EFFECT OF DEMONSTRATION AND PROBLEM-SOLVING METHODS ON ENTREPRENEURIAL SKILLS ACQUISITION IN FOODS AND NUTRITION AMONG SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE

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TITLE PAGE

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CERTIFICATION

This research on "*EFFECT OF DEMONSTRATION AND PROBLEM-SOLVING METHODS ON ENTREPRENEURIAL SKILL ACQUISITION IN FOODS AND NUTRITION AMONG SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE*" was carried out by me. This work has not been submitted to this university or any other institution for the award of a degree.

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APPROVAL PAGE

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DEDICATION

This work is dedicated to the Almighty God for the life, strength, intelligence, and His abundant mercy on me in my academic journey.

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ABSTRACT

This study aimed at finding out the effect of demonstration and problem-solving methods on entrepreneurial skill acquisition in Foods and Nutrition among Secondary School Students in Anambra state. Six research questions and hypotheses guided the study. The study adopted a Quasi-experimental research design. The population of the study consisted of all the 21,658 Senior Secondary School Two (SSII) students in 254 Secondary Schools from the six education zones in Anambra State. Using multi-stage purposive sampling technique, the sample size of 240 students comprising six Secondary Schools drawn from the 254 Secondary Schools in Anambra State; two schools were taken from each of the three senatorial zones. The instrument titled Instrument for Measuring Psycho Productive Skills in Foods and Nutrition (IMPPSFN) was essentially designed to evaluate students' abilities in the psycho productive areas in Foods and Nutrition. The reliability of the instrument was established by using Cronbach alpha for estimating the internal consistency of the instrument. The means and standard deviation of the rating were computed. The intra-class correlational technique was adopted to determine the degree of agreement among the raters. Data were analysed by using the Analysis of Covariance (ANCOVA). The findings indicated that Secondary School Students who were exposed to demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition had highest mean ($\bar{x}$) scores followed by those exposed to problem-solving method in comparison to their counterparts in the control group. Furthermore, there was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of urban and rural Secondary School Students who were exposed to demonstration, problem-solving and conventional lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State. The study also found that female Secondary School Students who were exposed to demonstration, problem-solving and conventional lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their male counterpart. The study therefore concludes that the demonstration method proved more effective and impressive on entrepreneurial skills acquisition compared to problem-solving and lecture methods. On the basis of the findings, it was recommended that practical activities and demonstration method should be highly utilized by Foods and Nutrition educators in teaching so as to equip the students with entrepreneurial competencies for self-employment.

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CHAPTER ONE

INTRODUCTION

Background to the Study

The Nigeria Nation, as most African countries is confronted with a great deal of social and monetary issues. These issues bring about destitution, joblessness, illnesses and clashes (Anyakoha, 2006). These circumstances present extraordinary difficulties to the harmonious co-existence of people in the country. Consequently, there have been yawning needs for the preparation of individuals who can work adequately through upgrades in their entrepreneurial propensities and capacities.

This is because unemployment is a public issue in Nigeria today. Most Nigerian graduates that should be productive are regrettably jobless. The unemployment rate for 2011 remained at 23.9% (Lemo, 2013). In the first quarter of 2016, the National Bureau of Statistics (2016) put the unemployment rate at 12.5%. Unemployment rate as at the final quarter of 2019 showed 26.7% while the extent of youth unemployment in the workforce increment to 55%, demonstrating that about 20.7 million Nigerians stay jobless. Once more, the joblessness rate as at the final quarter of 2020 was 30.1% as the extent of youth joblessness in the work force increment to 64%, showing that about 22.7 million Nigerians stay jobless (Adebimpe, Adetunji, Nwachukwu & Hieu, 2021). The current pace of unemployment in Nigeria expanded the requests for youths to be skilful and productive. Pursuit of entrepreneurial abilities stays the solitary practical choice to make a living, decrease unemployment, destitution and engage the graduates to create organizations, seek after their fantasies and add to economic development on the nation.

Because of the limited opportunities for psychomotor skill development, there are worries among Home Economics instructors that graduates are not skillful in different aspects of the essential psychomotor abilities required for competent entrepreneurial practices. Such concerns necessitate the need to re-examine the effectiveness of teaching methods used by teachers for students' psychomotor skills development in Foods and Nutrition. Generally,

psychomotor skill development in Foods and Nutrition has been fragmented. These skills are partitioned into segments including the cognitive knowledge and affective considerations, and each is taught independently. Although this strategy permits the students to advance smoothly from easy to complex topics; however it neglects to completely join the numerous intricacies associated with performing psychomotor abilities within the subject (Nestel, Kneebone, and Kidd, 2003).

Nigeria, having understood the viability of education as an amazing instrument for public advancement and improvement, changed her educational philosophy and system to accommodate the beliefs and difficulties of changing financial and social design of present day culture. Thus, in 1982, Nigeria changed her secondary educational system to envelop expanded educational program that incorporates Technical and Vocational subjects which is intended to empower the students for self-employment and entrepreneurship.

As per the updated National Policy on Education (2013), the wide points and destinations of secondary education in Nigerian educational system are measure for self-employment and advanced education. Notwithstanding, over thirty years after appropriation of the commendable policy, dominant part of Nigerian young people are inactive while some are engaged with different indecencies because of joblessness. Many youths who have completed their secondary education and could not get entrance into the university are in difficulty because they are not equipped with the essential skills for self-employment or paid jobs. Adekoya (1999) noted that for the Nigerian youths to be enabled monetarily they ought to be furnished with the vital entrepreneurial skills and this requires effective curriculum implementation through the use of appropriate teaching methods. Therefore, to guarantee a better tomorrow for Nigeria, secondary school leavers should be equipped with basic entrepreneurial skills to move the economy forward.

Okudo (2013) stated that the objectives of Education in Nigeria targets acquisition of fitting abilities, the improvement of mental, physical and social capacities and capabilities as hardware for individual to live in and add to the advancement of the general public.

Therefore, for any instructional program to contribute to positive functional education in Nigeria, it should not just offer certificate alone but must also inculcate relevant entrepreneurial skills for self employment. Foods and Nutrition is one of the subjects in secondary schools that have the ability to give the students the required chance for self employment. There are so many life sustaining skills available in the knowledge of Foods and Nutrition. This include bread making, decoration, preparation of snacks; nuts, meat, chicken, cakes, chin chin, dough nuts, burns, popcorn, drinks (soya milk, Ice cream and sobo), bottling of grounded pepper, groundnut and other spices, they can also engage in livestock production, fish farming and vegetable gardening (Ihensekhien & Cas-Ogiegbaen, 2014). Through this information the youths can obtain skills that can empower them to take part in the preparing and packaging of food varieties, cooking business or café and bar business where they can serve various dishes for all ages in all works of life.

In this manner, premium in specific Foods and Nutrition-related topics provides incentive to learn more about Nutrition Education and furthermore increases the individual's exposure to correspondences regarding it (Dwyer, 2007). Certain themes and topics are important to the learners because of their significance to the accomplishment of skill based assignments. Since relevance of the topic determines the individual's degree of interest in the topic and interest is generally considered conducive to learning, it should be determined which topics within the realm of Foods and Nutrition that arouse the interest of the students. Capitalizing on related interests can aid in the development of effective entrepreneurial skills among Secondary School Students as well as for general populaces.

Skill is a nature of performance which does not rely entirely on an individual's key, inborn limits however should be created through preparing, practice and experience. In spite of the fact that skill relies basically upon mastering, it likewise encapsulate the ideas of effectiveness and economy for performance. Present day ideas of expertise stress the adaptability with which a gifted administrator arrives at a given end on various events as indicated by exact conditions. In any case, it should be emphasized that despite the fact that

essential human capacities are not adequate to deliver skills, they structure the vital premise of their development; skills therefore address specific methods by which a prospective entrepreneur utilize capacities in relation to environmental demands, with human being and external situation together forming a functional system.

An entrepreneur is viewed as one who coordinates, oversees and assumes the need of a business venture. It may be defined as someone who has chosen to take responsibility for his/her future and becomes independently employed whether by making his own extraordinary business or functioning as an individual from a group at a multi level vocation. He is an individual who has ownership of an endeavor or adventure and accepts huge responsibility for the potential risks and the result. In this manner, entrepreneurial skills are skills expected of an entrepreneur to prevail in business. Entrepreneurial skills are the essential abilities important to empower a business person to start, create, finance and prevail in his/her undertaking. Some of the basic skills needed include attention to detail, negotiating prudence, neatness, inventiveness, culinary aptitude, decisiveness, self motivated, multitasking and good team-player.

The word entrepreneurship is gotten from the French word 'entreprendre' which means an individual endeavor, attempt, experience or embraces as a demonstration or something to that affect. Lemo (2013) reported that acquisition of entrepreneurial skills covers the training that gives insight and abilities necessary for entrepreneurial undertakings. Entrepreneurship was seen by Puyate (2008) as the way toward making something else with esteem by committing the essential time and accepting the monetary, clairvoyant and social risks. Iheonunekwu (2003) defined entrepreneurship as the demeanor, abilities and activities of an individual or people towards establishment of a new venture. He further added that an entrepreneur is an imaginative individual and a risk taker who is good at recognizing opportunity, investigating it, settling on a choice to follow up on it, marshaling vital assets and executing programs necessary for initiating new ventures. This implies that an

entrepreneur requires individual skills, judgment capacity, ability to work with people, persistence and perseverance (Hisrich and Peters, 2002; Osemeke, 2012).

Entrepreneurial skill therefore represents the capacity to implement a thought and make a venture whether (little or enormous) for personal benefits and sometimes for social and developmental gain (Olagunju, 2004). Formally, it is simply the ability to have conviction, power, innovation, accessibility to take ace urging, need for ensured result, visionary and ability to see opportunity (Salgado-Banda, 2005). Kilby (1971) expressed that the assortment of possible entrepreneurial skill wraps the perspective on financial independence, specific and various leveled advancements, obtaining orders over sparse resources, taking commitments in regards to inward organization and for external progress of the firm in all points of view.

Entrepreneurial skills acquisition process accordingly prepares students with entrepreneurial information, capability and abilities required for self reliance. As indicated by Ndumanya (2012) entrepreneurial skill acquisition is a specific preparation given to students to gain skills, thoughts and administrative capacities for independent work than being utilized for pay. The entrepreneurial skills acquisition attributes for this study included innovations, creativity, and foresight, whereas utilization of skills in Home Economics Education included Foods and Nutrition skills, Clothing and Textiles skills, Home Management skills, Family and Child Development skills, and Housing and Design skills.

Effective Foods and Nutrition instruction is key to entrepreneurial skill development process and so has important role to play in reducing massive graduate unemployment and the social danger in the general public. This is in accordance with Achor (2014) who defined Home Economics Education as self-reliance oriented field of study whose central theme is hinged on the improvement of the lives of everyone in the society. It is a professional subject that targets assisting individuals with creating attractive social demeanor and abilities important for the work life, creativity and capacity to adjust to groundbreaking circumstance. Ogbene (2006) pointed that unemployment can be enormously decreased by expanding

openings for entrepreneurial skill acquisition. Luckily Home Economics has many chances in both little and medium scale business. This gives the individual chance for profitable independent work.

Foods and Nutrition as a programme in Home Economics Education is skill-acquisition oriented. It is a vocation for self-reliance and borders on preparing persons for the challenges of the home and its environment which is a strong tool for economic empowerment. One space of Home Economics that is viewed as among the most fundamental is the accentuation on self-awareness and relational abilities which are considered basic for word related achievement. Moreover, Foods and Nutrition instruction is inter-disciplinary, multi-disciplinary and trans-disciplinary as it is a field of study with different attractive abilities that can guarantee self reliance and employment. The educating and learning cycles of Foods and Nutrition ought to permit teachers to create collaboration, administration and skills that empower them to turn out to be high level critical thinkers to meet individual, family, profession and local area challenges in their grown-up lives. When the appropriate teaching method is deployed, Foods and Nutrition graduates would have acquired various skills on or before leaving school. The skills includes but not limited to effective management of catering services (indoor and outdoor), restaurants, canteen, kiosk, fast food establishment, cake making and decoration, party planning, infant formula manufacturing, juice such as fruit juice, ice cream making such as yogurt making, jam making, biscuit manufacturing, hotel management. Food processing and preservation to include soya-beans flour, preparation of soya-milk, yam, plantain, cassava, beans, maize flour. Drinks can include kunu, burukutu, soborobo, and so on.

As of late, much approach accentuation has been set on entrepreneurial skills advancement around the world for business. Entrepreneurial skills thus have become the enchantment shot to address a scope of social and financial issues. The need for entrepreneurial skills became glaring in Nigeria during the 1980s when the economy fell because of political irregularities which resulted to increase in unemployment (Arogundade,

2011). Graduates of various institutions were not having sound knowledge and skills necessary for self employment. This prompted the accentuation on entrepreneurial skills advancement; the conviction is that accentuation on entrepreneurial skills improvement would empower graduates to act naturally dependent and subsequently diminish unemployment issues. Entrepreneurial skills acquisition join the absolute mastering experience offered in the educational institutions that can affect information, thoughts and capacities to make developed judgment and be in a situation to make labor and products in the space of Home Economics Education.

Food sources and Nutrition is an aspect of Home Economics education which manages food varieties and their nutritive qualities (Zimbabwe School Examinations Council, 2012). The overall goals of the Foods and Nutrition as expressed in the West African Examinations Council (2018) prospectus are to test applicants' abilities and use of the standards of Nutrition, the connection among sustenance and wellbeing, the strategies for arranging, getting ready and serving food for various events and to address family issues; the techniques for choosing, caring for and storing kitchen wares as well as the commercial kitchen management; the significance of sterilization in food preparation and administration; the fitting manipulative abilities in food planning which could be attractive in future; the techniques for effective management of food financial plan, utilizing the standards of food commercialization, food stockpiling and protection; the standards of various strategies for cooking; the abilities in formula advancement and the use of accessible local food sources; the basic exploration and utilization of data to test, create and enhance traditional dishes; the compelling course of action and use of kitchen to decrease fatigue.

There is need for effective teaching and implementation of the Foods and Nutrition to enhance the entrepreneurial interests of Secondary School students in Nigeria; this will empower them to effortlessly identify food business opportunities and expose them to reasonable entrepreneurial skills while in school. To this end, teaching methods occupied a paramount position in the teaching and learning situation. It fills in as a correspondence

connects among the educator, the students and the topic (Achor, 2014). The educator has to realize the effective method to communicate with the students to accomplish the set targets by the National Policy on Education. Various teaching methods include Problem-solving, Discussion, Demonstration, Role playing, Oral exposition/lecture, Discovery and Case study methods. However, for the purpose of this study, Lecture method, Demonstration method, and Problem-solving methods can be considered.

There is a by and large perceived grouping of learning objectives within education into three domains namely, cognitive (knowledge), affective (attitude) and psychomotor (skills). This grouping is generally called Bloom's scientific classification of instructional objectives (Huitt, 2009). The significant idea of the scientific classification is that what teachers want students to know can be masterminded in a pecking order from less to more perplexing levels. The levels are perceived to be progressive, so one level should be mastered before a higher level can be reached (Huitt, 2009). This order of instructive goals is vital to the field of specialized and professional schooling. This is so on the grounds that Home Economics support skills acquisition, information and mentalities required for proficient vocations (UNESCO, 2011). Learning in this field at all levels involve equipping the students with the information, attitudes and abilities that will empower them to exhibit capability in any task assigned to them. Notably, a very much planned informative and evaluation instrument will cater for the total advancement of students in Foods and Nutrition. Since perhaps the main highlights of Foods and Nutrition is its direction towards the world of work and the emphasis of the curriculum is on the acquisition of employable skills, therefore the psychomotor domain that deals primarily with physical or practical skills development through problem solving is emphasized in the present study.

The problem-solving method encourages students to test into an issue to discover why such issues exist and the answer for such issue. It gives a chance to the student to distinguish and explain a purpose for inquiry. This technique might be probably the most ideal methods of acquainting different skills with students in Foods and Nutrition class. On the other hand,

demonstration method requires that the skill be explained and performed to the students. There is need to utilize demonstration method during Foods and Nutrition practical, this will permit students to repeat the procedure in a 'hands on' practice session to reinforce the learning process. Lastly, the lecture method is generally embraced by teachers. Lecturing is possibly the most well known strategies for communicating data and thoughts by educators, mentors and speakers. Lectures can be educational and overpowering relying upon the convincing idea of the guidance and the moderator's style and lucidity of message.

The skills acquired through these teaching methods will make the student fruitful and helpful entrepreneurs after school. Pretty much every point in Foods and Nutrition has a practical viewpoint and every theme is taught to draw out the hidden potentials it contains in the space of self employment, job and wealth creation. It also contained some entrepreneurial skills like relational abilities, hazard taking abilities and business management skills. There are many entrepreneurial skills but, this study chose the skills it considered to have direct bearing on the students at this stage for instance in relation to Foods and Nutrition such as: communication skills, sales skills, leadership skills, digital literacy skills, innovative skills and personality skills. Foods and Nutrition is a special subject among subjects taught in Home Economics in the secondary school curriculum, consequently its teaching should be accorded priority. Effective teaching of Foods and Nutrition can possibly occur when sufficient and important instructional materials are utilized (Afolabi and Adeleke, 2010). Besides the availability of instructional resources, effective teaching and learning of Foods and Nutrition relies upon educator skill and pedagogical content knowledge (Orji, 2006).

Advancing instructional delivery pattern into the solution to real-world problems is an esteemed objective. Students seem to profit by realizing how to execute a strategy (procedural information), knowing why the methodology works (reasonable information), and knowing where the technique works (logical information). General understanding holds that students will best learn when they understand how the ideas are applied to their future lives (Shinn et al., 2003). In addition, specialists like Maurer (2000) and Balschweid (2001)

have presumed that it is vital to give students adequate context while they learn. In particular, it is accepted that contextualized learning guarantees improvement in a student's capacity to blend data from different sources, for advancing comprehension of new and conflicting information, for helping with making meaning and eventually, for upgrading their capacity to think critically and transfer learning to future life experience. In the event that the teacher tries to help students build analytical and synthesis skills, apply concepts, learn to solve problems, develop mature judgement, enhance communication skills, and retain information, then an appropriate method of instruction should be used (Allen, Abaye, McKenna & Camp, 1995).

By and large, teaching methods in Foods and Nutrition are the methods for assisting students to study effectively. Teaching methods are the strategies educators use to meet instructional goals. In this way methodology is extremely fundamental in any teaching learning circumstance and the method deployed by the educator may advance or impede learning. It might hone mental exercises which are the foundations of skill improvement or may discourage initiatives and curiosity thus making self-reliance and survival difficult. Shymansky and Kyle (2008) were of the view that instructional technique involves the materials, media, setting and conduct the teacher uses to establish an effective learning climate. Therefore, the accomplishment of the instructional objectives and the decision of appropriate teaching method are not discrete. Erdem (2012) underscores four highlights of effective teaching methods. To start with, teaching methods ought to improve a student's inclination to learning by expanding the desire for considering and seeing new circumstance. Second, teaching methods ought to be organized to enable students capture the information distributed through the instruction and build up student's capacities in absorbing and utilizing information possessed. Third, teaching methods ought to be sequenced in the best way so students can grasp new information by applying their prior experiences. At long last, teaching methods ought to be intended to permit students to truly take part in their skill acquisition process.

Clearly, teaching methods influence the reactions of students and decides if they are intrigued, propelled and engaged with teaching learning process. What establishes great teaching and learning of school subjects is the utilization of fitting methods of teaching. Ogunniyi (2009) attested that perhaps the most persevering and convincing issues plaguing skill acquisition in Food and Nutrition education is low quality of teaching method. Shockingly, many school subjects particularly Foods and Nutrition is not being learnt as it should be in Nigeria secondary school in view of unseemly ineffective teaching methods. Different teaching strategies will lead to varied instructional outcomes and a teacher can choose for himself or herself methods that are appropriate to his or her intension in teaching. A specific mrthod might be superior to another for a given reason. However a solitary teaching method may not be pertinent for all students and for a wide range of topic. Thusly, the choice of teaching method ought to be as per an individual populace of students and the specific topic (Erdem, 2012).

The selection of teaching methods and tactics depends upon the selected learning exercises and along these lines "the way to (educating) strategy is to achieve the ideal learning in students by choosing the appropriate teaching techniques and strategies and subsequently the proper content and techniques" (Clark and Starr, 2001). Accordingly, teachers are expected to match how to teach with what and to whom to teach, in developing a variety of methods for facilitating student achievement of determined outcomes, a teacher must be able to use several teaching methods and to implement them where they are applicable and most effective.

The traditional lecture approach frequently comprises of a teacher focused technique in a face-to-face capacity (Berry, 2008). Given the prevalence of this prescribed mode of instruction, there has been a shift in students attending classes with the intention of gaining new and meaningful knowledge. However, the incentive in attending lectures now is to get the current information needed to pass examination. In these types of lecture environments, the formal style of lecturing alone has not proven to be effective. Evidences from a number

of disciplines suggest that oral presentation contributes very little to real learning (Veselinovska, 2011). Teaching method should therefore be changed to mirror a cutting edge society that seeks thinking-focused and dynamic students. Consequently the determination of a suitable teaching method is imperative to the achievement of the teaching and learning objectives. To be effective, teachers ought to choose and utilize a wide assortment of teaching methods.

There is no single strategy which can be viewed as best for each teaching and learning circumstance. Ada (2005) reported that there are number of criteria that may control the instructor in the decision of some teaching method which include: the curriculum, targets to be accomplished, time accessible, number of students, educators' inclinations and individual contrasts, the kind of exercise, instructional facilities accessible, needs and interest of the class, among others. Nowak et al. (2004) enunciated this position and introduced proof that, demonstration method can be effective in teaching sciences, mathematics and mechanics as well as subjects within vocational and technical education since it tends to be extremely compelling for representing ideas in class. According to Nbina and Obomamu (2011) demonstration approach is a practical method of teaching. It involves showing, doing and telling something. The onus is hence on the teacher to display the steps in the process and clarify them precisely and obviously, while students are required to rehearse by repeating the things the teacher has done. This method has been noted for bridging the gap between theory and practice (Daluba, 2013). It controls the rate of breakages and accidents as students watch the teacher do it before attempting to do the same and enable the teacher to teach manipulative and operational skills.

The problem-solving method has been widely accepted and recommended by some Home Economics educators as a good method of teaching (Phipps & Osborne, 1988). Several studies have focused on the change in knowledge and skill levels that occur with problem-solving techniques. During problem-solving session, students participate in the learning process by analyzing the factors associated with the problems, developing possible solutions

to the problems, putting the solution(s) into action and evaluating the results of the solution. From the foregoing, it is believed that functional Foods and Nutrition education in secondary schools can be guaranteed through effective choice and application of relevant teaching method and which can spur students towards self reliance. Hence there is need to examine the influence of Foods and Nutrition instruction on Secondary School Students acquisition of entrepreneurial skills in Anambra state.

Statement of the Problem

Youth unemployment tends to have negative psychological effect on the youth themselves. It leads to maladjustment of young people who constitute up to 60% of our total population (Awogbenle & Iwuamadi, 2010). Obviously, maladjustment hinders progress and development. Most of the youths are jobless because they lack requisite entrepreneurial skills for productive job engagements, hence their idle hands and heads lead to negative behaviour in the society such as thuggery, armed robbery, militancy, restiveness, ethnic-political clashes and other social vices in Nigeria could be traced to the high rate of unemployment.

There seems to be a general expectation that the Senior Secondary students should proceed immediately to the tertiary level. But the true situation is that most of these students do not gain admission immediately into higher institutions due to low scores in JAMB and post UTME examinations. This may explain why the National Policy on Education (2013) strongly recommended the inculcation of practical skills including vocational and entrepreneurial skills in secondary school graduates through effective teaching strategies. It becomes necessary therefore to inculcate the practical entrepreneurial and vocational skills which the students can confidently put into practice having acquired such skills while in school.

However, the search for appropriate teaching method for Foods and Nutrition seems problematic because the teaching method that is best for the learner may not be financially practicable, particularly in public schools. Additionally, the instructional facilities most appropriate for the learners may not be accessible to the instructor (Slowbyte, 2000). Thusly

instructors should adopt the most appropriate techniques to teach the learners, utilizing the assets accessible to them (Williams and McClure, 2010). These should typically be possible by looking at the viability of at least two or more teaching methods in enhancing students' skill acquisition for entrepreneurship. More so, there is need to develop a uniform basis for measuring the student entrepreneurial skills in selected task in Foods and Nutrition. However standard Instruments for Measuring Psycho Productive Skills in Foods and Nutrition (IMPPSFN) among Secondary School Students is presently unavailable in literature.

Furthermore, there is a lack of evidence in literature that demonstrates strong comparisons of different teaching methods; lecture, demonstration, and problem-solving in the delivery of Foods and Nutrition instruction, especially in Nigeria. With many different teaching strategies available to instructors, there is need to determine the most effective method to enable students acquire requisite skills for self employment, entrepreneurship and economic empowerment through Foods and Nutrition Education. The problem of this study therefore is to assess the effects of demonstration and problem-solving methods on the entrepreneurial skill acquisition in Foods and Nutrition among Secondary School Students in Anambra state.

Research Questions

The following research questions were asked to guide the study:

1. What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?
2. What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?

3. What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to demonstration and problem-solving methods?
4. What is the difference in pre-test and post-test mean ($\bar{x}$) scores of urban and rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition?
5. What is the difference in pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture, demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition?

Hypotheses

The following null hypotheses (Ho) were formulated and will be tested at 0.05 level of significance.

Ho1: There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

Ho2: There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

Ho3: There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and

Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods.

Ho4: There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of urban and rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition.

Ho5: There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition.

Purpose of the Study

The purpose of this study is to determine the effects of demonstration and problem-solving methods on entrepreneurial skill acquisition in Foods and Nutrition among Secondary School Students in Anambra State in Anambra State. Specifically the study seeks to determine:

1. the difference between pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method),
2. the difference between pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method),
3. the difference between pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their

counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods,

4. the difference between pre-test and post-test mean ($\overline{x}$) scores of urban and rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition,
5. the difference between pre-test and post-test mean ($\overline{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture, demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition.

Significance of the study

The findings of this study are of significance to government (Federal, State and Local), curriculum planners, school administrators, society, schools, teachers and Nutrition Counsellors. The findings of this study is of immense benefit to Federal, States and Local Government. The findings also provides necessary information that can be used to sensitize the government on the need for workshops, seminars and conference on importance of Foods and Nutrition instruction as an effective strategy for improving students' entrepreneurial skill. The government can also benefit by using the knowledge gained to retrain teachers by organizing symposia, workshops and training on the impact of Foods and Nutrition instruction. This study will encourage the provision of government supported Foods and Nutrition programs for screening, assessment, Foods and Nutrition instruction, counseling and therapy, to enhance self employment.

Curriculum planners will profit from the study since they will assemble information from the study that might be utilized in suggesting successful creative procedures for Foods and Nutrition instructional delivery. The utilization of regular teaching method may be discarded or eliminated as Curriculum planners will discover the need to enhance it. This

implies that those teaching method that is discovered not successful will be dropped or supplanted or enhanced by educational plan organizers; this investigation gives Foods and Nutrition instructors and Curriculum planners with point by point data about the genuine image of Foods and Nutrition teaching and learning in Anambra State This thusly can help in arranging and planning further approaches for Foods and Nutrition Education in the State.

Similarly, the findings of the study will assist the school administrators in improving Entrepreneurial Skill development programmes for effective nutritional practice in secondary schools. Determining the adequacy of Foods and Nutrition instructional facilities, tools and equipment identified by this study will guide administrators in updating the Entrepreneurial Skill of Secondary School Students.

The findings would be useful as this would help to expand the body of knowledge in the area of choice of teaching method particularly to the teacher. It would be possible for the teachers to know the extent to which demonstration and problem-solving methods could facilitate learning. The study will be of significance to researchers. In precise terms, the findings from this study will contribute to the existing information on how gender, school location interact. This study will be of help to teachers because they will find the study useful, since it will suggest a better method of acquiring Entrepreneurial Skill with less stress.

The study will be useful to the students in light of the fact that it may encourage them to be cooperating in groups in order to accomplish a shared objective and gain from one another. It will empower them to fill in collectively and cooperate in amicability with each other regardless of their ethnic or social foundations. It will open the learners to the best pragmatic technique for learning Foods and Nutrition. The findings of this study will likewise add to the body of literature for use by different specialists.

If the selection of the content to be taught and the method to be applied are not matchable and the students' achievement is affected negatively, there may be need to review the curriculum. The steps for this can only be made possible based on the empirical data from studies of this nature to curriculum planners, school administrators and policy makers.

The findings would help in providing useful information to trainers and trainees in teacher training institutions. This would therefore help to alert the local, State and Federal Government of the need to reinvigorate their efforts towards improving the state of these institutions by enriching their methods, courses or develop new programmes of instruction based on the findings of the study.

Theoretically, a lot of assumptions and generalization have been made by previous researchers based on some relevant psychological theories like Ausubel, Human capital and Social cognitive theories which the current studies stemmed from. Its application to Foods and Nutrition students in Nigerian secondary schools curriculum would assist to strengthen these theories or provide opportunities for their modification as applicable to Secondary School Students. Finally, the results of the study would help to provide feedback to the ministry of Education especially the inspectorate unit on their supervision. No doubt, this will enhance inspection outcome as it relates to students' skill acquisition.

Scope and Delimitation

The study aimed to determine the effects of demonstration and problem-solving methods on entrepreneurial skill acquisition in Foods and Nutrition among Secondary School Students in Anambra State. The sample for this study consists of six Secondary Schools drawn from the 254 Secondary Schools in Anambra State. The instrument was essentially designed to evaluate students' abilities in the psycho productive areas in different contents areas including time and energy management in food preparation, Flour mixtures, Food flavourings and colouring, Food study (Eggs), Storage and preservation of foods, Condiments and seasonings.

Definition of terms

Acquisition: Acquisition is referred in this study as the learning or developing of entrepreneurial skill, habit, or quality.

Effect*:* Effect is referred in this study as a change which is a result or consequence of Foods and Nutrition training or instruction.

Food: Food is referred in this study as any substance consumed to provide nutritional support for human. It is usually of plant or animal origin, and contains essential nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals.

School: School is referred in this study as an educational institution designed to provide learning spaces and learning environments for the teaching of students under the direction of teachers.

Skill*:* Skill is referred in this study as the ability to do something well, it is the ability to carry out an entrepreneurship venture with determined results often within a given amount of time, energy, or both. Skills can often be divided into domain-general and domain-specific skills.

Lecture method: The lecture method is a teaching method involving oral presentation intended to present information or teach people about a particular subject. Lecture method is the oldest method of teaching. It is based on the philosophy of idealism.

Demonstration method: A method demonstration is a teaching method used to communicate an idea with the aid of visuals such as flip charts, posters, power point, etc. In demonstration method, the teaching-learning process is carried in a systematic way.

Problem solving method: Problem solving is the act of defining a problem; determining the cause of the problem; identifying, prioritizing, and selecting alternatives for a solution; and implementing a solution.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter, the review of literature is presented under the following sub-headings: namely; theoretical framework, conceptual framework, review of empirical studies and summary of review of literature.

- Theoretical Framework
- Ausubel Learning Theory
- Social Cognitive Theory
- Schultz's Theory of Entrepreneurship
- Conceptual Framework
- Concept of Foods and Nutrition
- Concept of Secondary School Education
- Concept of Foods and Nutrition Instruction
- Concept of Skill
- Concept of Entrepreneurship Skill
- Concept of Entrepreneurship
- Entrepreneurship in Nigeria
- Entrepreneurship Education
- Home Economics Education and Entrepreneurship
- Strategies for Enhancing Creative Entrepreneurship through Home Economics Education
- Factors that Challenge the Teaching of Entrepreneurship Education in Home Economics
- Acquisition of Entrepreneurial Skills through Foods and Nutrition Instruction
- Foods and Nutrition Instructor’s Role in Students Acquisition of Entrepreneurial Skills

- Pedagogical Requirements in Promoting Entrepreneurial Skills Development through Foods and Nutrition Instruction
- Foods and Nutrition Classroom Practice in Developing Entrepreneurial Skills
- Effects of Teaching Methods in Foods and Nutrition Instructional delivery
- Process Outline for Giving a Demonstration
- Review of Empirical Studies
- Appraisal of Reviewed Literature

Theoretical Framework

Health and Nutrition interventions have generally been created within the context and understanding of various Psychology-Based theories (Schultz, 2015). There are many theories of teaching, learning and entrepreneurship but Ausubel learning theory, Social cognitive theory and Schultz theory (human capital approach) of entrepreneurship was adopted to support this study.

Ausubel Learning Theory

Ausubel (October 25, 1918 – July 9, 2008) was an American analyst who proposed a hypothesis that differentiated meaningful learning from repetition learning. In Ausubel's view, to acquire entrepreneurial skill meaningfully, learners should relate new information (ideas and suggestions) to what they know previously. He proposed the thought of a high level coordinator as an approach to help learners interface their previous thoughts with new skills (Woolfolk et al., 2010). Ausubel's Theory of Learning claims that new skills to be mastered can be joined into more comprehensive skills or thoughts. These more inclusive skills are advance organizers. Advance organizers can be verbal phrases, or a graphic. In any case, the advance organizer is designed to provide, what cognitive psychologists call, the "mental scaffolding" to acquire new entrepreneurial skill.

Ausubel accepts that acquisition of entrepreneurial skill depends on previous knowledge. That is, development of knowledge starts with our perception and

acknowledgment of occasions and items through existing ideas. We learn by building an organization of ideas and adding to them. Ausubel also stresses the importance of reception rather than discovery learning, and meaningful rather than rote learning (see Table 2.1). He declared that his theory applies only to reception learning in school settings. He did not say, however, that discovery learning does not work; but rather that it was not efficient. In other words, Ausubel believed that understanding concepts, principles, and ideas are achieved through deductive reasoning.

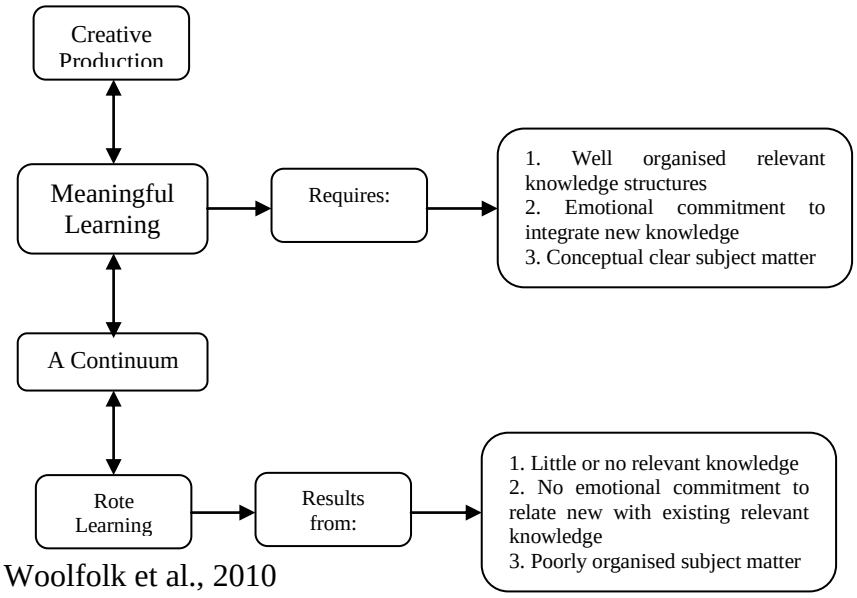
Ausubel (1963) was impacted by the lessons of Jean Piaget. Like Piaget's ideas of conceptual schemes, Ausubel related this to his clarification of how individuals obtain information.

Table 2. 1: Meaningful Learning vs Rote Learning

Type of Learning	Characteristics
Meaningful Learning	➢ Non-arbitrary, non-verbatim, substantive incorporation of new knowledge into cognitive structure. ➢ Deliberate effort to link new knowledge with higher order concepts in cognitive structure ➢ Learning related to experiences with events or objects. ➢ Affective commitment to relate new knowledge to prior learning.
Rote Learning	➢ Arbitrary, verbatim, non-substantive incorporation of new knowledge into cognitive structure. ➢ No effort to integrate new knowledge with existing concepts in cognitive structure. ➢ Learning not related to experience with events or objects. ➢ No affective commitment to relate new knowledge to prior learning.

Source: Woolfolk et al., 2010

Ausubel Theory is related to this study as acquisition of entrepreneurial skill continues in a hierarchical or deductive way. Ausubel's Theory comprises of three stages, presentation of an advance organizer, presentation of learning task, and reinforcing the intellectual association. Acquisition of entrepreneurial skill involves acknowledgment of the connections between ideas; it has the advantage of being moved to long-term memory. The most significant component in meaningful learning is the manner by which the new data is incorporated into the old knowledge structure. Likewise, Ausubel accepts that knowledge is progressively coordinated; that new information is meaningful to the extent that it can be related (attached, anchored) to what is already known.



Source: Woolfolk et al., 2010

Figure 2.1: The rote-meaningful learning continuum showing the requirements of meaningful learning

Advance Organizers: Ausubel advocated the use of advance organizers as a mechanism to help to link new learning material with existing related ideas. Advance organizers are helpful in the way that they help the process of learning when difficult and complex material is introduced (Ausubel, 1960). This is satisfied through two conditions:

1. The student must process and understand the entrepreneurial information presented in the organizer - this increases the effectiveness of the organizer itself.

2. The organizer must indicate the relations among the basic skills and terms that will be used.

Social Cognitive Theory

The Social Cognitive Theory of Bandura (1986) focuses on the ideas of support and perception, giving more significance to the psychological interior cycles just as to the connection of the subject with others. The Social Cognitive Theory (SCT) suggests that perception and imitation is given across models that can be guardians, instructors, and companions, and can even be heroes taken from TV. Social cognition is based on how individuals make sense of other people and themselves. Fiske and Taylor (2008) noted that making sense of other people and themselves is achieved by starting a linkage among "thinking" and "doing", with "thinking" being a significant component of social cognition. Thinking is known as having an adaptive mind or one that enables its owner to override automated action plans (Macrae & Bodenhausen, 2000). The doing portion of social cognition is a yield of intuition, whereupon the activity that guides conduct is based (Macrae and Bodenhausen, 2000).

Essential highlights of social cognition incorporate social schema and some concern with real world issues (Fiske and Taylor, 2008). Social schema is characterized as a psychological construction that exemplifies one's general information about a given subject (Fiske and Taylor, 2008). This information incorporates both pertinent characteristics (autonomous, agreeable, and cutthroat) and relationship credits (what your autonomy has to do with cordiality). General information about ourselves as well as other people enables us to be compelling in a competitive world.

The lone necessity for learning can be that one individual observes another individual, or models behaviour to carry out a certain conduct. The observation and imitation mediate upon the cognitive factors and assist the learner with choosing whether or not the observed conduct is to be imitated. The cognitive factors are the limit of reflection and symbolization just as the counteraction of outcomes dependent on cycles of correlation, speculation, and

auto-assessment. One of the points of the Social Cognitive Theory is simply the advancement of the assessment and the self-reinforcement constructs. As per the position of Bandura, people have an auto-system that permits them to quantify the control on their own considerations, sentiments, inspirations and activities. This system practices self-guideline to empower the learner with inclination to impact their own cognitive cycles and activities and in this manner to adjust their environment.

As of late, cognitive research in entrepreneurship has advanced. The most widely acknowledged meaning of entrepreneurial cognition is information structures that people utilise to settle on appraisals or choices including entrepreneurial opportunity recognition, evaluation, arrangement and development (Mitchell et al., 2002). Applying social cognition in entrepreneurship permits specialists to address thinking-doing linkages more straightforwardly (Mitchell et al., 2007).

Action is at the core of being an entrepreneur; entrepreneurial activity alludes to conduct in the light of a choice with equivocalness about a potential chance for revenue (McMullen and Shepherd, 2006). Action can be conceptualized as the formation of new items, new cycles, section into new business sectors or the production of new pursuits. Regardless of whether entrepreneurial action happens or not depends on the choice of whether to act or not (McMullen and Shepherd, 2006). This feeling of uncertainty can obstruct or defer action. A reluctance to take part in the obscure is considered liable for keeping potential entrepreneurs from participating in entrepreneurial activity.

This theory relates to this study as a result of the fact that entrepreneur's cognition (cognizant and oblivious) starts in human connection and correspondence giving a more broad comprehension of recognition and exploitation of chances (De Carolis and Saparito, 2006). Entrepreneurial cognition research has essentially extended in the course of the most recent 15 years.

Most entrepreneurs create interesting cognition structures and process information in different ways, thus they will in general store, recuperate and use information uniquely in

contrast to others (Mitchell et al., 2007). Researchers have likewise shown that entrepreneurs will in general be advancement centered. They see the potential for progress and don't consider disappointment while boosting the quantity of chances perceived and openings exploited. Non entrepreneurs will in general have an anticipation center and are more worried about staying away from disappointment and not distinguishing or exploiting as many chances as possible (Corbett, 2007). Empirically, there is growing evidence (Mitchell et al., 2002) to support the idea that in entrepreneurship, cognition in the form of improved decision making in opportunity recognition and exploitation exists (Mitchell et al., 2000). These cognition structures empower entrepreneurs to utilize information essentially better than non-entrepreneurs. However, further exploration can attract on SCT to additionally see how entrepreneurs utilize their information processing to perceive and exploit opportunities.

This study seeks to establish that if the learners imagine themselves with high personal control as entrepreneurs (skills and roles), this may empower them pick an entrepreneurial career path. Entrepreneurship instructors can profit by the execution of self-efficacy construct to the learning interaction. An undeniable degree of entrepreneurial self-efficacy can help them produce more entrepreneurs, an important goal of Foods and Nutrition education. As a strategy, Foods and Nutrition instructors and career counselors can assess the entrepreneurial self-efficacy of their students and develop special activities for students with the highest entrepreneurial self-efficacy levels, and also activities for students with low entrepreneurial self-efficacy. This strategy can help to attend to the special learning and entrepreneurial needs of all students in Foods and Nutrition.

Foods and Nutrition instructors need to reach the right factor combinations of personal attributes, traits, background, experiences and disposition that students need to pursue the idea of developing entrepreneurial skills (Arenius & Minniti, 2005).

Concept of Secondary School Education

In Nigeria, Senior Secondary Education is the training a kid gets in his/her most recent three years at the Secondary Education level following nine years of fundamental

schooling and before four or five years of Tertiary Education. So this level of education is important because of the dual consumer and producer roles it plays (Ohia and Obasi, 2014). As the next step after basic education in the country, secondary education produces students for tertiary degree of schooling (Ohia, 2010). One of the particular goals of Secondary Education in Nigeria is to give specialized knowledge and vocational skills necessary for modern, business and financial development (National Policy on Education, 2013). This target, as seen by Madumere and Salisu (2007), is firmly identified with the objectives of Technical and Vocational Education (TVE).

Secondary School follows elementary or primary education, and is sometimes followed by University (Tertiary) Education. Winsa (2012) views secondary level of education as a high school or a school of corresponding grade, ranking between a primary school and a college or university. Secondary Education, or Secondary School, is a period of education which follows directly after primary education (such as intermediate school or elementary school), and which may be followed by tertiary or "post-secondary" education. The purpose of a Secondary Education can be to prepare for either higher education or vocational training (Dodge, 2002). The exact boundary between Primary and Secondary Education varies from country to country and even within them, but is generally around the seventh to the tenth year of education, with middle school covering any gaps.

The Federal Republic of Nigeria, in the National Policy on Education (FRN, 2013) categorized Senior Secondary School Subjects into: group A with six (6) core subjects the students are to offer, including a vocational subject. Eighteen (18) vocational subjects were listed in group B and sixteen (16) non-vocational subjects in group C as electives. The students are relied upon to choose at least one or a limit of two subjects from group B and C. They are likewise at freedom to drop one in their last year in Secondary School. In the light of the above mentioned, there is by all accounts more accentuation on the students' acquisition of theoretical rather than practical skills at this level. In any case, Rich (2002) affirmed that skills make rich, not theory. Hence, secondary education can be structure with

appropriate entrepreneurial content to deliver the needed skills for poverty reduction and capacity building as identified in the schematics of the conceptual framework for the study (Figure 2.2).

Concept of Foods and Nutrition Instruction

Nutrition is the science of food, nutrients and other substances, their action, interaction and balance in relation to health and disease and the processes by which the organism ingests, digests, absorbs, transports, utilizes and excretes food substances. The developments in nutrition education has made food to be recognized as the fundamental source of nutrients. Foods and Nutrition are basic human rights because they are necessary for human development. Foods and Nutrition instruction offers hands-on interactive guidance to help students improve food and physical activity behaviours, food resource management, food safety, and food security. Nutrition is coming to fore as a major modifiable determinant of chronic disease with strong effects, both positive and negative on health throughout life (WHO, 2003). Nutrition is defined as the study of foods in relation to the needs of living organisms. (Sharma & Caralli, 2011). According to Gil (2010), Foods and Nutrition is part of Home Economics that focuses its resources toward learning, adaptation and acceptance of healthy eating habits, according to one's own food culture and scientific knowledge in nutrition, all with the ultimate aim of promoting health of the individual or community. It is very useful in health promotion and primary prevention to further the acquisition of healthy eating habits in different environments. It can be seen as a set of planned educational activities targeted at certain population groups and aimed at acquiring healthy nutrition behaviours. It is also a useful strategy in the adoption of therapeutic dietary prescriptions and secondary prevention.

According to Navas-López, (2005), Foods and Nutrition is seen as discipline that is based on monitoring of a biopsychosocial model of health where many studies converge from epidemiology or psychology of learning to social psychology, sociology and anthropology, drawing an interdisciplinary overview that focuses on the development and integration of

biomedical, social and nutrition sciences. Foods and Nutrition instruction is one of the effective intervention strategies for bringing about nutritional knowledge, attitudinal and behavioural change in the individual. Teaching of Foods and Nutrition is one of the effective means of spreading the knowledge of nutrition improvement among women in particular and communities at large. It is the step towards improving food habits (Audu, 2013; Contento, 2011; Devadas, Chandrasekhar & Vasamthanmani, 1975).

Nutrition is the science or practice of eating and using food. It is likewise the investigation of metabolic and physiological reactions of the body to food and diet, remembering the job of supplements for the reason, treatment and counteraction of sickness. Nutrition likewise centers on how infection conditions and issues can be forestalled or decreased with a sound eating routine. Furthermore, it includes distinguishing how certain illnesses, conditions and issues might be brought about by dietary factors like poor nutrition, food hypersensitivities, metabolic issues (Medical News Today, 2017).

Foods and Nutrition instruction is that type of schooling that furnishes individuals with information, abilities and certainty to change destructive food propensities while embracing positive and enduring healthy nutrition practices. Foods and Nutrition instruction is any blend of instructive methodologies, joined by environmental backings, intended to work with intentional appropriation of food decisions and different Foods and Nutrition related practices helpful for wellbeing and prosperity. Foods and Nutrition instruction is conveyed through numerous scenes and includes exercises at the individual, local area and strategy levels (Jones and Bartlett, 2007).

Foods and Nutrition instruction goes past basic gathering of information to positive activity and change in conduct. As a mode of progress in conduct, Foods and Nutrition instruction gives mindfulness on the connection among diet and wellbeing, wholesome necessities of groups and individuals, healthy benefit of food, settling on proper food decisions, stockpiling, handling and protection of food, preservation of supplements during cooking and nourishing requirements of family members (FAO, 2017).

Nonetheless, sustainable Foods and Nutrition teaching should take into perception the way of life, and value system of a group since these extraordinarily impact decision of food. To this end, Shittu (2011) noted that teaching of Foods and Nutrition should start changes that are with regards to a group's established food habits. The focus of Foods and Nutrition ought to be to impact public policies and elevating access to food; increase information on dietary benefit of food varieties; create individual abilities and inspiration to embrace smart dieting practices (FAO, 2010).

In terms of content, the teaching of Foods and Nutrition should be intended to help beneficiaries learn nutritional knowledge, including the advantages of smart dieting, nutritional deficiencies, standards of weight management, the utilization and abuse of dietary enhancement, safe food arrangement, food storage; sustenance related skills, including, yet not restricted to, arranging a good dinner, comprehension and utilizing food names, surveying and fundamentally assessing nutrition information; how to evaluate and oversee ones individual dietary patterns, put forward objectives for development and accomplish these objectives; and how to impart, settle on solid choices and promoter for creating long lasting sound food habits (Connecticut Department of Education, 2009).

The definitions of Foods and Nutrition above range from very narrow (knowledge dissemination) to complex descriptions of a multi-faceted discipline. The majority now include a dimension of behaviour change or voluntary modification of dietary practices as the intended outcome. Only one definition (Contento, 2011; McNulty, 2013) mentions policy level. Virtually all of the definitions imply that Foods and Nutrition instruction is coming from outside rather than as self-directed learning.

Concept of skill:

Skill as fundamental capacity is the method by which man conform to life activities. An individual's disposition and work capacities are required and important antidotes proposing the reasonable skills performance and acquisition of same by going through a given work test. In the work place, skill is the thing that the laborers give in return for

numeration. In the event that the skill (or the bunch of skill prominently called aptitudes) given is palatable, the laborer gets fulfilment and the employer gets remunerated in correspondence. This process, if sustained culminates in promotion, retaining and prolonged tenure that prompts efficiency (Adeyemo, 2003, Adeyemo, 2009).

Skill is the ability to do or perform an activity that is related to some meaningful actions, works or jobs. Okorie (2000) pointed out that to develop a particular skill is to show the habit of thinking, acting and behaving in a specific activity in such a way that the process becomes natural to an individual through constant practice. Skill development requires the actual muscular movements of the fingers, hands, arms, and other parts of the body, in coordination with the eye and sometimes the ear. Such movements are involved in the use of tools, instruments, machines and materials. Skill according to Okorie (2000) is the most relative term, it is an ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carry out complex activities or job functions involving ideas, things, and/or people. Skill when viewed from a psychological perspective could be defined as case, rapidity and precision of muscular action. The development of skills varies with the nature, complexity and the type of activity. People who acquire good nutritional skills continue to survive in spite of difficulty or danger (Adamu, 2011). Skill development is important for promoting economic stability of the nation.

In a classroom situation, skill is the ability to perform some tasks creditably. Up to a point, the more practice in the doing of specific task the faster and better they can be done. It is associated with know-how while speed and accuracy are some of its traits and characteristics (Adeyemo, 2009). Skill is considered as a nature of execution which does not rely entirely on an individual's major and intrinsic limits yet should be created through preparing, practice and experience. Despite the fact that skill relies basically upon mastering, it additionally remembers the ideas of proficiency and economy for execution. Present day ideas of skill stress the adaptability with which a talented administrator arrives at a given end

on various events as per exact conditions. Notwithstanding, it should be emphasized that despite the fact that essential human limits are not adequate to create skills, they structure the fundamental premise of their turn of events; skills address specific methods of utilizing limits corresponding to environmental demands, with person and external situation together framing a utilitarian framework. As indicated by Onuka and Olaitan (2007), fruitful entrepreneurship pivots upon the possession of a bunch of skills. A skill is a grounded propensity for performing task in a way satisfactory by laborers in their profession (Okorie, 2000). Entrepreneurship skills are abilities required to make, plan, build up and effectively run an endeavor utilizing human and non-human resources. These skills, according to Onuoha (1991) are needed for:

- Planning which include formulating strategies or methodology for accomplishing something. It involves plans and scheming which demands for effective utilization of solving skills to decide existing issues, objectives, to be achieved and methods of arriving at the objectives (Thompson, 1998).
- Organizing which include setting the strategy in motion. It tends to be a simple advance for certain individuals yet a hard one for other (Joan and Eddye, 1994). Organizing involves organizing the exercises within the plan in a sensible succession, to arrive at the objectives. For example, the entrepreneur acquires and arranges production resources already identified in the production plan in a logical sequence for implementation.
- Implementation includes utilizing the assets one has amassed, following the assignment list as indicated by the timetable and observing the arranged exercises and progress (Teresa and Maria, 2000). During implementing stage, the student that has gained entrepreneurial skill placed into impact all the production activities.

These skills when appropriately obtained by Secondary School Students will set them up to be profitable, independently employed, and rich.

Concept of Entrepreneurship:

The word entrepreneurship originated from the French word ‘entreprendre’ which indicates an act which the individual attempt, try, and adventure or undertakes as an act of some sort (Nwangwu, 2006). Entrepreneurship is not a new phenomenon in Nigeria, as the profile of the country with its diverse resources encouraged entrepreneurial education, culture, attitude and behaviour (Raimi, Shokunbi & Peluola, 2010). The essence of entrepreneurship lies in the perception and exploitation of opportunities in the realm of small, medium and large businesses. It has to do with bringing about a different use of national resources to new combinations (Filion, 1997). Since the aim of an individual for engaging in an occupation is to be successful and as well make money, entrepreneurship is the vehicle that will enable him achieve this objective and as well make the product of the farmer available to the general populace through network of distribution.

Iheonuekwu (2003) defined Entrepreneurship as the attitude, skills and actions of an individual or individuals for starting a new business. It was further added that an individual private entrepreneur is a creative person and a risk bearer who is good at recognizing opportunity, analysing it, making a decision to act upon it, marshalling necessary resources and implementing a programme leading to a new enterprise and profit. This means that an entrepreneur requires personal skills at judgement ability to work with people, patience and endurance.

Entrepreneurship as indicated by Utomi (2002) involves persevering quests for freedoms to make abundance through making of products or services that address client's issues. Similarly, Osuala (1999) asserted that entrepreneurship is the cycle of uniting inventive and imaginative thoughts and joining them with the management and organizational skills to consolidate individual’s cash and assets to meet a recognized need.

Entrepreneurship is the way toward making something new or distinctive with esteem by committing the vital time, assuming the monetary, psychic and social risks, and getting the subsequent rewards of most personal satisfaction (Ossai, 2008). As per Igbo (2006),

entrepreneurship happens when an individual builds up a new venture, another way to deal with an old business or thought or an exceptional method of providing goods or service by utilizing assets in another manner under states of risk. Entrepreneurial skills therefore are the abilities an individual require to prevail in business.

Beginning a business is not the principle segment of entrepreneurship since entrepreneurship involves animating monetary advancement through development and activity. Entrepreneurship is perceived as a critical factor for cultivating financial development based on innovation (European Commission, 2010). The European Commission goes on to explain that the sense of initiative and entrepreneurship was defined by the European Parliament and the Council in 2006 as an individual's ability to turn ideas into action. It incorporates imagination, development and risk taking, just as the capacity to design and oversee projects to accomplish objectives. This supports individuals, not just in their regular day to day existences at home and in the public eye, yet in addition in the working environment in monitoring the setting of their work and having the option to seize opportunities, and is a foundation for more explicit skills and information required by those building up or adding to social or business activity. This ought to incorporate consciousness of moral qualities and advance good governance.

Entrepreneurship can be approached both in terms of entrepreneurial firms and people (Swartland, 2008). The entrepreneurial person has the following characteristics; risk taking, daring, innovative, aggressive, intrinsically motivated for achievement and foresight (Stevenson & Jarillo, 1991). Swartland (2008) says that another approach to defining entrepreneurship can be structured around Stevenson and Jarillo's question about *what, why and how*. This approach examines entrepreneurship in this way; "what happens when entrepreneurs act? Why do entrepreneurs act? How do entrepreneurs act?" Irrespective of the approach used to define entrepreneurship, there is consensus that the entrepreneur plays an important role in making entrepreneurship happen.

Whatever the approach taken to define entrepreneurship, the qualities, skills and values required to be entrepreneurs bear some similarities. Wilkens (1979) commented that the entrepreneur is daring, aggressive and has an intrinsic need for achievement. For Stevenson and Jarillo (1991), entrepreneurs have the capacity to identify and grasp opportunities and they use their skills (e.g. persuasiveness, negotiation, strategic thinking) in order to achieve their aims. Consequently, entrepreneurship is linked to a wide range of skills and attitudes which include creativity, innovation, risk-taking, passion, leadership, foresight and sense of initiative.

Therefore, it is not sufficient to conceive a business idea, what makes the distinction is the capacity to be inventive with thoughts and create something new and innovative. There is not really any business idea that has not been brought about by entrepreneurs. What offers muscle to another business in the serious market is the capacity to be imaginative in order to arrive at ideas, items, benefits somewhat or totally unique in relation to the current standard.

Concept of Entrepreneurship skill

Entrepreneurial skills are the abilities required for business success. Entrepreneurial skills are the fundamental abilities important to empower someone to start, create, back and prevail in chosen venture. Entrepreneurial skill can be characterized as the capacity to make something new with high esteem by dedicating the vital time and exertion, accepting the monetary and social risks, and getting the subsequent compensations of financial and individual fulfillment and autonomy (Hisrich and Peters, 2002). Entrepreneurial skill is the capacity of a person to exploit a thought and make an enterprise for individual benefits as well as for social and formative gain (Olagunju, 2004).

Formal definitions describe entrepreneurial skills as the capacity to have self-conviction, strength, determination, energetic, sympathy, status to take master guidance, desire for immediate result, visionary and capacity to perceive opportunity (Salgado-banda, 2005). Kilby (1971) expressed that the variety of conceivable entrepreneurial skills includes the view of monetary freedom, specialized and authoritative developments, acquiring orders

over scanty assets, taking obligations regarding internal management and for outside advancement of the firm in all aspects of teaching enterprise.

Entrepreneurial skills training incorporate the total learning experience offered in the educational institutions that can impact knowledge, ideas and abilities to make matured judgement and be in a position to create goods and services in the area of Home Economics Education, Business Education, Industrial Technical Education, Agricultural Education and other courses (Rakia, Gaite & Salami, 2017).

According to Lemo (2013), entrepreneurial skills acquisition is the training that provides experience and skills that are suitable for entrepreneurial endeavours. Entrepreneurial skills acquisition therefore; trains graduates with entrepreneurial knowledge, competence and skills needed for self reliance (Pakpa, 2013). In line with the above definitions Osemeke (2012) defined entrepreneurship as the process of creating something new with value by devoting the necessary time and effort. According to Ndumanya (2012) Entrepreneurial skill acquisition is a specialized training given to student or trainees to acquire skills, ideas and managerial abilities and capabilities for self employment than being employed for pay. The entrepreneurial skills acquisition attributes for this study included innovations, creativity, and foresight, where as utilisation of skills in Home Economics Education included Foods and Nutrition skills, Clothing and Textiles skills, Home Management skills, Family and Child Development skills, and Housing and Interior Design skills. Hodges, Watchravesringkan, Yurchisin, Karpova, Marcketti, Hegland, and Childs (2015) suggest that entrepreneurial skills are essential for entrepreneurs in managing the challenges of running small ventures. Innovation intelligence and entrepreneurship skills therefore are rudiments in the Nutrition, Clothing and Textiles industries (Ünay & Zehir, 2012; Arubayi, 2019).

Entrepreneurship Education

The pioneer degree course in entrepreneurship was offered at Harvard University by in 1947 (Katz, 2003; Vyakarnam, 2009). Fry (1992) saw that entrepreneurship has been one

of the quickest developing areas of study in the United States of America in the 1990s. Indeed by the wake of the 21st century, as many as 1600 universities in the North-America were found to be offering different courses in entrepreneurship when compared to merely two dozen in the 1970s (Inegbenebor, 2006). In the United Kingdom, the first few courses in entrepreneurship were launched in the 1980s together with the UK's first initiative for enterprise in higher education (Kirby, 2005). The development of Entrepreneurship Education and the resulting incorporation of the discipline into the educational plans of colleges have been credited to the sheer necessities to serve the advancement need of organizations and to deliver graduates with adaptable skills for businesses.

Arogundade (2011) argued that Entrepreneurship Education will furnish the graduates with the skills to be self dependent; hence the public authority and other training partners should ensure that instructive program at all degrees of schooling are made applicable to give the young people and graduates required entrepreneurial skills. Entrepreneurship Education follows a direct methodology, building up students' capabilities and entrepreneurial goals towards beginning a business as a lifelong choice.

According to Paul (2005), the targets of Entrepreneurship Education incorporate to : (1) offer utilitarian instruction to youth to make them independently employed and self-reliant.(2) give youth graduates satisfactory preparation to make them inventive and imaginative in recognizing novel business openings and set up a vocation in little and medium scale organizations (3) lessen high pace of poverty and rural-urban relocation (4) make work and fill in as an impetus for monetary development and advancement among others. The difficulties to the advancement of Entrepreneurship Education include: insufficient capital, insecure full scale monetary climate, risk adversity of individuals, low infrastructural improvement (Ayodele, 2006). Unachukwu (2009) distinguished the difficulties to Entrepreneurship Education in Nigeria to include: account, labor and instruction, information, deficient foundations and pioneering disposition. The author advocates the need for robust entrepreneurial education for the student.

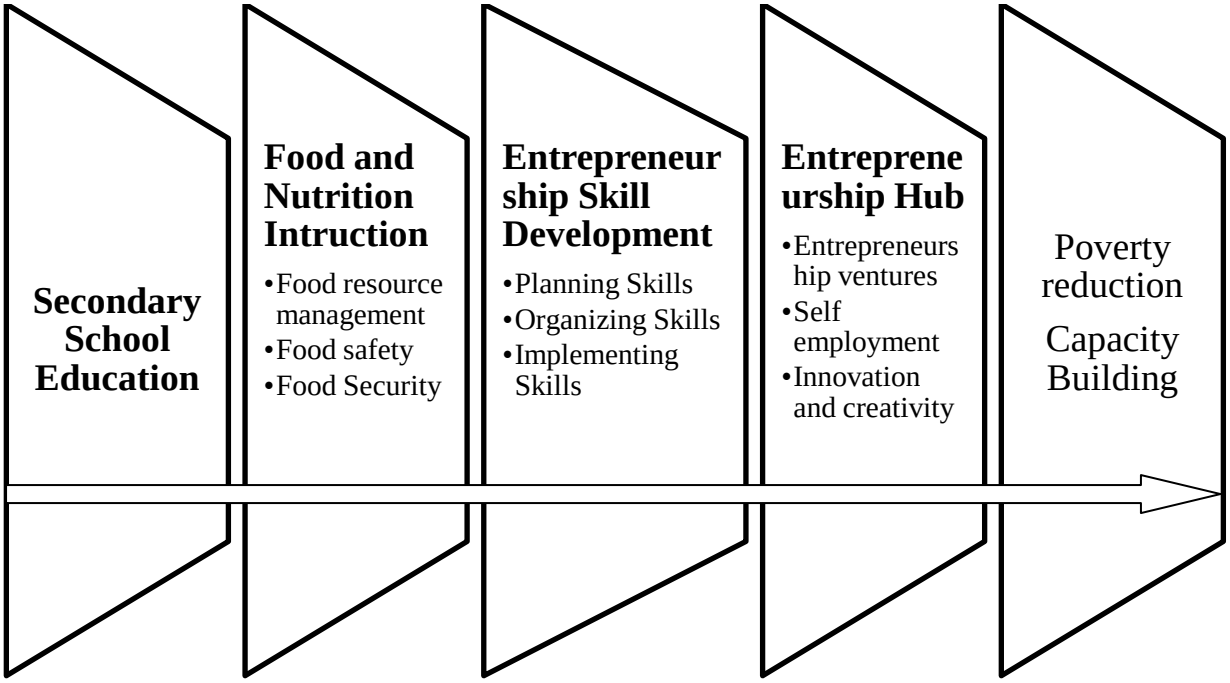


Figure 2.2 Schematics of the conceptual framework for the study

Home Economics Education and Entrepreneurship

Entrepreneurship Education seeks to provide students with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of setting. Entrepreneurship Education equips people with the ability to seek investment opportunities. Through Entrepreneurship Education, success habits are imparted as the individuals develop entrepreneurial integrity. It ensures that skills, ideas, attitudes are utilized to create employment for self and others. Home Economics Education is both inter disciplinary, multi disciplinary and trans disciplinary. It is a field of study with different attractive skills that can guarantee independence and self employment.

Mbah (2001) identified Home Economics Education as people's profession since it is a multidiscipline utilitarian delivery framework. Olaitan and Agusiobo (1981) characterized Home Economics as that field of study that is concerned with reinforcing individual and day to day life by giving practical information and abilities. Home Economics Education can be seen as the answer for the numerous issues confronting people, families, networks in Nigeria

especially in the space of skill acquisition, sound living, home resource management, poverty reduction and job creation. In Nigeria, time and patterns have advanced over the course of the years with respect to what utilitarian and innovative training ought to be. With the global business world and the rise of information economy, the target of Home Economics Educationist should be to get ready alumni who can interface the body of knowledge and the contemporary worldwide market.

In accordance with the spirit of entrepreneurship, Onyido (2011) detailed that the Federal Government of Nigeria has coordinated the establishment of entrepreneurship centres in the colleges and universities in order to upgrade Entrepreneurship Education. These centres are to be funded by the education tax fund and students are required to channel the information and energies acquired from the centres at formulating inventive procedures and learning skills to function as entrepreneurs.

Home Economics Education and entrepreneurship are interwoven. Home Economics Education is central in entrepreneurship development process thus has significant task to carry out in lessening enormous graduate unemployment and the associated social danger. The task therefore is to device the means by which to address the shortcoming in the teaching method and reposition Home Economics Education for delivering inventive entrepreneurs who can endure the modern business in Nigeria and also add to family and public structure. Home Economics Education should develop to be on top of current worldwide business changes and difficulties.

Factors that hinder the Teaching of Entrepreneurship Education in Home Economics

The following are the factors that inhibit effective teaching of Entrepreneurship Education in Home Economics:

***Teachers' incompetency*:** Weidman (1977) characterized competency as a mentality, conduct, ability or comprehension showed by a student. However, educators who are not equipped in Entrepreneurship Education will most likely be unable to teach it. Obviously, entrepreneurship training is new in the Home Economics educational program, subsequently,

a large portion of the Home Economics instructors may not be able to teach it. This is on the grounds that the majority of the instructors did not contemplate this new part of the Home Economics educational curriculum during their pre-service training. Idibie (2004) saw that incompetency of teachers causes them to come up short in their teaching obligations.

***Absence of relevant textbooks*:** Since Entrepreneurship Education was newly incorporated into Home Economics educational plan, there is likewise the issue of absence of reading material around there. This has truly affected the implementation of the curriculum in at various level of education. Idibie (2004) likewise noticed that teaching and learning without appropriate textbooks would limit teachers and students access to quality information on important topics. This doesn't clear path for competency in entrepreneurship skill development.

***Lack of Facilities*:** It is very glaring that most Colleges of Education have not been able to provide sufficient offices and equipment to adapt to the expanding enrolment of students. Obunadike (2009) noticed that absence of research center offices force Home Economics educators to utilize inappropriate techniques for teaching. The present circumstance smothers entrepreneurial skills among students.

Lack of fund: Inadequate funding of Colleges has frequently influenced the teaching and learning of Home Economics. It is the significant reason for insufficient offices and hardware in the schools.

***Poor enterprise culture*:** Because of absence of sufficient instructional hubs and undertakings, students are confronted with the issues of getting suitable foundation for their work insight. They thus resort to appending themselves to side of the road tailors for example and other Home Economics related undertakings, where they often learn wrong enterprising culture and skills. This is in opposition to the objectives of students' Industrial Work Experience Scheme (SIWES) which is relied upon to give students the chances of exposure to pragmatic encounters and relating the information and skills mastered in the classroom to the real world of work (Onu, 2008).

Acquisition of Entrepreneurial Skills through Foods and Nutrition Instruction

Two fundamental issues are raised when a new skill is to be acquired in Foods and Nutrition. The first is the conditions which promote acquisition and the second is the change that will occur when the skill is acquired. The initial conclusion of early researchers was that skill is best acquired through S.R learning theory proposed by Pavlov and Thorndikee "But recent thinking is that such a theory would predict the development of relatively stereotyped chain of response instead of the flexible pragmatic behaviour that characterizes skilled performance (Legge, 1970). Pragmatism in Foods and Nutrition skill learning demands that organisms more often learn guiding principles and programmes rather than specific responses. The stimulus response theory no doubt, provides the best description of learning in simpler organisms but in an emphasis on planning and strategy would appear more appropriate". At the point when a grown-up individual decides to become familiar with another Foods and Nutrition expertise, he/she for the most part starts with a transferable program of guidance. Someone else either verbally or by representation, imparts what he should do. Notably, knowledge of strategy alone does not ensure effective execution; a learner of a new skill does not hop into activity without first accepting the essential verbal guidance. Skilful elaboration and execution of the instruction serves to complete safe implementation. The instruction, perhaps given in bits, units, modules or stages, must be fused together to form a skilled performance.

For effective acquisition of entrepreneurial skill, a chain of command of social units should be developed. This thought was brought up in 1897 by Bryan and Harter (Rae, 2007) when they showed the progressive degrees of expertise engaged with telecommunication. The rate at which skill is gained is a component of feedback cycle (Holding, 1965). The feedback can be intrinsic or artificial. The cycle of acquisition and development of entrepreneurial skill according to Pleshette (2009) is completed in four stages which include:

1. objectively analyze and identify the current and foreseeable Foods and Nutrition skills needs to the business, in terms of management, administrative and technical skills and the relative importance of these.

2. identify the entrepreneur's own personal goals and objectives and accurately analyze and evaluate his or her own Foods and Nutrition skills and resources in relation to these.

3. produce a realistic personal development plan for the potential entrepreneur.

4. monitor the on-going performance of the entrepreneur once the business has started and progress made towards developing the new Foods and Nutrition skills that had been previously identified as necessary for the success of the business. This applies both to the entrepreneur's personal needs and to the process of assisting employees to develop new Foods and Nutrition skills that will also benefit the business.

Foods and Nutrition Instructor's role in students acquisition of Entrepreneurial Skills

For the Foods and Nutrition teacher to inculcate entrepreneurial skills in students, it demands that he/she in addition to being the master of the subject will be able to spur the student's interest in the subject through her method of teaching and attitude to the subject. In this present time where unemployment is on the increase, it calls for a reorientation of our youths to pay attention to skill oriented subjects like Foods and Nutrition which will help them acquire the competencies required to be self-employed. This yearns for self employability in individuals can be quenched through teaching of entrepreneurial skills to them so that they will be able to stand on their own after graduation. Fafunwa (1974) noted that the objective of vocational education of which Foods and Nutrition is an aspect is to equip its beneficiaries with skills necessary for self employment. It also includes character training to enable the individual fit into his way of life. Consequent upon the above facts, the Foods and Nutrition teachers should evolve a teaching strategy that will enhance the development of these entrepreneurial skills. This she achieves by having an up-to-date and accurate information on market system.

The impact of modernization in the society and business world has raised the problem of acquainting Foods and Nutrition instructor/students with the social implications of vocational instruction. The contemporary Foods and Nutrition instructor need to comprehend and appreciate the reliance of the society in skill acquisition and the progressions in the social construction that have been achieved by the accomplishment of entrepreneurship and technology. They ought to not exclusively have the option to appreciate and stand amazed at the advanced wonders of entrepreneurship in business world; however, they ought to likewise comprehend the social utilization of entrepreneurial skills in their everyday science issues in the classroom, outside the classroom and in the society at large. This in a nut shell is what a Foods and Nutrition instructor can do and must do with entrepreneurial skills. The Foods and Nutrition instructor only are not enough to open schools or any business related to vocational education but the need to understand and acquire the basic entrepreneurial skills that will make them function effectively in the school setting (Das, 2006).

Obviously, Foods and Nutrition instruction is a unique endeavor thus its teaching methodology revolve around three significant elements; the students, the instructors and the subject. As indicated by Adeyemo (2003), Grayson (1997), Ivowi (1993) and Nneji (1995), vocational instruction enterprise has students as the raw materials, the school climate as the factory and the teachers as the managers/entrepreneur of resources using a specified blue print (vocational curriculum). The relationship among these three main considerations legitimizes why the Foods and Nutrition educator should have imperative entrepreneurial skills capable of transforming classroom activities into business environment. The result is to draw out a refine and order item at any level. In view of this, Foods and Nutrition teachers need some fundamental entrepreneurial skills that will build their productivity and adequacy in knowledge delivery and management of resources in the school. These include: instructional leadership skills, management skills, communication skill, correspondence expertise, cooperation expertise, vision advancement abilities, change the executives abilities, examination abilities, measure abilities, assessment abilities and economy skills.

There is an earnest need to guarantee that teachers have least entrepreneurial skills to empower them work adequately in the classroom, labs and general school settings. Once more, with the acquisition of entrepreneurial skills, Foods and Nutrition educator will find out about finance administration and be able to navigate successfully through difficult political water filled with competing interests and demand for resources especially in Nigeria (Adeyemo, 2003; Yager, 1996; Nwosu, 1995). Another area of challenge to the Foods and Nutrition teacher in inculcating entrepreneurial skills in the students is the curriculum content. A close look at the content of Foods and Nutrition curriculum at different levels of education reveals little or no inclusion of entrepreneurial skill. This calls for pedagogical strategies to promote entrepreneurial skills in Foods and Nutrition.

Pedagogical Requirements in Promoting Entrepreneurial Skills Development through Foods and Nutrition Instruction

The following pedagogical strategies could be deployed in promoting entrepreneurial skills development through Foods and Nutrition Instruction. These include

- **Classroom Assessment Techniques (CATS)**: Odubunmi (1983) stresses the use of ongoing-classroom-assessment as a way to improve students' entrepreneurial abilities. An example of a CAT is to ask students to write a "Minute Paper" responding to questions such as "What was the most important thing you learned in today's class? What question related to this session remains uppermost in your mind?" This technique if well utilized is capable of developing entrepreneurial skill such as risk taking, as it will enable students to attempt new strategies as go against to the conventional methodology they as used to in learning circumstance.
- **Cooperative Learning Strategies:** The originators of this technique contend that placing students in group learning circumstances is the most ideal approach to cultivate the advancement of entrepreneurial skills. "In properly structured cooperative learning environments, students perform more of the active, entrepreneurial skills with continuous support and feedback from other students and

the teacher" (Okebukola, 1984). This will definitely create entrepreneurial skills in the teaching and learning of vocation in both teachers and students by offering them sufficient chance to search out intelligence from their associates and to listen to the opinions of those know some essential entrepreneurial concepts and standards. Again it will create in them capacity to gain from their errors.

- **Case Study/Discussion Method:** this methodology includes a Foods and Nutrition teacher introducing a case (or story) to the class without an end. Utilizing arranged inquiries, the educator at that point drives the students through a conversation, permitting them to develop an end for the case. This methodology will create entrepreneurial skill in Foods and Nutrition educators and their students as it will offer them chance to: assess every sensible surmising, think about an assortment of potential perspectives or viewpoints and stay open to alternative interpretations.
- **Using Questions:** this technique distinguishes methods of utilizing inquiries in the classroom which includes:
    - *Reciprocal Peer Questioning*: Following lecture, the educator shows a rundown of inquiry stems, (for example, "What are the qualities and shortcomings of...). Students should compose inquiries concerning the lecture material. In small groups, the understudies pose each other the inquiries. At that point, the entire class examines a portion of the inquiries from every small group.
    - *Reader's Questions*: Require students to compose inquiries on appointed reading and turn them in toward the start of class. Select a couple of the inquiries as the driving force for class conversation.
- **Conference Style Learning:** The instructor does not "instruct" the class in a way of lecturing. Instead, the instructor is a facilitator of the meeting. However, the students are expected to completely peruse all necessary material before class. Relegated readings ought to be in the zone of proximal development. That is, readings ought to

be clearly understood by the students. The class comprises of the students posing questions to one another and talking about these questions. The instructor does not remain passive, but rather, helps "direct and mould discussions by posing strategic questions and helping students build on each others' ideas" (Grayson, 1997).

- **Use Writing Assignments:** The utilization of writing is the essential to development of entrepreneurial skills. "With written assignments, an instructor can encourage the development of dialectic reasoning by requiring students to argue both [or more] sides of an issue".
- **Dialogues:** Odubunmi (1983) identified two strategies for stimulating useful discussions in the classroom:
  - *Written dialogues:* Give students written dialogues to examine in a little gathering. They should be able to distinguish the various perspectives of every member in the discourse. They should look out predispositions, presence or prohibition of significant proof, elective understandings, misquote of realities, and blunders in thinking. Each gathering should choose which view is the most sensible. In the wake of arriving at a resolution, each gathering showcases their discourse and clarifies their examination of it
  - *Spontaneous Group Dialogue:* in this technique, one gathering of students are relegated tasks to carry out in a conversation (like pioneer, data supplier, assessment searcher, and disagree). Four onlooker groups are framed with the functions of figuring out which jobs are being played by whom, recognizing predispositions and mistakes in reasoning, assessing thinking abilities, and inspecting moral ramifications of the content.
- **Ambiguity:** Scott (1998) advocates creating a lot of equivocalness in the classroom. Try not to give students obvious material. Instead, give them clashing data that they should thoroughly consider their direction. The convenience of every technique under every one of the gatherings will rely upon the instructor's capacity to make proper

determination for a lesson topic. For the most part, the following factors should direct the Foods and Nutrition teacher while picking a technique for a lesson:

- The experience and competency of the instructor.
- The past experience, development and capacity of the learners.
- The accessibility of the instructional materials, educational facilities and gear.
- Time available for preparation and for workshop practice.
- However, the instructors should master the purpose which every technique serves in a learning circumstance to know when best to utilize each.

Foods and Nutrition Classroom Practices in Developing Entrepreneurial Skills

Classroom practices are the different exercises that go on in the class throughout Foods and Nutrition instruction. These incorporate every one of the cycles that go into making a fruitful exercise. The exercises include: content of the instruction, targets, works out, educational materials, time, methodology of teaching, association of exercises, show of exercise and the succession of show, students' exercises, classroom management, assessment and use of instructional activities. Classroom practices revolve around the Foods and Nutrition instructor and how he/she can introduce data and abilities to such an extent that the students see its application even outside the classroom. To achieve this will require teacher preparation in terms of professional development of the teacher as well as teacher readiness to implement the ideals of entrepreneurship development in the classroom using appropriate classroom practices. It is classroom practices that ensure that the content of materials to be learnt gets to the learners.

Students in a typical classroom setting are required to be equipped with school-to-work fundamental abilities which are essential. This is with the goal for them to appreciate most extreme advantages of their instructive development and improvement. According to Marzano, Pickering, and Pollack (2001), viable Foods and Nutrition teaching method comprises of three components: instructional strategies, management techniques, and curriculum design. There is thus the need for Foods and Nutrition instructors to relate content

to the national goals of education and get ready students for the universe of work (Ondigi, 2002; Hindle, 2006). In relating content to the national goals of education, different strategies can be employed in the classroom. For the purpose of this thesis, infusion and integration are suggested as strategies to be adopted in relating the content of Foods and Nutrition to the National goals of Education.

Infusion: Infusion is having the principles of the newly introduced concept brought into materials outlined in the school Foods and Nutrition curriculum. Here the main content of a subject does not need to be expanded. All the teacher needs to do is bring in entrepreneurship development exercises, activities and examples while teaching a particular topic provided for on the main Foods and Nutrition curriculum. In infusion, entrepreneurship awareness and the content of Foods and Nutrition is incorporated into the various courses and topics in such a way that it carries all learners along (Ondigi, 2002). This is to provide learners with frequent encounters of entrepreneurship. In infusion, main content of the subject is not altered; instead, elements of entrepreneurship are fused into the main content of various topics in Foods and Nutrition.

Integration: Integration has to do with expanding the main content of a subject to include application of entrepreneurship strategies. Here for every topic treated, its entrepreneurship application is also examined. This entrepreneurship application has to do with strategies or skills to be developed through the topics treated. Equally, these strategies include those needed by entrepreneurship both as firms and as people. In teaching Foods and Nutrition for instance, the integration strategy will require that the food element to be learnt is taught cooking (in real life context where the students will actually be required to cook the food). This is to help the students to develop their food competence at the home level, sociolinguistics, discourse and strategic levels (Canale & Swain, 1980). These competencies are needed in entrepreneurship consequently, in a Foods and Nutrition lesson on creative food preparation, topics that center on resourcefulness, roles people play in enterprises, the entrepreneurs as architects of modern civilization, poverty eradication strategies or even

leadership qualities can be presented as information that will activate students' background experience. In infusion, the objectives of Foods and Nutrition are thrown into the contents of different subjects, together with instructional materials which are presented as, and when necessary.

In integration, the content of what needs to be integrated is added to the main content of the course thereby widening the scope of coverage of the course content. Foods and Nutrition can be integrated into carrier subjects through common or strongly related topics (Swartland 2008). In a general Home Economics for example, the development of business ideas can be linked to soap making processes. Other ideas relating to other topics include; pomade and perfume making, insectides or pesticide making, paint making, the list is inexhaustive. In the case of Business Studies or business education, the topics are often related to entrepreneurship development but they need to be distinctly linked to its application.

Other subjects include; home management, Foods and Nutrition, Creative Art, Electrical Electronics, Wood Work Technology, Metal Work Technology and even education. Here the content of the various subject syllabuses and even topics presented can incorporate additional topics such as production, costing, record keeping, marketing, business plans and organization. This however will have varying degrees of coverage. Sometimes, some of these additional topics can even be presented in form of infusion where they may be presented as instances outside the main content of the topic, but related to skills being developed in the main topic (Swartland, 2008). Apart from integrating the various features of entrepreneurship (business idea development, market research and business plan implementation) in classroom activities in the various subjects, asking students to come up with mini projects, or draw up business proposals covering an area or areas taught within a term, semester or session can also be integrated into the class activities.

Similarly, entrepreneurial skills like innovation, decision- making and problem-solving skills needed in daily life can equally be introduced in the Foods and Nutrition

classroom in various course areas through the integration and infusion approaches. In integration, students can be actively engaged in carrying out mini projects, drawing up business plans or even discussing how topics learnt after each class can be of practical benefit to them and the society. The Foods and Nutrition teacher can initiate other innovative classroom activities along this direction. In addition, the Foods and Nutrition classroom activities should at all times provide opportunities for movement in stages (known to unknown), should have a structure, and create in learners, expectations for the lesson (Swartland, 2008). In the case of infusion, the teacher can present the day's topic, but find ways of bringing in examples or instances where these qualities are displayed or are required. This should be made referenced to emphatically such that the students get the entrepreneurial message behind the day's lesson.

In addition, other entrepreneurial skills like skills on self-advocacy can be taught through encouraging students' active participation in class, encouraging them to ask and answer questions, encouraging them to even challenge answers, make oral presentations and engage in open discussions which are all forms of integration. In adopting infusion, materials selected for instruction should be such that these skills are projected. In addition to skills on self advocacy are skills on personal strengths and capabilities. The subjects include; civic education, history, social studies, citizenship education, religious studies and even some general studies courses. This is useful as it will help students act responsibly at school and eventually at work. These can be made reference to even in subjects that do not strongly emphasize it.

Social skills are also part of entrepreneurial skills. They develop positive relationships between individuals, their immediate community and the society generally. Developing this in the students through integration can be done through presenting this skill at the application stage of a lesson. In presenting the skill through infusion, the teacher can, during the lesson, create an activity that will require competition, team work and cooperation. The teacher can equally present illustrations on the two sides of life, collective cooperation, joint effort,

shared responsibility and so on, using stories, instructional materials or even real life experiences. This can be done before, during or after the main lesson on whatever topic.

It should be noted that social interaction can be encouraged as much as possible through group work, practical projects and community projects. Other skills to be developed include: organizational skills and study skills for school, work and career development skills.

Teaching Methods in Foods and Nutrition and Entrepreneurial Skills Development

Engagement in meaningful learning is a universal theme advanced in literature on student's achievement. Integration of instruction into real-world problems is a second emerging theme. *What* students learn is greatly influenced by *how* they are taught. Instructors teaching Home Economics curricula have implemented a wide variety of teaching methods, which fit different niches within the Home Economics classroom (Allen et al., 1995).

The inadequacy of conventional teaching models to improve students' interest, achievement and retention has become a wellspring of worry to numerous instructors in Nigeria. Tom (2011) is of the view that educators ought to be exceptional with the fundamental instructor factors and encounters required for use in encouraging school subjects if students are to adapt maximally. Educational procedures received by educators impact the intellectual, full of feeling and psychomotor results. The call for departure from the traditional method of teaching has been sounded by many educators in Nigeria with the intention of obtaining admirable results (Abakpa, 2010).

Some methods of teaching are totally out of stage with foundation and nearby conditions of the students especially in Nigeria. Besides, a few strategies are unfamiliar in nature and have no holding on for the Nigeria culture, and absolutely got from euro-driven culture (Achor et al., 2009). One of the outcomes of over reliance on foreign approaches to deal with training is the apparently absence of essential logical standards which results to rote-learning and low accomplishment as could be found in Nigeria today. Attempts to address this issue have required the way that teachers should evolve strategies that will guarantee dynamic support of students and be viable and project oriented (Uloko, 2006).

Incorporation of instruction into real-world problems is a constant contention. Students seem to profit by realizing how to execute a technique (procedural information), knowing why the system works (calculated information), and knowing where the methodology works (logical information). General understanding prevails that students will best learn if they understand how the ideas are straightforwardly applied to their future lives (Shinn et al., 2003). Also, investigators (Maurer, 2000; Balschweid, 2001) have reasoned that it is vital to furnish students with adequate context while they learn. In particular, it is accepted that contextualized learning holds guarantee for improving a student's capacity to incorporate knowledge from divergent sources, for facilitating comprehension of new and once in a while opposing information, for helping with making meaning and eventually, for upgrading one's capacity to think fundamentally. If the instructor aspires to help students build analytical and synthesis skills, apply concepts, learn to solve problems, develop mature judgement, enhance communication skills, and retain information, then an appropriate method of instruction should be used (Allen et al., 1995).

The technique used in any teaching and learning circumstance is vital in the light of the fact that the manner in which an educator presents topic to students may make them to like or hate the subject. It has likewise been accounted for by Mtsem (2011) that teaching method influences the reactions of students and decides if they are intrigued, persuaded and associated with an exercise in such manner as to participate in a decent learning. What establishes great teaching and learning of school subjects is the utilization of fitting techniques for teaching. Ogunniyi (2009) declared that perhaps the most determined and convincing issues assailing accomplishment in Nigeria is low quality of instructing.

Certifying this declaration, Harrison (2010) announced that many school subjects are being learnt as it ought to be in Nigeria as a result of improper teaching methods. There exist various teaching methods available for teachers to utilize and they incorporate lecture method, discussion method, demonstration method, discovery or inquiry (activity) method, laboratory method and individualized instructional. This study compares three methods

(lecture, demonstration and problem solving) of teaching Food and Nutrition with a view to determining which of them will be more effective and will result in greater learning.

Demonstration method: Chambers (1998) defines demonstration as a pointing out; proof beyond doubt; expression of the feeling by outward sign; a show; a practical lesson or exhibition. Nwodo (2006) defines demonstration method as a practical class activity involving the use of example, e.g. concrete objects, good models with a view to helping learners acquire or modify some skills, attitude, knowledge or ideas. He stated further that in this method, the sense of sight plays a very major role complemented by the sense of hearing, smelling and touching. Demonstration method has proved to be effective over the years because it is realistic and impressive. Real objects, good models can be used as examples and illustrations in teaching most topics in financial accounting. Demonstration is of two major types (i) method of demonstration; and (ii) result of demonstration. While the first teaches how, the other shows the result of doing something in a certain way (Olaitan & Agusiobo, 1991).

According to Ezewu (1997) there are many approaches to demonstration lessons which are appropriate to bring about meaningful learning. They include inductive, deductive, scientific or reflective, thinking, problem-solving project, role playing and brainstorming approaches. Whatever approach the teacher adopts he must necessarily make use of instructional materials appropriate in that particular demonstration method. The basic method of instruction for teaching skill-type subject matter is the demonstration-performance method of instruction. This method is recommended for teaching a skill because it covers all the necessary steps in an effective learning order. The demonstration step gives trainees the opportunity to see and hear the details related to the skill being taught. Those details include the necessary background knowledge, the steps or procedure, the nomenclature, and the safety precautions.

The repetition step helps the average and slow learners and gives the trainees an additional opportunity to see and hear the skill being taught. The performance step gives all

trainees the opportunity to become proficient. In short, this method is recommended because it leaves nothing to chance. For convenience, the techniques for imparting skills are presented in steps, rather than activities. When setting up an instructional plan, understand that you don't have to follow these steps in the sequence presented; instead choose the steps in the sequence best suited to the needs of the trainees. Although you will always include a demonstration step and a performance step, you must use judgement in selecting techniques to make the various steps effective.

Okorie (2001) reported that the instructional materials that give meaning to learners in demonstration include among others.

i) Pictorial instructional materials: These include photographs, slides, motion pictures, overhead projectors.

ii) Graphical instructional materials include charts, graphs, diagrams, sketches and poster.

iii) Black board demonstration.

The author concluded by saying these materials bring about interest and motivation to the students, make students from different background understand better at the same time, make students generate data through observation and helps the teacher overcome physical difficulties. This is corroborated by Duru (2010) who stated that the teacher can influence the learning task, define and clarifie it, and present materials and resources in the classroom. He also measures the pupils achievement and gives them encouragement to go on and tackle new tasks. Demonstration method is about the most outstanding teaching method because the learners can hear, see and use the learning materials themselves, draw conclusions and predict outcomes.

Process Outline for Giving a Demonstration

The presenter should try a "DRY RUN" on any demonstration prior to actually giving it. The "dry run" should follow the steps to be used in the actual demonstration.

1. *Orient the learners to the demonstration*. - Explain what is to be demonstrated and how it relates to the instructional program. The purposes of the demonstration should be discussed.

2. *Show the learners, if possible, what the demonstration is to produce or achieve*. - Having the finished product available for inspection will make it easier for the learners to understand the demonstration.

3. *Show and describe the equipment and materials to be used*. - The group can be asked to name and describe equipment and materials needed with the presenter producing the items as they are named. The presenter can finish by showing items not named by the group.

4. *Emphasize safety*. - If goggles are required, learners and presenter should be wearing them. The presenter should point out steps where accidents may occur and emphasize safe work habits at all times.

5. *Give the demonstration*. - Each step and important point should be identified and listed. Care must be taken to show and explain each step in a way learners can see and understand. To the extent possible, the learners can be asked to discuss the demonstration as it is being given. If additional time is available, related information may be injected into the procedures by the presenter. The amount of time to be used in this way should be estimated during the "dry run" so that appropriate preparation can be made.

6. *Summarize as needed*. - Depending on the situation and learner objectives, the presenter may summarize, a learner may be called on to perform the demonstration, or the entire group may be directed to perform the activity demonstrated.

In contrast to worksheets, quizzes, tests, and other more traditional approaches to assessment, a demonstration of learning may take a wide variety of forms in schools:

- Oral presentations, speeches, or spoken-word poems
- Video documentaries, multimedia presentations, audio recordings, or podcasts
- Works of art, illustration, music, drama, dance, or performance
- Print or online publications, including websites or blogs
- Essays, poems, short stories, or plays
- Galleries of print or digital photography
- Scientific experiments, studies, and reports

- Physical products such as a models, sculptures, dioramas, musical instruments, or robots
- Portfolios of work samples and academic accomplishments that students collect over time
- Presentations or slideshows that provide a summary of the skills and knowledge students have learned

It is important to note that demonstrations of learning are typically purposeful teaching strategies designed to achieve specific educational outcomes—i.e., they are not merely "show and tell" opportunities. For example, demonstrations of learning can help teachers determine whether students have acquired skills that cannot be easily evaluated by traditional tests or papers, including the ability to apply skills and knowledge learned in one subject area (Committee on Undergraduate Science Education, 1997).

Although demonstrations of learning can vary widely in structure, purpose, evaluation criteria, and learning objectives from school to school, they commonly require students to present, explain, or defend their project design, theory or action, or results (as in the case of a scientific experiment, for example). Whether students solve a complicated math problem, write a position paper on a social issue, design a working robot, or produce a work of art, drama, or engineering, demonstrations of learning require them to articulate their ideas and respond to questions and inquiries from teachers or other reviewers (Duru, 2010).

Problem-solving Method: According to Aliyu (2006) problem-solving or inquiry method of teaching is a useful method of developing skills in students to learn how to solve problem by themselves by reflecting and pondering on alternative means of arriving at the expected solution. He further stated that it increases students understanding of related concepts and judgement in vocational courses such as typing of letter, writing reports and other production copy. UBEB (2008) regarded this method as the type that allows learners to use scientific investigation to arrive at generalization and conclusion. On the other hand Merlot (2009) opined that this instructional method challenges students to "learn to learn" working in

groups to seek solution to real life problem. It is a method that allows students to work on their own under the guidance of a teacher until they arrive at a clear understanding of a problem by themselves and accept responsibility for all the trial and error steps before finally arriving at the correct answer.

The major advantage of this method is that students have the opportunity to work at their own pace and know the purpose for which they are working. It builds research skills and experiences that helps brilliant students become inventors in life. It generates interest and enthusiasm especially when expected solutions are arrived at in the end. However time may be taken and trial and error involved could discourage some learners. Will this difference in achievement exist if appropriate strategy is used in teaching?

There is no single method which can be regarded as best for every teaching situation. Ada (2005) reported that there are number of criteria available that may guide the teacher in the choice of any given method of teaching which include: the content to be taught, objectives to be achieved, time available, number of students, teachers' preferences and individual differences, the type of lesson, facilities available, needs and interest of the class, among others. There is a significant relationship in the instructional strategies employed by teachers for students' achievements. Problem-solving method in the teaching of science students' influence their academic performance and students taught physics via problem-solving method have a mean score higher than their counterparts who were taught the same concept with lecture approach.

Lecture method: Lecture method is the oldest method of teaching. It is based on the philosophy of idealism. This method refers to the explanation of the topic to the students. The emphasis is on the presentation of the content. The teacher clarifies the content matter to the students by using gestures, simple devices, by changing voice, change in position and facial expressions (Pakpa, 2013). Teachers are more active and students are passive but the teacher also asks questions to keep the students attentive.

Lecture method is most convenient and inexpensive method of teaching any subject. It hardly requires the use of scientific apparatus, experiment, and aids materials except for the black board. Lecture method is teacher controlled and information centered approach in which teacher works as a role resource in classroom instruction. In this method, the only teacher does the talking and the student is passive listens (Mtsem, 2011). This creates dullness in the classrooms as the interaction between the pupil and teacher ceases to occur. This method is economical and can be used among large number of students. It saves time and also covers syllabus. It is the simplest method for teachers and does not require any arrangements (Weiner, 2011). It gives the students training in listening. It provides an opportunity an opportunity for better clarification of the topics and lying stress on significant ideas. It brings a personal contact and touch to impress or influence the pupils.

In the field of education, lecture method is used very frequently. This method is used in order to acquire knowledge and concept. Lecture method mainly focuses on cognitive objectives. The main emphasis of this strategy is the presentation of the content. In this method teachers plans and controls the whole teaching – learning process. To make the lecture interesting, the teacher can take the help of audio -visual aids. This method is useful in large classes, but it also has some limitations (Oviawe, 2010). This method makes the students passive listeners. There is very little scope for pupil activity. It is against the principle of learning by doing. It does not take into consideration individual differences. It does not develop power of rezoning of the students. It becomes monotonous to the students.

Though this method has much limitation but still it is the most used method. The lecture method can be made effective by using following points matter should be arranged properly. Teacher should have process in between the lesson. These should be abundant repetition of the topic. The teacher should encourage the students to ask questions teaching aids should also be used to make the lecture effective. The content of the lecture should be logical and according to the standard of the students.

Advantages and Disadvantages of Lecture Method

The Lecture Method has both strong points as well as some drawbacks.

The main advantages are:

- It can cover a wide topic within a short time.
- Teacher can teach a large group at the same time.
- Fewer instructional materials are used.
- There is uniformity of facts given to the students.
- Students are given facts so they are saved the time and effort.
- Teacher has full control of what students are to learn.

The shortcomings of the Lecture Method are as follows:

- Students may be passive.
- Method is teacher-centered.
- No communication or interaction among learners.
- Method does not encourage students enquiring or creative mind.
- Individual differences not considered or neglected.
- Students with hearing problems may not get the points.
- The Method assumes too much in respect of students understanding.
- As students are not involved, they may sleep off and they are prone to forget easily what is taught.

Developing intuition, judgement and analytical skills for entrepreneurship

According to Egbule (2018), the word intuition is synonymous with instinct and literally refers to the ability to understand something instinctively, without the need for conscious reasoning. It is often, conceived as a kind of inner perception and sometimes regarded as real lucidity or understanding. Consequently, intuition provides views, understanding, judgments or beliefs that we cannot in every case empirically verify or rationally justify.

Intuition can be trained and its highest level leads into a conscious contact with non-incarnated beings, a process usually called channeling. Cognitive science is beginning to demystify the strong but sometimes inexplicable presence of unconscious reasoning in our lives and thought. It should be noted, however, that as soon as Subjective judgment is involved, rational reasoning is difficult to apply. Intuitive decision making is far more than using common sense because it involves additional sensors to perceive and get aware of outside stimuli and information, sometimes referred to as gut feeling, sixth sense, instinct, inner sense, inner voice or even spiritual guide. These sensors need to be developed or "trained" to make the process of receiving intuitive information a more conscious one (Egbule, 2018).

Entrepreneurs are often confronted with complex and unpredictable tasks which often require making judgments on what is “best” in the particular situation rather than what is “right" in some absolute sense. Generally, judgment has to do with the ability to make a decision" or form an opinion objectively and wisely in matters requiring action, good sense and discretion. This implies that judgment must always be based on a careful thought. Thus, the ability to make considered decisions and come to sensible or rational conclusions require skills (Egbule, 2018).

Good judgements are not made in a vacuum. All relevant information and data must be gathered and considered before judgements are made. All facts, resources, constraints and company values must be considered based on perceptive observations. The entrepreneur must be unbiased and maintain high levels of integrity in forming judgements. It pays to consider geographical or cultural differences in considering situations. Judgements must be based on facts and objective data, not opinions.

Egbule (2018) summarised tips for enhancing judgment skills as follows:

- Be conscious of the degree of ambiguity in the objectives to be achieved, the extent to which the outcomes of activities are known and the measurability of the performance to be controlled.

- Consider all aspects and concomitants in the complexity of issues involved in making the judgment.
- Interact with other entrepreneurs and people within the organization and learn from their experiences.
- Always draw on your previous experience and practical knowledge of issues.
- Be sure you make mental or written note of points as they occur as you may draw on the experience for better judgments.
- Make conscious effort to be conscious of the source and direction of bias and minimize or eliminate it.
- Training and skill top-ups are essential.

Analytical skill therefore refers to the ability to visualise, articulate and solve both complex as well as uncomplicated problems and make sensible decisions based on available information. It includes the ability to collect and analyse information, make decisions and solve problems. Thinking analytically is a skill that can be taught and learned, and improved upon with practice. Analytical skills are essential in the workplace for entrepreneurs, management and workers to ensure necessary problem-solving occurs at various levels to keep productivity and other areas of the workforce functioning smoothly (Egbule, 2018).

In business, analytical skills can be found or developed in such areas as auditing, budgeting, calculating, computing, checking for accuracy, classifying, comparing, collecting information and cost analysis. Other areas include: critical thinking, data analysis, decision-making, diagnosis, evaluating financial recording and analysis. Analytical skills still exist in planning, organising, prioritising, reasoning, research, resolutions, SWOT, taking inventory, synthesis and troubleshooting. Analytical skills can be developed or improved upon through online practice and professional development at workplaces. Many online sites presently offer free challenges and practices on analytical skills development. Also, most workplace offer seminars, training or workshops that may help improve analytical skills. Investment in and reading of relevant books can also help improve one's analytical skill (Egbule, 2018).

Egbule (2018) upheld that analytical input in such a reading exercise will entail:

- evaluating how far the materials are appropriate and up-to-date;
- evaluating how far the evidence or examples used in materials really proves the point that the author claims;
- weighing opinions, arguments or solutions against appropriate criteria;
- thinking or taking a line of reasoning through to its logical conclusion;
- checking for hidden bias or hidden assumptions;
- checking whether the evidence and argument really support the conclusions.

Review of Empirical Studies

Some individuals have undertaken similar studies which are related to the present research. Emelue (2010) identified entrepreneurship skills required by youths in clothing production. Four research questions guided the study. The population was made up of six thousand youths in the cities in the three Senatorial Zones of Delta State. The sample of the study was 200 youths selected from two out of three senatorial zones in the state using multi stage sampling technique. Questionnaire was used for data collection. The findings showed that the youths in Delta State required entrepreneurship skills for planning, organizing, mass production, and marketing skills in clothing production enterprise. Three recommendation were made based on the finding.

Ohia and Obasi (2014) evaluated strategies for repositioning senior Secondary Education in Nigeria for producing entrepreneurial-oriented students. The study sought to identify what skills are imparted to the students practically and the teaching/learning exercises used. The research design was descriptive survey. Government Secondary Schools (236) in Rivers State, Nigeria constituted the population. Proportionate stratified random sampling technique was used to get a sample size of 70 (30%) senior Secondary Schools. The total respondents were 140 made up of 70 principals and 70 vice-principals. Three research questions and one hypothesis guided the study. Data were collected using structured questionnaire. The instrument reliability was established using test re-test method (r-

coefficient was 0.82), Mean (*X*) and standard deviation (SD) were used to answer the research questions and the hypothesis analysed using t-test at 0.05 level of significance. Practically the students were taught some vocational skills like technical drawing, Foods and Nutrition. The entrepreneurial skills imparted to them are communication skills, personality skills, and digital literacy skills. It was recommended among other things that the students should be exposed to more practical skills. Students centered teaching/learning exercise need to be used to encourage active participation of the student.

Ejinkeonye and Chukwuone (2014) identified the strategies for fostering Entrepreneurship Education in Home Economics. It adopted a descriptive survey. The population comprised of 431 Home Economics teachers in the 374 Secondary Schools and 39 Zonal Home Economics officers in Anambra State. There was no sampling. A questionnaire was used for data collection. Data was analyzed using means and t-test for the hypothesis at 0.05 level of significance. The findings indicated that qualified Home Economics teachers, resource materials like textbooks, laboratories and instructional material should be provided and utilized among others. Based on this, the researchers recommended among other things that the government and education stakeholders make conscious effort in fostering entrepreneurship among Home Economics students by making necessary provisions to encourage skills acquisition and entrepreneurship in Home Economics.

Afuwape and Oriola (2017) examined skills in basic science and technology for local technology and entrepreneurship in Nigeria. This study employs a descriptive survey design using a questionnaire as the prime instrument. The study was carried out in Ijebu-North Local Government Area of Ogun State, Nigeria. Four major secondary schools were used (Ijebu-Igbo, Ijebu-Oru, Ijebu-Awa and Ago-Iwoye). In each of the secondary school 30 students were randomly selected to make a total of One Hundred and Twenty (120) students that participated in the study. The instrument was validated and data were analyzed using inferential statistics (simple percentage, mean and t-test at 0.05 level of significance). The validated prime instrument for the descriptive survey design was questionnaire. The data was

analyzed using inferential statistics. The researcher made recommendations that could answer the usual local and global question of "Where next is technology driving the local entrepreneurial?.

Adeyonu and Carim-Sanni (2015) assessed the new trade/Entrepreneurship Education in senior Secondary Schools in Oyo State, Nigeria. The study builds on primary data collected in 2014 from the respondents. The samples were made up of 17 schools, 37 teachers and 317 students from rural areas, while there were 44 schools, 114 teachers and 913 students from the urban areas. These were drawn across the three senatorial districts of the state. The study utilized both quantitative and qualitative techniques in data collection and analysis with questionnaires and observation as main instruments of data collection. Data were collected on schools', teachers' and students' characteristics and were analyzed through the use of descriptive statistics. The analysis reveals that only about 10% (11.8 rural and 9.1 urban) of sampled schools commenced the programme in 2011, while more than 70% selected between only one and two trade subjects for their students. The average age of teachers in the rural communities was 38 years while it stood at 39 years for their urban counterparts. While 76% of the teachers in the rural areas are degree holders, only 68% of those in the urban centres possess the minimum teaching requirement in Secondary Schools. Rural students were exposed to 10, while urban students were exposed to 11 out of the 34 entrepreneurial subjects. Students had learnt significant self-employable entrepreneurial skills in two subjects out of 10 in rural areas and six out of 11 selected subjects in urban areas. The study recommends adequate circulation of the curriculum, provision of equipment and relevant facilities, training and re-training of teachers and adequate funding among others.

Nwodo (2006) investigated on the effectiveness of lecture and demonstration methods of teaching in Lagos state. The study tested the gender variables in learning and secondly to determine the more effective method of teaching at this level. The study was carried out using only two Junior Secondary Schools, a coeducational school in mainland local government area of the state. The population for the study was 360 and 660 from Finban's College and

our Lady's College respectively. 30 students each were used as sample from both schools. The researcher formulated three research questions and null hypotheses. The researcher taught four lessons which lasted for 40 minutes in each school. He administered pre-test and post-test and used percentage to analyse the mean score of the tests. The t-test statistic was also used to test the relative performance of the two means at 0.05 level of significance. The result showed that female students taught by demonstration method performed better than male students taught by lecture method.

Ameh and Dantani (2012) determined the effect of lecture and demonstration methods on academic achievement of students in Chemistry in the Nassarawa Local Government Area of Kano State. Fifty eight (58) Chemistry students (boys and girls) in the Senior Secondary School One (SS1) from two randomly selected schools were involved in the study. Necessary data were collected and the validated reliable data were analyzed using t-test at a significant level of 0.05. Results obtained revealed that students perform better in Chemistry when taught using the demonstration method as compared to the lecture method. The boys and girls are better in academic achievement when taught using demonstration method than when lecture method was used. The demonstration method shows equality in the performance of boys and girls. Hence the adoption of demonstration methods in the teaching and learning of Chemistry and science in general is hereby recommended.

Modak, Patel, Pal, Das and Nain (2018) explored the level of entrepreneurial competence and its relationship with socio-personal characteristics of PostGraduate students of Anand Agricultural University (Gujarat). The 150 postgraduate students were selected on proportionate random sampling basis. To measure entrepreneurship competency level, the indicators advocated by Entrepreneurship Development Institute of India were used. The study revealed that majority (92.00%) of the postgraduate students possessed moderate level of entrepreneurial competency. Among different component traits of entrepreneurial competency, information seeking behaviour, concern for high quality work and efficiency orientation were important. Socio-personal characters such as knowledge of different

languages, fathers' level of education and risk orientation had positive impact on academic performance and agricultural business anxiety had negative impact on possession of entrepreneurial competency.

Sovyanhadi and Cort (2004) examined a Foods and Nutrition instruction program consisting of two content sessions: food-label reading, and food pyramid guide. In each session two groups of nutrition interns utilized four teaching methods: role-play/video presentation/display, grocery store tour, overhead transparency and lecture, and power point lecture, among a group of (N = 29) ninth grade, high school students. The purpose was to determine the most effective method of delivering Foods and Nutrition instruction to high school students. Analysis using the Kruskal Wallis One-way Analysis of Variance showed that the combination method of role-playing/video presentation/visual display was most effective in the food pyramid session (χ^2= 8.13, p = .04). While this method was given the highest rank in the food-label reading session it was not statistically significant. These results show that a combination of methods classified as the teacher's style, is more effective than a style that involves a single teaching method.

Hsu and Brenda (2013) examined the challenges faced by secondary teachers who teach Foods and Nutrition, and how the challenges can be addressed. The purpose of this qualitative research study was to explore the challenges and solutions through the teachers' asynchronous online text conversations on a professional e-mail listserv. A total of 2,586 e-mails from a statewide e-mail listserv, with 978 emails identified as Foods and Nutrition-related content, were collected. The findings show that challenges lie in food lab management, budgeting, and planning. In addition, food allergies, a lack of administration support in course scheduling, limited Spanish materials, restricted or indistinct school policies for the use of teaching aids created barriers to effective classroom practice. In conclusion, the study found the listserv to be a valuable tool for secondary teachers to support one another's needs when teaching Foods and Nutrition.

Audu (2013) investigated the effect of Foods and Nutrition instruction programme on food-related- knowledge and attitudes of literate women in Pankshin community. The non-randomized control group (lecture method) pre-test post-test quasi-experimental design was employed for the study. The instruments for data collection were a self developed 53 items nutritional knowledge and attitude questionnaire (NKAQ) and 24 content 12 weeks unit plans. The findings of the study showed that there was statistical significant difference between the mean scores of the nutritional knowledge of women exposed to Foods and Nutrition instruction programme (NEP) and those not exposed to NEP. There was statistical significant difference between the mean scores of the nutritional attitudes of the women exposed to NEP and those not exposed to NEP. Level of education has no significant influence on the nutritional attitudes of the women. Age has no significant influence on the nutritional attitudes of the women. Based on these findings, suggestions were proffered on ways to curtail the problems of nutritional disorders

Nwokolo and Eluwa (2009) investigated the strategies for inculcating Home Economics based life (survival) skills among rural women as a panacea for poverty alleviation. The study was a descriptive survey that was based on two research questions. From a population of 1,815 respondents, purposive sampling was used to select a sample of 253 respondents (40 Home Economics teachers and 213 secretaries of registered women cooperative societies in ten Local government Areas of Anambra State. A questionnaire titled "Inculcating Home Economics-Based Life Skills for Poverty Alleviation (IHELSPA)" was used for data collection. Data was analysed using mean ratings. The findings included that several Home Economics based life skills could be inculcated among the rural women using a range of networking approaches. Among the recommendations was that Government and non-governmental organizations should mobilize communities, youth groups, and other private sector organizations to network and contribute in building the capacities of rural women in Home Economics based life (survival) skills.

Achor (2014) examined strategies for utilizing Foods and Nutrition instruction for Sustainable Household Nutrition in Nigeria. The paper portrays Foods and Nutrition instruction as a tool for initiating that spark of creative and innovative thinking, changes of behaviour, development of attitudes, skills and confidence people need to improve their nutrition practices. However, effective Foods and Nutrition instruction must be conveyed through a suitable approach. This paper also advanced some strategies that would make Foods and Nutrition instruction, meaningful and sustainable to recipients.

Appraisal of Reviewed Literature

Literature relating to impact of Foods and Nutrition instruction on Secondary School Students acquisition of entrepreneurial skills has been reviewed. As far as teaching and learning is concerned the teacher is the critical factor. The role of the teacher in the learning process can be likened to the role of a driver of a vehicle or a pilot of an airplane in the transport sector. The goal of the whole education industry and the society in general cannot be achieved without the teacher. So the onus of making children to learn and understand, discover their talents and abilities, perform academic tasks as required, inculcate societal values and culture rests squarely on the teacher.

It has been proved beyond reasonable doubts through studies that where appropriate methods of instruction have been effectively used to teach students they learn and perform well. Where students cannot perform we can safely conclude that learning did not take place. The three methods of teaching discussed in this research work namely, Lecture method, demonstration methods and problem-solving method are methods that emphasized varying degrees of participation by the learners. It is a known fact that any method that involves participation by the learner encourages and appeals to cognitive, affective and psychomotor domains of learning and are therefore learner centred. Foods and Nutrition being a skill subject not only require learner centred approaches to teaching it, but demands understanding of each step in the presentation of the lessons for comprehending the whole topic in a given part of the subject. This is what makes a particular method a key to learning.

Drawn from the definitions of many authors, skill is the ability to do or perform an activity that is related to some meaningful actions, works or jobs. Foods and Nutrition instruction is that form of education that provides people with knowledge, skills and confidence to change harmful food habits while adopting positive and lasting healthy nutrition practices. Entrepreneurial skill can be defined as the ability to create something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence. Entrepreneurship is therefore concerned with the persistent pursuits of opportunities to create wealth through creation of products or services that meet customer's needs.

There are many theories of teaching, learning and entrepreneurship but Ausubel learning theory, Social cognitive theory and Schultz theory (human capital approach) of entrepreneurship were adopted to support this study. Ausubel's believes that acquisition of entrepreneurial skill relies on what is already known. That is, construction of knowledge begins with our observation and recognition of events and objects through concepts we already have. Social Cognitive Theory explains that an individual's sense of self-efficacy can be influenced through four processes: enactive mastery, role modeling and vicarious experience, social persuasion, and judgements of one's own physiological states, such as arousal and anxiety, therefore entrepreneurial self-efficacy is a variable useful for increasing students' convictions that they can execute the necessary entrepreneurial skills to produce the desired result. Finally the Schultz theory conceives entrepreneurial skill as a form of human capital and this ability can be increased through Foods and Nutrition instruction, training, experience, health care, and so on

From the various empirical reviews of literature, the interventions reviewed were methodologically diverse. They often had incomplete methodological descriptions, used convenience samples, lacked a control group (lecture method), and had very small cohorts. These kinds of shortcomings limit comparisons that can be made between studies and also

limit any kinds of definitive conclusions that can be made. Additionally, with the data being self-reported, there are inherent limitations including recall bias. Lastly, there was significant selection bias as researchers had limited tools to contact students for recruitment. Majority of the studies were largely limited by the small number of participants in the study and that it was an exploratory study and not a randomized controlled trial. Largely, the biggest limitations for all studies were small sample size, recruitment methods, study design, and self-report bias. Given that most Foods and Nutrition instruction entail the same kinds of limitations, it would be ideal to develop a strong experimental study with a quasi research design and a scientific recruitment process to truly evaluate the impact of Foods and Nutrition instruction on Secondary School Students acquisition of entrepreneurial skills. Therefore, the gap that this study intends to fill is to establish the relationship between Foods and Nutrition instruction and students acquisition of entrepreneurial skills.

CHAPTER THREE

RESEARCH METHODS AND PROCEDURES

This chapter comprised of Design of the Study, Area of the Study, Population of the Study, Sample and Sampling Technique, Instrument for Data Collection, Validation of Instrument, Reliability of the Instrument, Experimental Procedure, Control of Extraneous Variables, Administration of the Instrument, Method of Data Collection and Method of Data Analysis

Design of the Study

The study adopted a quasi-experimental research design. The prefix quasi means "resembling." Thus quasi-experimental research is research that resembles experimental research but is not true experimental research. Although the independent variable is manipulated, participants are not randomly assigned to conditions or orders of conditions. Because the independent variable is manipulated before the dependent variable is measured, quasi-experimental research eliminates the directionality problem. Because participants are not randomly assigned—making it likely that there are other differences between conditions—quasi-experimental research does not eliminate the problem of confounding variables.

The study therefore implements a quasi-experimental research design in which the dependent variable is measured once before the treatment is implemented and once after it is implemented. The pretest-posttest design is much like a within-subjects experiment in which each participant is tested first under the control condition and then under the treatment condition. It is unlike a within-subjects experiment, however, in that the order of conditions is not balanced because it typically is not possible for a participant to be tested in the treatment condition first and then in an "untreated" control condition. If the average posttest scores is better than the average pretest score, then it makes sense to conclude that the treatment might be responsible for the improvement. This design is appropriate for use when introducing new procedures, technologies or for educational practices (Garba, 1993; Ikeoji, 1996). The

researcher developed and validated an instrument for measuring psycho-productive skills in Foods and Nutrition. This was produced by gathering and analyzing relevant data which ascertained the psychometric properties of the instrument as adequate for educational use. However, assignment of group to different treatment condition was randomly done. The two treatment groups and the control group (lecture method) was each given pretest before treatment and a post-test after treatment. The pre-test was used to establish equality or no difference between the treatment groups at the beginning of the experiment only. The design is as represented in the Table 3.1:

Table 3.1: Design Outlay

Grouping	**Pre-Test**	**Research Condition (Treatment)**	**Post-Test**
Experimental group I (Demonstration Method)	Q_1	X_l	Q_2
Experimental group II (Problem-solving method)	Q_1	X_2	Q_2
Control group (lecture method) (Lecture method)	Q_1	X_3	Q_2

Where Q_1 = Shows test before treatment

X_l = Shows treatment condition 1

X_2 = Shows treatment conditions 2

X_3 = Control treatment (Lecture)

Q_2 = Shows post-test (after treatment)

Area of the Study

The study was conducted in Anambra State of Nigeria. Anambra is a state in south eastern Nigeria. The capital and seat of government is Awka. Boundaries are formed by Delta State to the west, Imo State and Rivers State to the South, Enugu State to the east, and Kogi State to the north. The name was derived from the Anambra River (Omambala) which flows through the area and is a tributary of the River Niger. The indigenous ethnic groups in Anambra state are the Igbo (98% of population) and a small population of Igala (2% of the population), who live mainly in the north-western part of the state. Anambra is the eighth-most populated state in the Federal Republic of Nigeria and the second-most densely populated state in Nigeria after Lagos State. The stretch of more than 45 km between the towns of Oba and Amorka contains a cluster of numerous thickly populated villages and small towns, giving the area an estimated average density of 1,500–2,000 persons per square kilometre. Anambra is rich in natural gas, crude oil, bauxite, and ceramic. It has an almost 100 percent arable soil.

Population for the Study

The population of the study consists of all the 21,658 Senior Secondary School two (SSII) students in 254 Secondary Schools from the six education zones in Anambra as shown in the 2017/2018 academic session (Appendix A). The 254 schools that consisted the population for the study have a qualified Foods and Nutrition teacher for 12 months before data collection for effective coverage of SSI work; Have laboratory equipment in Foods and Nutrition; Have been using National Foods and Nutrition Curriculum and; Have covered SSI aspect of Foods and Nutrition Curriculum to be determined by inspection of scheme, records of work and students' note book.

The Senior Secondary School two (SSII) students are considered appropriate for use in this study because the class is not preparing for any external examination unlike JSS III

and SSIII classes and are therefore expected to have time for the research; SSII students have completed SSI work in Foods and Nutrition.

Sample and Sampling Technique

Two hundred and forty (240) students constituted the sample size for the study as shown in Table 3.2. There are six educational zones in Anambra State. They include Onitsha, Aguata, Nnewi, Otuocha, Ogidi and Awka. The three senatorial districts in the State are (a) Anambra North, comprising Awka North and South, Njikoka, Dunukofia, Anaocha, and Idemili North and South Local Government Areas (LGAs); (b) Anambra Central, made up of Onitsha North and South, Ogbaru, Oyi, Ayamelum, and Anambra East and West LGAs; and (c) Anambra South consisting of Orumba North and South, Aguata, lhiala, Ekwusigo, and Nnewi North and South LGAs.

Using multi-stage purposive sampling technique, the sample for this study consists of six secondary schools drawn from the 254 Secondary Schools in Anambra State, the schools includes Onitsha High School Onitsha (SCHOOL 1), Community High School Nsugbe (SCHOOL 2), Community Secondary School Nnewichi Nnewi (SCHOOL 3), Community Secondary School Oko (SCHOOL 4), Community Secondary School Obosi (SCHOOL 5) and Emeka Aghasili High School Nise (SCHOOL 6). Two schools were taken from each of the three senatorial zones.

In Anambra State, schools were grouped into rural and urban in each educational zone. The selected schools comprised of three rural and three urban schools which made up the six selected Secondary Schools with a total number of two hundred and forty (240) students for the study. The assignment of classes to treatment and control group (lecture method) was through a simple random technique and all the groups were taught the same lesson. Table 3.2 shows the distribution of experimental and control group (lecture method).

Table 3.2: Distribution of Experimental and Control group (lecture method)

Loc.	School	Method	Treatment	Gender		Total
				Female	Male	
URBAN SCHOOLS	SCHOOL 1	LM	Pre-test/ Post-test	14		
					9	
		DM	Pre-test/ Post-test	9		
					3	
		PM	Pre-test/ Post-test	9		
					2	
						46
	SCHOOL 3	LM	Pre-test/ Post-test	13		
					7	
		DM	Pre-test/ Post-test	10		
					6	
		PM	Pre-test/ Post-test	11		
					4	
						51
	SCHOOL 5	LM	Pre-test/ Post-test	11		
					6	
		DM	Pre-test/ Post-test	9		
					3	
		PM	Pre-test/ Post-test	10		
					4	
						43
RURAL SCHOOLS	SCHOOL 2	LM	Pre-test/ Post-test	12		
					4	
		DM	Pre-test/ Post-test	6		
					1	
		PM	Pre-test/ Post-test	9		
					2	
						34
	SCHOOL 4	LM	Pre-test/ Post-test	10		
					3	
		DM	Pre-test/ Post-test	9		
					2	
		PM	Pre-test/ Post-test	8		
					2	
						34
	SCHOOL 6	LM	Pre-test/ Post-test	9		
					2	
		DM	Pre-test/ Post-test	9		
					3	
		PM	Pre-test/ Post-test	8		
					1	
						32
						240

LM: Lecture method, DM: Demonstration method, PM: Problem-solving method.

Instrument for Data Collection

The instrument was essentially designed to evaluate students' abilities in the psycho productive areas, i.e. Skills in Foods and Nutrition. The instrument is a self developed Instrument for Measuring Psycho Productive Skills in Foods and Nutrition (IMPPSFN) drawn from the entrepreneurial-oriented topics/areas in the curriculum for Senior Secondary School two (SSII) and other textbooks used in Senior Secondary Schools.

Following the literature review and experience of the researcher, six areas were purposefully selected for developing the instrument. The researcher also considered the various groups of foods as provided in the curriculum. There are six tasks in the instrument as follows:

1. Preparation and Packaging of Fried Rice
2. Preparation and packaging of water yam flour
3. Making Banana Ice Cream
4. Preparation of cake
5. Preparation of canned tomatoes
6. Preparation of spice mixtures

Based on the selected areas, the researcher followed the guidelines in Ikeoji (1996) to identify competencies or activities hereafter referred to as items in line with Harrow's (1992) taxonomy of psychomotor objectives whose levels include the following:

a) Basic Fundamental Movements (BFM).
b) Perceptual Abilities (PA).
c) Physical Abilities (Ph.A).
d) Skilled Movements (SM).
e) Non-discursive Communication (NDC).

This classification was used to develop the table of specification as shown in table 3.3 below. The items are written out using the researcher's experience in teaching the various

tasks as well as description of such tasks as documented in textbooks. Further the logical or rational approach was adopted in writing the items. According to Ikeoji (1996), this approach demands that the instrument developer having been exposed to the theories and literature on the particular subject of interest produces items which appear to have relevance or relationship with the subject. Though aspects of the cognitive and affective domains were discovered to be very relevant, they were the aspects most teachers easily accessed and therefore, the psychomotor domain was considered most important as it was being neglected. The table of specification was weighed based on the various models of the psychomotor domain weighed the items in the tasks as shown in the table of specification. Accurate measurement and proper hygiene were emphasised.

Validity of the Instrument

The Instrument for Measuring Psycho Productive Skills in Foods and Nutrition (IMPPSFN) was given face and content validity by five experts in Measurement and Evaluation and Foods and Nutrition Education from Delta State University, Abraka and Nnamdi Azikiwe University, Awka. The IMPPSFN was developed from the Foods and Nutrition content areas for SSII adapting the procedures of Ikeoji (1996) by first constructing a table of specification (Table 3.3) for the different contents areas including time and energy management in food preparation, Flour mixtures, Food flavourings and colouring, Food study (Eggs), Storage and preservation of foods, Condiments and seasonings. Three of the validates were from Foods and Nutrition, while the other two were from Measurement and Evaluation department. The experts were therefore, requested to do the following:

1. Review and revise the items (if necessary) in line with the objectives.
2. Reword/delete/add items as they consider appropriate.
3. Make general comment(s) on the usability of the instrument.

The validators criticisms and suggestions were put into considerations in the production of the final draft of the instrument.The essence of ensuring face validity is to build in rapport or proper public relationship.

Table 3.3: Table of Specification on Instrument for Measuring Psycho Productive Skills in Foods and Nutrition (IMPPSFN)

S/N	TASKS	PSYCHOMOTOR LEVEL							Percentage (%)
		NO. OF ITEMS	BFM	PA	PH.A	SM	NDC	TOTAL	
1	Preparation And Packaging of Fried Rice	9	1	1	2	2	3	9	18%
2	Preparation and packaging of water yam flour	7	2	2	1	1	1	7	14%
3	Preparation of Banana Ice Cream	9	1	2	1	2	3	9	18%
4	Preparation of cake	10	1	2	2	2	3	10	20%
5	Preparation of canned tomatoes	8	1	2	2	1	2	8	16%
6	Preparation of spice mixtures	7	2	1	2	1	1	7	14%
	Total	50	8	10	10	9	13	50	
	Percentage		16%	20 %	20%	18%	26%		100%

BFM = Basic Fundamental Movements, PA=Perceptual Abilities, PH.A=Physical Abilities, SM=Skilled Movements, NDC=Non-discursive Communication.

Reliability of the Instrument

The reliability of the instrument was established by using Cronbach alpha for estimating the internal consistency of the instrument. This yielded reliability coefficient of 0.94 for preparation and packaging of fried rice; 0.90 for preparation and packaging of water yam; 0.92 for making of banana ice cream; 0.87 for preparation of cake; 0.88 for preparation of canned tomatoes and 0.94 for preparation of spice mixture. See Appendix 4.

Experimental Procedures

1. Co-ordination of Teachers for the Study: The regular Foods and Nutrition teachers of the sampled schools for the study was trained by organizing a workshop on the study procedure for them. The workshop or coordination exercise lasted for a week before the commencement of the study. The coordination exercise was concentrate on the purpose of the study, content area to be taught, use of the lesson notes that was prepared by the researcher and the mode of evaluation. The teachers were coordinated on how to teach the experimental groups with demonstration and problem-solving methods while the control group (lecture method) was taught with the lecture method.

2. Treatment Procedure: Three instructional methods were used for this study. The first two approaches involved the use of demonstration and problem-solving methods, while the third approach made use of lecture method. The three methods are identical in terms of content, basic instructional objectives and mode of evaluation. The only difference may be in the instructional activities. Demonstration and problem-solving methods was used for the treatment groups 1 and 2 respectively while the lecture method was used for the control group (lecture method).

3. Control of Extraneous Variables: The following measures was taken to control some of the extraneous variables in the study:

i) ***Initial group differences***: Randomisation is one of the measures for controlling initial group differences in experimental studies. However, this was not done in the present study since the process will disrupt normal school administration. Instead, intact classes was used. Thus, to control the initial differences of subjects in the intact classes, analysis of covariance (ANCOVA) was employed in analyzing the data.

ii) ***Experimenters bias:*** When researcher involved external subjects (students) in their experiment, they become sensitized that they are being used for a study. Consequently, they tend to behave mechanically and fake most of their actions. This introduces experimenter's bias. In order to avoid the bias in the study, the regular Foods and Nutrition teachers in each of the selected schools was trained. The researcher monitored these teachers so as to ensure that they effectively adhere to the instructions.

iii) ***Teacher variable:*** When different teachers are involved in an experiment, the problem of teacher variable is likely to arise since different teachers possess different standards in terms of knowledge of the content, methodology and evaluation. In order to control this variable in the study, the researcher prepared lesson plan for problem-solving group, demonstration method and lecture method on Foods and Nutrition topics that was used in the study. The researcher trains the teachers on how to effectively use these lesson plan.

iv) ***Variability of Instructional Situation:*** Homogeneity of instruction across groups is ensured as follows:

a) The researcher trained all the teachers on the instructional procedure involved.

b) The teachers was directed to strictly follow the detailed lesson plan provided.

c) The demonstration, problem-solving and lecture methods subjects was taught the same topics and with the regular periods allotted to Foods and Nutrition in the school timetable.

vi) ***Student Interaction:*** The researcher was aware of the possible interaction between the students in demonstration, problem-solving and lecture groups, arising from the use of these groups within the same school compound. Consequently, the teachers was instructed to give no notes or assignments to students so that exchange of ideas outside the classroom by the students will be reduced.

vii) ***Training of Teachers:*** Teachers that administered the experimental treatment to the students was trained to enable them acquire the necessary competencies required to effect the

implementation of uniform experimental conditions. The training programme lasted for one week.

viii) ***Instructional Situation Variable:*** Instructional situation was the same for all the groups, since intact classes from SS II students was used and lesson plans bearing the same contents was also be used.

ix) ***Instrumental Variables:*** The variables that was introduced as a result of misinterpretation of the instrument for data collection by the subjects was removed by trial testing the instrument before actual experiment. Any ambiguity discovered was removed. The instrument used was also subjected to validity tests by experts in the field.

Method of Data Analysis

The mean ($\bar{x}$) and standard deviation of the rating was computed. The intra-class correlational technique was adopted to determine the degree of agreement among the raters. Analysis of covariance (ANCOVA) which is a general linear model which blends ANOVA and regression was used to test the null hypotheses at 0.05 level of significance. The analysis was done using the Statistical Package for the Social Sciences (SPSS). With regards to the mean ($\bar{x}$) gain difference, it is the difference between two mean ($\bar{x}$) scores that was used to explain whether there is a positive/negative change in the two mean ($\bar{x}$) values.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION

This chapter presents the analysis of data collected for the study based on the research questions and hypotheses.

Research Question 1

What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?

Table 4.1: Mean ($\bar{x}$) and Standard derivation of pre-test and post-test scores of Secondary School Students in Anambra State exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and those exposed to lecture method

Treatment group		**Pre-test**	**Post-test**	**Mean ($\bar{x}$) difference**
Demonstration method	Mean($\bar{x}$)	68.36	74.99	6.63
	N	70	70	
	Std. Deviation	7.349	9.436	
	Std. Error of Mean($\bar{x}$)	.878	1.128	
	Variance	54.001	89.029	
Lecture method	Mean($\bar{x}$)	53.53	57.58	4.05
	N	100	100	
	Std. Deviation	6.232	5.817	
	Std. Error of Mean	.623	.582	
	Variance	38.837	33.842	
Total	Mean($\bar{x}$)	59.64	64.75	5.11
	N	170	170	
	Std. Deviation	9.918	11.401	
	Std. Error of Mean	.761	.874	
	Variance	98.363	129.989	

The results in Table 4.1 shows that based on demonstrationand lecture method treatment groups, Secondary School Students exposed to demonstration had pre-test and

post-test mean ($\bar{x}$) scores of 68.36 and 74.99 with a 6.63 mean ($\bar{x}$) difference. On the other hand, those exposed to lecture method had a pre-test and post-test mean ($\bar{x}$) scores of 53.53 and 57.58 with a mean ($\bar{x}$) score difference of 4.05, indicating that those students exposed to demonstration had acquired higher entrepreneurial skills in Foods and Nutrition compared to those exposed to lecture method.

Research Question 2

What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?

Table 4.2: Mean ($\bar{x}$) and Standard derivation of pre-test and post-test scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and those exposed to lecture method.

Treatment group		Pre-test	Post-test	Mean ($\bar{x}$) difference
Problem-solving	Mean($\bar{x}$)	65.26	70.90	5.64
	N	70	70	
	Std. Deviation	7.330	8.891	
	Std. Error of Mean	.876	1.063	
	Variance	53.730	79.048	
Lecture method	Mean($\bar{x}$)	53.53	57.58	4.05
	N	100	100	
	Std. Deviation	6.232	5.817	
	Std. Error of Mean	.623	.582	
	Variance	38.837	33.842	
Total	Mean($\bar{x}$)	58.36	63.06	4.7
	N	170	170	
	Std. Deviation	8.843	9.764	
	Std. Error of Mean	.678	.749	
	Variance	78.196	95.327	

The results in Table 4.2 shows pre-test, post-test mean scores of Secondary School Students and mean ($\bar{x}$) difference scores based on their treatment groups. In terms of their mean ($\bar{x}$) scores based on problem-solving method, pre-test and post-test mean ($\bar{x}$) scores

were 65.26 and 70.90 with a mean ($\bar{x}$) difference score of 5.64; those exposed to lecture method were 53.53 and 57.58 with a mean ($\bar{x}$) gain score of 4.05. Table 4.2 showed that Secondary School Students who were exposed to problem-solving method demonstrated more entrepreneurial skills in Foods and Nutrition compared to their counterparts exposed to lecture method.

Research Question 3

What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to demonstration and problem-solving methods?

Table 4.3: Mean ($\bar{x}$) and Standard deviation of pre-test and post-test scores of Secondary School Students in Anambra State who were exposed to demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

Treatment Group	**Pre-test**			**Post-test**			**Mean ($\bar{x}$) difference**
	Mean ($\bar{x}$)	**SD**	**N**	**Mean ($\bar{x}$)**	**SD**	**N**	
Experimental group 1 (Demonstration method)	68.36	7.349	70	74.99	9.436	70	6.63
Experimental group 2 (Problem-solving method)	65.26	7.330	70	70.90	8.891	70	5.64
Lecture method	53.53	6.232	100	57.58	5.817	100	4.05
Total	61.27	9.572	240	66.54	11.072	240	5.27

Table 4.3 shows pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students who were exposed to demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method). In terms of the skills acquired, those exposed to demonstration method had the

highest post-test scores of 74.99 and the highest mean ($\bar{x}$) difference of 6.63 while those exposed to lecture method had the lowest post-test score of 57.58. Comparing problem-solving method and demonstration method, Table 4.3 indicated that those Secondary School Students who were exposed to demonstration method acquired more entrepreneurial skills than their counterparts in problem-solving group. On the whole, Secondary School Students who were exposed problem-solving and demonstration methods performed better than their counterparts who were exposed to lecture method on entrepreneurial skills acquisition in Foods and Nutrition.

Research Question 4

What is the difference in pre-test and post-test mean ($\bar{x}$) scores of Urban And Rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition?

Table 4.4: Mean ($\bar{x}$) and Standard deviation of pre-test and post-test mean ($\bar{x}$) scores of Urban And Rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition.

Treatment Group	**Location**	**Pre-test**			**Post-test**			**Mean ($\bar{x}$) difference**
		Mean ($\bar{x}$)	**SD**	**N**	**Mean ($\bar{x}$)**	**SD**	**N**	
Control group (lecture method)	Urban	59.78	8.182	60	63.53	8.734	60	3.75
	Rural	32.33	6.498	40	46.08	6.549	40	13.75
	Total							
(Lecture method)		48.80	15.470	100	56.55	11.673	100	7.75
Experimental group 1 (Demonstration method)	Urban	77.98	6.934	40	86.43	7.082	40	8.45
	Rural	71.27	7.570	30	81.50	9.258	30	10.23
	Total	75.10	7.902	70	84.31	8.390	70	9.21
Experimental group 2 (Problem-solving method)	Urban	73.98	6.934	40	80.80	7.487	40	6.82
	Rural	68.27	7.570	30	81.73	9.048	30	13.46
	Total	71.53	7.704	70	81.20	8.143	70	9.67
Total	Urban	69.04	11.062	140	75.01	12.891	140	5.97

	Rural	54.79	19.784	100	67.40	19.293	100	12.61
	Total	63.10	16.818	240	71.84	16.277	240	8.74

The results in Table 4.4 shows pre-test, post-test mean ($\bar{x}$) scores of Urban And Rural Secondary School Students who were exposed to demonstration, problem-solving and lecture methods. Mean ($\bar{x}$) scores based on location for students exposed to lecture method shows that the pre-test and post-test mean ($\bar{x}$) scores of those in urban area were 59.78 and 63.53 with a mean ($\bar{x}$) difference score of 3.75. Those in rural area exposed to lecture method had mean ($\bar{x}$) scores 32.33 and 46.08 as pre-test and post-test respectively and a mean difference score of 13.75.

Mean ($\bar{x}$) scores based on location for students exposed to demonstration method shows that the pre-test and post-test mean ($\bar{x}$) scores of those in urban area were 77.98 and 86.43 with a mean ($\bar{x}$) difference score of 8.45. Those in rural area exposed to demonstration method had mean ($\bar{x}$) scores 71.27 and 81.50 as pre-test and post-test respectively and a mean ($\bar{x}$) difference score of 10.23. Mean ($\bar{x}$) scores based on location for students exposed to problem-solving method shows that the pre-test and post-test mean ($\bar{x}$) scores of those in urban area were 73.98 and 80.80 with a mean ($\bar{x}$) difference score of 6.82. Those in rural area exposed to problem-solving method had mean ($\bar{x}$) scores 68.27 and 81.73 as pre-test and post-test respectively and a mean ($\bar{x}$) difference score of 13.46.

The total mean ($\bar{x}$) difference scores for students in rural area have the highest value of 12.61 suggesting that Secondary School Students in rural area acquired more entrepreneurial skills acquisition in Foods and Nutrition compared to their urban counterpart.

Research Question 5

What is the difference in pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition?

Table 4.5 shows pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students who were exposed to lecture method, demonstration method and problem-solving method. Mean ($\bar{x}$) scores based on gender for students exposed to lecture method shows that the pre-test and post-test mean ($\bar{x}$) scores of female students were 57.87 and 63.62 with a mean ($\bar{x}$) difference score of 5.75. Male students exposed to lecture method had mean ($\bar{x}$) scores 42.42 and 44.74 as pre-test and post-test respectively and a mean ($\bar{x}$) difference score of 2.32.

Mean ($\bar{x}$) scores based on gender for female students exposed to demonstration method shows that the pre-test and post-test mean ($\bar{x}$) scores of female were 73.73 and 82.50 with a mean ($\bar{x}$) difference score of 8.77. However, male students exposed to demonstration method had mean ($\bar{x}$) scores 60.50 and 62.33 as pre-test and post-test respectively and a mean ($\bar{x}$) difference score of 1.83. Furthermore, the mean ($\bar{x}$)scores based on gender for female students exposed to problem-solving method shows that the pre-test and post-test mean ($\bar{x}$) scores of female were 71.75 and 78.91 with a mean ($\bar{x}$) difference score of 7.16. Their male counterpart exposed to problem-solving method had mean ($\bar{x}$) scores 58.73 and 60.67 as pre-test and post-test respectively and a mean ($\bar{x}$) difference score of 1.94.

Table 4.5: Mean ($\bar{x}$) and Standard deviation of pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition.

Treatment Group	**Gender**	**Pre-test**			**Post-test**			**Mean ($\bar{x}$) difference**
		Mean ($\bar{x}$)	**SD**	**N**	**Mean ($\bar{x}$)**	**SD**	**N**	
Control group (lecture method) (Lecture method)	Female	57.87	7.673	69	63.62	8.748	69	5.75
	Male	42.42	8.049	31	44.74	8.493	31	2.32
	Total	53.08	10.566	100	57.77	12.307	100	4.69
Experimental group 1	Female	73.73	4.691	52	82.50	6.620	52	8.77
	Male	60.50	4.502	18	62.33	4.627	18	1.83

(Demonstration method)	Total	70.33	7.428	70	77.31	10.793	70	6.98
Experimental group 2 (Problem-solving method)	Female	71.75	4.563	55	78.91	6.349	55	7.16
	Male	58.73	4.166	15	60.67	4.117	15	1.94
	Total	68.96	6.981	70	75.00	9.583	70	6.04
Total	Female	66.89	9.440	176	73.98	11.245	176	7.09
	Male	51.33	10.785	64	53.42	10.777	64	2.09
	Total	62.74	11.978	240	68.50	14.359	240	5.76

Examining the mean ($\bar{x}$) scores based on gender shows that male students had the least pre-test and post-test scores. However, female group had the highest standard deviation at pre-test and post-test stages.

Hypothesis 1

There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

Table 4.6: One-way analysis of variance on pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

		Sum of Squares	**df**	**Mean ($\bar{x}$) Square**	**F**	**Sig.**
Pre-test	Between Groups	9052.407	1	9052.407	200.873	.000
	Within Groups	7570.981	168	45.065		
	Total	16623.388	169			
Post-test	Between Groups	12474.778	1	12474.778	220.761	.000
	Within Groups	9493.346	168	56.508		
	Total	21968.124	169			

The result in Table 4.6, indicated the F-value of 200.873 for pre-test and 220.761 for post-test with the P – value of 0.000; testing the null hypothesis at an alpha level of 0.05, the

P-value of 0.000 was less than the alpha level of 0.05. Hence, the null hypothesis was rejected. This revealed that there was significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

Hypothesis 2

There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

Table 4.7: One-way analysis of variance on pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Pre-test	Between Groups	5662.830	1	5662.830	125.969	.000
	Within Groups	7552.281	168	44.954		
	Total	13215.112	169			
Post-test	Between Groups	7305.628	1	7305.628	139.397	.000
	Within Groups	8804.660	168	52.409		
	Total	16110.288	169			

There was a statistically significant difference between groups as determined by one-way ANOVA ($F(1, 168) = 125.969$, $p = 0.000$) for pre-test and ($F(1, 168) = 139.397$, $p = 0.000$) for post-test. Hence, the null hypothesis which states that "there is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)" was rejected.

Hypothesis 3

There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods.

Table 4.8: One-way analysis of variance on pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students in Anambra State who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods.

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Pre-test	Between Groups	10619.497	2	5309.749	111.577	.000
	Within Groups	11278.353	237	47.588		
	Total	21897.850	239			
Post-test	Between Groups	14351.938	2	7175.969	113.777	.000
	Within Groups	14947.646	237	63.070		
	Total	29299.583	239			

There was a statistically significant difference between groups as determined by one-way ANOVA ($F(2, 237) = 111.577$, $p = 0.000$) for pre-test and ($F(2, 237) = 113.777$, $p = 0.000$) for post-test. Hence, the null hypothesis which states that "there is no significant difference between the pre-test and post-test mean ($\bar{x}$) score of Secondary School Students who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods" was rejected.

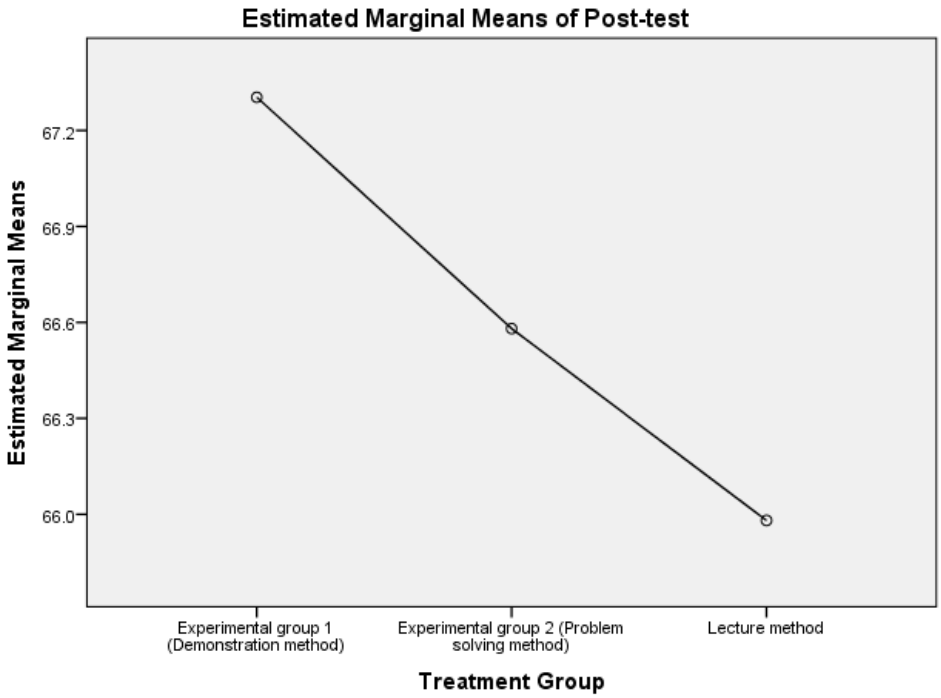


Figure 1: Mean ($\bar{x}$) plots of the pre-test and post-test mean ($\bar{x}$) scores of Secondary School Students who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

The plot shows that Secondary School Students who were exposed to demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition had highest mean ($\bar{x}$) scores followed by those exposed to problem-solving method in comparison to their counterparts in the control group (lecture method).

Hypothesis 4

There is no significant difference between the pre-test and post-test mean ($\bar{x}$) score of urban and rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition.

Table 4.9: Summary of Analysis of Covariance of mean ($\bar{x}$) scores of secondary school student's entrepreneurial skills acquisition in Foods and Nutrition by location

Source of variation	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	61440.827	6	10240.138	1266.539	.000	.970
Intercept	189.187	1	189.187	23.399	.000	.091
Pre-test	13291.414	1	13291.414	1643.933	.000	.876
Group	30.587	2	15.293	1.892	.153	.016
Location	1324.694	1	1324.694	163.843	.000	.413
Group * Location	581.512	2	290.756	35.962	.000	.236
Error	1883.836	233	8.085			
Total	1301875.000	240				
Corrected Total	63324.662	239				

The results presented in Table 4.9 shows that there was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of urban and rural Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition, $F(1,233) = 163.843$, $P<0.05$. Therefore, the null hypothesis was rejected. Also, there is a significant interaction between treatment group and location of Secondary School Students who were exposed to demonstration, problem-solving and lecture methods, $F(2,233) = .35.962$, $P>0.05$. though this was a weaker effect (Eta-squared = .236).

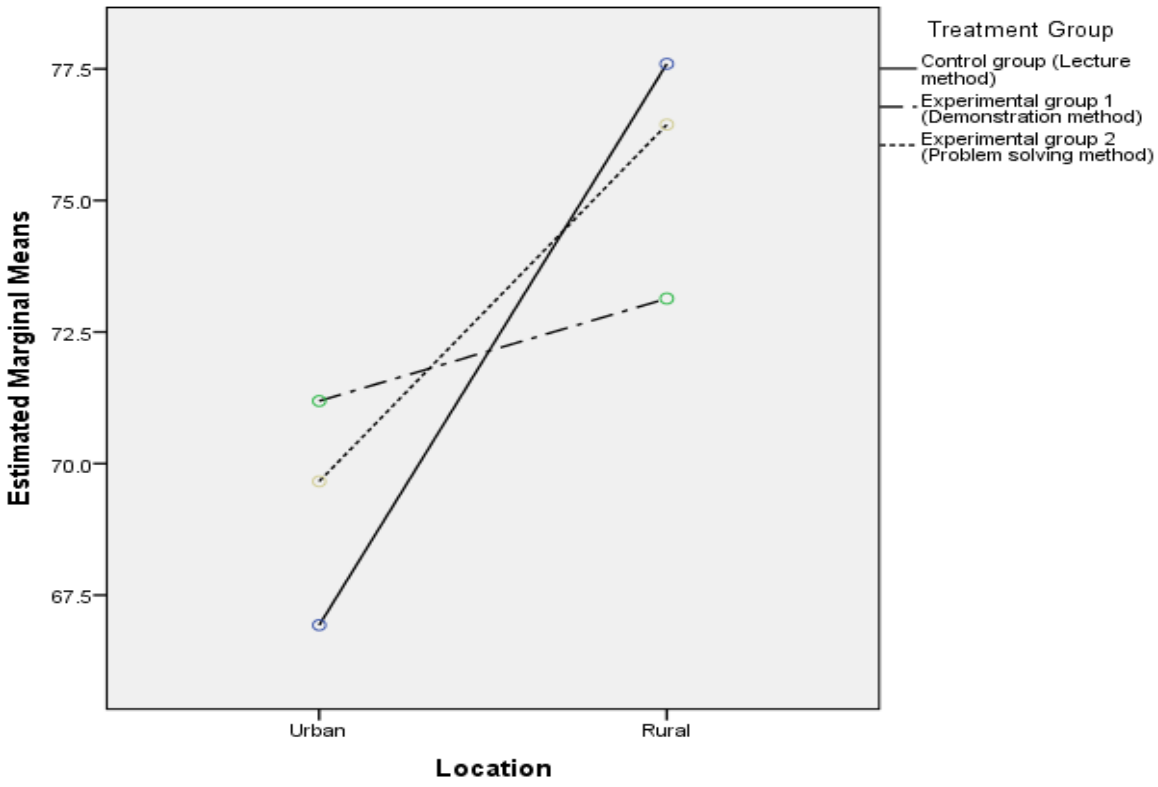


Figure 2: Mean ($\bar{x}$) plots of pretest-posttest scores of Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools based on location

The plot shows that Secondary School Students in rural area who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their urban counterpart.

Hypothesis 5

There is no significant difference between the pre-test and post-test mean ($\bar{x}$) scores of female and male Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition.

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Table 4.10: Summary of Analysis of Covariance of mean ($\bar{x}$) scores of secondary school student's entrepreneurial skills acquisition in Foods and Nutrition by gender.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	47312.014	6	7885.336	935.489	.000	.960
Intercept	1.476	1	1.476	.175	.676	.001
Pretest	10417.035	1	10417.035	1235.841	.000	.841
Group	14.990	2	7.495	.889	.412	.008
Gender	349.064	1	349.064	41.412	.000	.151
Group * Gender	115.243	2	57.622	6.836	.001	.055
Error	1963.982	233	8.429			
Total	1175279.00	240				
Corrected Total	49275.996	239				

The results presented in Table 4.10 shows that there was significant difference between the pre-test and post-test mean ($\bar{x}$) score of female and male Secondary School Students who were exposed to lecture, demonstration and problem-solving methods, $F(1, 233) = 41.412$, $P>0.05$. Therefore, the null hypothesis was rejected. Similarly, there was significant interaction between treatment groups and gender on mean ($\bar{x}$) scores of Secondary School Students who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition $F(2, 233) = 6.836$, $P>0.05$.

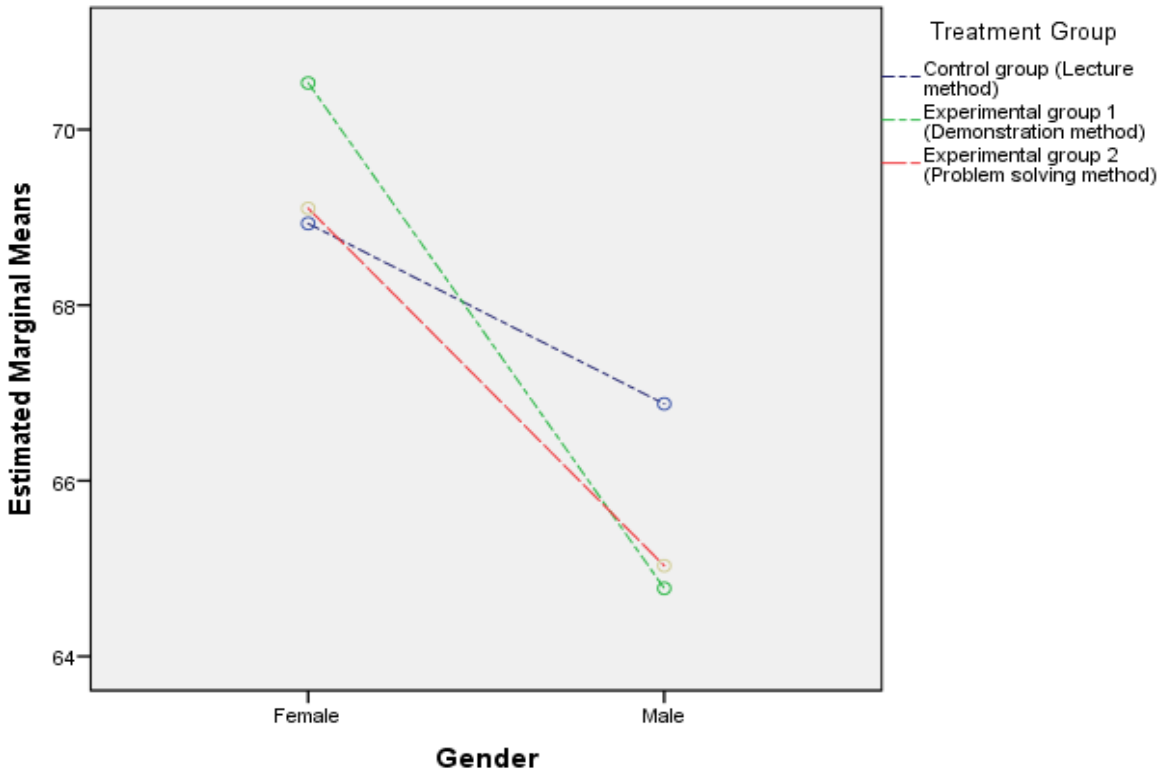

Figure 3: Mean ($\bar{x}$) plots of pretest-posttest scores of Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools based on gender

The plot shows that female Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their male counterpart.

Discussion of Results

The discussions of result were made under the following sub-headings:

Pretest-Posttest scores of Secondary School Students in Anambra State who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

Findings of the study showed that demonstration method had more positive effect on students' entrepreneurial skills acquisition in Foods and Nutrition compared to lecture method as evidenced by the positive values of gained mean score. In a similar study by Audu, Kamin, Musta'amal and Saud (2014) who assessment of the teaching methods that influence the acquisition of practical skills, authors upheld that demonstration method influence the

acquisition of practical more compared to lecture method. This view was upheld by Nwokike (2016) who proposed the use of practical activities and demonstration method as an instructional skill to improve the entrepreneurial competencies of students so that they can acquire the skills for gainful employment in the labor market or be able to establish on their own and become self-reliant.

There exists a significant difference between the pre-test and post-test mean ($\overline{x}$) score of Secondary School Students who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method). A similar outcome was attained by Eseroghene (2020) who studied teaching methods and creativity levels of students on acquisition of entrepreneurial skills by students in Obio/Akpor Local Government Area of Rivers State; among other methods considered, the post hoc analyses showed that the significant differences in the instructional strategies were credited to demonstration strategy. This finding was in line with the findings of Daluba (2013) who observed that that demonstration method had significant effect on students' achievement in agricultural science than those taught with the lecture method.

This finding is also comparable to that of Adebisi, Babayeju and Gbadebo (2016) who showed that students exposed to demonstrated food practical had better skill acquisition competencies than those that are not. Adebisi, Opaleke and Unomah (2015) further explained that Foods and Nutrition is a practical-oriented subject which should be taught especially with practice and drill method that comprise of demonstration and explanation as well as practice. In a related result, Udoetuk (2006) found that demonstration teaching method is an effective approach of teaching used in experiments involving the use of delicate and expensive utensils and equipment which the teacher cannot afford to leave in the hands of inexperienced students for fear of being damaged.

Pretest-Posttest scores of Secondary School Students in Anambra State who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

The result of this study showed that Secondary School Students who were exposed to problem-solving and demonstrated methods acquired more entrepreneurial skills in Foods and Nutrition compared to their counterparts exposed to lecture method. The finding was not surprising because problem-based learning approach in teaching and learning promotes cognition in the learners. This result is in line with the finding of Molande, Mtemang'ombe and Chikasanda, (2017) who confirmed that problem-based learning approach aims at promoting lifelong learning essential for problem solving as the student engage in complex problems that are presented to them other than the rote memory approaches. Idris and Rajuddin (2012) upheld problem-solving teaching methods as a significant predictor of skills acquisition among students.

There was evidence of significant difference between the pre-test and post-test mean ($\bar{x}$) score of Secondary School Students who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method). The study supported the view of Ada (2005) who noted that there is a significant relationship in the instructional strategies employed by teachers for students' achievement and students taught Foods and Nutrition via problem-solving method had a mean ($\bar{x}$) score higher than their counterparts who were not exposed to problem-solving method. The finding also supports the view of Merlot (2009) that problem-solving method challenges students to learn work in group, to seek solution to real life problem. Similar findings by Meintjes, Henrico and Kroon (2015) revealed that practice intervention enhanced learners' entrepreneurial skills competencies concerning problem recognition and problem-solving considerably.

Igunnu and Gbadebo (2012) upheld that through food related problem-solving exercise, the knowledge can be transferred to improve the nutritional composition. The result

also agrees with Kembe (2014) who explained further that when students are exposed to various Foods and Nutrition problems in schools, they will be able to use the skill acquired to stand the test of time and get sustainable living. Therefore, students exposed to problem-solving method can work on their own under the guidance of a teacher until they arrived at a clear understanding of the problem by themselves and accept responsibility than those who were not exposed to problem-solving method.

Pretest-Posttest scores of Secondary School Students in Anambra State who were exposed to demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to demonstration and problem-solving methods.

The findings of this study revealed that those Secondary School Students who were exposed to demonstration method acquired more entrepreneurial skills than their counterparts in problem-solving group. Plaxcedia (2015) in a related study on strategies for enhancing teaching of foods and nutrition in Mutare Urban Secondary schools, upheld that demonstration was very efficient, since during practicals it helped pupils to grasp skills well since they would observe and "experience" the process/skill. Accordingly, demonstration helps students to understand and master different techniques and skills from the teacher, and in return they will also be able to practice these skills and see reality in what they are doing.

There was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of Secondary School Students who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem-solving and demonstration methods. The finding conforms with the study of Ada (2005) who reported that there is a significant relationship in the instructional strategies employed by teachers for students achievement, that problem-solving method in the teaching of science students influence their academic performance and students taught Foods and Nutrition via problem-

solving method have a mean ($\bar{x}$) score higher than their counterparts who were not taught using problem-solving method.

The findings of the study supported the notion that active methods do aid in increasing learning. The findings are also in line with Eze and Nwaukwa (2019) who posited that modern day philosophers support the use of problem-solving and demonstration methods for improved teaching of practical skilled courses. The methods could have given the learner the opportunity to touch in addition to the general opportunity of seeing and hearing of the details of the entrepreneurial skills being emphasised which led to improvement in their performance. The findings are also in line with Eze (2009) who maintained that the repetition steps involved during demonstration helps the average and slow learners as it gives them an additional opportunity to see, hear and be reminded of the skill being taught.

Mbanefo and Eboka (2017) earlier collaborated this finding when they revealed that teaching strategies required for the acquisition of innovative and entrepreneurial skills in vocational and science education were the use of multiple modes of inquiry which includes the use of collaborative project, problem-solving, field trips and demonstration methods. These are in line with the strategies stated by Adikwu (2015) for inculcating entrepreneurial skills in students which include demonstrated games and stimulation methods that will help students explore opportunities for innovation and creative ideas through practical and involvement in problem-solving activities.

Pretest-Posttest scores of urban and rural Secondary School Students in Anambra State who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition

The results of this study showed that there was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of urban and rural Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State. This study supported the studies of committee on undergraduate Science Education (1997) who noted

that demonstration method help teachers to determine whether students have acquired skills that cannot be easily evaluated by traditional test examination, including the ability to apply skills and knowledge learned in one subject area. Similarly, Suliburska, Bogdanski, Pupek-Musialik, Glod-Nawrocka, Krauss and Piatek (2012) found that the lifestyles of young people in rural and urban areas were slightly different.

The finding further indicates that Secondary School Students in rural area who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their urban counterpart. This result is collaborated by the findings of Gartaula, Patel, Shukla and Devkota (2020) who reported that rural students have potential to attain higher food literacy and skills in the school, provided the school create supportive space for experiential learning that weaves community-based indigenous knowledge of local foods. Similarly, Garcia, Reardon, McDonald and Vargas-Garcia (2016) reported higher cooking skills among rural dwellers as a result of having previous cooking experience. In the same vein, Wiedinmyer, Dickinson, Piedrahita, Kanyomse, Coffey, Hannigan and Oduro (2017) found significant difference in the food skills of urban and rural dwellers which they attributed to differences in the timing and duration of cooking between rural and urban areas; the timing of the cooking events suggest differences in cooking activities that is likely driven by the dishes prepared. The finding of the present study is also supported by the work from Laska, Larson, Neumark-Sztainer and Story (2012) who found that individuals living in rural areas are exposed to a higher frequency of food preparation during adolescence which can be associated with their increased likelihood of enjoying cooking and food preparation activities than their urban counterpart.

Pretest-Posttest scores of female and male Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition

The findings showed that there was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of female and male Secondary School Students who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State. The finding support the study of Nwodo (2006) who investigated the effectiveness of lecture and demonstration methods of teaching in Lagos State and found that female students taught by demonstration method performed better than male students taught by lecture method.

The finding is also in line with the finding of Ameh and Dantani (2012) on the effect of lecture and demonstration methods on academic achievement of students in chemistry in the Nassarawa Local Government Area in Kano State. They revealed that students perform better when taught using the demonstration method as compared to the lecture method. The boys and girls are better in academic achievement when taught using demonstration method than when lecture method was used. This finding is in line with that of Adudu (2013) who opined that there was statistical significant difference between the mean ($\bar{x}$) score of the nutritional knowledge of women exposed to Foods and Nutrition Instruction Programme and those not exposed to Foods and Nutrition Instruction Programme. There was statistical significant difference between the mean ($\bar{x}$) scores of nutritional attitudes of the women exposed to Foods and Nutrition Instruction Programme and those not exposed to Foods and Nutrition Instruction Programme.

The finding further indicates that female Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their male counterpart. This is in line with the findings of Lavelle, Spence, Hollywood, McGowan, Surgenor, McCloat, Mooney, Caraher, Raats and Dean (2016) female teen learners had significantly greater

numbers of, and confidence in, their cooking and food skills, cooking practices, cooking attitudes, diet quality. This is because, according to Akabanda, Hlortsi & Owusu-Kwarteng (2017), women cook frequently in most families.

In another related study where Keller, Gibbs, Wong, Vanderkooy and Hedley (2004) evaluated a cooking intervention among male, low improvements in the cooking confidence and decreased food neophobia were observed and the authors attributed the low male performance to difficulties to bring about change in men's perception of their own culinary abilities. It is also possible that these results were influenced by participants' poor initial description of their own cooking skills.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The chapter presents the summary of this study; under the following sub-headings summary of results; findings; conclusions; recommendations; contribution to knowledge and suggestion for further studies.

Summary of Research

The study investigated the effects of demonstration and problem-solving methods on entrepreneurial skills acquisition in Foods and Nutrition among Secondary School Students in Anambra State. Five research question and six hypotheses guided the study.

To clarify the meaning of some words, operational definition of terms were given. Related literature on the theoretical framework for the Study reflecting on the dependent variable (Entrepreneurial Skills Acquisition in Foods and Nutrition) and independent variables (demonstration method, Lecture method and Problem-solving method) were appraised. Also reviewed were the concept of Foods and Nutrition Instruction, Entrepreneurial Skills, Strategies for enhancing creative entrepreneurial, factors that challenge the teaching of entrepreneurship education and effects of teaching methods in Foods and Nutrition Instructional delivery. There are many theories of teaching, learning and entrepreneurship but Ausubel learning theory, Social cognitive theory and Schultz theory (human capital approach) of entrepreneurship was adopted to support this study.

The population of the Study comprised of 21,658 Senior Secondary School two (SS11) Students in 254 Secondary Schools from the six education zones in Anambra State in 2017/2018 academic session. The multi – Stage purposive sampling technique was used to draw Six Secondary Schools from the 254 Secondary School in Anambra State and two Schools were taken from each of the three senatorial zones and a sample of two hundred and forty (240) Students were drawn for the Study. The face and content validity of the instrument were established by expert judgment in the Department of Vocational Education, Delta State University, Abraka. The reliability of the instrument was established by using

Cronbach alpha method. The Study was an experimental research that made use of pre-test and post-test design which employed control group (lecture method) and treatment groups in sampling the opinions of the respondents. The instrument was titled lesson plan on Preparation and packaging of fried Rice, Preparation and packaging of water yam, making of Banana ice cream, preparation of cake, preparation of canned tomatoes and preparation of Spice mixture for both control group (lecture method) and treatment groups (Experimental).

Findings

The following findings were obtained in the study

1. There exists a significant difference between the pre-test and post-test mean ($\bar{x}$) score of Secondary School Students who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method). In essence, the study showed that demonstration method had more positive effect on students' entrepreneurial skills acquisition in Foods and Nutrition compared to lecture method as evidenced by the positive values of gained mean score
2. There was evidence of significant difference between the pre-test and post-test mean ($\bar{x}$) score of Secondary School Students who were exposed to problem-solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method). In other words, students exposed to problem-solving method are able to work on their own under the guidance of a teacher until they arrived at a clear understanding of the problem by themselves and accept responsibility. .
3. The findings of this study revealed that Secondary School Students who were exposed to demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition had highest mean ($\bar{x}$) scores followed by those exposed to problem-solving method in comparison to their counterparts in the control group (lecture method). Therefore, there was a significant difference between the pre-test and post-test mean ($\bar{x}$) score of

Secondary School Students who were exposed to problem-solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method).

4. The results of this study showed that the students in rural area who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their urban counterpart. In essence, there was a significant difference between the pre-test and post-test mean ($\overline{x}$) score of urban and rural Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State.
5. The study found that female Secondary School Students who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition had higher scores compared to their male counterpart. Hence, there was a significant difference between the pre-test and post-test mean ($\overline{x}$) score of female and male Secondary School Students who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State.

Conclusion

The following conclusion was made:

The entrepreneurial skills acquisition rating on various tasks contained in Foods and Nutrition incorporate the total learning experience offered in educational institution that can impact knowledge necessary to create goods and service for the society in general. Although problem-solving had more positive effects on entrepreneurial skills acquisition than lecture methods, the demonstration method proved more effective and impressive on entrepreneurial skills acquisition compared to problem-solving and lecture methods. Obviously, the demonstration method of teaching shows learners how to do a task with the aim/goal of

teaching the learners to perform the task independently which promotes the acquisition of specific manipulative skill within a short time. The greatest advantage of using demonstration method as a teaching skill is that it provides opportunity for students' participation. Since the students were fully involved in doing the tasks contained in the instrument for measuring psycho productive skills in Foods and Nutrition (IMPPSFN), which could have help in improving their entrepreneurial skills acquisition.

It was clear that the students in rural area who were exposed to demonstration, problem-solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition performed better than their urban counterpart. This could be as a result of the fact that lifestyles of young people in rural and urban areas were slightly different; additionally, individuals living in rural areas are exposed to a higher frequency of food preparation which could have increased their experience in cooking and food preparation activities than their urban counterpart. Also, the female Secondary School Students in Anambra State who were exposed to lecture method, demonstration method and problem-solving method on entrepreneurial skills acquisition in Foods and Nutrition performed significantly better than their male counterpart. Since Foods and Nutrition is practically oriented, demonstration method is recommended for the teaching and learning of the Subject.

Recommendation

On the basis of the above findings, the following recommendations were made:

1. The demonstration method should be highly utilized by Foods and Nutrition educators in teaching so as to equip the students with entrepreneurial competencies for self employment.
2. Parents in urban and rural areas should be encouraged to buy the recommenced food items needed for their children for practical learning in Schools.
3. Male and female members of the household should be engaged and with equal opportunity to participate in food preparation in the home, this is because knowing how to cook could make them more attractive mate later in life.

Contributions to Knowledge

The Study has contributed to knowledge in the following ways:

i. The study has established that problem-solving and demonstration methods were significantly superior to lecture method in the process of entrepreneurial skills acquisition in Foods and Nutrition.

ii. The study also showed that the urban and rural Secondary School Students performed significantly better than their rural counterparts when taught with demonstration, problem-solving and lecture methods for entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State.

iii. The study further established that the demonstration method was a better teaching method than problem-solving for entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State

Suggestions for further Study

The following suggestions were made:

i. Effect of Demonstration method of Teaching on Academic Achievement of Junior Secondary School Students in Delta State.

ii. Developing Entrepreneurial Skills and Transforming challenges into opportunities among Senior Secondary School two Students in Anambra State.

iii. Entrepreneurial Skills Acquisition and utilization among Home Economics Students in Secondary Schools in Edo State

iv. Effect of process –oriented Strategy and lecture method on Students' achievement and problem-solving ability in Home – Economics in Imo State.

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APPENDICES

APPENDIX A
LIST OF PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE BY LOCAL GOVERNMENT AREA

AGUATA L G A

S/NO NAME OF SCHOOL

1. Urban Girls' Secondary School Ekwulobia
2. Girls' Secondary School Igboukwu
3. Community Secondary School Isuofia
4. Aguata High School Aguata
5. Girls' high school Uga
6. Uga Boys' Secondary School Uga
7. Community Secondary School Uga
8. Pioneer Secondary School (GSS) umuchu
9. Community Secondary School Umuchu
10. Umuchu High School Umuchu
11. Government Technical Coll umuchu
12. St. Peter's Secondary School Achina
13. Girls' Secondary School Achina
14. Community Sec. Sch nkpologwu
15. Comm Secondary School Oraeri
16. Comm Secondary School Aguluezechukwu
17. Comm Secondary School Akpo
18. Christ the Redeemer College Amesi
19. Comm Secondary School (BSS) igboukwu
20. Comm Secondary Sch (BSS)ezinifite
21. Ezinifite High School (GSS) ezinifite

ORUMBA NORTH L G A

S/NO NAME OF SCHOOL

22. Community High School, nanka
23. Community Secondary School Nanka
24. Community Secondary School Oko
25. Community Secondary School Ndikelionwu
26. Community Secondary School Ndiowu
27. Community Secondary School Ufuma
28. Community Secondary School Enugwuabor ufuma
29. Community Secondary School Awgbu
30. Community High School Awgbu
31. Awgbu grammar School Awgbu
32. Community Secondary School Ajali
33. Community Secondary School Omogbo
34. Community Secondary School Awa

ORUMBA SOUTH

S/NO NAME OF SCHOOL

35. All saints Secondary School Umunze
36. Community High School Umunze
37. Government Technical College Umunze

38. Community Secondary School Ihite
39. Community High School Nawfija
40. New Bethel Secondary School Isulo
41. Victory High School Ezira
42. Premier Secondary School Ogbunka (BSS)
43. Girls' Secondary School Ogbunka
44. Union Secondary School Owere Ezukala
45. Community Secondary School Owere Ezukala
46. Community High. School Ogboji
47. Union Secondary School Umuomaku

NNEWI NORTH LGA

S/NO NAME OF SCHOOL

48. Girls' Secondary School, nnewi
49. Maria Regina Model Comprehensive Secondary School, Nnewi
50. Newi High School, Nnewi
51. Nigerian Science & Technical College Nnewi
52. Okongwu Memorial Grammer School, Nnewi
53. Women Education Centre, Nnewi
54. Community Secondary School Nnewichi, Nnewi
55. Akoboezem Community Secondary School Uruagu Nnewi

NNEWI SOUTH L.G.A.

S/NO NAME OF SCHOOL

56. Union Secondary School (BSS) Amichi
57. Community Secondary School, Amichi
58. Community Secondary School Azigbo
59. Community Secondary School Ebeneator
60. Community Secondary School Ekwulumili
61. Community High School, ezinifite
62. Awo-ezimuzo CSS, Ezinifite
63. Boys' High School Osumenyi
64. Community High School, Osumenyi
65. Community Secondary School, Ukpor
66. Union Secondary School, Ukpor
67. Boys' Secondary School, Unubi
68. Premier Secondary School, Unubi
69. Utu High School, Utuh
70. Government Technical Colloege Utuh
71. Community Secondary School, akwaihedi

ANAOCHA LGA

S/NO. NAME OF SCHOOL

72. Girls High School, Agulu
73. Flora Azikiwe Memorial Comprehensive Secondary School. Neni
74. Loretto Secondary School Adazi
75. Community Secondary School Obeledu
76. Community Secondary School Ichida
77. Community High School Aguluzigbo
78. Bubendorff Memorial Grammer School Adazi Nnukwu

79. Community Secondary School Agulu
80. Ojiako Memorial Gram School Adazi ani
81. Union Secondary School Agulu
82. Community High School Adazi
83. Community High School Akwaeze
84. Agulu Grammar School Agulu
85. Lake City Secondary School Nri
86. Girls Secondary School Adazi Nnukwu
87. Regal Secondary School Nri

AWKA NORTH LGA
S/NO NAME OF SCHOOL
88. Community Secondary School Amansea
89. Community Secondary School Isuanaocha
90. Community Secondary School Ebenebe
91. Community Secondary School Mgbakwu
92. Community Secondary School Achalla
93. Community Secondary School Amanuke
94. Community Secondary School Urum
95. Community Secondary School Awba ofemili

DUNUKOFIA
S/NO NAME OF SCHOOL
96. St. Mary's high School Ifitedunu
97. Walter Eze Memorial Secondary School Ukpo
98. Community Secondary School Umunachi
99. Nneamaka girls' Secondary School Ifitedunu
100. Community Secondary School Ukpo
101. Community Secondary School Ukwulu
102. Girls Secondary School Umudioka
103. Community Secondary School Nawgu

NJIKOKA
S/NO. NAME OF SCHOOL
104. Community Secondary School Nawfia
105. Girls Secondary School Abagana
106. Nnamdi Azikiwe Secondary School Abagana
107. Ide Secondary School Enugwu ukwu
108. St. Micheals' Model Comprehensive Secondary School Nimo
109. Girls Secondary School Nimo
110. Community Secondary School Abba
111. Government Technical College Enugwu Agidi
112. Girls Secondary School Enugwu Agidi
113. Nawfia Community Secondary School Nawfia
114. Okutalukwe Community Secondary School Enugwu-ukwu

AWKA SOUTH L.G.A.
S/NO. NAME OF SCHOOL
115. St. John of God Secondary School Awka
116. Gwebuike grammar School Awka

117. Girls Secondary School Awka
118. Community Secondary School Umuokpu
119. Capital City Secondary School Awka
120. Kenneth Dike Memorial Secondary School Awka
121. Ezi-awka Community Secondary School Awka
122. Community Secondary School Okpuno
123. Nneoma Community Secondary School Nibo
124. Community Secondary School Mbaukwu
125. Emeka Aghasili High School Nise
126. Community Secondary School Agulu-awka
127. Community Secondary School Amawbia
128. Union Secondary School Umuawulu
129. Union Secondary School Amawbia
130. Ezike high School Nibo
131. Holy cross High School Umuawulu mbaukwu
132. Community Secondary School Isiagu

EKWUSIGO L.G.A.
S/NO NAME OF SCHOOL
133. Community Secondary School, ichi
134. Union Secondary School, Ichi
135. Community Secondary School, Ihembosi
136. Boys' Secondary School, Oraifite
137. Girls' sec school Oraifite
138. Community Secondary School Ozubulu
139. Girls Secondary School, Ozubulu
140. Zixton Secondary School, Ozubulu

IHIALA L.G.A.
S/NO. NAME OF SCHOOL
141. Community High School, Amorka
142. Community Secondary School Azia
143. St. Anthony's Secondary School Azia
144. Abbot girls' Secondary School, ihiala
145. Abbot boys' Secondary School, ihiala
146. Government Technical College Ihiala
147. St. Jude's Secondary School, Ihiala
148. Community Secondary School, Isseke
149. Community Secondary School, Lilu
150. Community Secondary School, Mbosi
151. Union Secondary School, Okija
152. Okija Grammer School Okija
153. Community Secondary School Orsumoghu
154. Girls' Secondary School, Uli
155. Uli High School, Uli
156. Community High School, Umuoma-uli
157. Community Secondary School Ogwuaniocha

IDEMILI NORTH LGA

S/NO. NAME OF SCHOOLS

158. Notre Dame High School, Abatete
159. Abanna Secondary School Abatete
160. Community Secondary School, Eziowelle
161. Community Secondary School, Ideani
162. Government techn. College Nkpor
163. Urban Secondary School, Nkpor
164. Community Secondary School, Obosi
165. Unity Secondary School, Obosi
166. Boys' Secondary School, Ogidi
167. Anglican Girls' Secondary School, Ogidi
168. Community Secondary School, Oraukwu
169. Oraukwu Grammar School, Oraukwu
170. Community Secondary School, Uke
171. Mater Amabili Secondary School, Umuoji
172. Community Secondary School, Umuoji
173. Awada Secondary School, Awada

IDEMILI SOUTH

S/NO. NAME OF SCHOOLS

174. John Secondary School Akwu-ukwu
175. John Science and Technical College, Alor
176. Girls' Secondary School Alor
177. Girls' Secondary School, Awka-etiti
178. St. Joseph's High. School, Awka-etiti
179. Our lady's Secondary School, Nnobi
180. Community Secondary School, Nnobi
181. Community Secondary School, Nnokwa
182. Unity Secondary School, Nnokwa
183. Girls' Secondary School, Oba
184. Merchant of light Secondary School, Oba
185. Boys' Secondary School, Ojoto
186. Girls' Secondary School, Ojoto

OYI

S/NO. NAME OF SCHOOL

187. Community Secondary School Awkuzu
188 . Unity Secondary School Awkuzu
189 women Education Centre Awkuzu
190 model Comprehensive Secondary School Nkwelle Ezunaka
191 Community High School Nkwelle Eezunaka
192 Boys' High School Nteje
193 New Era Secondary School Nteje
194 Cave City Secondary School Ogbunike
195 St. Monica's College Ogbunike
196 Progre Secondary School Umunya
197 Community Secondary School Umunya

ONITSHA NORTH L.G.A.
S/NO. NAME OF SCHOOL
198 Dennis Memorial Grammer School Onitsha
199 girls' Secondary School Onitsha
200. Queen of Rosary School
201. Ado Girls' Secondary School
202. St. Charles Secondary School
203. Eastern Academy
204. New Era Girls' Secondary School
205. Inland girls' Secondary School
206. Washington Memorial Secondary School
207. Patterson Memorial Secondary School Onitsha
208. Prince Memorial Secondary Onitsha
209. Army Day Secondary School
210. Metropolitan College
211. Government Technical College
212. Onitsha High School Onitsha
213. Our Lady's High School, Onitsha

ONITSHA SOUTH LGA
S/NO. NAME OF SCHOOL
214. Christ the King College
215. Modebe Memorial Secondary School
216. Metu Memorial Secondary School
217. Urban girls Secondary School
218. Urban Boys Secondary School
219. Special Secondary School (deaf and dumb) Odoakpu

OGBARU L.G.A
S/NO. NAME OF SCHOOL
220. Ogbaru High School Ogbakuba
221. Ideke GrammerSecondary School Ideke
222. Unity Comprehensive Girls high School Okpoko
223. Community Boys' Secondary School Okpoko
224.Community Girls' Secondary School Okpoko
225. Community Secondary School Atani
226. Government Technical College Osomala
227. Community Secondary School Odekpe
228. Josephine odua Memorial Secondary School Akili-ozizor

ANAMBRA EAST
S/NO. NAME OF SCHOOL
229. Fr. Joe Memorial High School Aguleri-enugu-otu
230. Col. Mike Attah Secondary School Aguleri
231. Justice Chinwuba memorial Grammar School Aguleri
232. Community Secondary School Umuoba-anam
233. Government Technical College Umuleri (umueri)
234. Girls' High School Umuleri (Umueri)
235. Community Secondary School Ifite Umuleri
236. Community High School Igbariam

237. Community Secondary School Nando
238. Community High School Nsugbe

ANAMBRA WEST
S/NO. NAME OF SCHOOL
239. Community Secondary School Umueze-anam
240. Anam High School Oroma etiti
241. Christ the King College Umuem-anam
242. Community Secondary School Anam mmiata
243. Community Comprehensive Secondary School Nzam
244. Udama Community Secondary School Inoma-akator
245. Community Secondary School Igbedor

AYAMELUM LGA
S/NO. NAME OF SCHOOL
246. Universal Secondary School Omasi
247. Community Secondary School Omor
248. Community Secondary School Umumbo
249. Community Secondary School Igbakwu
250. Community Secondary School Ifite-ogwari
251. Riverside Secondary School Umerum
252. Ogbe High School Anaku
253. Amikwe Community Secondary School Omor
254. Community Secondary School Umueje

APPENDIX B

Instrument for measuring psycho productive skills in Foods and Nutrition (IMPPSFN)

This instrument is designed for measuring performance (psychomotor abilities) of students in Foods and Nutrition at secondary school level. Rate the students on a 5-point scale in terms of the extent of performance thus:

5 - Very Good

4 - Good

3 - Fair

2 - Poor

1 - Very poor

Overall Task description

Task no	Syllabus section (topics)	Task Description	No. Of items
Task 1	Time and energy management in food preparation	Preparation and Packaging Of Fried Rice	9
Task 2	Flour mixtures	Preparation and packaging of water yam flour	7
Task 3	Food flavourings and colouring	Making Banana Ice Cream	9
Task 4	Food study (Eggs)	preparation of cake	10
Task 5	Storage and preservation of foods	preparation of canned tomatoes	8
Task 6	Condiments and seasonings	preparation of spice mixtures	7

TASK 1: Preparation and Packaging of Fried Rice

Objectives: By the end of the lesson, the students should be able to

- Wash and boil the meat correctly
- Wash the vegetables with salty water
- Chop the vegetable evenly
- Wash and parboil the rice
- Stew the chopped vegetables correctly
- Boil the rice correctly
- Fry the meat properly
- Fry the boiled rice together with the vegetable sauce.

Task Description:

Material/ recipe required:

Rice, Carrot, Red pepper, Turmeric, Meat, Green peas, Green beans, Spring onion, vegetable oil, Green pepper, Curry powder, Salt.

Table: Rating Scale for skills in preparation and Packaging of Fried Rice

S/N	Skills	Rating Scale				
		5	4	3	2	1
1	Ability to slice the meat to be used, season with spices place on heat to boil					
2	Ability to wash all vegetable with salty water					
3	Ability to chop all vegetables evenly					
4	Ability to fry the meat to be used					
5	Ability to parboil the rice					
6	Ability to stew the vegetable on a low heat using vegetable oil					
7	Ability to boil the rice using the meat stock					
8	Ability to fry the boiled rice on a sauce pan with the vegetable sauce					
9	Ability to get a clean attractive plate with nice lid/package					

TASK 2: Preparation and packaging of water yam flour

Objectives: By the end of the lesson, the students should be able to

Wash the yam tubers properly

Peel the yam tubers manually and rewash

Slice the yam tubers into pieces

Parboil the sliced yams

Dry sliced yams using the drier

Mill the sliced yams granules and sieve the powder

Package it in the branded nylon bags and seal properly

Task Description: The students will be required to wash the yam, grate the yam and package it

Material/ recipe required:

The raw materials needed are 3 tubers of yam, a unit of yam Slicer, grinder, Drier, Parboiler, Weighing scale, Sieving machine, Sealing machine, Branded Polythene or nylon bags for packaging, Sealing machine and grater.

Table: Rating Scale for skills in preparation and packaging of water yam flour

S/N	Skills (Item)	Rating Scale				
		5	4	3	2	1
1	Ability to wash the yam tubers properly (making sure that all sand and dirt are washed away)					
2	Ability to peel the yam tubers manually and rewash					
3	Ability to slice the yam tubers into pieces using the yam slicer and wash properly					
4	Ability to parboil the sliced yams for some time till its partially cooked					
5	Drying the parboiled yam using the drier until properly dried					
6	Ability to mill the granules and sieve the powder					
7	Ability to package it in the branded nylon bags and seal properly when cooled					

TASK 3: Making Banana Ice Cream

Objectives: By the end of the lesson, the students should be able to:

1. Adjust Composition using stabilizers & Blend Ingredients
2. Wash the banana thoroughly with clean water and salt
3. Blend until smooth add table spoon full of lime juice
4. Pump the ice cream from the fermentation vat and packaged as desired
5. Mention at least 6 examples of fruits
6. State 2 factors to consider when buying fruit
7. State at least 3 importance of fruits to the diet.
8. Producing ice cream from banana fruit.

Task Description: Milk composition may be adjusted to achieve the desired fat and solids content. Often dry milk is added to increase the amount of whey protein to provide a desirable texture. Sweeteners, flavors and fruit preparations are used in Ice Cream to provide variety to the consumer.

Material/ recipe required:

- 2 bunches of banana
- 1 tin of evaporated milk
- 3 small sized lime.

Table: Rating Scale for skills in Making Banana Ice Cream

S/N	Skills (Item)	Rating Scale				
		5	4	3	2	1
1	Ability to adjust Composition using stabilizers & Blend Ingredients					
2	Ability to homogenize by mixing all ingredients thoroughly to improve consistency					
3	Ability to wash the banana thoroughly with clean water and salt					
4	Ability to peel and dice properly					
5	Ability to blend with evaporated milk					
6	Ability to blend until smooth, add a table spoon full of lime juice					
7	Ability to pour into a clean plastic container with fitting lid					
8	Ability to put in the refrigerator and ready to serve					
9	Ability topump the ice cream from the fermentation vat and packaged as desired					

TASK 4: Preparation of cake

Objectives: By the end of the lesson, the students should be able to:

- cream butter and granulated sugar until it is light and fluffy
- prepare (grease) cake pan by rubbing the insides with soft butter to prevent the cake from sticking to the pan
- break one egg at a time into a small bowl and slip in to a bigger bowl and wisk them to a smooth blend
- Mention at least (5) five ingredients used for making rich cake.
- Ability to pour the cake mix into the greased cake pan and gently lift and drop the cake pan over again to level out the cake List at least (5) five apparatus used for making cake
- State (2) two methods involved in cake making.
- Bake a rich cake
- Appreciate the knowledge of cake making
- Cream sugar and margarine
- Fold in flour, baking powder mixture into the creamed sugar and full butter
- Mix all the ingredients properly

Task Description: Cake baking is based on scientific principles and requires the interaction of very specific ingredients in exact proportions. There is need to ensure that all the ingredients called for in the cake recipe is available, Measure all ingredients carefully and accurately. To measure flour, spoon it lightly into a dry measuring cup and level it off with a straight edge metal spatula. Sifting dry ingredients helps distribute them throughout the cake batter and remove weevals.

Material/ recipe required:

Recipe: 500grms of flour, 350grms of sugar, 400grms of margarine, 1 ½ teaspoon baking powder, Salt to taste, Flavouring – Butter scotched flavour, Cake fruits, Sugar carames (colour), 5 eggs, ½ n(grated) nutmeg.

Material: An oven with a top and down heating capability is best, Cake mixer, Kitchen scale, Sieve or Sifter, Egg Whisk, Bowls, Spatulas, Cake Pan: 10 inches in diameter and 2.5 inches deep.

Table: Rating Scale for skills in preparation of cake

S/N	Skills (Item)	Rating Scale				
		5	4	3	2	1
1	Ability to measure ingredients accurately, cream butter and granulated sugar until it becomes light and fluffy (it should be able to drop from a spoon) and without a feel of granulated sugar.					
2	Ability to prepare (grease) cake pan by rubbing the insides with soft butter to prevent the cake from sticking to the pan thereby easy of removal when done, without denting the cake.					
3	Ability to break all the eggs into a big bowl and whisk them to a smooth blend.					
4	Ability to mix creamed butter and sugar with the whisked eggs and mix till a smooth fluffy blend of the creamed butter/sugar and the eggs is achieved.					
5	Ability to turn on the oven to preheat (accurately at 150°C or 302°F)					
6	Ability to add the ornamental ingredients, vanilla extract (flavours) and stir with a wooden spatula till everything is well					

	incorporated.					
7	Ability to add the plain flour with the baking powder by putting small quantities of the flour through the sieve/sifter into the bowl of other cake ingredients. Stir very well with the wooden spatula and repeat till all the flour is incorporated.					
8	Ability to pour the cake mix into the greased cake pan and gently lift and drop the cake pan several times to level out the cake mix as much as possible.					
9	Ability to transfer the cake to the preheated oven, placing the rack halfway between the top and the bottom of the oven and bake for at least 2 hours before attempting to open the oven door to check the cake for the first time.					
10	Ability to cool (accurately measures 5 minutes) and decorate the cake.					

TASK 5: Preparation of canned tomatoes

Objectives: By the end of the lesson, the students should be able to

- Blend fresh tomatoes until smooth
- Pour the blended tomatoes paste into a clean pot and place on heat
- Fill two more small pots with boiling water.
- Place the canning rack into the canning kettle, and fill the kettle with enough water
- Add a spoon full of salt to it, allow the tomatoes to dehydrate
- Stuff the sterilized jars evenly with chopped tomatoes
- Lower the jars into the boiling water in the canning kettle using jar lifters or tongs.
- Remove the cans from the kettle water bath and set them on a towel on your counter-top to dry and cool

Task Description: peeled tomatoes are quickly blanched in hot water, peeled, stuffed into jars, covered, and boiled to seal the jars.

Material/ recipe required:

- 15 pounds ripe whole Roma, paste, or other low-moisture tomatoes (you can certainly use juicier heirloom varieties, but they would not hold their shape as well)
- 3/4 cup bottled lemon juice
- 6 quart-size jars with rings and new sealable lids

Materials: A large canning kettle or stockpot (for processing the jars)

A small, round rack (to keep the jars off the bottom of the pot)

6 quart jars, sterilized box of new lids and rings

S/N	Skills (Item)	Rating Scale				
		5	4	3	2	1
1	Ability to blend fresh tomatoes until smooth					
2	Ability to pour the blended tomatoes paste into a clean pot and place on heat					
3	Ability to fill two more small pots with boiling water. In one pot, boil the lids to the jars for about 10 minutes, to soften their sealant.					
4	Ability to place the canning rack into the canning kettle, and fill the kettle with enough water that the jars will be able to be submerged. Bring water to a boil.					
5	Ability to add a spoon full of salt to it, allow the tomatoes to dehydrate					
6	Ability to stuff the sterilized jars evenly with chopped tomatoes. Student should be able to add 1/2 tsp salt, and 1 tsp bottled lemon juice to each quart. Gently pour boiling water in the jars with the tomatoes, leaving 1/2 in headspace at the top of the jars.					
7	Ability to lower the jars into the boiling water in the canning kettle using jar lifters or tongs. Once all the jars are submerged in the kettle, put a lid on it and bring it back up to boil. Process, with the water boiling the whole time, for 45 minutes.					
8	Ability to remove the cans from the kettle water bath and set them on a towel on your counter-top to dry and cool.					

TASK 6: Preparation of spice mixtures (chicken flavoured homemade stock cubes)

Objectives: By the end of the lesson, the students should be able to

- Define herbs and spices
- Mention at least (2) two examples of herbs and spices
- Explain way of preserving herbs and spices.
- Appreciate preservation of herbs and spices.

Task Description: Stock cubes are those cubes we add to our cooking to enhance the taste of the food and they are one of the commonly used spice used in Nigeria.

Materials/ recipe required: 500g chicken

6 Spring onions)

1 onion

3 big carrots

Salt to taste (optional)

For fish flavoured homemade stock cubes, you will need:

3 Mackerel/Titus heads

2 spring onions)

1 onion

3 big carrots

Salt to taste (optional)

S/N	**Skills (Item)**	**Rating Scale**				
		5	**4**	**3**	**2**	**1**
1	Ability to cut up the chicken and vegetables into small pieces.					
2	Ability to cook on medium to high heat for 45 minutes (student should be able to put everything in a pot, add water to half the level of the contents of the pot and cook till everything is soft and tender)					
3	Ability to set aside to cool down completely.					
4	Ability to remove the bones from the chicken.					
5	Ability to blend the chicken and vegetables.					
6	Ability to strain with a sieve to remove all traces of bones and other particles that did not blend well.					
7	Ability to pour into ice cube trays and freeze					

APPENDIX C

Rating scale for measuring psycho productive skills in Foods and Nutrition (IMPPSFN)

Name of Student:……..

Date:……..

Class:…….

Instruction: Rate the student's performance in the following task using the scale given below. Check (v) in the appropriate box 1-5 to indicate how well the student performed on each item. The ratings in the scale are as follows:

5 - Very Good

4 - Good

3 - Fair

2 - Poor

1 - Very poor

TASK 1: Preparation and Packaging of Fried Rice

Table: Rating Scale for skills in preparation and Packaging of Fried Rice

S/N	Skills	Rating Scale				
		5	4	3	2	1
1	Ability to cut the meat to be used, season with spices place on heat to boil					
2	Ability to wash all vegetable in salty water					
3	Ability to chop all vegetables evenly					
4	Ability to fry the meat to be used					
5	Ability to parboil the rice					
6	Ability to stew the vegetable on a low heat using vegetable oil					
7	Ability to boil the rice using the meat stock					
8	Ability to fry the boiled rice on a sauce pan with the vegetable sauce					
9	Ability to package food using a clean plate					

TASK 2: Preparation and packaging of water yam flour

Table: Rating Scale for skills in preparation and packaging of water yam flour

S/N	Skills	Rating Scale				
		5	4	3	2	1
1	Ability to wash the yam tubers properly, making sure that all sand and dirt are washed away					
2	Ability to peel the yam tubers manually and rewash					
3	Ability to slice the yam tubers into tiny slices using the Yam slicer and wash properly					
4	Ability to parboil the sliced yams for some time till its partially cooked					
5	dry it using the drier until properly dried					
6	Ability to mill the granules and sieve the powder					
7	Ability to package it in the branded nylon bags and seal properly					

TASK 3: Making Banana Ice Cream

Table: Rating Scale for skills in Making Banana Ice Cream

S/N	Skills	Rating Scale				
		5	4	3	2	1
1	Ability to adjust Composition using stabilizers & Blend Ingredients					
2	Ability to homogenize by mixing all ingredients thoroughly to improve consistency					
3	Ability to wash the banana thoroughly with clean water and salt					
4	Ability to peel and dice properly					
5	Ability to blend with evaporated milk					
6	Ability to blend until smooth add table spoon full of lime juice					
7	Ability to pour into a clean plastic container with fitting lid					
8	Ability to put in the refrigerator and ready to serve					
9	Ability topump the ice cream from the fermentation vat and packaged as desired					

TASK 4: Preparation of cake

Table: Ratting Scale for skills in preparation of cake

S/N	Skills	Rating Scale				
		5	**4**	**3**	**2**	**1**
1	Ability to measure ingredients accurately, cream butter and granulated sugar until it becomes light and fluffy (it should be able to drop from a spoon) and without a feel of granulated sugar.					
2	Ability to prepare (grease) cake pan by rubbing the insides with soft butter to prevent the cake from sticking to the pan thereby easy of removal when done, without denting the cake.					
3	Ability to break all the eggs into a big bowl and whisk them to a smooth blend.					
4	Ability to mix creamed butter and sugar with the whisked eggs and mix till a smooth fluffy blend of the creamed butter/sugar and the eggs is achieved.					
5	Ability to turn on the oven to preheat (accurately at 150°C or 302°F)					
6	Ability to add the ornamental ingredients, vanilla extract (flavours) and stir with a wooden spatula till everything is well incorporated.					
7	Ability to add the plain flour with the baking powder by putting small quantities of the flour through the sieve/sifter into the bowl of other cake ingredients. Stir very well with the wooden spatula and repeat till all the flour is incorporated.					
8	Ability to pour the cake mix into the greased cake pan and gently lift and drop the cake pan several times to level out the cake mix as much as possible.					
9	Ability to transfer the cake to the preheated oven, placing the rack halfway between the top and the bottom of the oven and bake for at least 2 hours before attempting to open the oven door to check the cake for the first time.					
10	Ability to cool (accurately measures 5 minutes) and decorate the cake.					

TASK 5: Preparation of canned tomatoes

Table: Rating Scale for skills in preparation of canned tomatoes

S/N	Skills	Rating Scale				
		5	4	3	2	1
1	Ability to blend fresh tomatoes until smooth					
2	Ability to pour the blended tomatoes paste into a clean pot and place on heat					
3	Ability to fill two more small pots with boiling water. In one pot, boil the lids to the jars for about 10 minutes, to soften their sealant.					
4	Ability to place the canning rack into the canning kettle, and fill the kettle with enough water that the jars will be able to be submerged. Bring water to a boil.					
5	Ability to Add a spoon full of salt to it, allow the tomatoes to dehydrate					
6	Ability to stuff the sterilized jars evenly with chopped tomatoes. Student should be able to add 1/2 tsp salt, and 1 tsp bottled lemon juice to each quart. Gently pour boiling water in the jars with the tomatoes, leaving 1/2 in headspace at the top of the jars.					
7	Ability to lower the jars into the boiling water in the canning kettle using jar lifters or tongs. Once all the jars are submerged in the kettle, put a lid on it and bring it back up to a boil. Process, with the water boiling the whole time, for 45 minutes.					
8	Ability to remove the cans from the kettle water bath and set them on a towel on your counter-top to dry and cool.					

TASK 6: Preparation of spice mixtures (chicken flavoured homemade stock cubes)

Table: Rating Scale for skills in preparation of spice mixtures

S/N	Skills (Item)	Rating Scale				
		5	4	3	2	1
1	Ability to cut up the chicken and vegetables into small pieces.					
2	Ability to cook on medium to high heat for 45 minutes (student should be able to put everything in a pot, add water to half the level of the contents of the pot and cook till everything is soft and tender)					
3	Ability to set aside to cool down completely.					
4	Ability to remove the bones from the chicken.					
5	Ability to blend the chicken and vegetables.					
6	Ability to strain with a sieve to remove all traces of bones and other particles that did not blend well.					
7	Ability to pour into ice cube trays and freeze					

APPENDIX D

LESSON PLAN ON PREPARATION AND PACKAGING OF FRIED RICE

School: Emeka Aghasili High School, Nise
Class: SS II
Estimated Age: 16 years +
Lesson Topic: **Preparation and Packaging of Fried Rice**
Duration: 45 Mins

INSTRUCTIONAL OBJECTIVES: By the end of the students should be able to:

1. Wash and steam the meat correctly
2. Wash the vegetables with salty water
3. Chop the vegetable evenly
4. Parboil the rice appropriately
5. Stew the chopped vegetables correctly
6. Steam the parboiled rice correctly
7. Fry the meat properly
8. Fry the steamed rice together with the vegetable sauce.

INSTRUCTIONAL MATERIALS: Rice, carrot, green peas, green bean, spring onion, green pepper, red pepper, groundnut oil, meat

SKILLS EMPHASIZE: Demonstration, explanation, planned repetition, use of example, reinforcement

INSTRUCTIONAL PROCEDURES

STEP I

TEACHER'S ACTIVITIES: the teacher begins the lesson by asking what vegetables are and the nutrients it supplies to the body. Vegetable are leaves of a plant, some are roots which supplies the body vitamins. They can be used to garnish food e.g are vegetable salad and fried rice. today we are going to be preparing and packaging fried rice.

STUDENT'S ACTIVITIES: The students listen to the teacher's explanation

STEP II:

TEACHERS' ACTIVITIES: The teacher arrange all the recipe and utensil needed for preparation of fried rice as thus

RECIPE FOR FRIED RICE

Rice
Carrot
Red pepper
Turmeric
Meat
Green pea
Green bean
Spring onion
Groundnut oil

Green pepper
Curry
Salt.

PROCEDURE

STEP I Slice the meat to be used, season with spices place meat in boiling water to cook

STEP II Wash all vegetables with salty water

STEP III Chop all vegetables evenly

STEP IV Fry the meat to be used, drain water from the cooked meat and fry in vegetable oil.

STUDENTS' ACTIVITIES: The student watches the teacher as she demonstrates how to prepare fried rice and assist where necessary

SKILL EMPHASIZED: Demonstration, explanation, use of examples, planned repetition.

STEP III

TEACHERS' ACTIVITIES: the teacher goes further to explain the steps as thus

STEP IV Wash rice severally before parboiling

STEP VI Stew the vegetable on a low heat using vegetable oil

STEP VII Steam the boiled rice using a meat stock

STEP VIII Fry the perboiled rice on a sauce pan with the vegetable sauce

STEP VIX Get a clean attractive plate with nice lid and package

STUDENTS ACTIVITIES: The student listens attentively to the teacher and watch the teacher demonstrates how to prepare and enclose the food item to protect it from damage, contamination, spoilage, pest attacks, and tampering.

STEP IV

EVALUATION

TEACHER'S ACTIVITIES: the teachers evaluate the students using the following tasks:

1. Ability to wash and cook the meat correctly
2. Ability to wash the vegetables with salty water
3. Ability to chop the vegetable evenly
4. Ability to parboil the rice appropriately
5. Ability to stew the chopped vegetables correctly
6. Ability to steam the parboiled rice correctly
7. Ability to fry the meat properly
8. Ability to fry the steamed rice together with the vegetable sauce.

STUDENT'S ACTIVITIES: they perform the tasks given by the teacher

SKILLS APPLIED: Evaluation

TEACHER'S ACTIVITIES: the teacher reinforces the students, summarizes the lesson and gives them assignment.

STUDENT'S ACTIVITIES: the students write down the assignment in their notebooks

SKILL APPLIED: closure

LESSON PLAN ON PREPARATION AND PACKAGING OF WATER YAM FLOUR

School: Community Secondary School, Obosi
Class: SS II
Estimated Age: 16 years +
Lesson Topic: **Preparation and packaging of water yam flour**
Duration: 45 Mins

Instructional Objectives: By the end of the lesson students should be able to:

1. Define the term flour correctly;
2. Mention at least (2) dishes made from water yam flour;
3. State at least (5) nutritional values of water yam flour;
4. Explain the process of producing water yam flour;
5. Appreciate the produces of water yam flour.

Entry Behaviour: The students are already familiar with the process of producing cake, bun, puff-puff as products of wheat flour.

Instructional Materials: Tuber of yam

Skills Emphasized: Set induction, use of examples. Stimulus variation, questioning techniques, reinforcement, planned repetition.

Instructional Procedure: (Lesson Presentation)

Content Development

Step I: Water Yam Flour

Teachers' Activities: The teacher begins the new topic by explaining what flour is to the students.

Flour is referred to the powder derived from ground cereals such as wheat, yam, cow pea, bambara nut, cassava and water yam.

Students' Activities: The students listen to the teachers explanations and jot down points.

Step II

Teachers' Activities: The teacher generates discussion on the different types of flour introduces the new topic "water yam flour and explains its nutritional values as thus:

Water Yam is the tuber of Droscorea alata also called wild yam. Water yam flour is referred to the flour obtained from water tubers.

Nutritional Values of Water Yam Flour

1. They are rich in fiber
2. They contain a substantial amount of antioxidants and Vitamin C.
3. It helps to suppress blood sugar, thus, this makes it perfect for diabetic patients.
4. Dioscorea alata also contains a small amount of Vitamin E and beta-carotene level (beta-carotene is good for vision, immunity and overall health.

5. They are also a good source of Vitamin B_6
6. Lowering effect on blood cholesterol levels.
7. Decreases blood pressure levels.
8. It is a good source of female hormone, progesterone, thus, it helps to balance female hormones and are good for hormonal imbalance disorders and regulation of menses.
9. They improve digestive health and help with constipation and irritable bowel syndrome.
10. The antioxidants in water yam helps to reduce damage free radicals in the body and slow down the effect of ageing.
11. Water yam can slow down the ageing process and boost the immune system.
12. Water yam has been used as a laxative and worm expeller, and as a treatment for fever, gonorrhea, leprosy, tumuors and inflamed haemorrhoids.

Students' Activities: The students listen attentively to the teacher's explanation and jot down points.

Skills Emphasized: Explanation, planned repetition, use of examples, questioning skills, reinforcement, set induction.

Teachers' Activities: The teacher goes further to explain the processing of water yam flour.

Step III: Ingredients: Water yam

Step I: Peel the water yam
Step II: Wash in clean water
Step III: Slice into thin slices
Step IV: Wash and drain in a sieve
Step V: Spread on a tray and sun dry
Step VI: When it is well dried mill to powder.
Students' Activities: The students listen to the teacher's explanation, pay attention to what the teacher is doing and help out where necessary.

Skills Emphasized: Explanation, demonstration, questioning skills.

Step IV: Summary and Evaluation

Teachers' Activities: The teacher summarizes the major points of the lesson before evaluating the students with the following questions:

1. Define flour
2. Mention (2) dishes made from water yam flour
3. State (5) nutritional values of water yam flour
4. Explain the process of producing flour from water yam.

LESSON PLAN ON MAKING BANANA ICE CREAM

Name of School: Community Secondary School, Oko.

Subject: Foods and Nutrition

Topic: Making Banana Ice Cream

Class: SS II

Average Age: 17 years plus

Duration: 45 mins

Behavioural Objectives: By the end of the lesson, students should be able to:

1. Define the term fruit
2. Mention at least 6 examples of fruits
3. State 2 factors to consider when buying fruits
4. State at least 3 importance of fruits in the diet.
5. Demonstrate the making of banana ice cream from banana fruit.

Entery Behaviour: The students are already use to eating fruits.

Instructional Materials: Banana, milk, lime

Instructional Techniques: Explanation, planned repetition, demonstration, reinforcement.

Set Induction: The teacher set induces the students by asking them to give examples of fruits they are familiar with.

Teachers' Activities: Yes, you answered well. Mango, grape and paw-paw. are all examples of fruits.

Instructional Procedures:

STEP I: The teacher begins the lesson by writing the topic on the board as thus:

Step II: The teacher goes further to explain the concept of fruits as thus:

Fruit is the fleshy seed-bearing part of plants. It is the complete structure formed by the ripened ovary of a flowering plant. The common fruits are pawpaw, pineapple, mango, citrus fruits like orange, grape fruit, lemon and lime.

Students' Activities: The students listen to the teachers explanation, answer questions when asked and give contribution where necessary.

Instructional Techniques: Explanation, reinforcement, use of examples.

Step III: The teacher explains the factors to consider when buying or purchasing fruits as thus:

Factors to Consider When Buying Fruits

1. Make sure the fruit is ripe
2. Make sure it is fresh

3. Buy from a neat sever
4. Fruit should be free from insect attack
5. Buy fruit that are free from bruises.

Importance of Fruit to Diet

1. Fruits are sources of vitamins
2. They aid digestion
3. They are rich sources of potassium examples is ripe banana
4. They contain carbohydrate in the form of a sugar
5. They are rich in calcium, fat and oil, examples is Avocado pear.

Students' Activities: The students listen to the teachers explanation and jot down points.

Instructional Techniques: Use of examples, planned repetition, questioning skills, reinforcement.

Step Iv: The teacher demonstrates the making of banana ice cream

Recipe for Banana Ice Cream

- 4 whole bunch of banana
- 1 tin of evaporated milk
- 1 small size lime

Procedure

- Wash the banana thoroughly with clean water and salt
- Peel and dice properly
- Blend with evaporated milk
- Blend until smooth
- Add table spoonful of lime juice
- Pour into a clean plastic container with fitting lid
- Put in the refrigerator and ready to serve

Students' Activities: The students pay attention to the process of making ice cream and helps out where necessary.

Summary: The teacher summarizes the lesson

Evaluation: The teacher evaluates the students with the following question:

1. Define fruit
2. Mention (6) six examples of fruits.
3. State (2) two factors to consider when buying fruits
4. State (3) three importance of fruits in diet

LESSON PLAN ON CAKE MAKING

Name of School: Community Secondary School, Nnewich, Nnewi.

Subject: Foods and Nutrition

Topic: Cake Making

Class: **SS II**

Average Age: 16 years plus

Duration: 45 Mins

Behavioural Objectives: By the end of the lesson, the students should be able to:

1. Mention at least (5) five ingredients used for making rich cake.
2. List at least (5) five apparatus used for making cake
3. State (2) two methods involved in cake making.
4. Bake a rich cake
5. Appreciate the knowledge of cake making.

Entering Behaviour: The students have already been familiar with cake as a snack.

Instructional Techniques: Explanation, use of examples, demonstration

Set Induction: The following questions are used to set induce the students;

1. What is a cake?
2. Mention (3) three occasions cakes are used for.

Instructional Materials: Flour, sugar, margarine, baking powder, salt, nutmeg, egg, cake fruit.

Teacher's Activities: Yes, you answered well cakes are flour mixture that are made from variations of flour, fat, eggs, sugar, water and flavouring. And cakes are used to cerebrate occasions like; weddings, birthday party and wedding anniversaries.

Instructional procedure:

Step I: **Cake Making**

The teacher begins the lesson by arranging all the ingredients needed for cake making on the table. Telling the name of each ingredient, and the reason it is used in cake making.

Ingredients for Rich Cake

- 500 grams of flour
- 350 grams of sugar
- 400 grams of margarine
- 1 ½ teaspoonful of baking powder
- Pinch of salt

- ❖ Flavor – vanilla, butter scotch.
- ❖ 200 grams of cake fruits
- ❖ Sugar carames (colour) or browny
- ❖ 5 egg
- ❖ ½ nutmeg grated

Ingredients and Quantity for Medium Size 3 Inches Rich fruit Cakes

- 100 grams of flour
- 600 grams of sugar
- 800 grams of margarine
- 1 table spoon of flavor
- 1 big size Nutmeg (grated)
- ¼ cup cake fruit (mixed fruit) – soaked in brandy, drained and tossed in flour to prevent sinking to the bottom of cake.
- 10 fresh eggs (NB: Large size)
- 1 table spoon baking powder
- Pinch of salt
- Sugar carames for colouring

Students' Activities: The students listen attentively to the teacher's explanation and jot down the ingredients and quantity.

Step II: The teacher demonstrates how to measure ingredients for cake making: put measured margarine and sugar in a bowl and cream in an circular motion with a woken spoon, until it is creamy. Sieve the flour in a clean bowl, sieve in salt, add Nutmeg, and baking powder and mix together. Break the eggs one at a time in a small bowl and slip into a bigger bowl to prevent one rotten egg from spoiling the others, beat until it is thick and foaming.

Students' Activities: The students listen attentively to the teachers explanation and watch the teacher closely as she continues the cake making process.

Step III: The teacher at this point the teacher transfers the creamed substance (margarine and sugar) into a bigger mixing bowl, add beaten eggs in bits and continue to cream. After creaming, the next step is folding in of the dry ingredients with a metal spoon. Previously soaked in brandy and tossed on flour or sprinkle brandy and flour to prevent the fruit from sinking.

Students' Activities: The students listen attentively to the teacher's explanation and watch the teacher closely.

Step IV: At this point the teacher lights the oven for it to heat for about 10 minutes, while she teaches the students how to grease the cake pan with saltless fat (margarine). She then puts the mixture into the greased cake pan and put in the oven. Bake for 30 minutes in moderate heat.

NB: Methods of checking it a cake is well baked;

- If a cake has an even brown colour and a firm crust.
- The cake should shrink away from the sides of the pan.
- If the cake springs back quickly after it has been pressed gently on the top with a finger.
- If a clean tooth – pick, or skewer is inserted into the entre of the cake, it should come out clean.

Students' Activities: The students listen to the teachers explanation, jot down points and ask questions for clarifications where necessary.

Summary: The teacher summarizes the lesson.

Evaluation: The teacher evaluates the lesson with the following questions:

1. Mention (5) five ingredients used in making rich cake
2. List (5) five apparatus used for making cake.
3. State two methods involved in cake making.

LESSON PLAN ON PREPARATION OF CANNED TOMATOES

Name of School: Community High School, Nsugbe

Subject: Foods and Nutrition

Topic: Food Preservation (Canning and Bottling)

Class: SS 2

Average Age: 16 years plus

Duration: 45 Mins

Behavioural Objectives: By the end of the lesson, the students should be able to:

1. Define the term food preservation
2. Reasons for preserving food.
3. Define food spoilage
4. State at least (5) five methods of food preservation
5. Explain how to preserve food using canning or bottling method of food preservation.
6. Appreciate the knowledge of food preservation.

Entering Behavior: The students are already familiar with the topic food.

Instructional Materials: Tomatoes (fresh), salt, empty bottles and cans.

Instructional Techniques: Explanation, demonstration, set-induction, use of examples, planned repetition, reinforcement.

Set Induction: The teacher set induces the students with the following questions.

1. What is food ?:
2. Mention the (6) six classes of food nutrients.

Teacher's Activities: Yes, you answered well. Food is any substance which after consumption, digestion and absorption by the body nourished the body, supplies energy, promotes growth, repairs the worn out tissues and regulates all the body processes. Foods contain nutrients which must be consumed in the right proportion for good intellectual development and growth. The following are the classes of food nutrients.

- Carbohydrate
- Protein
- Vitamins
- Mineral salt
- Fats and oil
- Water

Step I: Food Preservation

The teacher begins the lesson by explaining the topic food preservation as thus; food preservation is the act of keeping food for a longer period of time before it is consumed. It may involve:

- The adding of other substances
- Changing the form of the food stuff to another food through processing.
- Keeping the food in specially designed containers or equipment. The teacher gives examples of food items that can be preserved.

Students' Activities: The students listen attentively to the teachers explanation and respond to the teachers question.

Step II: The teacher goes further to explain the reasons for food preservation as thus:

Reasons for Preserving Food

- To prevent its spoilage
- To prolong its shelf life
- To avoid wastage, especially when they are in season.
- To allow for the use of foods during the off-season.
- To introduce variety into the family menu.
- To eliminate the purchase of foods when they are most expensive.
- To be able to take care of emergency situations.

Causes of Food Spoilage

Food spoilage is undesirable changes taking place in the food which eventually leads to its rejection. Food spoilage can be caused by the following factors:

1. Action of micro-organisms e.g. bacteria, yeast and moulds
2. Action of enzymes present in the food.
3. Purely chemical reactions in the food.
4. Action of insects.
5. Physical changes on the food.

Students Activities: The students listen to the teachers' explanation and jot down points.

Step III: The teacher explains the methods of food preservation as thus: the type of methods of preserving food depends on the nature of food, length of preservation required, the facility available and the type of dish to be prepared. The different methods of food preservation are:

- **Drying/dehydration:** This is the process by which the water content (moisture) of the food is reduced to create an unfavourable environment for the actions of food

enzymes and microorganisms, hence preventing spoilage e.g. cassava, maize, melon, cereals, legumes, yams, vegetables, milk, fish, meat, egg white, cocoa beverages.

- **Low temperature treatment:** This is keeping the food at a low temperature by freezing below $O^{o}c$ in the freezer and chilling at a higher temperature in the refrigerator e.g. fish, meat, milk, fruits, vegetables.
- **High temperature treatment:** This is the application of heat to foodstuff to destroy the food enzymes and microorganisms. It could be by
  a. **Pasteurization:** To destroy only the pathogenic microorganisms with minimum effect on the nutritional properties of the food. Usually at a temperature below $100^{o}c$ e.g. milk.
  b. **Sterilization:** To destroy all the microorganisms present in the foodstuff at a very high temperature. E.g. tomato puree, canned meat and fish.
  c. **Blanching:** To kill insects and their eggs, pathogenic microorganism, inactivate the food enzymes. The process involves dipping foodstuff into boiling water for 3 minutes e.g. vegetables. It is used with other preservative methods like freezing.
- **Use of chemicals**

  This is the addition of chemicals to food to
  - ❖ Inhibit the action of food enzymes
  - ❖ Create an unfavourable environment for the growth of the microorganisms.
  - ❖ Prevent chemical reactions from taking place in the food.
  - ❖ Tieing up the moisture present in the food.

  Examples of natural chemical preservatives are vinegar, salt, sugar, phenols and aldehydes.
- **Canning and bottling:** This is keeping food aseptically in cans or bottles. The food is sterilized, sealed in vacuum or in the presence of inert gases and then put in cans or bottles e.g. fruit juices, meat, fish, fruit purees, beverages and tomatoes purees.
- **Irradiation:** This involves the use of radioactive elements like cobalt to destroy microorganisms and food enzymes e.g. potato, yam tubers and onion.
- **Fermentation:** This involves the decomposition of some of the food components to produce acid that makes the food unfavourable to microorganisms e.g. locust bean seeds (iru), melon seeds (ogiri) and wines.
- **Smoking:** This is drying of food stuff over a fire or heated charcoal, the smoke produced contains some aldehyeles and phenols which have a strong bactericidal effect e.g. fish, meat.

Students Activities: The students listen attentively to the teachers explanation, make contribution where necessary and jot down points.

Step IV: At this point the teacher demonstrates canning to tomatoes as thus:

Ingredients for Canned Tomatoes

1. Fresh tomatoes
2. Cans or bottles
3. Salt

Procedure;

1. Blend fresh tomatoes until smooth
2. Pour the blended tomatoes paste into a clean pot and place on heat
3. Add a spoon full of salt to it, allow the tomatoes to dehydrate
4. Remove the tomatoes paste into the cans or bottles
5. Put the tomatoes paste into the cans or bottles
6. Put water on heat (make sure the water can cover the bottles or cans when put into the pot) allow to boil to 100^{o}c
7. Put the canned or bottled tomatoes into the boiling water allow it to sterilize for about 5 minutes.

Students' Activities: The student pays attention to what the teacher is doing and renders assistance where necessary.

Summary: The teacher at this point summarizes the lesson.

Evaluation: The teacher evaluates the students with the following questions.

1. Define the term food preservation
2. Mention (4) four reasons for preserving food
3. State (5) five methods of food preservation
4. Define food spoilage
5. Explain the process of canning or bottling food.

LESSON PLAN ON PREPARATION OF SPICE MIXTURES

Name of school: Onitsha High School, Onitsha.

Subject: Foods and Nutrition

Topic: preparation of spice mixtures

Class: **SS 2**

Average Age: 16 years plus

Duration: 45 Mins

Behavioural Objectives: By the end of the lesson, the students should be able to:

1. Define Herbs and spices
2. Mention at least (2) two examples of herbs and spices
3. Explain way of preserving herbs and spices.
4. Appreciate preservation of herbs and spices.

Entering Behaviour: The students are already familiar with the concept of food preservation.

Instructional Materials: Ginger, nchanwu "tea bush", nylon for packaging.

Instructional Techniques: Demonstration, explanation, use of examples, planned repetition, demonstration, reinforcement.

Set Induction: The teacher set induces the students with the following questions;

1. What is food preservation?
2. List (3) three methods of food preservation.

Teachers' Activities: Yes, you answered well. Food preservation is the act of keeping for a longer period of time before consuming it. Drying/dehydration, canning or bottling, low temperature, high temperature and use of chemical are methods of preserving food.

Instructional Procedure:

Step I: The teacher writes the topic on the board as thus;

Preservation and Packing of Herbs and Spices

Step II: The teacher explains the concept herbs and spices to the students as thus:

Herbs are leaves of plants while spices are obtained from roots, seeds, buds, or bark of plants. They contain volatile essential oils which give them their characteristics flavor and aroma. They become stale if kept too long, exposed to air or stored in a warm place. They then lose their valued flavor and aroma. Examples of herbs and spices are African lemon grass, bitter leaf (ewuro, shuwaka, onugbu), nchanwu (tea bush), African black pepper (uziza, ada),

ginger, garlic, onion, red pepper, mustard seed, ogiri (fermented melon), dawa dawa (fermented locust or soya beans). The teacher ask the student to give examples.

Students Activities: The students answered the questions and give contribution where necessary.

Instructional Techniques: Planned repetition, explanation, use of examples, questioning skills, reinforcement.

Step III: The teacher goes further to explain the importance of herbs and spices to food as thus:

Importance of Herbs and Spices

- **Improves nutritive values of food:** In the processing of cereal and dairy products, a large proportion of vitamins such as vitamins B and D, and also mineral salt like calcium and iron are added.
- **Improves colour and appearance of food:** Herb and spices helps to improves the colour of food.
- **For flavor and taste:** The appeal of food depends on its smell appearance and taste, in addition to it nutritional content.
- **Use as emulsifies:** Emulsifies like monoglycerides are added to food to improve the texture.

Students' Activities: The students listen attentively to the teachers explanations.

Instructional Procedure: Set induction, use of examples, explanation, reinforcement.

Step IV: At this point the teacher demonstrates spices and herbs preservation and packaging.

Ingredients

1. 2 bunch of Nchanwu "tea bush"
2. 5 pieces of fresh Ginger

Procedures

- Wash the ginger thoroughly
- Peel it
- Slice it to reduce the surface
- Spread in a clean tray
- Sundry, when dried properly
- Put in a fancy nylon and seal.

Nchanwu "Tea Bush"

- Wash the leaves with clean salty water
- Slice and spread in a clean tray
- Dry at a room temperature (room dry)
- When dry package in a clean nylon and seal.

Students' Activities: The student pays attention to what the teacher is doing and helps if necessary.

Instructional Techniques: Demonstration, explanation, questioning skills, use of examples.

Summary: The teacher summarizes the lesson.

Evaluation: The teacher evaluates the lesson with the following questions:

1. Define herbs and spices
2. Mention two (2) examples of herbs and spices
3. Explains way of preserving herbs and spices.

APPENDIX E
SPSS OUTPUTS
RESEARCH QUESTION 1

What is the difference in pre-test and post-test mean score of secondary school students who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test * Treatment group	170	100.0%	0	0.0%	170	100.0%
Post-test * Treatment group	170	100.0%	0	0.0%	170	100.0%

Report

Treatment group		Pre-test	Post-test
Demonstration method	Mean	68.36	74.99
	N	70	70
	Std. Deviation	7.349	9.436
	Std. Error of Mean	.878	1.128
	Variance	54.001	89.029
Lecture method	Mean	53.53	57.58
	N	100	100
	Std. Deviation	6.232	5.817
	Std. Error of Mean	.623	.582
	Variance	38.837	33.842
Total	Mean	59.64	64.75
	N	170	170
	Std. Deviation	9.918	11.401
	Std. Error of Mean	.761	.874
	Variance	98.363	129.989

HYPOTHESIS 1

There is no significant difference between the pre-test and post-test mean score of secondary school students who were exposed to demonstration method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Pre-test	Demonstration method	70	68.36	7.349	.878	66.60	70.11	51	80
	Lecture method	100	53.53	6.232	.623	52.29	54.77	41	67
	Total	170	59.64	9.918	.761	58.13	61.14	41	80
Post-test	Demonstration method	70	74.99	9.436	1.128	72.74	77.24	53	90
	Lecture method	100	57.58	5.817	.582	56.43	58.73	44	70
	Total	170	64.75	11.401	.874	63.02	66.47	44	90

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Pre-test	Between Groups	9052.407	1	9052.407	200.873	.000
	Within Groups	7570.981	168	45.065		
	Total	16623.388	169			
Post-test	Between Groups	12474.778	1	12474.778	220.761	.000
	Within Groups	9493.346	168	56.508		
	Total	21968.124	169			

RESEARCH QUESTION 2

What is the difference in pre-test and post-test mean score of secondary school students who were exposed to problem solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)?

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test * Treatment group	170	100.0%	0	0.0%	170	100.0%
Post-test * Treatment group	170	100.0%	0	0.0%	170	100.0%

Report

Treatment group		Pre-test	Post-test
Problem solving	Mean	65.26	70.90
	N	70	70
	Std. Deviation	7.330	8.891
	Std. Error of Mean	.876	1.063
	Variance	53.730	79.048
Lecture method	Mean	53.53	57.58
	N	100	100
	Std. Deviation	6.232	5.817
	Std. Error of Mean	.623	.582
	Variance	38.837	33.842
Total	Mean	58.36	63.06
	N	170	170
	Std. Deviation	8.843	9.764
	Std. Error of Mean	.678	.749
	Variance	78.196	95.327

HYPOTHESIS 2

There is no significant difference between the pre-test and post-test mean score of secondary school students who were exposed to problem solving method in entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method)

Descriptive

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Pre-test	Problem solving	70	65.26	7.330	.876	63.51	67.00	49	78
	Lecture method	100	53.53	6.232	.623	52.29	54.77	41	67
	Total	170	58.36	8.843	.678	57.02	59.70	41	78
Post-test	Problem solving	70	70.90	8.891	1.063	68.78	73.02	54	89
	Lecture method	100	57.58	5.817	.582	56.43	58.73	44	70
	Total	170	63.06	9.764	.749	61.59	64.54	44	89

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Pre-test	Between Groups	5662.830	1	5662.830	125.969	.000
	Within Groups	7552.281	168	44.954		
	Total	13215.112	169			
Post-test	Between Groups	7305.628	1	7305.628	139.397	.000
	Within Groups	8804.660	168	52.409		
	Total	16110.288	169			

RESEARCH QUESTION 3

What is the difference in pre-test and post-test mean score of secondary school students who were exposed to demonstration and problem solving methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to demonstration and problem solving methods?

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test * Treatment Group	240	100.0%	0	0.0%	240	100.0%
Post-test * Treatment Group	240	100.0%	0	0.0%	240	100.0%

Report

Treatment Group		Pre-test	Post-test
Experimental group 1 (Demonstration method)	Mean	68.36	74.99
	N	70	70
	Std. Deviation	7.349	9.436
	Std. Error of Mean	.878	1.128
	Variance	54.001	89.029
Experimental group 2 (Problem solving method)	Mean	65.26	70.90
	N	70	70
	Std. Deviation	7.330	8.891
	Std. Error of Mean	.876	1.063
	Variance	53.730	79.048
Lecture method	Mean	53.53	57.58
	N	100	100
	Std. Deviation	6.232	5.817
	Std. Error of Mean	.623	.582
	Variance	38.837	33.842
Total	Mean	61.27	66.54
	N	240	240
	Std. Deviation	9.572	11.072
	Std. Error of Mean	.618	.715
	Variance	91.623	122.592

HYPOTHESIS 3

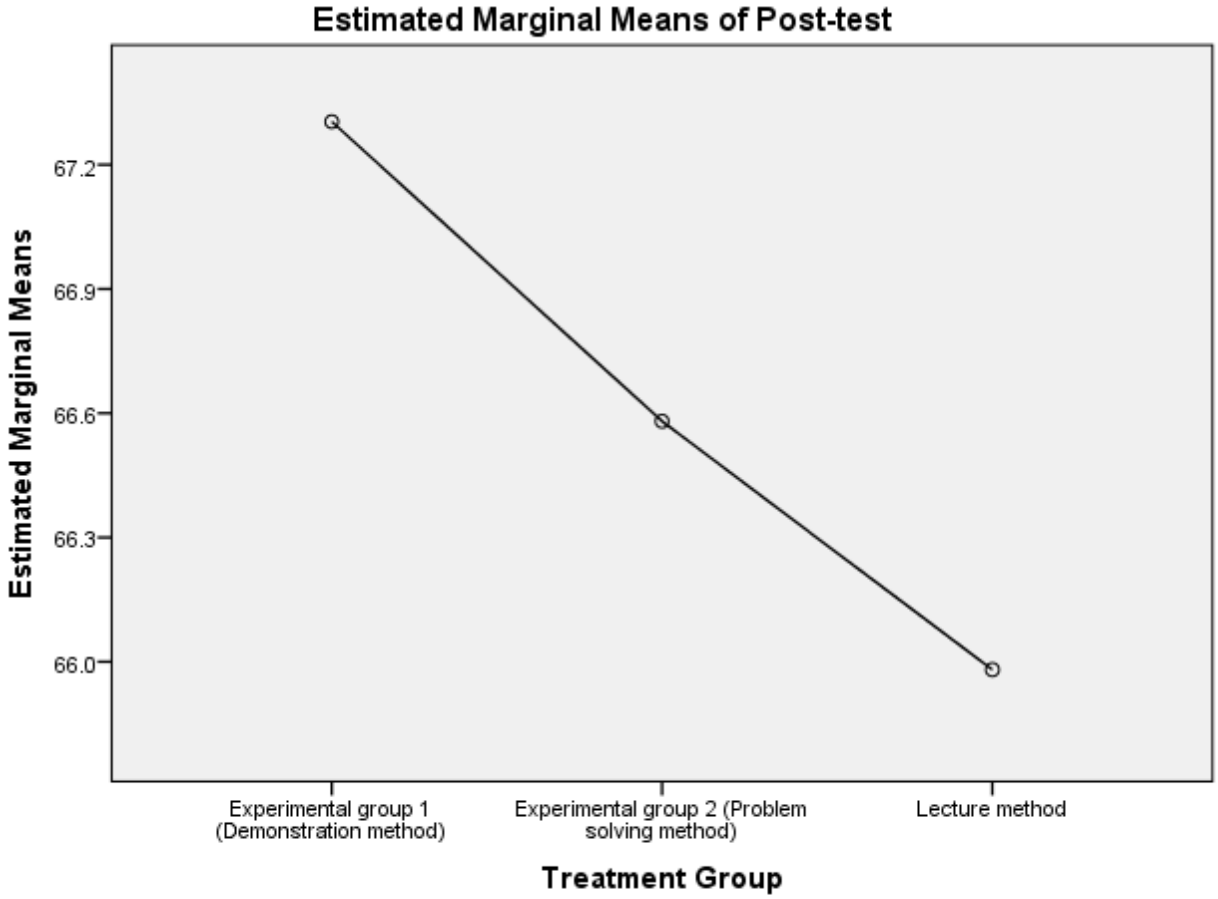
There is no significant difference between the pre-test and post-test mean score of secondary school students who were exposed to problem solving and demonstration methods on entrepreneurial skills acquisition in Foods and Nutrition and their counterparts in the control group (lecture method) who were not exposed to problem solving and demonstration methods

DESCRIPTIVES

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Pre-test	Experimental group 1 (Demonstration method)	70	68.36	7.349	.878	66.60	70.11	51	80
	Experimental group 2 (Problem solving method)	70	65.26	7.330	.876	63.51	67.00	49	78
	Lecture method	100	53.53	6.232	.623	52.29	54.77	41	67
	Total	240	61.28	9.572	.618	60.06	62.49	41	80
Post-test	Experimental group 1 (Demonstration method)	70	74.99	9.436	1.128	72.74	77.24	53	90
	Experimental group 2 (Problem solving method)	70	70.90	8.891	1.063	68.78	73.02	54	89
	Lecture method	100	57.58	5.817	.582	56.43	58.73	44	70
	Total	240	66.54	11.072	.715	65.13	67.95	44	90

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Pre-test	Between Groups	10619.497	2	5309.749	111.577	.000
	Within Groups	11278.353	237	47.588		
	Total	21897.850	239			
Post-test	Between Groups	14351.938	2	7175.969	113.777	.000
	Within Groups	14947.646	237	63.070		
	Total	29299.583	239			



Covariates appearing in the model are evaluated at the following values: Pre-test = 61.28

RESEACH QUESTION 4

What is the difference in pre-test and post-test mean score of urban and rural secondary school students who were exposed to demonstration, problem solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State?

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test * Treatment Group * Location	240	100.0%	0	0.0%	240	100.0%
Post-test * Treatment Group * Location	240	100.0%	0	0.0%	240	100.0%

Report

Treatment Group	Location		Pre-test	Post-test
Control group (lecture method) (Lecture method)	Urban	Mean	59.78	63.53
		N	60	60
		Std. Deviation	8.182	8.734
		Std. Error of Mean	1.056	1.128
		Variance	66.952	76.287
	Rural	Mean	32.33	46.08
		N	40	40
		Std. Deviation	6.498	6.549
		Std. Error of Mean	1.027	1.036
		Variance	42.225	42.892
	Total	Mean	48.80	56.55
		N	100	100
		Std. Deviation	15.470	11.673
		Std. Error of Mean	1.547	1.167
		Variance	239.313	136.250
Experimental group 1 (Demonstration method)	Urban	Mean	77.98	86.43
		N	40	40
		Std. Deviation	6.934	7.082
		Std. Error of Mean	1.096	1.120
		Variance	48.076	50.148
	Rural	Mean	71.27	81.50
		N	30	30
		Std. Deviation	7.570	9.258
		Std. Error of Mean	1.382	1.690
		Variance	57.306	85.707
	Total	Mean	75.10	84.31
		N	70	70
		Std. Deviation	7.902	8.390
		Std. Error of Mean	.944	1.003
		Variance	62.439	70.393
Experimental group 2 (Problem solving method)	Urban	Mean	73.98	80.80
		N	40	40
		Std. Deviation	6.934	7.487
		Std. Error of Mean	1.096	1.184
		Variance	48.076	56.062

	Rural	Mean	68.27	81.73
		N	30	30
		Std. Deviation	7.570	9.048
		Std. Error of Mean	1.382	1.652
		Variance	57.306	81.857
	Total	Mean	71.53	81.20
		N	70	70
		Std. Deviation	7.704	8.143
		Std. Error of Mean	.921	.973
		Variance	59.354	66.307
Total	Urban	Mean	69.04	75.01
		N	140	140
		Std. Deviation	11.062	12.891
		Std. Error of Mean	.935	1.089
		Variance	122.366	166.180
	Rural	Mean	54.79	67.40
		N	100	100
		Std. Deviation	19.784	19.293
		Std. Error of Mean	1.978	1.929
		Variance	391.420	372.222
	Total	Mean	63.10	71.84
		N	240	240
		Std. Deviation	16.818	16.277
		Std. Error of Mean	1.086	1.051
		Variance	282.835	264.957

HYPOTHESIS 4

There is no significant difference between the pre-test and post-test mean score of urban and rural secondary school students who were exposed to demonstration, problem solving and lecture methods on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State

Between-Subjects Factors

		Value Label	N
Treatment Group	1	Control group (lecture method) (Lecture method)	100
	2	Experimental group 1 (Demonstration method)	70
	3	Experimental group 2 (Problem solving method)	70
Location	1	Urban	140
	2	Rural	100

Tests of Between-Subjects Effects

Dependent Variable: Post-test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	61440.827[a]	6	10240.138	1266.539	.000	.970
Intercept	189.187	1	189.187	23.399	.000	.091
Pretest	13291.414	1	13291.414	1643.933	.000	.876
Group	30.587	2	15.293	1.892	.153	.016
Location	1324.694	1	1324.694	163.843	.000	.413
Group * Location	581.512	2	290.756	35.962	.000	.236
Error	1883.836	233	8.085			
Total	1301875.000	240				
Corrected Total	63324.662	239				

a. R Squared = .970 (Adjusted R Squared = .969)

1. Grand Mean

Dependent Variable: Post-test

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
72.492[a]	.190	72.119	72.866

a. Covariates appearing in the model are evaluated at the following values: Pre-test = 63.10.

2. Treatment Group

Dependent Variable: Post-test

Treatment Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Control group (lecture method) (Lecture method)	72.263[a]	.519	71.240	73.286
Experimental group 1 (Demonstration method)	72.163[a]	.450	71.276	73.050
Experimental group 2 (Problem solving method)	73.052[a]	.399	72.266	73.837

a. Covariates appearing in the model are evaluated at the following values: Pre-test = 63.10.

3. Location

Dependent Variable: Post-test

Location	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Urban	69.261[a]	.309	68.652	69.870
Rural	75.724[a]	.322	75.089	76.359

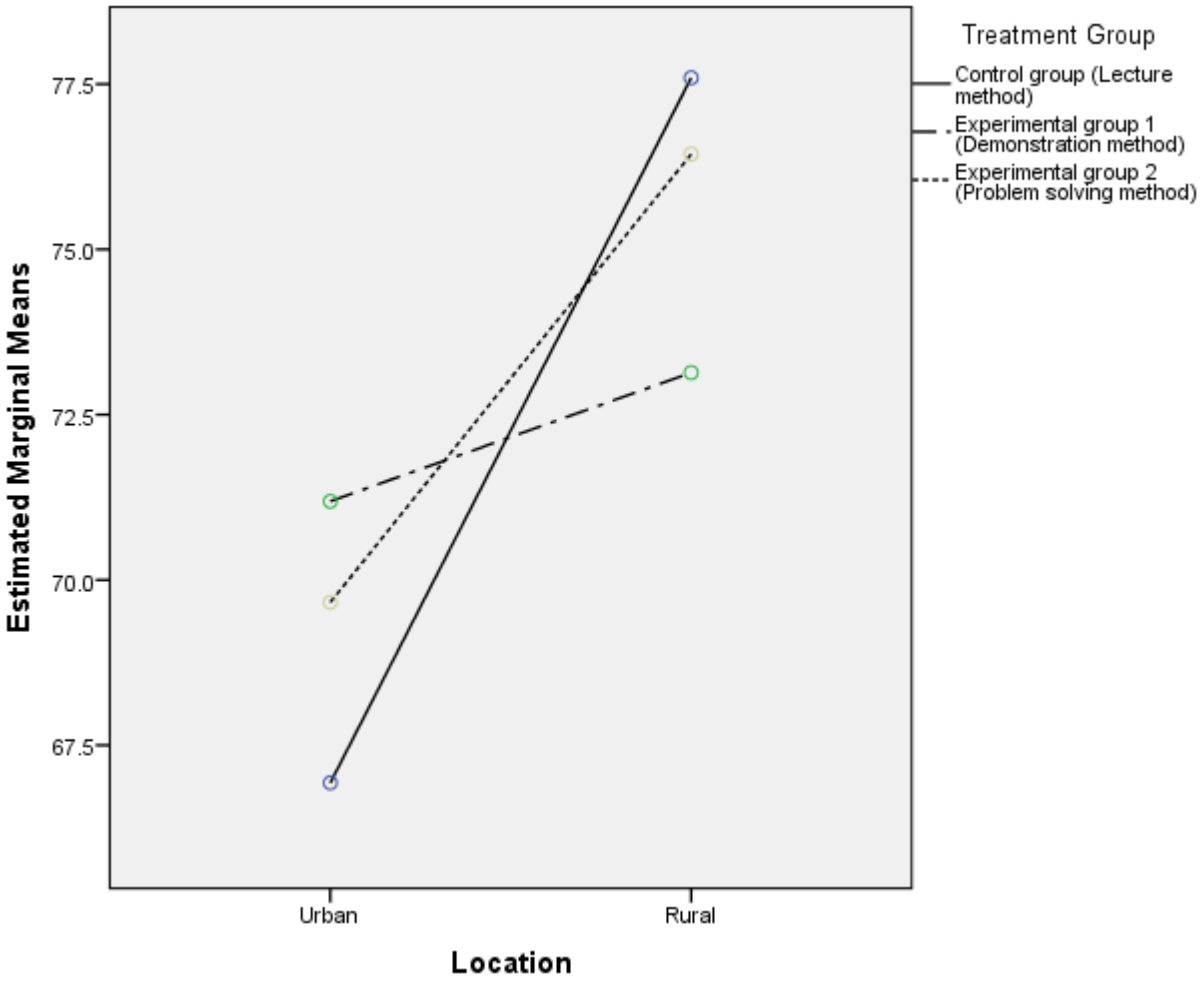
a. Covariates appearing in the model are evaluated at the following values: Pre-test = 63.10.

4. Treatment Group * Location

Dependent Variable: Post-test

Treatment Group	Location	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Control group (lecture method) (Lecture method)	Urban	66.930[a]	.377	66.188	67.672
	Rural	77.595[a]	.898	75.826	79.364
Experimental group 1 (Demonstration method)	Urban	71.190[a]	.586	70.036	72.344
	Rural	73.136[a]	.559	72.035	74.236
Experimental group 2 (Problem solving method)	Urban	69.662[a]	.527	68.624	70.700
	Rural	76.442[a]	.535	75.387	77.496

a. Covariates appearing in the model are evaluated at the following values: Pre-test = 63.10.



RESEARCH QUESTION 5

What is the difference in pre-test and post-test mean score of female and male secondary school students who were exposed to lecture method, demonstration method and problem solving method on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State?

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test * Treatment Group * Gender	240	100.0%	0	0.0%	240	100.0%
Post-test * Treatment Group * Gender	240	100.0%	0	0.0%	240	100.0%

Report

Treatment Group	Gender		Pre-test	Post-test
Control group (lecture method) (Lecture method)	Female	Mean	57.87	63.62
		N	69	69
		Std. Deviation	7.673	8.748
		Std. Error of Mean	.924	1.053
		Variance	58.880	76.532
	Male	Mean	42.42	44.74
		N	31	31
		Std. Deviation	8.049	8.493
		Std. Error of Mean	1.446	1.525
		Variance	64.785	72.131
	Total	Mean	53.08	57.77
		N	100	100
		Std. Deviation	10.566	12.307
		Std. Error of Mean	1.057	1.231
		Variance	111.650	151.452
Experimental group 1 (Demonstration method)	Female	Mean	73.73	82.50
		N	52	52
		Std. Deviation	4.691	6.620
		Std. Error of Mean	.651	.918
		Variance	22.005	43.824
	Male	Mean	60.50	62.33

		N	18	18
		Std. Deviation	4.502	4.627
		Std. Error of Mean	1.061	1.091
		Variance	20.265	21.412
	Total	Mean	70.33	77.31
		N	70	70
		Std. Deviation	7.428	10.793
		Std. Error of Mean	.888	1.290
		Variance	55.180	116.480
Experimental group 2	Female	Mean	71.75	78.91
(Problem solving method)		N	55	55
		Std. Deviation	4.563	6.349
		Std. Error of Mean	.615	.856
		Variance	20.823	40.306
	Male	Mean	58.73	60.67
		N	15	15
		Std. Deviation	4.166	4.117
		Std. Error of Mean	1.076	1.063
		Variance	17.352	16.952
	Total	Mean	68.96	75.00
		N	70	70
		Std. Deviation	6.981	9.583
		Std. Error of Mean	.834	1.145
		Variance	48.737	91.826
Total	Female	Mean	66.89	73.98
		N	176	176
		Std. Deviation	9.440	11.245
		Std. Error of Mean	.712	.848
		Variance	89.114	126.445
	Male	Mean	51.33	53.42
		N	64	64
		Std. Deviation	10.785	10.777
		Std. Error of Mean	1.348	1.347
		Variance	116.319	116.153
	Total	Mean	62.74	68.50
		N	240	240
		Std. Deviation	11.978	14.359
		Std. Error of Mean	.773	.927
		Variance	143.481	206.176

HYPOTHESIS 5

There is no significant difference between the pre-test and post-test mean score of female and male secondary school students who were exposed to lecture method, demonstration method and problem solving method on entrepreneurial skills acquisition in Foods and Nutrition in secondary schools in Anambra State

Between-Subjects Factors

		Value Label	N
Treatment Group	1	Control group (lecture method) (Lecture method)	100
	2	Experimental group 1 (Demonstration method)	70
	3	Experimental group 2 (Problem solving method)	70
Gender	1	Female	176
	2	Male	64

Tests of Between-Subjects Effects

Dependent Variable: Post-test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	47312.014[a]	6	7885.336	935.489	.000	.960
Intercept	1.476	1	1.476	.175	.676	.001
Pretest	10417.035	1	10417.035	1235.841	.000	.841
Group	14.990	2	7.495	.889	.412	.008
Gender	349.064	1	349.064	41.412	.000	.151
Group * Gender	115.243	2	57.622	6.836	.001	.055
Error	1963.982	233	8.429			
Total	1175279.000	240				
Corrected Total	49275.996	239				

a. R Squared = .960 (Adjusted R Squared = .959)

Univariate Tests

Dependent Variable: Post-test

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	14.990	2	7.495	.889	.412	.008
Error	1963.982	233	8.429			

The F tests the effect of Treatment Group. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Estimates

Dependent Variable: Post-test

			95% Confidence Interval	
Gender	Mean	Std. Error	Lower Bound	Upper Bound
Female	69.521[a]	.270	68.989	70.053
Male	65.561[a]	.469	64.637	66.485

a. Covariates appearing in the model are evaluated at the following values: Pre-test = 62.74.

Pairwise Comparisons

Dependent Variable: Post-test

					95% Confidence Interval for Difference[b]	
(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
Female	Male	3.960*	.615	.000	2.748	5.172
Male	Female	-3.960*	.615	.000	-5.172	-2.748

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

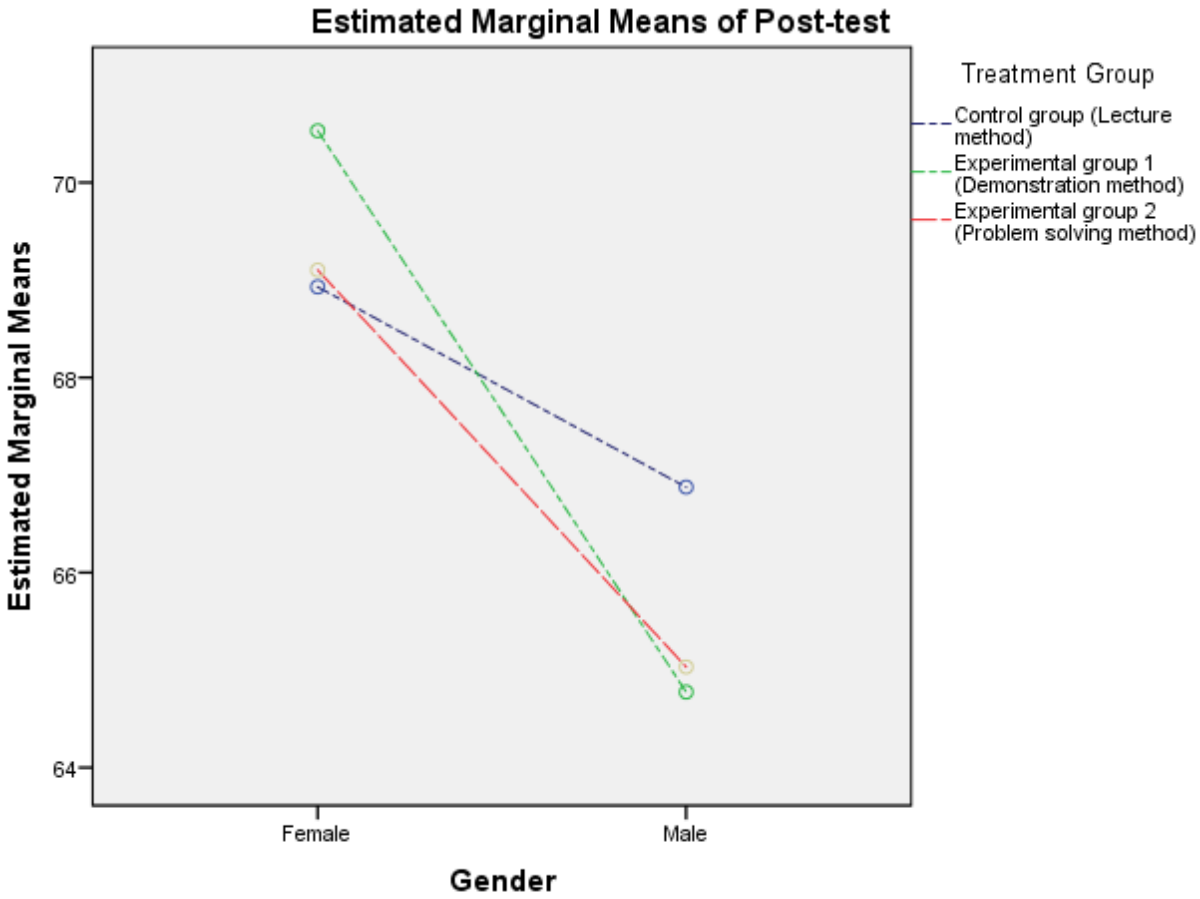
b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Post-test

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	349.064	1	349.064	41.412	.000	.151
Error	1963.982	233	8.429			

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.



Covariates appearing in the model are evaluated at the following values: Pre-test = 62.74

APPENDIX F

```
RELIABILITY
  /VARIABLES=Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale: PREPARATION AND PACKAGING OF FRIED RICE

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure

Reliability Statistics

Cronbach's Alpha	N of Items
.943	9

```
RELIABILITY
  /VARIABLES=Q10 Q11 Q12 Q13 Q14 Q15 Q16
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale: PREPARATION AND PACKAGING OF WATER YAM

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.904	7

```
RELIABILITY
  /VARIABLES=Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale: MAKING BANANA ICE CREAM

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.915	9

```
RELIABILITY
  /VARIABLES=Q26 Q27 Q28 Q29 Q30 Q31 Q32 Q33 Q34 Q35
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale: PREPARATION OF CAKE

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.871	10

```
RELIABILITY
  /VARIABLES=Q36 Q37 Q38 Q39 Q40 Q41 Q42 Q43
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale: PREPARATION OF CANNED TOMATOES

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.883	8

```
RELIABILITY
  /VARIABLES=Q44 Q45 Q46 Q47 Q48 Q49 Q50
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability

Scale:PREPARATION OF SPICE MIXTURE

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.943	7