the Nigerian Economy	The Nature of the Nigerian Economy Agriculture Mining
Theme 6	Financial Institutions and Regulatory Agencies	Meaning of Financial Institution
Theme 7	Money and Inflation/Deflation	Money: Meaning, Characteristics and Functions
Theme 8	Distributive Trade	Chanel of Distribution
Theme 9	Business Finance	Instrument of Business Finance

Source: NERDC, 2022

Table 2.1.4.2.2: SSS2 Economics Curriculum in Nigerian Secondary Schools

Themes		Topics
Theme 1	Principles of Economics	1. Tools of Economic Analysis 2. Concept of Demand and Supply 3. The Production Possibility Curve 4. Cost Concepts 5. Revenue Concepts
Theme 2	Economic Systems	Types and Features of Economic System
Theme 3	Population, Labour Market and	Labour market

	Human Capital Development	
Theme 4	Consumer Behaviour, Price Determination and Market Structures	1. Elementary treatment of Utility Theory 2. Price Determination 3. Market Structures
Theme 5	Nigerian Economy and Major Natural Resources	1. Industries in Nigeria 2. Agriculture
Theme 6	National Income and Public Finance	1. Elementary treatment of fiscal policy 2. Balanced and Unbalanced budget 3. Elements of National Income Accounting
Theme 7	Financial Institutions and Regulatory Agencies	Types of financial institutions and their functions
Theme 8	Money And Inflation/Deflation	1. Money: Demand for and supply of money 2. Money: Inflation and deflation

Source: NERDC, 2022

Table 2.1.4.2.3: SSS3 Economics Curriculum in Nigerian Secondary Schools

	Themes	Topics
Theme 1	Comparative Economics	Economic Lessons from Asian Tigers, Japan, Europe and America
Theme 2	Population, Labour Market and Human Capital Development	Human Capital Development
Theme 3	Structure of the Nigerian Economy	1. Petroleum and the Nigerian Economy 2. Manufacturing and Construction 3. Service Industries
Theme 4	Financial Institutions and	1. Agencies that regulate the

	Regulatory Agencies	financial markets 2. Functions and role of regulatory agencies
Theme 5	International Trade and Balance of Payments	1. International Trade 2. Balance of Payments (B.O.P)
Theme 6	Development Economics	1. Economic growth and development 2. Economic development planning
Theme 7	International Economic Organizations	International Economic Organisation
Theme 8	Applied Economics and Contemporary Economic Organizations	1. Current Economic plans; MDGs, NEEDS, Vision 2020 2. Economic Development challenges 3. Economic reform programs

Source: NERDC, 2022

The Nigerian Economics Curriculum has 25 themes in the Senior Secondary School (SSS) (SSS 1 - nine, SSS 2 – eight and SSS 3 - eight). 48 topics are then created by further dividing the themes into 15 topics in SSS 1, 18 topics in SSS 2, and 15 topics in SSS 3. These teaching themes are spread over the three years based on the nature and complexity of the topics and the total teaching time available each year[52].

2.1.4.3 Economics Curriculum Innovation and Renewal

Innovation and renewal of Economics curriculum in senior secondary schools in Nigeria become necessary because the country is seemingly still struggling to fit in appropriately to the 4th industrial revolution while the developed countries of the world are now in the era of the 5th industrial revolution in a new age. The revolution involves all aspects of life in a new age known as the globalization era which is an invention of science and technology. Nigeria

as a developing nation should have a positive responsibility for globalisation. The country has to prepare the citizens to face it, in order to be able to compete with other nations and not be left behind. Preparing students in the senior secondary schools through the innovation and the renewal of the Economics curriculum is one of the solutions to face globalisation and reduce its effects on the future of jobs in Nigeria. In the recent two decades, there have been a number of improvements in teaching and learning that have the potential to significantly enhance the Economics curriculum. Effective teaching techniques and materials are the catalysts and drivers of innovation, and two of these are: Incorporation of flipped classroom into Economics instructions and adaption of the Computer Assisted Learning Methods[52].

Critical Issues Needed to be Incorporated into the Curriculum

If the current pressing challenges of our time are not addressed in the revised document, an effort to enhance and update the high school economics curriculum may be ineffective. It is crucial to take into account the following issues:

Innovative Teaching Methods: In light of their applicability to the topics, the flipped classroom and computer-assisted instruction are two cutting-edge approaches that can be successfully included into the theme details of the new e-curriculum under "teaching & learning material," as was already noted.

Professional Skills and Competencies of Teachers: For the teaching of Economics in the age of globalization, teachers must possess the requisite competences, including communication, interpersonal, problem-solving, and emotional and cognitive quotient skills. In order to impart their expertise to pupils, teachers must be computer literate if they are to comply with the professional skills and teaching competencies obtainable in the 21st century.

Insecurity and International Wars: The nation's security situation should be taken into account when developing new curricula. The security of instructors and pupils must be taken into consideration when developing the curriculum in light of the current instability that is wreaking havoc on our streets in Nigeria. Additionally, economics students should be made aware of contemporary concerns relating to foreign wars, conflicts, violence, and human rights violations (such as the conflict in South Sudan, the civil war in Yemen, etc.), particularly how they affect the economy of Nigeria. The students' economic literacy will grow as a result, enhancing their ability to participate actively in discussions about topics related to the latter.

The Fourth Industrial Revolution: To keep students current with automation and the attendant disruption of the fourth industrial revolution, economics curricula should include the new technological realities of the modern age. The latest technologies utilized in the business world should be employed to teach subjects like business finance, agriculture, mining, etc. The updated curriculum should cover subjects and ideas like foreign exchange and data analysis techniques that help students compete in the global investment market.

Job Creation and Personal Development: Only when the appropriate employment are made accessible can investments in training and education be beneficial. So that students of economics might also have the innovative mind to come up with ideas that would disrupt the market and make them employers of labor, training on job creation should be included in the curriculum.

2.2 Theoretical Framework

The theoretical anchorage of the study will be twofold. First is the theory of Conceptual Change as a theoretical basis for threshold concepts and second is the theory of Mastery learning as a theoretical for the flipped classroom approach.

2.2.1 Theory of Conceptual Change by Posner, Strike, Hewson and Gertzog

Conceptual change refers to the process of altering or substituting one conception for another. It might be a notion, a conviction, or a mode of thought. Conceptual change learning differs from other types of learning in that it involves a change or restructure of information and beliefs. In conceptual change learning, a preexisting thought could be completely altered, swapped out, or assimilated by the new information. The adjustment creates a conceptual framework that helps explain the knowledge and solve difficulties in the future[34].

The classical Conceptual Change Theory was introduced by Posner, Strike, Hewson, and Gertzog[35]. It involves the teacher making students' alternative frameworks explicit prior to designing a teaching approach consisting of ideas that do not fit students' existing conceptions and thereby promoting dissatisfaction. Prior to actually creating a teaching strategy that incorporates concepts that clash with students' preconceived notions and hence foster unhappiness, the instructor must make students' alternative frameworks explicit. The anomaly is then maybe explained by a new framework based on formal scientific inquiry. Although most studies indicate that initial novel ideas are only utilised in specific contexts, the conceptual progress that students made toward comprehending and acquiring science concepts and principles after instruction was frequently substantially limited[6]. Thomas Kuhn's depiction of the scientific revolution and Piaget's idea of disequilibration and accommodation served as the foundation for the theory[34].

2.2.1.1 Conceptual Change and Epistemology

The philosophical nature of knowledge and the act of knowing is the definition of the word "epistemological belief". It is interesting to look into how students perceive or manage their knowledge and how their epistemological views affect classroom instruction in various subject areas[34]. Dissatisfaction with a prior conception was thought to be the catalyst for dramatic or revolutionary conceptual change in the classical conceptual change model that placed a focus on students. This belief was rooted in radical constructivist epistemological views and placed an emphasis on the individual's conceptions and conceptual development. If the learner was dissatisfied with their prior conception and a replacement conception was understandable, credible, and/or fruitful, adaptation of the new notion may follow, in this context, threshold concepts in Economics[6,35]. In addition to the student understanding what the conception means, an intelligible conception is considered sensible if it is not contradictory; a plausible conception is thought to be believable; and a conception is meaningful if it aids the learner in solving additional problems or suggests new research avenues. Threshold Concepts' "Integrative" feature specifically focuses on solving potential challenges or connecting concepts' related components.

An insightful conception must be both comprehensible and plausible, and a conceivable thought must first be true. Conceptual changes that result may be too subtle to notice or they may be permanent. This learning model uses the relative plausibility, comprehensibility, and usefulness of competing ideas to describe how conceptual conflict is resolved. Additionally, a set of epistemological tenets known as the student's conceptual ecosystem facilitated conceptual plausibility, intelligibility, and fruitfulness[35].

2.2.1.2 Conceptual Change and Ontology

Some scholars use ontologies to reflect students' knowledge, which is a representation of what is obvious to them given what they already know. Children's prior knowledge of how the world functions includes both spontaneous and instruction-based modifications at the level of their mental models. Some scholars use “tree switching” to illustrate their most significant ontological shifts because they feel that conceptual change necessitates an ontological adjustment[36]. However, some argued for significant knowledge reconstruction during childhood since they thought that children's notions were incommensurable with those of adults[37].

The process of conceptual transition is challenging since there is no effective method for putting concepts in a new ontological category. By re-evaluating their ontological commitments, categories, and presuppositions, thoughtful students can categorize the concept into the appropriate category. There are numerous other topics where students’ material perceptions and scientists’ process viewpoints differ. It is uncommon for school science to result in the intended changes to students' ontologies because science concepts are not typically given by teachers or in textbooks with any ontological differentiation, such as between process and material.

2.2.1.3 An Affective View of Conceptual Change

There hasn't been much focus on conceptual development in the affective domain, particularly when it comes to motivation and interests. Since they are crucial in fostering conceptual changes at the level of economic knowledge, this needs to be developed in the teaching of economics. The subjective is incorporated into the traditional conceptual transformation strategy by subtly highlighting the student's discontent with existing

knowledge. Personal, motivational, social, historical, and situational beliefs all have an impact on students' theories, beliefs, and model development. Their prior knowledge is frequently what prevents knowledge reorganization. Individual objectives, motives, and intents encourage conceptual development in children. Teachers who don't take into account social and motivational variables in learning and teaching activities will limit how much students learn[34].

This problem is addressed, at least indirectly, by the traditional conceptual change strategy described above, which emphasizes students' discontent with prior concepts. The social and motivational literature emphasizes how crucial student engagement in learning activities is to their interest, personal beliefs, and environmental factors. It was suggested that teachers who neglect the social and affective components of individualized and collaborative learning may restrict their students' conceptual growth. It is essential to create a cohesiveness between the cognitive and emotional dimensions in order to link the cognitive and emotional in teaching and learning. This unity should see emotions not only as moderating variables of cognitive outcomes but also as variables of equal status that typically also require conceptual changes[6].

2.2.1.4 A Planned Perspective on Conceptual Change

Approaches to conceptual change are typically explicitly founded on constructivist epistemological theories, which hold that learners must create their own knowledge. According to this point of view, students must be engaged and have a specific goal in mind when they are learning. As a purposeful, goal-directed sort of learning process, planned learning occurs internally rather than externally initiated. As a result, the student's conscience fully controls it. The intentional student knows and believes in internal initiation and goal-oriented actions in the process of absorbing knowledge. Intentional learning interrelates to

educational psychology with the constructs of higher level of learning and reasoning, self-regulation, engagement, and critical thinking. The students must be purposeful to monitor and regulate their learning in a metacognitive manner. The lack of intentional learning in conceptual change may result in students assimilating new knowledge into existing ones without conceptual change[34].

The student is advised to take an active, intentional part in the knowledge restructuring process in order to address this problem. Accordingly, "conceptual change depends on not just cognitive elements, like the identification of conflict, but also on metacognitive, motivational, and affective processes that may be brought under the learner's conscious control and may decide the likelihood of change". The foundation of the text's chapters is this emphasis on the student having power over the forces driving transformation. The idea of deliberate conceptual transformation resembles mindfulness in certain respects, which is described as a concept that "reflects a voluntary state of mind and connections among motivation, cognition, and learning"[6].

2.2.1.5 A Socio-cultural View of Conceptual Change

The process of conceptual change is also influenced by social perspectives and general culture. Sociocultural elements are important for learning and completing specific activities. The key results are the social culture being changed and understanding being attained. Social culture as a whole has a significant impact on how conceptual transformation occurs in students. Social contact and group projects in the classroom significantly advance the reorganization of information. However, further study is required to examine various strategies for applying conceptual change efficiently by fusing cognitive and socio-cultural aspects[34].

2.2.1.6 Multidimensional Views of Conceptual Change

Many studies on conceptual change have adopted a certain viewpoint, such as an epistemological, an ontological, or an affective viewpoint. Pluralistic frameworks are required for the development of learning and teaching in order to adequately accommodate the distinct views from various learning philosophies[34]. Despite the fact that there are few studies on the connection of cognitive and affective components in the learning process, there is enough evidence in research on learning and instruction that cognitive and affective concerns are strongly related. For instance, there are several studies on the connections between interest in Economics and acquiring Economics concepts, but these studies are typically limited to exploring the relationships between interest in science and learning outcomes that are cognitive in nature. Only a few researches have investigated how changes in scientific interest interact with conceptual changes[38]. In essence, epistemological, ontological, and emotional perspectives must be taken into account for conceptual changes to be effective in manipulating the challenging teaching and learning processes[6].

In order to fully address the complexity of the teaching and learning processes, many views on conceptual change that take into account epistemological, ontological, and affective domains must be used. These frameworks are the only ones that can adequately model the teaching and learning processes and satisfy the high standards of scientific literacy. The fusion of theories on conceptual change and the importance of affective elements will produce beneficial results for future research. Additionally, it seems most beneficial to approach the problem of interest in Economics from the standpoint of conceptual change. As with developing students' pre-instructional perceptions of the intended subjects, developing interest is undoubtedly a key goal of Economics instruction[34].

2.2.1.7 Conceptual Change and Threshold Concept in Economics

The framework theory of conceptual change postulates that the development of disciplinary thought can provide the solution. A threshold idea ought to reframe how we think about a variety of phenomena in some way. In the history of economic theory, the ideas of supply and demand as well as opportunity cost have been regarded as pivotal breakthroughs. It follows that both have been proposed as "threshold concepts". However, the manner in which teachers and students employ technical terminology to refer to more basic notions that have little in common with the "science" knowledge make it challenging to identify these troublesome terms as threshold concepts[26]. The conceptual change model requires students to evaluate whether various conditions are met using their prior knowledge, or conceptual ecology. The new idea must be understandable (meaning is understood), credible (concept believed to be valid), and successful (the concept is useful). If the new idea meets all three requirements, conceptual change takes place and learning proceeds without any problems[34].

It is plausible to pressume that students do not enter a class on economics teaching without having some background in the field. Students actually already have a variety of strong misconceptions or naive ideas that are at odds with the world of science. The conceptual framework that the pupils use to interpret and comprehend new instructions is based on their misconception and the common sense that goes along with it. Despite being a difficult source to change through instruction, student conceptions serve as the basis for economic conceptions[34].

Research on conceptual change has mostly focused on transitions from ordinary thought to thought framed by the structure of scientific fields. The research on threshold concepts sheds

light on the difficulties that students encounter while attempting to build disciplinary frames in their thought. This distinction reflects the concentration of threshold concepts research on learning in higher education and the last years of secondary school and the focus of most conceptual change research on younger learners[13]. The nature of the phenomenon and its behaviour patterns, for instance, have fundamentally changed from a single seller to a market where sellers may come and go, and from a negative relationship between output and supply price to a positive relationship between output and supply price, making it more difficult for learners to develop an understanding of supply. This understanding is linked to a comprehension of how prices are determined by the threshold concept, which calls for the learner to be able to transition between how things appear to an individual supplier and how they appear to the market as a whole. The notion of "hybrid conceptions" from the conceptual change provides some markers for the instructor who is attempting to accompany students as they travel through 'liminal spaces'.

'Demand and Supply' 'Price determination', and 'opportunity cost' are each regarded as threshold concepts. A learner's classification of phenomena and understanding of the connections between phenomena are altered when one or more of these three concepts takes root in their thinking. Therefore, each of these concepts can be thought of as a way to frame understanding. However, a learner's comprehension of the first threshold idea will be configured when they incorporate a second or third threshold notion into their thinking. This logically comes from the idea that a collection of threshold concepts may come together to define an approach to thinking and doing, or general framework, in a discipline[18,19,38].

According to the framework theory of conceptual change, "misconceptions" are instances where a conception is out of alignment with a framework. When a framework is intentionally

used as the proper frame of reference, an everyday conception is in alignment with it and perfectly acceptable. The everyday conception, however, will be out of alignment if the frame of reference is a scientific conception of the world, and new misalignments will be created as learners attempt to incorporate scientific ways of thinking through 'hybrid' conceptions.

When disciplinary terminologies are employed to describe phenomena as they have been conceptualized in everyday thought, one sort of misunderstanding results. An example of this is when the output of one producer is referred to as 'supply', which promotes a misunderstanding of the connection between price and output in the market. It raises the possibility that misunderstandings will be created at points of framework change as well as in the process of moving from common to scientific thought if we view the development of understanding of a discipline in terms of an expanding frame of reference as additional threshold concepts are incorporated in a structure of thinking[38].

2.2.2 Mastery Learning by Benjamin Bloom

Benjamin Bloom's concept of Mastery Learning serves as the study's theoretical foundation for the flipped classroom. He was a teacher in the education department at Chicago University and a well-known psychologist and educator of the modern era. The growth in American education during the 1950s and 1960s led to the creation of the Mastery Learning[15]. According to Mastery Learning, "everyone can master what they need to know during the teaching process if the learning settings have fulfilled students' needs"[32]. Bloom argued that all students can learn well and most of them will have nearly equal learning abilities, learning speed, and motivation for learning if the teaching proceeds smoothly in accordance with the teaching schedule, all the problems they encountered have been offered a solution, all students have enough time, and there is a standard for mastering[14]. Bloom developed

"teaching for mastery" and later Mastery Learning Theory on the basis of his learning theory and earlier successes. According to Bloom, all pupils can master the material if given the right circumstances[15]. Carol's studying theory, which took into account five variables, is the foundation for Bloom's Mastery Learning Theory. Study time, learning persistence, teacher quality, comprehension capacity, and aptitude are the five factors. These variables interact and ultimately have an impact on the learning outcomes[33].

2.2.2.1 Central Principles of Mastery Learning

According to literature, more than 90% of students can probably master the material being taught, thus the role of the teacher is to determine how to best help students learn what they are being taught. This is the principle behind "teaching for mastery"[15]. Therefore, educators need to discard their old teaching philosophies and adopt a new, student-centered perspective. The flipped classroom approach is used in this situation to engage students in a variety of active learning activities that will keep their bodies and minds engaged throughout the classroom experience. According to Bloom, who promotes a new student-centered perspective, most students may successfully absorb professional information and increase their enthusiasm to study with the help of their teachers.

2.2.2.2 Processing Methodologies of Mastery Learning

In addition to being a theory and an idea, mastery learning is also a method. The new notion of teaching assessment, encompassing "diagnostic assessment," "formative assessment" and "summative assessment" is introduced by Bloom in the theory of Mastery Learning. It is important to conduct a "diagnostic assessment" at the start of each new semester. Before beginning a lesson, teachers evaluate the performance of their student using diagnostic evaluation. Its objective is to identify students' needs and encourage their academic pursuits

rather than to judge them as “excellent” or “bad”. At every step of the instructional process, students must receive assessments[15].

The purpose of “formative assessment” is to provide teachers and students with feedback. According to Bloom, group instruction combined with individualized corrective help and frequent feedback is the key to mastery learning. Feedback frequently reveals how much pupils have understood and how much they still need to learn. Providing pupils with personally tailored corrective assistance enables teachers to pinpoint the key concepts that still need to be taught to each student. According to Bloom, each unit should involve either eight to ten hours of in-person instruction or two weeks of study assignments. Each unit in the junior class of primary school only lasts for roughly one week of instruction. However, at a higher level, it may take three or four weeks. The goal is to maximise study time and limit the time spent correcting[15,32].

Summative assessments are frequently given at the conclusion of a lesson. Its objective is to provide students with evaluations and certifications or to demonstrate the value of instructional schedules[45]. The evaluation of each unit, semester, or academic year contributes to a more thorough evaluation of students. The three assessments work together to create a teaching cycle that is thoroughly permeated by feedback and corrections. Teachers offer individualized counseling and support as well as making improvements to their instruction based on assessments at each step. Students are accountable for their studies, identify issues at each stage, and make up any shortcomings, they are experts in their field.

2.2.2.3 Analysis of Mastery Learning

Mastery Learning is a relatively new teaching perspective and student-based perspective, which is an entirely new research methodology. The normal distribution idea, which states that "give up the ordinary pupils to protect the outstanding students" was the biggest misconception that needed to be cleared up in education. It also offered fresh methods and suggestions for enhancing teaching abilities. Prior to that, the traditional teaching approach that focuses on the achievements of the top students while ignoring the growth of the average students served teachers' direction[15].

Originally developed in America, the Mastery Learning Theory has its own limitations as a method of instruction and a theory. For instance, it is not helpful for innovative courses and instead concentrates on basic theory, basic courses, and other confined courses. The implementation procedure faces certain challenges at the same time. Focusing on corrections and comments consumes far too much time and effort. It can only ensure that the majority of students develop generally. Although mastery learning can help students master and retain their knowledge, it can also neglect other skills to some extent[14].

2.2.2.4 Mastery Learning in the Flipped Classroom and Its Educational Relevance

The Bloom's Mastery Learning Theory has four key implications for the flipped classroom approach which will be highlighted below [33].

The Mastery Learning Theory improves on the learning outcomes for students and supports the need of having every student complete their assignments, whether they come in the form

of homework or in-class activities. Each student's individual learning needs are intended to be accommodated.

a. This theory also recognizes that pupils differ in terms of their cognitive capacities or learning challenges. Teachers take into account the individual variances when defining learning achievement goals. For each student, teachers should select a separate set of instructional resources. Additionally, they should use distinct instructional strategies to provide students with unique guidance and assistance[15].

b. The students' psychological well-being benefits from the Mastery Learning Theory[33]. Teachers believe that every student has the potential to succeed and maintain a positive outlook on everyone throughout the learning process. Because of the expectations, which assist motivate students and advance their learning, teachers have confidence and trust in their students' capacity to learn. Students will, in turn, develop confidence as a result of the expectations. Students get engaged in the subjects they are studying, relish the love for learning, feel accomplished, and have their own ideas formed during the entire learning process[15].

c. The collaborative learning and dialogue between students and teachers are also highlighted by the mastery learning theory[33]. They communicate and interact with one another during this process. Additionally, students support one another, strengthening their bonds while cultivating a spirit of cooperation[15].

2.2 Review of Empirical Studies

This section presents the works of scholars relating to the Threshold Concepts, Flipped Classroom and Academic Achievement in Economics under the following headings.

2.3.1 Threshold Concepts and Students' Academic Achievement

The Threshold Concept offers a framework of features for highlighting relevant conceptual thinking that serves as learning gates within a subject area or field. These learning portals are regarded as a threshold that must be passed by students in order to increase their mastery of their educational experiences and to view a certain aspect of the universe in a completely fresh, transforming, and frequently unexpected way. Following such changed comprehension, further professional and in-depth learning related to the notion is made feasible, which results in an improvement in academic achievement in the subject area under consideration. In fact, without a threshold concept—which "represents a transformed way of understanding, or interpreting, or viewing anything without which the learner cannot progress"—such heights of academic achievement could not be feasible. However, students will advance to higher levels of comprehension at varying rates and through various learning strategies (i. e. active learning in a flipped classroom)[43].

According to some notable academicians, the degree of exposure to threshold concepts distinguishes students who have mastered the pedagogy of a subject from those who have only a cursory understanding of it[7,10,12,19,43].

Integrative threshold concept knowledge translates along with "threshold concept representations" and is a "socio-empirically created learning" with the main goal of improving academic achievement. Also, prominent among its aim is to suggest a framework that is informed by research and supported by empirical data to assist university academics in creating and integrating Integrative Threshold Concept Knowledge. This paradigm relied from a wealth of research literature that incorporated knowledge from various academic

fields, nations, and institutional contexts. There are seven principles underlying this which are expounded below[19]

a. As a first principle of the framework, effective teaching prioritizes advancing student learning. The aforementioned goal is perfectly linked with a focus on building this foundation. This methodology promotes adopting a learning-centered rather than a teaching-centered methodology.

b. The focus should always be on transformative learning in any conversation about learning threshold concepts. This implies that there will be changes not only at the cognitive level but also at the epistemological and ontological levels, or in terms of how people think, act, and "be".

c. Two essential components of learning are emotion and motivation. Learning transformative threshold concepts may cause feelings of "upset" on numerous different levels. There is undoubtedly cognitive disequilibrium, but equally significant is the epistemological and ontological unmooring it may cause as learners encounter possibilities to change their identities and worldviews (sometimes welcome, sometimes not). The emotional reactions to and motivational inclinations toward these events may vary among learners. Therefore, working with threshold concepts gives you the chance to have insightful conversations about emotion and motivation as essential components of learning.

d. Additionally, supporting the framework is the cultivation of care. Teachers who are performing this (perhaps) revolutionary activity are cared for by developers, who also cultivate this care. They might also inspire teachers to consider the ways in which

they demonstrate concern for the discipline, for the students, and for the way in which the students are learning the disciplinary Threshold Concept.

e. The framework's suggested activities also promote "celebrating rather than suppressing differences" as individual students undergo transformative learning. The activities encouraged by the framework are based on the underlying presumption that learners will experience the unpredictable transformative (liminal) environment in a variety of ways.

f. The framework also is predicated on the idea that educational developers will implement and promote reflective practice. As participant instructors' experiences and answers develop, developers can modify the framework on the spot. Developers can simultaneously challenge teachers to consider how much of the framework applies to their situational needs and to interact with the framework from the viewpoints of their students.

g. The last principle is that educational developers should have a part in fostering communication. By urging educators to share new insights as they progress through the framework with colleagues, solicit input from them, and incorporate these insights into their work, they may support knowledge sharing within traditional academic communities.

2.3.2 Flipped Classroom and Students' Academic Achievement

The following two factors explain why the flipped classroom received so much popularity and rose to prominence in some regions of the world: (1) The Flipped Classroom is ensured

by cutting-edge technology, and after class, students can watch self-directed learning clips. (2) A lot of schools use videos to be watched online or offline. The Flipped Classroom has recently gained popularity in American classrooms. The Flipped Classroom in America concentrates on science disciplines including math, physics, and science and centers on elementary and high schools. The educational process encourages scholars' and teachers' acceptance of the flipped classroom. According to their approach to teaching, they enumerated the benefits and drawbacks of the flipped classroom[15].

Many researchers have the conviction that the Flipped Classroom could have more positive benefits than the Traditional Classroom. Most of their studies showed that students absorb the training video at their own pace and would access the internet and social media to find the information they need[13,15,22,26]. When students complete "homework" in class, teachers have additional opportunity to provide students feedback and gain a better understanding of their learning preferences and challenges. As a result, the time spent in the classroom can be used more effectively and creatively. It turns out that as student achievement rises, interest and involvement do as well. Additionally, viewing and learning from one another's videos helps teachers' professional development[15].

Because teachers need more time to develop the courses, flipping the classroom places a greater demand on their ability to engage in teaching design activities. Students are made the focal point of the lessons, and they are expected to set their own schedules and take responsibility for themselves[22]. Compared to a traditional classroom, a flipped classroom is good for students' learning abilities, motivation, and attaining higher grades. The flipped classroom encourages greater interaction and communication between teachers and students while also encouraging greater participation from the students.

Even though the Flipped Classroom has many benefits, many scholars and teachers have reservations about the method of instruction. According to some authors, there are numerous disadvantages in practice, including the possibility that students will completely skip the materials, a difference in the quality of the teaching videos due to the skill of the creators, a small chance that students will benefit fully from the teaching videos, and a lack of use of the in-person classes[39,40,41].

The design of teaching materials and instructional activities determines whether or not the impacts of teaching can be improved. However, other authors emphasize how crucial teachers are to the flipped classroom. According to more academics, augmenting traditional teaching techniques with technology while flipping the teaching schedule does not fundamentally alter learning in any way[39,42].

2.3.3 Teachers' Attitude and Students' Academic Achievement in Economics

Every country's educational system depends on its teachers, who are the hubs around which it all revolves. As a result, it is believed that the effectiveness of the teachers has a critical role in how well the students perform in the classroom. A teacher is a professional who consciously and purposefully imparts knowledge to a student who has less experience by utilizing instructional materials, methods, and strategies along with a wealth of experience, training, skills, competences, attitudes, and content knowledge. Teachers have continued to get criticism for their poor attitudes and lack of requisite professional qualifications as a result of their poor performance and negative attitudes. In literature, low academic achievement among Nigerian students has been attributed to instructors' ineffectiveness in

carrying out their duties, unfavourable attitudes toward their jobs, and unsatisfactory pedagogical skills[47,48].

According to studies, teachers' attitudes considerably influenced how attentive their students were in class, and students' attitudes also had an impact on how they approached their work. Significant correlation exists between the philosophy of an economist and the learning philosophy of the students. The students will learn more, their skills and competencies will improve, their level of confidence in the teacher will rise, and vice versa, if the teachers are displaying positive attitude personality traits that support the students' learning, share knowledge in multiple ways, foster learning and cooperation, and encourage the students to come forward and show participation in the class activities. There is a weakly positive relationship between economic teachers' attitudes and students' academic achievement in economic in secondary school, Bauchi South, according to a study that examined the relationship between teachers' attitudes toward economics, students' attitudes toward learning it and their academic achievement in the subject[47].

2.3.4 Students' Weaknesses in Economics Examinations and Remedies from the Standpoint of Chief Examiners' Reports

The general comments of chief examiners' report on Economics from 2015 and 2019 revealed that performance of students in economics at the secondary school level over the years is less than satisfactory. These are some of the weaknesses noticed in candidates of the West African Secondary School Certificate Examination (WASSCE) May/June, and General Certificate Examination (GCE) Nov/Dec from 2015-2019 periods as reported by the Chief Examiner, West African Examination Council (WAEC)[4,5]. However, these weaknesses were offered proposed solution/remedies which will be outlined below;

2.3.4.1 Weaknesses of Students in Economics Examinations

According to the chief examiners on Economics, poor performance of students could be attributed to some weaknesses noticeable in their scripts, these include:

(i) Lack of basic mathematical skills to tackle questions in the data response section.

(ii) Disobedience of the rubrics.

(iii) Mere listing of points without proper explanation.

(iv) Outright misinterpretation of some of the question.

(v) Inability to draw and label relevant diagrams properly.

(vi) Inadequate coverage of the syllabus.

(vii) Full calculations were not shown. This would have helped to have maximum marks.

(viii) Poor power to express in English language.

(ix) Adoption of wrong approach of answering questions.

(x) Poor knowledge of terminologies peculiar to economics.

(xi) Inadequate knowledge of the subject matter.

(xii) Illegible handwriting.

(xiii) Inadequate preparation for the examination.

2.3.4.2 Remedies for Improved Academic Achievement in Economics

The Chief Examiner, West African Examination Council (WAEC) stated that candidates' performance would be improved if the following remedial measures are taken;

(i) Candidates should take mathematics, which is a related course; more seriously, as this would enable them perform better in Economics.

(ii) Candidates should endeavour to show all workings in their calculations to earn high marks.

(iii) Candidates should improve on their ability to communicate in order to develop their points logically with examples where necessary.

(iv) Candidate should devote enough time to practicing the construction of diagrams before the examination.

(v) To avoid misinterpretation of questions, candidates should spend the first five minutes going through the question paper. This will enable them to understand the actual requirements of the questions.

(vi) Candidates should go beyond listing out points only. They should endeavour to explain to details.

(vii) Candidates should desist from selective study of topics in the syllabus.

(viii) Teacher should teach their students the need to expatiate their points.

(ix) Qualified teachers should be employed in schools to teach the student all the necessary concepts they should know.

(x) Students should be exposed to reading textbooks, newspapers, journals, magazines, with a view to improving their reading and speaking skills.

(xi) Students should be encouraged to practice the use of basic tools of economic analysis before the examination.

2.4 Conceptual Framework

Figure 2.2 showed the link between threshold concepts in Economics, flipped classroom and the outcome variable (academic achievement in Economics). It is expected that there be improved academic achievement in Economics when focus is on threshold concepts using active learning in a flipped classroom. Teachers attitude towards Economics is regarded as a

mediating variable between Threshold Concepts, Flipped classroom and Academic Achievement in Economics.

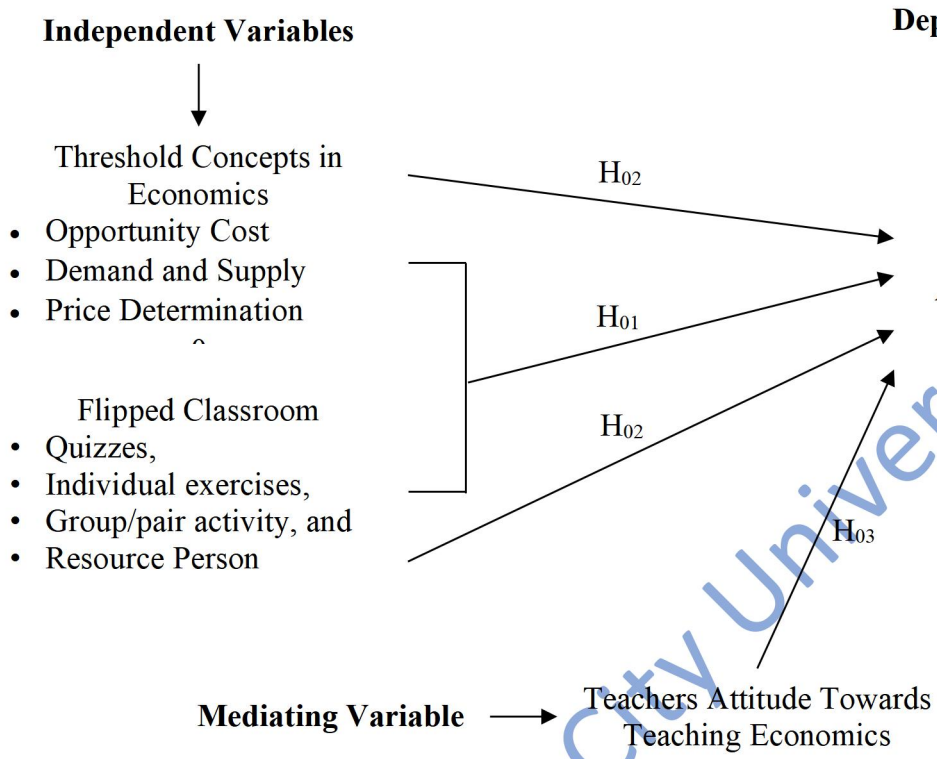

Figure 2.2: Conceptual Model

Source: Field – work 2022

2.5 Summary in Gaps of Literature Reviewed

Numerous academics have investigated into how first-year undergraduate students are impacted by threshold concepts in economics. The identification of threshold concepts, their features, and their effects on teaching and learning in higher education have received more attention than anything else. The latter two years of senior secondary school appear to receive almost no attention, despite the fact that they constitute the prerequisite for learning the subjects. The way students approached any subject at the tertiary level (from memorization to having a thorough knowledge) is often a carryover of what they had learnt in secondary school. Research on the fundamental concepts in the study of economics and how they are taught in secondary schools is therefore crucial to students' academic achievement in both

school examinations and the West African Secondary School Certificate Examination (WASSCE).

Given the foregoing, pertinent literature to the subject of this research study was then studied under appropriate headings as stated in the chapter's preceding paragraphs. The concept in the topic was first attempted to be explained (i.e., Threshold Concepts, Flipped Classroom and Academic Achievement as well as Economics Education Nigerian Secondary Schools), following which the basic framework was established, the relevant empirical research were listed and explained. The conceptual framework, which reflected the researcher's model for the study, was the final component of the review.

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Chapter Three

Methodology

This chapter describes the procedures and the methods adopted in the study. The chapter, therefore, presents a careful description of the research design, population of the study, Sample and sampling technique, description of the research instruments and instrumentation, validity of the instruments, reliability of the instruments, data collection and method of data analysis.

3.1 Research Design

This study adopted the descriptive survey research design. This is because the study attempted a description of the existing situation with regards to teaching methods to engender the students' academic achievement in Economics in public senior secondary schools in Lagos State, Nigeria. Furthermore, none of the variables were manipulated in the study.

3.2 Population of the Study

The population included all senior secondary school students who offered Economics and their Economics teachers in humanities department in the 69 public senior secondary schools in Lagos State Education District V[1]. Teachers and students are considered best fit as respondents of the study because, interview and structured questions with the duo are suggested among others to provide help in identifying threshold concepts and consequently improving teaching and learning of the subject through active learning in flipped classroom[2]. Find on tables below, presentation of total population of students and teachers offering economics in senior secondary schools in Lagos State Education District V.

Table 3.2.1: List of Schools, Number of Economics Teachers and Number of Students in Zone 1 – Ajeromi Ifelodun LGA

S/N	Name of School	No of Economics Teachers	No of Economics Students
1	Adeolu Senior Secondary School, Tolu-Apapa	1	540
2	Ajeromi Ifelodun Senior High School, Ajegunle	3	1117
3	Alakoto Senior Secondary School, Tolu-Ajeromi	1	210
4	Awodi Ora Senior Secondary School, Ajegunle	3	1269

5	Bola Ige Millennium Senior Secondary School, Tolu	2	478
6	Cardoso Senior High School, Ijora-Badia	3	1745
7	Creek Senior High School, Tolu	1	352
8	Expressway Senior Secondary School, Tolu	2	569
9	Gaskiya Senior College, Badia-Ijora	3	1120
10	Mokoya Senior High School	1	289
11	New land Senior Secondary School, Tolu	1	285
12	Ojoku Senior Secondary School, Tolu	1	360
13	Ojora Memorial Senior Secondary School, Olodi-Apapa	1	452
14	Olodi Apapa Senior Secondary School, Tolu	1	294
15	Oluwa Memorial Senior Secondary School, Tolu-Apapa	2	625
16	Oshodi Senior Secondary School, Tolu	1	291
17	Reservation Senior Secondary School, Tolu	1	525
18	Temidire Senior High School, Tolu	1	287
19	Tin-Can Island Senior High School, Tolu	2	702
20	Unity Senior Secondary School, Tolu	1	300
	Total	**32**	**11, 810**

Source: Lagos State Education District V, 2022

Table 3.2.2: List of Schools, Number of Economics Teachers and Number of Students in Zone 2 – Amuwo Odofin LGA

S/N	Name of School	No of Economics Teachers	No of Economics Students
1	Agboju Senior Secondary Schools, Agboju	2	618

2	Amuwo Odofin Senior Secondary School, Mile 2	2	508
3	Amuwo Odofin Senior High School, Mile 2	1	326
4	Amuwo Odofin Community Senior secondary School, Mile 2	1	347
5	Amuwo Odofin Senior Grammar School, Mile 2	3	934
6	Awori Ajeromi Senior Grammar School, Agboju	2	512
7	Dr Lucas Memorial Senior High School, Kirikiri	2	735
8	Festac Girls Senior Secondary School, Festac Town	2	559
9	Festac Senior College, Festac	3	724
10	Festac Senior Grammar School, Festac	2	532
11	Igbologun Senior Secondary School, Snake Island	1	345
12	Imoye Senior High School, Imoye	2	795
13	Ivory Senior Grammar School, Ibeshe Island	1	254
14	Kuje Senior Secondary School, Agboju	1	509
15	Navy Town Senior Secondary School, Navy Town	3	1002
16	Odofin Senior Secondary School, Mile 2	1	431
17	Satellite Senior Secondary School, Satellite Town	3	1377
18	Tomaro Senior Secondary School, Tomaro	1	102
19	Unity Senior Grammar School, Ikare Island	1	136
	Total	**34**	**10,746**

Source: Lagos State Education District V, 2022

Table 3.2.3: List of Schools, Number of Economics Teachers and Number of Students in Zone 3 – Badagry LGA

S/N	Name of School	No of Economics Teachers	No of Economics Students
1	Ajara Comprehensive Senior High School, Ajara-Topa	2	983

2	Ajara Senior Grammar School, Ajara-Vetho	4	1984
3	Ansar-ud-deen Society Senior Grammar School, A.U.D. Road	2	756
4	Araromi-Ilogbo Senior Secondary School, Oko-Afo	5	2045
5	Badagry Senior Grammar School, Badagry	1	433
6	Government Senior College, Ajara	3	1424
7	Ikoga Senior Grammar School, Ikoga Zabe	4	1686
8	Iworo-Ajido Senior Model College, Iworo-Ajido	3	1052
9	Kankon Senior Secondary School, Kankon	2	748
10	Lagos State Model Senior College, Kankon	2	928
11	Methodist Senior High School, Badagry	1	574
12	Newland Senior Secondary School, Badagry	2	942
13	Sito-Ghetrome Senior Secondary School, Gbethome	2	636
14	State Senior High School, Ibereko	3	1251
15	Topo senior Grammar School, Badagry	1	411
	Total	**37**	**15,853**

Source: Lagos State Education District V, 2022

Table 3.2.4: List of Schools, Number of Economics Teachers and Number of Students in Zone 4 – Ojo LGA

S/N	Name of School	No of Economics Teachers	No of Economics Students
1	Ajangbadi Senior High School, Afromedia	3	2006
2	Army Cantonment Boys Senior Secondary School, Ojo	1	438

3	Army Cantonment Girls Senior Secondary School, Ojo	1	758
4	Awori Senior College, Ojo	4	2533
5	Community Senior Secondary School, Agric	1	428
6	Egan Senior High School, Riverine	3	1257
7	Iba Housing Estate Senior Secondary School, Ojo	4	1494
8	Ijeododo Senior Grammar School, Abaranje	3	1041
9	Ilogbo-Elegba Senior Grammar School, Ilogbo-Elegba	4	2583
10	Isasi Senior Grammar School, Isashi	3	1787
11	Lagos State Government Senior Secondary School, Otto Ijanikin	2	1179
12	Lagos State Model Senior College, Ojo	1	358
13	Ojo Senior High School, Ojo	3	1186
14	Osolu Senior High School, Irewe	1	581
15	Oto-Awori Senior Grammar School, Otto-Awori	2	1098
	Total	**36**	**18,727**

Source: Lagos State Education District V, 2022

1. Total number of Senior Secondary Schools in Lagos State Education District V = **69**
2. Total Numbers of Economics Teachers in Senior Secondary Schools in Lagos State Education District 5 = **139**
3. Total Numbers of Students Offering Economics in Lagos State Education District 5 = **57,136**

3.3 Sample and Sampling Technique

The sample size for this study for students was obtained using Taro Yamane scientific formula which is given as;

$$\text{Sample size (n)} = \frac{N}{1+N(e)^2}$$

Where ***n*** = sample size, ***e*** = error of sampling (***5%*** or ***0.05***),

N = Economics Students' population (57,136) ***1*** = constant

Economics Teachers' population (139)

Economics Students' sample size = $\frac{57,136}{1+57,136(0.05)^2}$ = 397.21 ≈ 397

Economics Teachers' sample size = = $\frac{139}{1+139(0.05)^2}$ = 103.15 ≈ 103

Total sample size = 397 + 103 = 500

The sample size calculations gave a value of 500 for both Economics students (397) and teachers (103). A multi stage sampling technique was used to select teachers and students offering Economics in the sampled schools, in Lagos State Education District V. At the first stage, systematic sampling technique was used to select ten (10) schools from each of the four (4) local governments (Ajeromi Ifelodun, Amuwo Odofin, Badagry and Ojo) in Lagos State Education District V, making a total of 40 schools. At the second stage, purposive sampling technique was used to select 103 teachers from the selected schools. This technique was considered appropriate because the researcher needed to find teachers who can and are willing to provide the needed information by virtue of knowledge or experience, availability and willingness to participate, and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner owing to the nature of the research[3]. At the third stage simple random sampling technique was used to select 397 students from the sampled schools. This technique was considered appropriate in order to ascertain that each of the students were given an equal chance of being part of the study.

Table 3.3.1: List of Sampled Schools, Number of Economics Teachers and Number of Students in Lagos State Education District V

S/N	Name of School	No of Economics Teachers	No of Economics Students
	Zone 1		
1	Ajeromi Ifelodun Senior High School, Ajegunle	3	10
2	Awodi Ora Senior Secondary School, Ajegunle	3	10

Sample size (n) = $\frac{N}{1+N(e)^2}$ Where n=sample size, N=population (1900), e=error

3	Bola Ige Millennium Senior Secondary School, Tolu	2	10
4	Cardoso Senior High School, Ijora-Badia	3	10
5	Expressway Senior Secondary School, Tolu	2	10
6	Gaskiya Senior College, Badia-Ijora	3	10
7	Oluwa Memorial Senior Secondary School, Tolu-Apapa	2	10
8	Temidire Senior High School, Tolu	1	9
9	Tin-Can Island Senior High School, Tolu	2	10
10	Unity Senior Secondary School,Tolu	1	8
	Zone 2		
11	Agboju Senior Secondary Schools, Agboju	2	10
12	Amuwo Odofin Senior Secondary School, Mile 2	2	10
13	Amuwo Odofin Senior Grammar School, Mile 2	3	10
14	Awori Ajeromi Senior Grammar School, Agboju	2	10
15	Dr Lucas Memorial Senior High School, Kirikiri	2	10
16	Festac Girls Senior Secondary Schools, Festac	2	10
17	Festac Senior College, Festac	3	10
18	Festac Senior Grammar School, Festac	2	10
19	Navy Town Senior Secondary School, Navy Town	3	10
20	Satellite Senior Secondary School, Satellite Town	3	10
	Zone 3		
21	Ajara Comprehensive Senior High School, Ajara-Topa	2	10
22	Ajara Senior Grammar School, Ajara-Vetho	3	10
23	Ansar-ud-deen Society Senior Grammar School, A.U.D. Road	2	10
24	Araromi-Ilogbo Senior Secondary School, Oko-Afo	3	10
25	Government Senior College, Ajara	3	10
26	Ikoga Senior Grammar School, Ikoga Zebe	3	10
27	Iworo-Ajido Senior Model College, Iworo-Ajido	3	10
28	Newland Senior Secondary School, Badagry	2	10
29	Sito-Ghetrome Senior Secondary School, Gbethrome	2	10
30	State Senior High School, Ibereko	3	10
	Zone 4		
31	Ajangbadi Senior High School, Afromedia	3	10
32	Awori Senior College, Ojo	3	10

33	Egan Senior High School, Riverine	3	10
34	Iba Housing Estate Senior Secondary School, Ojo	3	10
35	Ijeododo Senior Grammar School, Abaranje	3	10
36	Ilogbo-Elegba Senior Grammar School, Ilogbo Elegba	3	10
37	Isasi Senior Grammar School, Isashi	3	10
38	Lagos State Government Senior Secondary School, Otto-Ijanikin	2	10
39	Ojo Senior High School, Ojo	3	10
40	Oto-Awori Senior Grammar School, Otto-Awori	2	10
	Total	**103**	**397**
	Grand Total = 500 respondents		

Source: Field – work 2022

3.4 Description of the Research Instruments

The research instruments are threefold, tagged Threshold Concept, Flipped Classroom and Academic Achievement in Economics Questionnaire (TFAEQ) Active Learning, Teachers Attitude towards Economics and Students' Academic Achievement (ALTASA) and Students' Achievement Test (SAT).

TFAEQ included three sections – A, B, and C. Section A consists of purpose of research work, duration, name of school and teacher's information. Section B consists of brief introduction to threshold concept and flipped classroom. Section C has 12-items bordering on teachers' perception on identified threshold concepts in economics, influence of threshold concepts on academic achievement and teachers' method of teaching and assessment using active learning in flipped classroom.

ALTASA was made up also, of three sections – A, B, and C. Section A includes purpose of research work, duration, name of school and student's information. Section B has 12-items bordering on the usability of active learning and teachers' attitude towards economics. Items

have four columns that is to be ticked according to the modified Likert scale – VTM - Very true of Me, TM - True of Me, UM - Untrue of Me, VUM -Very Untrue of Me and SA: Strongly Agree, A: Agree, D: Disagree, SD: Strongly Disagree. Items included in both teachers' questionnaire and students' questionnaire were adapted from Organisation for Economic Cooperation and Development (OECD) Teacher Questionnaire, some questions from the body of this research work and while some were adapted from Jimaa Shihab Students Rating Scale[4,5].

SAT consisted seven (7) questions (5 multiple-choice questions and 2 essay type questions) to be solved by students before responding to the questionnaire. This would be so in order to test the mastery level of the students in the identified threshold concepts in economics and to induce positive and reliable response when they are responding to the questionnaire. The questions would be multiple-choice and theory (essay) type, and the students would be given 30 minutes to provide answers to them. The questions would be set considering the identified topics which are considered threshold concepts in Economics syllabus, and examination questions obtained from some of the sampled schools. The scoring of the question was 2 marks for the multiple-choice questions and 5 marks for each question in the essay part, giving a total of 20 marks. Questions in the achievement test were drawn from the topics that have been taught in their previous classes on the identified threshold concepts in Economics.

3.5 Validity of Research Instruments

The content and construct validity of the research instruments were established by the project supervisor, who assessed the items and comment on their clarity and appropriateness in addressing the problem under investigation. Based on the comments that ensued, modifications were made on some items in the final draft of the instruments.

3.6 Reliability of the Research Instruments

The reliability of the instrument was established using, Cronbach's alpha reliability method. Cronbach's Alpha is most commonly used reliability method for science education studies. It is described as one of the most important and persuasive statistics in research involving test construction to the extent that its usage in research with multiple-item measurements is considered routine[6]. The reliability measure of the three instruments used herein are presented below:

Table 3.6.1: Reliability Statistics for Research Instruments

Research Measure	Cronbach's Alpha
Concept, Flipped Classroom and Academic Achievement in Economics Questionnaire	0.693
Active Learning, Teachers Attitude towards Economics and Students' Academic Achievements	0.725
Students' Achievement Test	0.533

Source: Field-work 2022

The reliability report above gave a value of 0.69 for teachers' questionnaire, 0.73 for students' questionnaire and 0.53 for students' achievement test. This report revealed that the three instruments were able to measure what they were purported to measure because they all scored above 0.5 which is a requirement for instruments to be reliable[6].

3.7 Data Collection

The researcher visited the sampled schools, day after day to acquaint administrative heads with the intention to carry out research, by presenting letter of introduction, signed by the Head of Department of Arts and Social Science Education, Lead City University, Ibadan. Subsequently, dates were scheduled with the teachers and students to obtain convenient days for the questionnaires and achievement test. The researcher made use of five proctors who were trained to administer the instruments. Efforts was made to collect the instruments on the

days each of the instruments were distributed, that is, the teachers' questionnaires, students' questionnaires and achievement test.

3.8 Data Analysis

The data were analyzed using quantitative research methods such as frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation (PPMC) and multiple regression. Multiple linear regression was used to analyse hypothesis one and two, while hypothesis three was analysed with the use of Pearson Product Moment Correlation (PPMC). All data collected were analysed at 0.05 level of significance through Statistical Package for Social Sciences (SPPSS) version 23.

Endnotes

1 Lagos State Online, "Official Internet Portal for all schools in Lagos State,". https://lagosschoolsonline.com/ 2022.

2 J. A. Timmermans & J. H. F. Meyer, *A Framework for Working with University Teachers to Create and Embed 'Integrated Threshold Concept Knowledge' (ITCK) in their practice,* **International Journal Academic. Development**, 24(4), 2019, 101-114.

3 I. Etikan, & O. Babtope. *A Basic Approach in Sampling Methodology and Sample Size Calculation.* **Med Life Clin**, 1(2), 2019, 1006.

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5 OECD, *TALIS - The OECD Teaching and Learning International Survey*, **Organisation for Economic Co-operation and Development,** 2018.

6 K. S. Taber, *The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education*, **Research in Science Education,** 48(6), 2018, 48-61.

Chapter Four

Results and Discussion of Findings

In this chapter, the data collected from the questionnaires and achievement test administered during the study are presented. The data were analyzed using quantitative research methods such as frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation (PPMC) and multiple regression. This chapter includes the following sub-headings:

4.1 Return of Instrument and Response Rates

4.2 Presentation of Data

4.2.1 Analysis of Demographic Data

4.2.2 Research Questions

4.2.3 Test of Hypotheses

4.3 Discussion of Findings

4.1 Return of Instrument and Response Rates

Table 4.1.1: Return of Instrument and Response Rates

S/N	Title of Instrument	Number Distributed	Number Retrieved	Number Valid	Response Rate
1.	Threshold Concept, Flipped Classroom and Academic Achievement in Economics Questionnaire (TFAEQ)	103	88	88	85.4%
2.	Active Learning, Teachers Attitude towards Economics and Students' Academic Achievements (ALTASA)	397	375	375	94.5%
3.	Students' Achievement Test in Economics	397	375	375	94.5%

Source: Field-work, 2022

Table 4.1.1 showed the number of instruments (questionnaires and achievement test) that were administered` during the field work. Two questionnaires and one achievement test in Economics were distributed to the Economics teachers and senior secondary school students offering Economics subject in Lagos State. It is revealed from the table that the questionnaire titled "Threshold Concept, Flipped Classroom and Academic Achievement in Economics Questionnaire (TFAEQ)" was distributed to one hundred and three Economics Teachers in senior secondary schools in Lagos state. However, eighty-eight (88) were retrieved and found to be valid and therefore used for the study. This produced a high response rate of 85.4%. Another questionnaire titled – "Active Learning, Teachers' Attitude towards Economics and Students' Academic Achievements (ALTASA)" was distributed to three hundred and ninety-seven (397) senior secondary school students that offered Economics. However, three

hundred and seventy-five (375) were retrieved and found to be valid and therefore used for the study. This produced a very high response rate of 94.5%. Students' Achievement Test in Economics was also distributed to three hundred and ninety-seven (397) senior secondary school students offering Economics. Three hundred and seventy-five (375) were also retrieved and found to be valid and therefore used for the study. This also produced a very high response rate of 94.5%.

4.2 Presentation of Data

4.2.1 Analysis of Demographic Data

Table 4.2.1.1: Demographic Data of Economics Teachers

Demographic Variable		Frequency (n)	Percentage (%)
Gender	Male	49	55.7
	Female	39	44.3
	Total	88	100
Age Group (Years)	26-34	16	18.2
	35-44	30	34.1
	44-50	27	30.7
	Over 50	15	17.0

	Total	**88**	**100**
Professional Qualification	Diploma	2	2.3
	B.Ed/B.A/B.Sc	47	53.4
	M.Ed/M.Sc	38	43.2
	PhD	1	1.1
	Total	**88**	**100**
Position held in the school	Senior Teacher	13	14.8
	Games Master	4	4.5
	H.O.D	6	6.8
	Form Teacher	18	20.5
	Subject Teacher	42	47.7
	Year Tutor	5	5.7
	Total	**88**	**100**

Source: Field-work, 2022

Table 4.2.1.1 showed the demographic data of Economics teachers. It showed that 49(55.7%) of the teachers were males, while 39(44.3%) were females. This showed that there were more male Economics teachers when compared to their female counterparts. This could be as a result of the fact that males were more interested in economics subject than females and hence, they tend to study it more in the university. It is also revealed from the table that most of the teachers, 30 (34.1%) were within 35-44 years of age which was followed by 27 (30.7%) who were within 44-50 years of age. Furthermore, it was revealed that majority of the teachers, 49 (53.4%) had B.Ed/B.A/B.Sc as their professional qualification which was followed by 38 (43.2%) who had M.Ed/M,Sc as their current level of professional qualification. This implied that most of the teachers had university education even up to the post graduate level which was good. Lastly, in terms of the teachers' position held within the school, it is revealed that 13 (14.8%) were senior teachers, 4 (4.5%) were games master, 6 (6.8%) are Heads of Department (H.O.D), 18(20.5%) are form teachers, 42 (47.7%) were subject teachers and 5 (5.7%) were year tutors. This implies that majority of the teachers were just subject teachers.

Table 4.2.1.2: Demographic Data of Economics Students

Demographic Variable		Frequency (n)	Percentage (%)
Gender	Male	174	46.4
	Female	201	53.6
	Total	375	100
Age Group (Years)	11-15	105	28.0
	16-20	264	70.4
	Over 20	6	1.6
	Total	**375**	**100**
Occupation of Parents	Teacher	51	13.6
	Banker	50	13.3
	Engineer	75	20.0
	Trader	171	45.6
	Transporter	28	7.5
	Total	**375**	**100**
Department	Science	98	26.1
	Art	76	20.3
	Commercial	201	53.6
	Total	**375**	**100**

Source: Field-work, 2022

Table 4.2.1.2 showed the demographic data of senior secondary school students offering Economics. It showed that 174(46.4%) of the students were males, while 201(53.6%) were females. This showed female dominance over males in the secondary school educational system. This could be as a result of the fact that nowadays, parents are now beginning to see or realize the importance of training their female children or wards hence, the increase in female students in education. It wss also revealed from the table that most of the students, 264(70.4%) were within 16-20 years of age which was followed by 105(28.0%) who were within 11-15 years of age. This showed that most of the senior secondary school students were young adults or adolescents. This suggested that they should be matured enough for the classes they are. Furthermore, it is revealed that majority of the parents of the students, 171(45.6%) were traders by occupation which was followed by 75(20.0%) whose parents were Engineers. About 51(13.6%) of the students' parents were teachers which was immediately followed by 50(13.3%) whose parents were Bankers. However, only 28(7.5%) of the students' parents were transporters. Lastly, in terms of the departments the students

belonged to, 98(26.1%) of them were in science department, 76(20.3%) were in Arts department while majority of them, 201(53.6%) were in commercial department. This implied that most of the students prefered commercial subjects like economics and commerce probably because they have flair for it or they feel it is easier for them unlike science subjects.

4.2.2 Research Questions

Research Question One: What is the average level of Lagos State senior secondary school students' academic performance in Economics in WASSCE over five years period (2018 – 2022)?

Table 4.2.2.1: Average Level of Lagos State Senior Secondary School Students' Academic Performance in Economics in WASSCE over Five Years Period (2018 – 2022)

S/N	State	2018 NCCP (%)	2019 NCCP (%)	2020 NCCP (%)	2021 NCCP (%)	2022 NCCP (%)	Mean (%)	Position
1	ABIA	37994 (94.5)	34484 (86.4)	36258 (91.3)	34343 (90.9)	30140 (76.1)	87.84	1st
2	ABUJA	10478 (65.8)	7762 (42.4)	12934 (68.6)	14526 (74.6)	13101 (58.0)	61.88	28th
3	ADAMAWA	9531 (69.0)	7694 (66.2)	10208 (51.2)	21083 (71.0)	16275 (56.7)	62.82	26th
4	AKWA-IBOM	36684 (80.7)	30279 (67.8)	32536 (76.4)	35142 (84.0)	30229 (70.1)	75.8	15th
5	ANAMBRA	23501 (85.6)	22211 (80.0)	22675 (86.8)	24141 (88.7)	19616 (67.0)	81.62	7th
6	BAUCHI	12439 (56.3)	11093 (46.7)	7514 (73.1)	8132 (76.6)	4651 (58.6)	62.26	27th

7	BAYELSA	14486 (88.6)	14271 (86.1)	12456 (88.8)	10698 (85.3)	10549 (79.7)	85.7	4th
8	BENUE	25143 (79.2)	22553 (73.2)	23908 (85.8)	25340 (91.2)	28510 (93.7)	84.62	6th
9	BORNO	6600 (45.1)	7611 (52.9)	6157 (50.4)	6010 (51.4)	4670 (40.0)	47.96	37th
10	CROSS-RIVER	18048 (75.4)	15027 (65.4)	17951 (81.1)	17446 (82.6)	14392 (63.0)	73.5	18th
11	DELTA	33624 (71.2)	32161 (66.4)	40010 (81.4)	46176 (87.4)	45840 (80.7)	77.42	13th
12	EBONYI	12525 (86.1)	9084 (62.7)	9707 (70.4)	10493 (81.2)	9904 (71.7)	74.42	17th
13	EDO	45263 (83.9)	37296 (70.1)	48264 (92.6)	52324 (94.2)	36722 (67.3)	81.62	8th
14	EKITI	11834 (87.1)	10104 (68.1)	12772 (79.6)	13894 (84.0)	9119 (69.4)	77.64	12th
15	ENUGU	24265 (88.1)	20623 (77.9)	23011 (87.4)	21783 (88.3)	20811 (91.4)	86.62	2nd
16	GOMBE	3830 (44.1)	5138 (51.9)	4816 (63.1)	5745 (73.1)	6332 (54.0)	57.24	33rd
17	IMO	32168 (92.0)	29110 (80.5)	31393 (89.1)	32133 (89.7)	26314 (72.9)	84.84	5th
18	JIGAWA	4154 (31.8)	4806 (37.1)	838 (75.6)	1624 (80.2)	1050 (62.2)	57.38	32nd
19	KADUNA	44226 (78.6)	33680 (67.2)	41277 (80)	39234 (86.2)	35841 (79.9)	78.38	10th
20	KANO	10224 (82.6)	9194 (79.2)	9389 (83.0)	9197 (87.0)	7296 (65.3)	79.42	9th
21	KATSINA	6471 (64.8)	6647 (54.4)	8352 (69.5)	4310 (60.8)	3873 (38.6)	57.62	31st
22	KEBBI	6155 (56.2)	7561 (71.3)	6416 (66.2)	7243 (71.8)	6292 (62.9)	65.68	24th
23	KOGI	15386 (66.7)	11978 (57.8)	15699 (78.2)	17666 (84.9)	13101 (61.1)	69.74	21st
24	KWARA	21583 (78.9)	20515 (72.5)	7584 (39.8)	14421 (64.7)	15733 (64.1)	64	25th
25	**LAGOS**	**98656 (77.2)**	**92027 (71.3)**	**109370 (81)**	**120908 (83)**	**105784 (69.0)**	**76.3**	**14th**
26	NASARAWA	29373 (77.9)	28218 (75.9)	31128 (80.7)	31155 (90.2)	24292 (66.0)	78.1	11th
27	NIGER	22999 (63.5)	16089 (53.6)	20246 (71.7)	18999 (71.4)	10768 (41.0)	60.24	29th
28	OGUN	51637 (71.2)	51927 (71.1)	62725 (79.8)	80066 (83.3)	71967 (71.0)	75.28	16th
29	ONDO	18005 (66.8)	15525 (61.0)	20089 (75.4)	24614 (82.9)	19241 (57.0)	68.62	23rd
30	OSUN	18504 (68.3)	17500 (61.7)	8471 (34.2)	12866 (51.9)	15391 (59.1)	55.4	34th
31	OYO	29137 (67.2)	28726 (49.4)	35859 (65)	43769 (65.7)	34045 (50.5)	59.56	30th
32	PLATEAU	16937 (67.4)	12137 (60.6)	13374 (71.2)	13659 (78.9)	13163 (68.2)	69.26	22nd
33	RIVERS	51232 (90.3)	50339 (83.6)	58436 (88.0)	64677 (91.6)	58075 (78.4)	86.38	3rd
34	SOKOTO	7085 (62.7)	9157 (69.9)	6050 (69.5)	829 (86.9)	843 (72.2)	72.24	20th
35	TARABA	8191 (79.2)	7746 (77.2)	6984 (76.5)	5775 (74.4)	4948 (55.5)	72.56	19th
36	YOBE	4497 (59.8)	3148 (42.9)	2709 (40.0)	4496 (59.5)	3876 (53.9)	51.22	35th
37	ZAMFARA	7023 (59.8)	7099 (55.9)	6802 (60.7)	2001 (22.4)	731 (53.9)	50.54	36th
	NIGERIA	**829947 (75)**	**750553 (68)**	**826449 (77)**	**896992 (81)**	**773485 (68)**		

Source: West African Examination Council (WAEC) Lagos State Head Office, 2022

Keys: NCCP = Number of Candidates that obtained Credit Passes

Table 4.2.2.1 showed the number of candidates that obtained credit passes (A1-C6) in Economics as a percentage of number of candidates that sat for May/June WASSCE in Nigerian States and FCT from 2018 to 2022 Years. With specific focus on Lagos state, it was revealed from the table that in the year 2018, about 98,656 candidates obtained credit passes (A1-C6) in Economics in Lagos state which gave a percentage of 77.2% which was good. In the year, 2019, about 92,027 candidates also obtained credit passes (A1-C6) in Economics in Lagos state which gave a percentage of 77.2% which was good since it was above 70%. In the year, 2020, about 109,370 candidates obtained credit passes (A1-C6) in Economics in

Lagos state which gave a high percentage of 81% which was very good since it was above 80%. In the year, 2021, about 120,908 candidates obtained credit passes (A1-C6) in Economics in Lagos state which also gave a high percentage of 83% which was very good since it was above 80%. However, in the year, 2022, there was a sharp decline in the achievement of the students in Lagos state as only 105,784 candidates obtained credit passes (A1-C6) in Economics in Lagos state which gave a low percentage of 69% which was average since it was below 70%. This result showed that the academic achievement of the students in Economics in Lagos state was currently declining at an alarming rate as Lagos state which was supposed to be the "centre of excellence" was currently ranked 14th out of the 36 states and FCT in the nation. In answer to research question one, the level of academic achievement in Lagos state was at an average level.

Research Question Two: What is the perception of Economics teachers on identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V?

Table 4.2.2.2: Perception of Economics Teachers on Identified Threshold Concepts in Economics (n = 88)

S/N	Items	SA	A	D	SD	Mean	S.D	Remark
1	I am in agreement with the topics identified as threshold concepts in Economics (i.e. demand and supply, opportunity cost and	49 (55.7%)	39 (44.3%)	-	-	3.557	.79	Strongly Agree (Very Good)

	price determination)							
2	Threshold concepts in Economics can develop students' ability to think like an expert in the field of Economics	34 (38.6%)	52 (59.1%)	2 (2.3%)	-	3.364	.75	Agree (Good)
3	The topics identified as threshold concepts in Economics are intellectually challenging and stimulating	39 (44.3%)	49 (55.7%)	-	-	3.443	.77	Agree (Good)
4	I am in agreement with the belief that threshold concept can improve academic achievement of students if given priority in the curriculum	36 (40.9%)	46 (52.3%)	6 (6.8%)	-	3.341	.74	Agree (Good)
5	A focus on threshold concept is a welcome idea if economics curriculum is to be reviewed	38 (43.2%)	45 (51.1%)	5 (5.7%)	-	3.375	.76	Agree (Good)
Criterion Mean = 2.500; Weighted Mean = 3.416; S.D = 0.76; Overall Decision = Agree (Good)								

Source: Field-work, 2022

KEY: SA = Strongly Agree (4), A = Agree (3), D = Disagree (2) and SD = Strongly Disagree (1); S.D = Standard Deviation

***Threshold:** mean value of 0.000-1.499 = Strongly Disagree (very bad); 1.500-2.499 = Disagree (bad); 2.500-3.499 = Agree (good); 3.500 to 4.000 = Strongly Agree (very good)

Table 4.2.2.2 showed the perception of Economics teachers on identified threshold concepts in Economics in Lagos State Education District V. The four scale Likert type of strongly disagree (1) to strongly agree (4) was used with the criterion set at 2.50. Five positive items were used to measure the identified threshold concepts in Economics as perceived by the teachers. Four out of five of the items were rated "agree" as their means were within 2.500-3.499. However, only one of the item was rated 'strongly agree' as its mean was within 3.500-4.000. This result implied that the teachers perceive that threshold concepts in

Economics can develop the students' ability to think like an expert and improve their academic achievement if given priority in the curriculum since they can mentally challenge and stimulate the students. Table 4.2.2.2 generally showed that Economics teachers agreed on identified threshold concepts in Economics in Lagos State Education District V (**Weighted Mean = 3.416; S.D = .76**). In answer to research question one, the Economics teachers in Lagos State Education District V perceived the identified threshold concepts in Economics (Demand and Supply, Opportunity cost and Price determination) as capable of transforming students to experts in Economics by improving their academic achievement and it is a welcome idea in the curriculum, which is good.

Research Question Three: To what extent have students mastered the identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V?

Table 4.2.2.3: Extent to which Senior Secondary School Students Have Mastered Threshold concepts in Economics (n = 375)

S/N	Achievement Test Questions on Threshold Concepts in Economics	Marks	No. that passed it	No. that failed it	$\bar{x}$	SD	Rem	Observation
1	Economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses. "ends" here refers to_____ (a) resources (b) wants (c) choice (d) factors (e) materials	1	210 (56.0%)	165 (44.0%)	1.560	.50	Pass	Some of the students seem to be confused between 'resources' and 'wants' which means they are yet to master the definition of Economics
2	Opportunity cost is defined as	1	149	226	1.397	.45	Fail	Majority of the students

	the_____ (a) money cost (b) cost of production (c) real cost (d) variable cost (e) fixed cost		(39.7%)	(60.3%)				thought opportunity cost is the money cost, cost of production or variable cost not knowing it's the real cost.
3	The ranking of consumer's needs in order of importance is termed_____ (a) an opportunity cost (b) economics scale (c) a scale of preference (d) the making of choice (e) order of production	1	175 (46.7%)	200 (53.3%)	1.467	.47	Fail	As basic as this question is, some of the students opted for opportunity cost, making of choice or order of production instead of scale of preference.
4	_____ is the interaction between the forces of demand and supply in the market to regulate prices (a) inflation (b) increases in factor price (c) price determination (d) equilibrium price (e) elasticity of demand	1	136 (36.3%)	239 (63.7%)	1.363	.45	Fail	Many of the students failed this particular question. Most of them thought it was equilibrium price or inflation instead of price determination.
5	The real cost of a commodity is_____ (a) it's online market price (b) the cost of the alternative that has to be sacrificed for (c) the alternative that has to be forgone in order to purchase it (d) the alternative involved when the opportunity of buying the item is missed (e) it's real price	1	133 (35.5%)	242 (64.5%)	1.347	.44	Fail	Most of the students thought it is the real price instead of "the alternative that has to be forgone in order to purchase it".
	TOTAL	5						

Criterion Mean = 1.500; Weighted Mean = 1.454 (SD = 0.56); Overall Decision = Fail

KEY: SD = Standard Deviation; Rem. = Remark

Pass (P) = 2; Fail (1); Threshold mean value of 0.000-1.499 = Fail; 1.500-2.000 = Pass

Source: Field-work, 2022

Table 4.2.2.3 showed the extent to which students have mastered the identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V. An achievement test consisting of five multiple choice questions (A-E) on the threshold concepts was prepared for the students to answer in five minutes. The threshold concepts were on demand and supply, opportunity cost and price determination. It was revealed from the table that majority of the students failed questions two (2) to question five (5). This implied that most of the students failed questions on threshold concepts such as demand and supply, opportunity cost and price determination. However, most of the students passed question one (1). This implied that most of the students only passed the question that has to do with the definition of Economics which of course is the simplest amongst the economics threshold concept. This result suggested that many of the students are yet to master Economics Threshold Concepts. The weighted mean value of 1.454 (SD = 0.56) generally showed that

the students failed the questions on threshold concepts which implied that they were yet to master some threshold concepts in Economics when asked objectively in the study area.

Table 4.2.2.3: Extent to which Senior Secondary School Students Have Mastered Threshold concepts in Economics Cont'd (n = 375)

S/N	Economics Achievement Test Questions (Theory)	Mks	No. that got 0/5	No. that got 1/5	No. that got 2/5	No. that got 3/5	No. that got 4/5	No. that got 5/5	$\bar{x}$	SD	Rem	Observ.
6	Given the demand and supply of a commodity as. Qd = 150 – 15p; Qs = 45p – 90; Qd = quantity demand; Qs = quantity supplied; P = price in Naira (i) Determine the equilibrium price and quantity (ii)If price is fixed at N10, what will be the excess supply	5	199 (53.1%)	98 (26.1%)	51 (13.6%)	21 (5.6%)	4 (1.1%)	2 (0.5%)	1.176	.41	Fail	Most of the students are not conversant with demand and supply concept in Economics. Some did not even attempt the question
7	When the price of bournvita is N150 per sachet, quality demanded of milo was 20 items in January; in February when the price of bournvita increased to N180, quality demanded of milo was 24 sachets. (i) Calculate the cross elasticity of the two commodities (ii) Is the demand elastic or inelastic?	5	291 (77.6%)	53 (14.1%)	24 (6.4%)	3 (0.8%)	3 (0.8%)	1 (0.3%)	1.115	.40	Fail	Most of the students are not conversant with price determination concept in Economics. Many of the students did not even attempt the question
	TOTAL	15										

Criterion Mean = 3.000; Weighted Mean = 1.146 (SD = 0.41); Overall Decision = Fail

KEY: Mks = Marks; SD = Standard Deviation; Rem = Remark; Observ. =Observation; Threshold mean value of 0.000-2.999 = Fail; 3.000-5.000 = Pass

Source: Field-work, 2022

The second part of table 4.2.2.3 showed the extent to which students have mastered the identified threshold concepts in Economics in senior secondary schools in Lagos State Education District V using subjective questions. The students were also given two subjective questions to answer in fifteen minutes. The questions were based on threshold concepts such as demand and supply and price determination. The criterion mean was set at 3.000. It is

revealed from the table that majority of the students scored nothing out of 5 marks for both subjective questions as most of them did not even attempt the questions. Many who attempted the questions did not get it correctly. This suggested that majority of the Economics students in Lagos State Education District V were yet to master simple basic threshold concepts in Economics which might be responsible for the current decline in academic achievement in Economics in WASSCE in the State. The weighted mean value of 1.146 (SD = 0.41) generally showed that the students failed the questions on threshold concepts which implied that they were yet to master some threshold concepts in Economics when asked subjectively in the study area. In answer to research question three, most of the students were yet to master identified threshold concepts (such as demand and supply, opportunity cost and price determination) in Economics in Lagos State Education District V as majority of them failed the achievement test questions on threshold concepts in Economics.

Research Question Four: What is the usability of the active learnings in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V?

Table 4.2.2.4: Usability of Active Learnings in Flipped Classroom in the Teaching of Economics (n = 88)

S/N	Items (How often do you ask the students to ……. in order to develop their comprehension skills or strategies in Economics?)	Every day or Almost Everyday	Once or Twice a Week	Once or Twice a Month	Never or Almost Never	Mean (x)	S.D	Remark
1	watch recorded videos of topics in Economics at home	19 (21.6%)	47 (53.4%)	16 (18.2%)	6 (6.8%)	2.898	0.68	Good

2	explain or support their understanding of what they have learned individually or in a peer group work	27 (30.7%)	53 (60.2%)	5 (5.7%)	3 (3.4%)	3.182	.77	Good
3	compare what they have learned in the classroom with experiences they have had	35 (30.8%)	38 (43.2%)	15 (17.0%)	-	3.227	.79	Good
4	talk to guest lecturers such as prominent Economist bank manager, business tycoon and top government officials	25 (28.4%)	33 (37.5%)	24 (27.3%)	6 (6.8%)	2.875	.67	Good
5	make generalizations and draw inferences based on what they have learned	25 (28.4%)	51 (58.0%)	12 (13.6%)	-	3.148	.76	Good
6	describe and analysis newspaper publications on economic issues	21 (23.9%)	41 (46.6%)	25 (28.4%)	1 (1.1%)	2.932	.69	Good
7	obtain feedback in form of quiz, individual exercises, and projects	28 (31.8%)	44 (50.0%)	13 (14.8%)	3 (3.4%)	3.102	.76	Good
Criterion Mean = 2.500; Weighted Mean = 3.052; S.D = 0.73; Overall Decision = Good								

Source: Field-work, 2022

KEY: S.D = Standard Deviation

***Threshold:** mean value of 0.000-1.499 = Never or Almost Never (very bad); 1.500-2.499 = Once or Twice a Month (bad); 2.500-3.499 = Once or Twice a Week (good); 3.500 to 4.000 = Every day or Almost Every day (very good)

Table 4.2.2.4 showed the usability of the active learnings in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V. The rating scale of never or almost never to everyday or almost everyday was used with the criterion mean set at 2.500. Seven positive items were used to measure the usability of the active learnings in flipped classroom in the teaching of Economics in senior secondary schools. All the items were remarked "good" as their means are within 2.500-3.499. This result implied that the teacher made use of active learning such as quizzes, individual exercises, group/pair activity (work) and resource persons in a flipped classroom was performed once or twice a week which was good. Table 4.2.2.4 generally showed that the

usability of the active learnings in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V is once or twice a week (Weighted Mean = 3.052; S.D = .73). In answer to research question four, it can be stated that the usability of the active learnings (quizzes, individual exercises, group work and resource persons) in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V is carried out once or twice a week which was good.

4.2.3 Test of Hypotheses

$H_0$1 There is no significant joint influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V

Table 4.2.3.1: Model Summary and Coefficients of Multiple Regression Analysis for the Joint Influence of Threshold Concept and the Active Learning in Flipped Classroom on Academic Achievement in Economics among Senior Secondary School Students in Lagos State Education District V

Model		ANOVA Sum of Squares	df	Mean Square	F	Sig.	Model Summary R	R^2	Adjusted R^2	Std. Error of the Estimate
1	Regression	31.295	3	2.529	3.059	.008	.977	.956	.950	.01412
	Residual	2269.873	371	1.893						
	Total	2301.168	374							

Dependent Variable: Students' academic achievement in Economics

Predictors: (Constant), active learning in flipped classroom, threshold concept

Source: Field-work, 2022

F-value is significant at P<0.05

Table 4.2.3.1 shows that there was a significant joint influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among

Senior Secondary School Students in Lagos State Education District V ($F_{3, 371} = 3.059$; $P<0.05$). This clearly indicated that the model represents a good fit of the data. Therefore, the null hypothesis was rejected. The model summary values ($R = .977$; $R^2 = .956$; Adjusted $R^2 = .950$) determines how well the regression model fits the data. The high R value of .977 indicates a good level of prediction. The R^2 or coefficient of determination shows that 95.6% of the variance in the dependent variable can be accounted for by the independent variables or by the regression model. However, the adjusted R^2 which gives a more accurate report shows that 95.0% variation in students' academic achievement in Economics (dependent or criterion variable) can be explained by the predictor variables (threshold concept and active learning in flipped classroom). Therefore, the remaining 5.0% could be due to errors or other factors that were not considered in the study. The small standard error of the estimate (.01412) shows that the model was precise since the error is small and could easily be ignored.

$H_0$2: There is no significant relative influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V.

Table 4.2.3.2: Coefficients of Multiple Regression Analysis for The Relative Influence of Threshold Concept and the Active Learning in Flipped Classroom on Academic Achievement in Economics among Senior Secondary School Students in Lagos State Education District V

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	35.774	1.687		12.152	.000	27.124	34.432
	Threshold	.097	.039	.166	2.514	.012	.065	.296

concepts							
Active learning in Flipped classroom	.101	.022	.222	3.471	.003	.054	.143

Dependent Variable: Students' academic achievement in Economics

Source: Field-work, 2022

***Beta Coefficients significant at 0.05 (P<0.05)**

Table 4.2.3.2 showed the coefficients of multiple regression analysis for the relative influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V. The table showed that the beta coefficient (β) and t-values for mastery of threshold concept (opportunity cost, demand and supply, and price determination) in Economics (Beta = .166; t = 2.514; Significance = .012) and active learning in flipped classroom (Beta = .222; t = 3.471; Significance = .003) were relatively significant at P<0.05. Beta coefficient values were useful for comparing the relative strengths of the predictors. In the table, the Beta coefficient values showed that active learning in flipped classroom (which involves the use of quizzes, group work/pair activity, individual exercises and resource persons) was a stronger predictor of students' academic achievement than threshold concept since the beta coefficient value for active learning in flipped classroom (β = .222) was higher than that of threshold concept (β = .166). Furthermore, the B-coefficient value indicated the average increase in students' academic achievement in Economics associated with a unit increase in the predictors.

Since the values for B for both predictors was positive, it would therefore mean that a unit increase or decrease in mastery of threshold concepts in Economics would result to an average .097 increase or decrease in students' academic achievement in Economics. Also, a unit increase or decrease in active learning in a flipped classroom would result to an average .101 increase or decrease in students' academic achievement in Economics. In this study, it was revealed that students' mastery of threshold concepts in Economics was found

to be poor and also the students' academic achievement. It therefore means that a unit decrease in students' mastery of threshold concepts resulted to an average of .097 decrease in their academic achievement. Furthermore, the students' active learning in a flipped classroom was found to be at a little below average level. It could also mean that a unit decrease in students' active learning in a flipped classroom resulted to an average of .101 decrease in their academic achievement in Lagos Education District V. The small standard error for both threshold concept (standard error = .039) and active learning in a flipped classroom (standard error = .022) means that the model was quite precise since the error level is small.

$H_0$3: There is no significant relationship between students' perception of their teachers' attitude towards Economics and their academic achievement in Economics in Lagos State Education District V.

Table 4.2.3.3: Pearson Product Moment Correlation Showing the Significant Relationship Between Students' Perception of their Teachers' Attitude Towards Economics and their Academic Achievement in Economics

N = 375

		Students' Academic Achievement in Economics	Students' Perception of their Teachers' Attitude towards Economics
Students' Perception of their Teachers' Attitude towards Economics	Pearson Correlation	.182*	1
	Sig. (2-tailed)	.006	
	N	375	375
Students' Academic Achievement in Economics	Pearson Correlation	1	.182*
	Sig. (2-tailed)		.006
	N	375	375

		Students' Academic Achievement in Economics	Students' Perception of their Teachers' Attitude towards Economics
Students' Perception of their Teachers' Attitude towards Economics	Pearson Correlation	.182*	1
	Sig. (2-tailed)	.006	
	N	375	375
Students' Academic Achievement in Economics	Pearson Correlation	1	.182*
	Sig. (2-tailed)		.006
	N	375	375

*Pearson Product Moment Correlation (r) value is significant at the P<0.05 level (2-tailed).

Source: Field-work, 2022

The data in table 4.2.3.3 revealed a statistically significant correlation between students' perception of their teachers' attitude towards Economics and their academic achievement in Economics in Lagos State Education District V (P<0.05). This was an indication that teachers' attitude as perceived by the students had a significant relationship with the students' academic achievement in senior secondary schools in Lagos State Education District V.

In table 4.2.3.3, the $r_{calculated} = 0.182$.

Degree of freedom (Df) = n – 2 (i.e. 375 - 2 = 373), because one df goes for X and one df goes for Y variable.

Checking the correlation coefficient table, $r_{tabulated}$ or $r_{critical} = r_{0.05(2),\ 373} = 0.105$.

Decision: Since the p-value (**0.006**) of the Pearson Product Moment Correlation was less than **0.05** (level of significance value) or since the rcalculated value of **0.182** was greater than the rtabulated or rcritical value of **0.105**, the null hypothesis (H_0) was therefore rejected. This implied that the null hypothesis that stated that 'there is no significant relationship between students' perception of their teachers' attitude towards Economics and their academic achievement in Economics in Lagos State Education District V' was therefore rejected.

Observation: In this study, eight positive items were used to determine the attitude of Economics teachers towards the teaching of Economics as perceived by their students. The rating scale of strongly disagree (1) to strongly agree (4) was used. Strongly disagree was rated 'very bad', disagree was rated 'bad', agree was rated 'good' and strongly agree was rated 'very good'. Results showed that the students generally 'agreed' to the eight items on teachers' attitude towards teaching of Economics which is 'good'. This result implies that Economics teachers have 'good' attitude towards teaching of Economics in Lagos State Education District V as perceived by their students. Furthermore, the students' academic achievement in Economics was found to be poor as most of them failed the questions on the students' achievement test in Economics scoring below average in the test.

Conclusion: It can therefore be concluded that there was a significant relationship between teachers' attitude towards the teaching of Economics and students' academic achievement in Economics. Although the teachers' attitude was found to be 'good' as generally 'agreed' by the students and students' academic achievement was found to be 'poor', it could also be concluded that the good level of teachers' attitude as perceived by the students may not be enough to drastically improve the students' academic achievement in Economics. Probably, the teachers would need to further improve on their attitude to a 'very good' level in order to improve the academic achievement of their students from the poor state it was to a much better state.

4.3 Discussion of Findings

This study was carried out to investigate the effect of threshold concepts and flipped classroom on academic achievement in Economics among senior secondary school students in Lagos State, Nigeria. This section presented this discussion of the results relating it with

prior studies. The demographic data of Economics teachers showed that 49(55.7%) of the teachers were males while 39(44.3%) were females. Furthermore, most of the teachers, 30(34.1%) were within 35-44 years of age which is followed by 27(30.7%) who were within 44-50 years of age. Majority of the teachers, 49(53.4%) had B.Ed/B.A/B.Sc as their professional qualification which is followed by 38(43.2%) who had M.Ed/M,Sc as their current level of professional qualification. Lastly, in terms of the teachers' position held within the school, it was revealed that 13(14.8%) were senior teachers, 4(4.5%) were games master, 6(6.8%) were Heads of Department (H.O.D), 18(20.5%) were form teachers, 42(47.7%) were subject teachers and 5(5.7%) were year tutors. This result partially agreed with the works on "The Effect to Teaching Method of Economics on Student Performance: A Case Study of Selected Secondary Schools in Ojo Local Government Area, Lagos State, Nigeria" and "Analysis of Selected Demographic Factors on the Level of Job Satisfaction Among Secondary School Agricultural Science Teachers in Ikorodu LGA of Lagos State" which reported more male Economics and Agricultural science teachers who had Bachelor's degree as their professional qualification, were subject teachers in their mid-age within 40-50 years of age[1,2].

The demographic data of senior secondary school students offering Economics showed that 174(46.4%) of the students were males while 201(53.6%) were females. About 264(70.4%) were within 16-20 years of age which was followed by 105(28.0%) who were within 11-15 years of age. Furthermore, majority of the students' parents, 171(45.6%) were traders by occupation which is followed by 75(20.0%) whose parents were Engineers. About 51(13.6%) of the students' parents were teachers which was immediately followed by 50(13.3%) whose parents were Bankers. However, only 28(7.5%) of the students' parents were transporters. Lastly, in terms of the departments the students belong to, 98(26.1%) of them were in science

department, 76(20.3%) were in Arts department while majority of them, 201(53.6%) were in commercial department. This result also partially agreed with the research works on "Knowledge, perception and experience of gender-based violence among in-school adolescents in Lagos state, Nigeria" and "Effects of Demographic Factors on the Psychosocial Challenges of Adolescents in Lagos State. Implications for Counselling" which noted that most adolescent students in Lagos state senior secondary schools were females within the 14-20 years of age and in commercial department. Majority of their parents were into businesses such as trade[3,4].

Findings from research question one revealed that the level of academic achievement in Lagos state was at an average level. This result completely disagreed with the research work on "A Comparative Analysis of Students' Performance in Economics in Private and Public Secondary Schools in Lagos State, Nigeria" carried out in the year 2015 which reported a good academic achievement of students in Lagos state secondary schools[5]. This result may be different from that of this present study probably because the former was carried out about seven (7) years ago while the latter was carried out seven (7) years later. As at seven years ago, the academic achievement of students was still good unlike now when it is beginning to decline as revealed by the students' performance from WASSCE, 2022. Furthermore, the result of this study was in line with the work on "Provision and Utilisation of Facilities and Public Senior Secondary School Students' Academic Achievement in Lagos State Education District V" carried out in the year 2021, which revealed average performance of students in various subjects including Economics in the district[6]. This result is similar to that of the present study probably because it was carried out recently of which the academic achievement has currently began to decline. This work therefore confirmed the result of this study.

Findings from research question two revealed that Economics teachers 'agree' on identified threshold concepts (demand and supply, opportunity cost, price determination) in Economics in Lagos State Education District V which was good. These results imply that the teachers perceive that threshold concepts in Economics can develop the students' ability to think like an expert and improve their academic achievement if given priority in the curriculum since they can mentally challenge and stimulate the students. This result was in line with a previous study on "Identification of Threshold Concepts in Economics: A literature review" which noted that economics threshold concepts can be identified to include opportunity cost, demand and supply and price determination and these threshold concepts can be difficult to grasp yet helps to stimulate the students' mental prowess in the subject[7].

Findings from research question three revealed that the senior secondary school Economics students failed the questions on threshold concepts which implies that they were yet to master some threshold concepts in Economics when asked both objectively and subjectively in the study area. This result implied that a most of the students were yet to master identified threshold concepts (such as demand and supply, opportunity cost and price determination) in Economics in Lagos State Education District V as majority of them failed the achievement test questions on threshold concepts in Economics. This result was also in line with a previous study on "Evaluating Effect of Students' Academic Achievement on Identified Difficult Concepts in Senior Secondary School Biology in Delta State" which revealed that students' academic achievement on identified threshold concepts was poor as they seem to see these concepts as difficult and yet to master them[8]. Also studies on "Provision and Utilisation of Facilities and Public Senior Secondary School Students' Academic Achievement in Lagos State Education District V" and "Students' Perception of Difficulty

Levels of Senior Secondary School Civic Education Curriculum Content in Osun State, Nigeria" noted that students' academic achievement on threshold concepts in Economics and Civic Education was poor in Lagos and Osun States respectively[6,9].

Research question four revealed that the usability of the active learnings (quizzes, individual exercises, group work and resource persons) in flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V is carried out once or twice a week which was good. This result partially agreed with the work on "Effect of Flipped Classroom Instructions on Secondary School Students' Critical Thinking and Achievement in Matrices and Determinants" which reported that teachers' sometimes use active learning instructions in a flipped classroom for the teaching of Mathematics in the secondary schools[10]. The results could be similar because teachers in major parts of Nigeria are now being encouraged to regularly adopt active learning such as quizzes, individual exercises, pair activity and even resource persons in a flipped classroom for mathematical subjects such as Mathematics, Economics, Physics and Chemistry as they can help to stimulate the students' thinking abilities.

Findings from hypothesis one revealed a significant joint influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V ($F_{3,\ 371} = 3.059$; $P<0.05$). This result was quite similar to the research work on "Impact of Flipped Classroom on Mathematics Learning Outcome of Senior Secondary School Students in Lagos, Nigeria" which noted that active learning such as quizzes in a flipped classroom and mastery of difficult topics or concepts in Mathematics significantly influence mathematics learning outcome and their achievement in the subject in Lagos state[11]. Another study also showed

significant effect of flipped teaching and learning method involving threshold concepts on students' academic achievement in social studies in Imo State, Nigeria[12].

Findings from hypothesis two revealed a significant relative influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V. This result was quite similar to the research work on "Impact of Flipped Classroom on Mathematics Learning Outcome of Senior Secondary School Students in Lagos, Nigeria" which noted that active learning in a flipped classroom and mastery of difficult topics or concepts in Mathematics have relative significant effect on mathematics learning outcome and their achievement in the subject in Lagos state[11]. Another study also showed that flipped teaching and learning method involving threshold concepts have individual prediction on students' academic achievement in social studies in Imo State, Nigeria[12].

Findings from hypothesis three revealed a significant relationship between students' perception of their teachers' attitude towards Economics and their academic achievement in Economics in Lagos State Education District V. This finding was completely in line with the research work on "Teachers' Qualification, Attitude and Mastery of Content as Correlates of Students' Academic Achievement in Economics in Lagos State, Nigeria which revealed a significant relationship between teachers' attitude and Students' Academic Achievement in Economics in Lagos State, Nigeria[13]. These studies may be similar because they were both carried out in Lagos state and on similar subject area.

Endnotes

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Chapter Five

Conclusion

This chapter focused on the summary of findings, conclusions, recommendations based on the findings of the study, contribution to knowledge and the areas of further research.

5.1 Summary of Findings

This study investigated the influence of threshold concepts and flipped classroom on academic achievement in Economics among senior secondary school students in Lagos State, Nigeria. Findings revealed that Economics teachers showed that 49(55.7%) of the teachers were males while 39(44.3%) were females. Furthermore, most of the teachers, 30(34.1%) are within 35-44 years of age which was followed by 27(30.7%) who were within 44-50 years of age. Majority of the teachers, 49(53.4%) had B.Ed/B.A/B.Sc as their professional qualification which was followed by 38(43.2%) who had M.Ed/M,Sc. Most of the teachers, 42(47.7%) were subject teachers. Also, 174(46.4%) of the students are males while 201(53.6%) were females. Most of the students, 264(70.4%) were within 16-20 years of age and their parents, 171(45.6%) were traders by occupation. Lastly, majority of the students, 201(53.6%) were in commercial department.

Research questions revealed average level of academic achievement of students in Economics from WASSCE in Lagos state; and poor level of academic achievement in the students' achievement test in Economics. It also revealed that the Economics teachers 'agreed' on the identified threshold concepts (demand and supply, opportunity cost and price determination) in Economics in Lagos State Education District V ($\bar{x}$= **3.416)**. Furthermore, many of the students were yet to master Economics Threshold Concepts both objectively ($\bar{x}$=**1.454**) and subjectively ($\bar{x}$=**1.146**), and lastly, the usability of the active learnings (quizzes, individual exercises, group work and resource persons) in a flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V is once or twice a week ($\bar{x}$= **3.052).**

The findings from the hypotheses revealed that there is a significant joint influence of threshold concept and the active learning in flipped classroom on academic achievement in Economics among Senior Secondary School Students in Lagos State Education District V ($F_{3, 371} = 3.059$; $P<0.05$). It also showed that the beta coefficient (β) and t-values for mastery of threshold concept (opportunity cost, demand and supply, and price determination) in Economics (Beta = .166; t = 2.514; Significance = .012) and active learning in flipped classroom (Beta = .222; t = 3.471; Significance = .003) are both relatively significant at $P<0.05$. Lastly, it revealed that there is a significant relationship between teachers' attitude towards the teaching of Economics and students' academic achievement in Economics ($r = .182$; $P<0.05$).

5.2 Conclusion

This study investigated the influence of threshold concepts and flipped classroom on academic achievement in Economics among senior secondary school students in Lagos State, Nigeria. Findings revealed average level of academic achievement of students in Economics from WASSCE in Lagos State, and poor level of academic achievement in the students' achievement test in Economics in Lagos State Education District V. It also revealed that the Economics teachers 'agreed' on the identified threshold concepts (demand and supply, opportunity cost and price determination) in Economics and many of the students are yet to master Economics Threshold Concepts both objectively and subjectively; the usability of the active learnings (quizzes, individual exercises, group work and resource persons) in a flipped classroom in the teaching of Economics in senior secondary schools in Lagos State Education District V is once or twice a week.

In terms of relationship, the findings revealed a significant joint influence of threshold concept and the active learning in flipped classroom on students' academic achievement in Economics. It also showed that threshold concept and active learning in flipped classroom both have relative significant influence on students' academic achievement in Economics. Lastly, there is a significant mediating effect of teachers' attitude towards the teaching of Economics on students' academic achievement in Economics. In this study, mastery of threshold concepts was poor; active learning by the students was below average while teachers' attitude as perceived by the students was good though not very good. On the basis of the above results, it can therefore be concluded that the poor level of mastery of threshold concepts and active learning by the students may be the cause of their poor level of academic achievement in Economics in Lagos state District V. Also, despite the significant influence of threshold concepts and active learning, the teachers' attitude as perceived by the students also moderates the relationship.

5.3 Recommendations

Based on the findings, it was therefore recommended that:

1. All efforts should be made by the Lagos State Government and other educational stakeholders towards improving the academic achievement of the students in Economics.
2. Teachers should ensure that they focus extensively on ensuring that their students thoroughly master threshold concepts in Economics as they could play in major role in determining their academic achievement:
3. Teachers should also try as much as possible to utilize active learning such as quizzes, individual exercises, group work/pair activity and resource persons in a flipped

classroom regularly to stimulate the creativity and mental abilities of the students in Economics; and

4. Teachers should improve their attitude towards the teaching of Economics from the state it is, to even a much better state regardless of other factors that may be affecting their attitude. They should have an exceptionally good attitude towards teaching of the students as this could improve the students' academic achievement.
5. Government, teachers, schools, ministries of education and NERDC are all charged to all work together to find the synergy between threshold concept and flipped classroom as framework for the improvement of academic achievement in Economics in senior secondary schools in Lagos State, and by extension, Nigeria.

5.4 Contribution to Knowledge

This study contributed to knowledge conceptually, empirically and theoretically. It contributed conceptually by providing more and better clarifications on useful concepts and constructs of the study. These concepts/constructs include – threshold concepts, active learning, flipped classroom, teachers' attitude, academic achievement and Economics. Theoretically, this study contributed to the development of additional theories that support the link between the independent variables (Threshold Concept and Flipped Classroom) on the dependent variable (Students' Academic Achievement in Economics). These theories are "the theory of mastery learning" for active learning in a flipped classroom and the "theory of conceptual change" for threshold concepts. Empirically, this study added to the pool of prior studies by showing that there is a significant joint and relative influence of threshold concept and active learning in a flipped classroom on students' academic achievement in Economics which therefore closes the gap in empirical literature and adds to knowledge.

5.5 Suggestions for Further Research

On research design, this study made use of descriptive survey research design. Other studies could make use of experimental research design, wherein focus and control group would be used. This study also made use of the quantitative research methodology by using questionnaire and achievement test for data collection. In subsequent studies however, qualitative research methodology can be utilized, in which case instruments such as interviews and focus group discussions instead of questionnaires can be used to purpose of eliciting information from respondents. This study made use of "teachers' attitude" as a mediating variable. However, for the purpose of further research moderating variables especially with regards to the demographic characteristics of the students such as their gender and age can be used in subsequent studies.

In terms of study population and sector, this study made use of senior secondary school teachers and students. However, primary, junior secondary schools and tertiary school population/sector can be used for further research in subject outside of economics. This study focused on a district in Lagos State. Other districts in the state and even other Southwest States could be used in subsequent studies to confirm and generalize the results across the Southwest region of Nigeria.