

ASSESSMENT OF CASSAVA PRODUCTION POTENTIALS AS PANACEA FOR POVERTY ALLEVIATION IN NIGERIA (A STUDY OF PRIMARY SCHOOLS IN ABAKALIKI EDUCATION ZONE)

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Abstract

The study was an assessment of cassava production potentials, as a panacea for poverty alleviation (study of primary schools in Abakaliki Education zone). Descriptive survey design was adopted with a sample size of 80 Agricultural Science teachers, made up of 58 males and 22 females. Research questions and hypotheses guided the study. The study was carried out in Abakaliki Education zone, using the primary school teachers. Questionnaire was developed and used for data collection, while mean and standard deviation were used to answer the research questions, and t-test statistics used to test the hypotheses at 0.05 significant level. The study recommends among other things that government at all levels should provide adequate facilities to improve cassava production in primary schools, which will go a long way in alleviating poverty in Nigeria.

Keywords: Cassava production, poverty alleviation

Introduction

In many African countries, there is abject poverty; lack of money and all the human needs that money can buy. Living revolves around the continuous search for necessities such as water shelter and clothing. The increasing level of unemployment has forced many trained people to join the teeming stream of the untrained and unemployed. The resultant poverty has affected women more. Because they are perfunctorily saddled with the responsibility of caring for the family especially the children.

Cassava is an important staple food in Africa. Internationally, cassava has become recognized as the main hope of combating human starvation in sub-Saharan Africa (Ikpi and Hanhn, 1989). In Nigeria cassava is processed into three staple food types namely, cassava flour (lafun), fufu, and garri (Sanni, Sobaniwa, Enyinla and Rosleng, 1994). Garri is the most popular and indispensable cassava stable food for the Nigerian household for a variety of reasons. It is a convenient storable and easy to prepare food that conform to the organoleptic preference of

the consumers. The importance of cassava, in particular garri, in the Nigerian diet is long established. (Amadi, 1983), noted that approximately 28, 41 and 31% of some selected communities in Nigeria consume garri once, twice and thrice daily respectively.

Industrially, cassava crop can be processed into starch powder and cold water starch for textiles finishing and home Laundry, glues and adhesives, and in the manufacture of drugs and paint. Cassava meal and cassava peel are used to substitute maize in the feeding of livestock, (depending on the class of livestock and methods of preparation). The leaves are equally consumed as a favourite green vegetable.

Cassava plays a major role in alleviating food crisis in Africa because of its efficient production as cheap source of energy food, year round availability, tolerant to extreme climatic conditions and sustainability to peasant farming. This paper therefore reviews the potentials of cassava production to food security and poverty alleviation and suggests strategies for its increased production

Currently, Nigeria is the highest producer of cassava, producing about 36 million metric tones per annum (Mustapha, 2002). The volume and tonnage figures of cassava export in Nigeria are perhaps not recorded.

This notwithstanding, the production of cassava is still at its subsistence level not highly commercialized. This is why it is being assessed at the primary school level, because that is the basis upon which other developments take place. Primary education is the education received by the pupils aged 5⁺ to 12⁺ years before secondary education. The production of cassava should be properly introduced at the primary school educational level.

Statement of problem

Nigeria is the largest producer of cassava in the world. In 1990 alone, Nigeria produced about 26.0 million tonnes on 1.08 million hectare of land (FAO 1991). Cassava production suffered a severe set back during the early 1980's due to the outbreak of the cassava mealbug and green spider mite causing a significant decrease in production of over 60% (Chinaka, Chinwendu and Asnmugba 1998). Continued use of low yielding planting materials and poor cultural management also resulted in a serious yield reduction (NRCRI 1981). To combat these problems, the National Root Crops Research Institute (NRCRI) and the International Institute for Tropical Agriculture (IITA) have, through breeding, developed and released high yielding disease and pest resistant/tolerant varieties capable of adapting to a wide range of ecological conditions and farming systems with their technological packages. This should be introduced in the primary education system.

In addition to the traditional uses of cassava, it can be promoted as a modern food ingredient comparable with wheat and as a modern input in the growing agro-industrial sector. The highly perishable cassava roots can be transformed into non-fermented flour. A stable product with a longer shelf life than the fresh roots. The opportunities for cassava flour include not only baking industry but also can be used in alcohol and starch manufacturing. Cassava flour being a multipurpose product, it will sell at a higher

price than fermented cassava flour.

Purpose of the study

The purpose of this study is to assess the cassava production. Potentials that need to be in calculated in primary education.

Research question

1. What are the cassava production potentials to be inculcated in primary education for poverty alleviation

Research hypothesis

There is no significant difference between the mean ratings of male and female primary school teachers on the cassava production potentials that will be inculcated in primary school education.

Methodology

The study adopted a descriptive survey design, and was carried out in Abakaliki education zone of Ebonyi State. The population is made up of Agricultural science teachers in primary schools with a minimum qualification of NCE numbering 58 males and 22 females. The whole population of 80 teachers (58 males and 22 females) were used. Questionnaire was developed for sample collection. It was face and content validated and reliability established 0.86 using Cronbach alpha. Mean and standard deviation were used to answer the research questions, while t-test was used to test the hypothesis.

Results

What are the cassava production potentials to be inculcated in primary school education for poverty alleviation in Ebonyi State.

Table 1: Mean ratings and standard deviation of male and female primary school Agricultural teachers on the cassava production potentials to be inculcated in primary education for poverty alleviation in Ebonyi State

S/ N	Items	Male = 58			Female = 22		Remks
		X	Sd	Rmks	X	Sd	
1.	One can specialize in cassava a production for livelihood	3.33	0.57	Agreed	3.01	0.65	Agree
2	Economic value: cassava production generates much income	3.41	0.51	Agreed	3.17	0.61	Agreed
3	It can guarantee to creation	2.71	0.81	Agreed	2.56	0.91	Agreed
4	Cassava production provides food security	2.65	0.86	Agreed	2.61	0.88	Agreed
5	Cassava production provide raw materials for animal feeds	3.17	0.61	Agreed	3.41	0.51	Agreed
6	It provides starch production for industrial use	2.61	0.88	Agreed	2.55	0.93	Agreed
7	Other kinds of food like flour and alcohol are produced from cassava produce	2.82	0.75	Agreed	2.56	0.91	Agreed
8	Cassava products can be fabricated as chips, pellets, ethanol etc	2.71	0.81	Agreed	2.61	0.88	Agreed
9	Cassava production protect the environment (soil) from erosion	2.61	0.88	Agreed	2.71	0.81	Agreed
10	It has the potentials to multiply the improved variety for local and commercial uses	3.01	0.65	Agreed	2.81	0.76	Agreed
	Gran mean	2.87	0.73	Agreed	2.79	0.78	Agreed

The data in table 1 reveal that both male and female Agricultural teachers overwhelmingly rated all the ten items as cassava production potentials to be inculcated to the primary school education in Ebonyi State

Hypothesis

H01: There is no significant difference in the mean ratings of male and female primary school agricultural teachers on cassava production potentials to be inculcated in primary school education.

Table 2: t-test analysis of male and female primary school agricultural teachers on cassava production potentials

Category	N	X	DF	df	t-cal	t-crit	Decision
Male agric teachers	58	2.87	0.73				Ho1: accepted
				78	0.44	1.96	
Female agric teachers	22	2.79	0.78				

The data in table 2, show that both male and female primary school Agricultural teachers express similar views on the cassava production potentials to be inculcated in primary school education. On this basis, the null hypothesis is accepted because the t-calculated value of 0.44 is less than the t-critical value of 1.96 at 0.05 significant level with the degree of freedom of 78.

Discussion

The findings of the study reveal the following:

Socio-economic importance of cassava production in Nigeria -production of Cassava for local and export markets:-

In order to meet the local and export markets demands for cassava, its production has to be expanded. A lot of hands would be needed for this. If they respond to this challenge, a high percentage of unemployment problems being faced by our youths, particularly the teeming of graduates will be gainfully employed. It will alleviate their poverty, and they would be fed and have savings to invest in other areas.

In the production of cassava, farmers would be engaged in fertilizer application, harvesting and storage technologies, appropriate cassava varieties best farming practices (shifting cultivation, fallow resistant varieties etc) and organization of central collection system for cassava. Such increased production would go along way to also meet the industrial needs of local and export markets, apart from solving the feeding problem of the teeming population. It provides job opportunities and income generation for the rural areas. You can also establish contact with local government authorities to assist in solving other cassava production problems (grazing animals, rural transportation etc).

Food security: -

Farmers would increase their food security base as the crop can be eaten rather than sold in times of hardship (or sold for money with which to buy other essentials of life). Cassava provides a major source of calories for poor families because of its high starch content but with very

little protein. With minimum maintenance, farmers can dig up the starch root of cassava and eat it. They can be peeled and boiled, baked fried. It can also serve as food for the people in the cities. Such food includes snacks, garri, flour, chips, pellets etc. These could be processed to make fast foods for those who desire them.

Animal feed production:-

In Africa, people also eat the young green leaves of the cassava as green vegetables which provides a cheap and rich source of protein and vitamins A and B. Livestock also take the green leaves of cassava as well. This is in the areas of animal feeds. In foreign countries, cassava is used to feed their livestock, one can take advantage of this, to export 3sTigeria cassava to Europe to feed their animals especially now when they have cow mouth problems.

Employment creation:-

The production, processing and marketing of cassava will provide much needed employment in the rural areas, curbing the urban drift through self-reliance and self-sustaining activities in the informal sector.

National economy-

The national economy would benefit through foreign exchange savings resulting from import substitution. The creation of new markets opportunities will also expand export potential. For instance, cassava chips pellets and starches are mostly for export markets in Europe. Cassava can be used to feed the focal industries that require it.

Starch production for industrial use:-

The starchy content of cassava could be processed for industrial use. Various industries use it as binding (gum) material because it is not all that expensive. Cassava starch is used in the production of paper and textiles and as monosodium glutamate so those in the paper and textile industries need cassava starch. People can invest in this area and earn their living. Such industries can also invest in such area to guarantee (the steady supply of this raw material.

Environment:

The introduction of the sustainable cultivation of cassava in semi arid regions will conserve soils in these marginal areas. The large leaves can protect the underlying soils from erosion; excessive heat and the introduction of a root crop to the cropping system would have favourable effects in soil structure.

Marketing of cassava products:

Another paying area of investment is the marketing of cassava products. One could specialize in this by getting in touch with the farmers and other producing cassava products for their market outlets. This may involve storage and packaging aspects of marketing. By doing this, values are added to the cassava products produced by such farmers and other merchants and the values of and prices for such products are enhanced.

Alcohol production:-

Cassava tuber could be grated and the juice extracted through pressing or squeezing. The juice could be processed to produce ethanol alcohol. One could invest on small/medium scale technologies for the production of ethanol from cassava or improving the existing technologies, including determination of enzymes and yeast for production of ethanol from cassava. This may include designing effective machinery ethanol production, particularly distillators.

Design and fabrication technologies:

Another investment opportunity in the cassava sub-sector is the fabrication of processing technologies for all cassava products such as cassava chips, pellets, ethanol and packaging. One could also specialize in designing and fabrication of cost saving and efficient dryers, extruders and promotional items. These items could be sold to farmers and other stakeholders through the ADP and Agro-Processors.

Consultancy services:

In another direction, one could specialize in providing consultancy services for the dissemination of information and updating database for cassava products in the country

(Nigeria). One could also create forum for information exchange by organizing seminars and workshops. Token fees charged for these services could sustain one in the business.

Cassava varieties:

There is need to increase the adoption of planting materials of improved cassava varieties among smallholder farmers. This will increase production and reduce poverty among farmers. Regarding cassava as traditional crops, the development of cultivars which have qualities similar to the traditional can enhance adoption. Strengthening research/extension farmer linkages can also enhance adoption of cassava, it can be strengthened through on farm testing of improved cassava varieties technologies and joint field visits of extensionists and researchers in addition to other means e. g. press coverage and radio should be increased to inform the public about new technologies of cassava.

Rapid multiplication of cassava planting material:-

Cassava in Nigeria is attacked by diseases such as mosaic disease, bacterial blight etc. These diseases spread easily since farmers share planting materials. There is the need therefore to provide farmers with disease free planting material from International Institute of Tropical Agriculture, Ibadan Nigeria and other reputable research organizations.

Conclusion/Recommendation

Nigeria has great potential for cassava production, which has not been fully tapped. Awareness for the investment opportunities has been made which we could exploit in cassava product. If resources are diverted into it. It will not only generate employment opportunities in the rural areas, but definitely feed the teeming population, earn foreign exchange and eventually alleviate, if not totally eradicate, the poverty, in the Nigerian Society.

Government at all levels should provide adequate facilities for cassava producing primary school level of all the states in Nigeria.

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EFFECTS OF PEER-TUTORING STRATEGY ON UPPER BASIC SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES IN EBONYI STATE.

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Abstract

The study examined the effect of peer tutoring strategy on upper basic school students' achievement in social studies in Onueke Education zone of Ebonyi State. Three specific purposes of study were ascertained the effect of peer tutoring strategy on students' mean achievement in social studies, ascertain the effect of peer tutoring strategy on the mean achievement of male and female students, examine the interaction effects of instructional strategies and gender on students' achievement in social studies. Three research questions and three null hypotheses were formulated to guided the conduct of the study. The design of the study was quasi-experimental research design and the population of the study was four thousand, eight hundred and twelve (4, 8, 12) upper basic two students in public upper basic schools in Onueke education zone of Ebonyi State. The instrument used for data collection was social studies multiple choke test (SOSMCT). Data were analyzed using mean and standard deviation for all research questions and analysis of co-variance (ANCOVA) were used to test the null hypotheses. The findings of the study revealed that: the mean achievement score of upper basic school students taught social studies using peer tutoring strategies was higher than those taught using conventional strategies. Female upper basic school students obtained higher mean scores than male students taught social studies using peer tutoring strategy and there were no significant interaction effects between strategies and gender in upper basic school students' achievement in social studies and the results of data analysis using ANCOVA revealed that there were significant differences in the mean achievement scores of upper basic school students taught social studies using peer tutoring strategy. Based on these findings the researcher recommended that social studies teachers should be encouraged to use instructional strategies that enhance students' active participation in the instructional processes rather than being passive learners.

Keywords: Effects, Peer – Tutoring, Strategy, Academic Achievement

Introduction

Background to the Study

Generally, the academic achievement of students at school in Nigeria has attracted the attention of not only the parents and teachers, but also the society at large. Over the years the government of the Federal Republic of Nigeria has lamented greatly on the poor achievement of students in schools especially in the compulsory courses which Social Studies is one of them. Social Studies is one of the core subjects in the Nigeria school curricula and so occupies a very prominent position in the social, cultural, political and economic life of Nigerians.

Explaining further, Isiaka (2003) asserts that until recently, a child's intelligence was considered to be a fixed entity at birth. Most people believed that nothing in the child's environment could change his intelligence to any significant degree. This assumption has become a greatly debated subject in education; many factors play a role in the academic performance of students especially in upper basic schools. Therefore, a proper education of children will enhance their social and economic development among others.

Federal Government of Nigeria (2012)

maintains that, education is a veritable tool for social change; national integration and development. Chukwu (2009: 6) is of the view that "education is a social process whereby the individual acquires skills and knowledge for successful living in a society". The extent to which the above goals of the Federal Government of "Nigeria (2012) are achieved depends largely on the quality of education provided to the citizenry. In line with the above assertions, Ukaonu in Aguokogbuo (2000) opines that education is a social process whereby the individual is prepared for successful participation in social relationship. Ukaeje (1984:27) is of the opinion that education should be seen as the "process of training an individual to not only read and write or to be proficient in a given job but also to enable him fit himself for living in a society". In support of this assertion, Ani in Eze (2004) states that education is a wheelbase that can carry not only the individual but the nation to its development centre.

Statement of the Problem

Peer tutoring is the strategy used in teaching and learning situations which involves getting students to unleash their imaginative and intuitive capacities through learning and promotes maximum interaction between and among students to enhance efficient decision making while discussing and analyzing social issues. It encourages the development of critical thinking through discussion, negotiations and clarifications of basic content or ideas because in peer tutoring, students enjoy the liberty to advance their own ideas and to benefit from the ideas and views of others. In Ebonyi State, this strategy has not been in use and students perform poorly in Social Studies examinations. Hence, the problem of this study put in question form is, what is the effect of peer tutoring strategy on Upper Basic school students' achievement in Social Studies in Ebonyi State?

Purpose of the Study

The purpose of the study is to ascertain the effect of peer tutoring strategy on Upper Basic school students' academic achievement in Social

Studies in Ebonyi State. Specifically, the study is designed, to ascertain:

- The effects of peer tutoring on the mean academic achievement of Upper Basic school students in Social Studies in Ebonyi State.
- The effect of peer tutoring on the mean achievement scores of male and female Upper Basic school students in Social Studies in Ebonyi State.
- The interaction effects of instructional strategies and gender on Upper Basic school students' achievement in Social Studies in Ebonyi State.

Significance of the Study

The findings of this study will be significant to government, curriculum planners, teachers and students. It will provide the government and the curriculum planners an empirical evidence to justify the status of teaching Social Studies in Upper Basic schools in Ebonyi State. The findings of this study will guide Social Studies teachers in the use of peer tutoring instructional strategy in Upper Basic schools. The results of this study may improve understanding of the problems affecting teaching and learning of Social Studies by teachers especially in relation to the methods and strategies of teaching the subject in Upper Basic schools especially in Ebonyi State.

Scope of the Study

The focus of this study is to ascertain the effect of peer tutoring strategy on Upper Basic school students' academic achievement in Social Studies in Ebonyi State. This study also focuses on ascertaining effects peer tutoring strategy on the mean achievement of male and female students in Social Studies and the interaction effects of strategies and gender on the academic achievement of Upper Basic school students in Social Studies. The study will be delimited to Upper Basic schools students of public Upper Basic schools in Ebonyi State.

Research Questions

The following research questions guided the study:

- What is the effect of peer tutoring on the mean academic achievement of Upper Basic school students in Social Studies in Ebonyi State?
- What is the effect of peer tutoring on the mean achievement of male and female Upper Basic school students in Social Studies in Ebonyi State?
- What is the interaction effect of instructional strategies and gender on Upper Basic school students' achievement in Social Studies in Ebonyi State?

Hypotheses

The following three (3) null hypotheses were formulated and will be tested at 0.05 level of significance to guide the conduct of this study.

Ho₁: There is no significant difference in the mean achievement scores of students taught Social Studies using peer tutoring and those taught using conventional strategies.

Ho₂: There is no significant difference in the mean achievement of male and female students taught Social Studies using peer tutoring.

Ho₃: There is no significant interaction effect between instructional strategies and genders on students' mean achievement scores in Social Studies.

Review of Related Literature

Theoretical Framework

A theory is an idea that is suggested or presented as possibly true but that is not known or proven to be true. Two theories are relevant to this study they are Vygotsky social cognitive theory and Skinner's theory of learning.

Social Cognitive Theory

This work is founded on Social Cognitive Development Theory, Social cognitive development (SCD) is a theory proposed by a Russian Psychologist Lev Vygotsky (1896-1934). SCD is a theoretical viewpoint, which maintains that social interaction plays a fundamental role in the development of cognition. The theory believes that social interaction precedes development;

consciousness and cognition as the end product of socialisation and social behaviour. Vygotsky (1978) developed three major themes for his Social cognition development. In contrast to Jean Piagets' understanding of development (in which development necessarily precedes learning), the theory is of the view that social learning precedes development. The theory states that;

1. Every function in the child's cultural development appears twice: first on the social level and later the individual level; first, between people (inter-psychological) and then inside the child (infra-psychological)
2. The More Knowledgeable than Others (MKO) refers to anyone who has a better understanding or a higher ability level than the other learners, with respect to a particular task, process, or concept. The theory explains that children can do more with the help and guidance of an adult or other person more experienced than they are.

The implication of Vygotsky's social cognitive development theory as it applies to teaching Social Studies using peer tutoring instructional strategy is that a body of knowledge should be approached interactively in a social setting using instructional tools like computer or brainstorming activities. It offers empirical evidence that learning based on social cognitive development theory facilitates cognitive development over other instructional strategies. The goal of this theory is best achieved in the practice of peer tutoring instructional strategy, which integrates interactive competence and reflective thinking as instructional tools. It has tremendously increased the opportunities for social interaction. In addition, the social context for learning, collaboration and peer instruction are to transform in the face of interactive classroom and critical inquiry. Hence, Vygotsky's social cognitive development theory provides the theoretical framework for this study, which seeks to find out the effects of peer tutoring instructional strategy on student' achievement in Social Studies.

Review of empirical studies

Mosston and Ashworth (2002) studied the impact of a peer teaching style, called the reciprocal style, on student social, cognitive and motor skill performance in grade six schools in Montel province of United Kingdom. The design of the study was quasi experimental with the population of fifty-seven students in two intact classes. The instrument used for data collection was multiple choice questions and data collected were analyzed using mean and standard deviation. The results of the study showed that in peer tutoring, skill performance has been shown to improve in different aged learners across various physical activities when practicing under the conditions of the reciprocal style of teaching. And interactions between students have been found to be high in number and positive in nature.

The difference between the former study and the present study is that the former study focused on the effects of cooperative instructional strategy on students' achievement in Social Studies while the present study focused on the effect of peer tutoring instructional strategy on upper basic school students' achievement in Social Studies. The reviewed study and the present study are related because both are meant to ascertain the effects of instructional methods to improve students' achievement in their subject areas. They are also related to each other since the former and present studies adopted quasi-experimental research design and used mean, standard and Analysis of Covariance (ANCOVA) as method for data analysis.

Ojo-Ajibane (2002) carried out a study on the effect of Peer-Tutoring Instruction on Students Achievement in Technical drawing. The sample of the study involved 120 (all-boys) drawn from four (4) classes in four (all-boy) distantly located upper basic schools in mainland local education (Ebute-Metta, Yaba) district in Lagos State. The instrument used for the study was geometrical Drawing Achievement Test' (GDAT) and Descriptive Geometry Achievement Test (DGAT).

The analysis of covariance (ANCOVA) was used in analyzing that data collected for the study. The result showed that students exposed to peer tutoring performed significantly better in technical drawing than students who were exposed to the conventional methods of teaching. Based on the results, it was recommended that technical drawing teachers should integrate peer tutoring into the teaching of technical and engineering drawings.

The difference between the two studies is that the former study focused on the effects of peer tutoring instructional strategy on students' achievement in technical drawing while the present study focused on the effects of peer tutoring strategy on upper basic school students' achievement in Social Studies in Onueke education zone of Ebonyi State. The studies are related to each other since both were meant to ascertain the effects of instructional methods on students' achievement in their subject areas. The studies are also related to each other since both studies adopted quasi-experimental research design and used mean, standard deviation and Analysis of Covariance (ANCOVA) as method for data analysis.

Mastropieri, Scruggs, Spencer, and Fontana (2003) in their study compared qualitative, and quantitative reading comprehension outcomes associated with peer tutoring versus teacher-directed guided notes in a world history class. The authors looked at peer tutoring research in remedial reading classes, English class, social studies class, and chemistry finding that in many situations tutoring saved class time helped to facilitate learning of conceptually challenging content and was shown to be effective with a wide variety of ages and subjects.

Oleabhielle and Ikwumelu (2012) investigated the effects of peer-tutoring method on students' achievement in Economics in Abakaliki education zone of Ebonyi State. Two null hypotheses that guided the study were that there is no significant difference in the mean scores of students taught Economics using peer-tutoring "and those taught using the conventional

methods, and there is no significant difference in the mean scores of male and female students taught Economics using peer-tutoring and those taught Economics using other conventional methods. The design of the study was pretest, posttest and control group research design. The population of the study was two hundred and sixty-nine (269) senior upper basic school students in public upper basic schools in Ebonyi State. The instrument used for data collection was an Economics achievement test titled 'Economics Multiple Choice Test Items' (MCTI) constructed by the researchers and the null hypotheses were tested using analysis of covariance (ANCOVA) at alpha level of 0.05.

Design

This chapter discusses the method for carrying out this study. The method is presented under the following subheadings: research design, area of

study, population of the study, sample and sample techniques, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection and method of data analysis.

This is a quasi-experimental study. This study adopted a pre-test, post-test control group quasi-experimental groups and one control group. Respondents in the experimental group one were exposed to selected structured social studies learning tasks. Respondents in the experimental group two were exposed to the same tasks using peer tutoring method. Respondents in group three were exposed to the conventional chalk and talk method control (group). The respondents were exposed to both pre-test and post-test therefore treatment and after treatment respectively.

Experiment	Pre-Test	Treatment	Post-Test
Treatment	O ₁	X ₁	O ₂
Control	O ₁	X ₂	O ₂

Fig. 1: Diagrammatic representation of quasi experimental design. The research design is illustrated as presented below:

X₁ = Treatment = effect of peer tutoring

O₁ = Pre-test

O₂ = Post-test

X₂ = Conventional method

The study was carried out in public Upper Basic schools in Ebonyi state. Ebonyi state is divided into three educational zones namely; Abakaliki, Onueke and Afikpo education zones. Abakaliki education zone comprises Abakaliki, Ebonyi, Izzi and Ohaukwu local government areas. Onueke education zone comprise Ezza south, Ezza north, Ikwo and Sshielu local government areas. Afikpo education zone comprises Afikpo north, Afikpo south, Ivo, Ohaozara and Onicha local government areas. Onueke Education Zone which is the area of this study and eventually one of the three education zones of Ebonyi State comprises Ezza North, Ezza South,

Ikwo and Ishielu Local Government Areas of Ebonyi State. Onueke Education Zone of Ebonyi State is bounded in the North by Abakaliki and Ohaukwu Local Government Areas, in the South by Onicha Local Government Area of Ebonyi State while in the East by Cross River State, and in the West by Enugu State. The researcher choose Ebonyi State as the area of this study in order to provide empirical evidence on the effects of peer tutoring strategy on Upper Basic school students' academic achievement in Social Studies.

The population of the study consisted of eight thousand, eight hundred and twelve (8,812) Upper Basic two students in the public secondary in Ebonyi State (Ebonyi State Secondary Education Board, 2017). UBS 2 classes will be used for the study because this is the class among which Social Studies is offered as a subject. The researcher's choice of UBS 2

students for this study stemmed from the fact that upper basic two students have been exposed to the basic processes and procedures of Social Studies as a subject of instruction and was not examination classes. The researcher decided not to use UBS I students since at that level of class, students were only exposed to introductory aspects of Social Studies which cannot contribute to the research at hand and UBS 3 students will not also be used because this category of class is purely an examination class and so cannot be exposed to rudiments of experimental research design.

The simple random sampling technique was used to select four (4) upper basic schools in each education zone that already have intact classes with the sample size of one hundred and fifty-three (153) Upper Basic school two students in each Education Zone for this study. Out of these four schools, two schools in each education zone were assigned to the experimental group while the remaining two schools were assigned to the control group using simple random sampling technique by balloting.

The instrument used for data collection in this study was Social Studies Multiple Choice Test (SOSMCT) constructed by the researcher with thirty (30) items with multiple-choice option A-D to aid achievement of the purpose of the study. The SOSMCT made up of two major sections thus; Section A and Section B. section A contained information on the personal data of the respondents while Section B carried information on the Social Studies Multiple-Choice Test questions.

The Social Studies Multiple Choice Test (SOSMCT) was first presented to the researcher's supervisor who made correction in terms of sentence structure, wording and adequacy of the instrument in addressing the purpose of the study. It was also face validated by two experts from Social Studies Education and one expert in Measurement and Evaluation in Ebonyi State University, Abakaliki for relevance, clarity, proper wording and adequacy of items in addressing the objectives of the

study. Some items were restructured but none was dropped.

The items of the instrument were further treated to item analysis of difficulty index and discrimination power as contained in appendix: 1 (iv). After item analysis, five (05) out of the thirty (30) items were dropped leaving behind twenty-five (25) multiple-choice question items.

The instrument that now has twenty-five (25) question items were treated to a determination of reliability using Kinder Richardson 20 (KR-20) statistic using twenty-five (25) UBS 2 students selected from Urban Model Upper basic school in Enugu state who were considered equivalent to those in Ebonyi state. By this analysis, a reliability coefficient of 0.98 was obtained which shown a high internal consistency; thereby making the instrument suitable for use for the study.

At the beginning of the experiment 'SOSMCT' was administered to both treatment and control groups as pre-test. The class teachers performed this in the classroom. At the end of the test, scores of the students on the pre-test were recorded and kept. The same instrument was administered to the students at the end of the experimental period. Later, the scores obtained from the pre-test and post-test were subjected to both inferential and descriptive statistical analysis. Mean and standard deviation were used to answer to the research questions while the analysis of co-variances (ANCOVA) was used to test the null hypotheses at an alpha level of 0.05.

Presentation and Analysis of Data

Research question one:

What is the effect of peer tutoring, strategy on the mean academic achievement of upper basic schools students in social studies?

Data collected from Social Studies Multiple Choice Test (SOSMCT) were used to answer the research question and mean scores obtained from pre-test and posttest were statistically adjusted to take care of the group difference.

Summary of results of data analysis were presented in table 1.

Table 1: Effects of peer-tutoring instructional strategy on students' mean achievement in Social Studies

<u>Instructional strategy</u>	<u>Mean</u>	<u>SD</u>	<u>Case</u>
Peer-tutoring strategy	81.37	5.799	70
Conventional strategies	61.75	14.854	74

The results of data analysis presented in table 1, revealed that Upper Basic school students taught Social Studies using peer-tutoring strategy performed better than those taught Social Studies using conventional methods. The reason is that upper basic school students in the experimental group (peer-tutoring strategy) obtained a high mean score of 81.37 and standard deviation of 5.799 against those students in the control group (conventional strategies) that obtained low mean score of 61.75 and standard deviation of 14.854. This implies that the use of peer-tutoring strategy improves students' achievement in Social Studies more than conventional strategies are used.

Research Question two: What is the effect of peer tutoring strategy on the mean achievement of male and female Upper Basic school students in Social Studies in Onueke education zone of Ebonyi State?

The mean scores of male and female upper basic school students taught Social Studies using peer tutoring strategy for pretest and posttest for the experimental group (peer tutoring strategy) were used to answer the research question. Summary of results of data analysis were presented in table 2.

Table 2: Mean scores of male and female upper basic school students taught Social Studies using peer-tutoring strategy

Gender	Mean	SD	Cases
Male students	67.869	18.108	69
Female students	74.440	10.556	75

The results of data analysis presented in table 2 revealed that peer tutoring strategy seemed to have much differential effect on female students. This is because female students had a mean score of 74.440 and a standard deviation score of 10.556 while the male students had a mean score of 67.869 and a standard deviation score of 18.108. This showed that female students perform better than the male students in Social Studies when peer tutoring strategy is used in Social Studies classroom interaction.

Research Question three: What are the interaction effects of instructional strategy and gender on students' mean achievement in Social Studies in Upper Basic Schools in Onueke education zone of Ebonyi State?

The mean scores of upper basic school students taught Social Studies using peer tutoring strategy and conventional strategies were used to answer the research question. Summary of results of data analysis were presented in table 3.

Table 3: Interaction effects of instructional strategies and gender in Students' achievement in Social Studies

Instructional Strategy	Male	Female
Peer-tutoring strategy	79.83	83.00
Conventional strategies	54.82	67.34

The results of data analysis presented in table 3 revealed that instructional strategies used in teaching Social Studies seemed to have no interaction effects on upper basic school students' achievement in the control group and in the experimental group. This is because male and female students of experimental group taught Social Studies using peer tutoring method obtained mean scores of 79.83 and 83.00 respectively while the male and female students had mean scores of 54.83 and 67.34. Based on the results of data analysis presented in table 3 above, the researcher observed that there were no interaction effects between instructional

strategies and gender on upper basic school students' mean achievement in Social Studies in Onueke education zone of Ebonyi State.

Testing the Null Hypotheses

The results of data analysis of the following null hypotheses tested at 0.05 level of significance were presented in the tables below. Hoi: There is no significant difference effect in the mean achievement scores of upper basic school students taught Social Studies using peer tutoring strategy and those taught using conventional strategies.

Table 4: Analysis of Co-variance for students' mean achievement in Social Studies based on peer-tutoring strategy

Source of Variation	Sum of Square	Df	Mean of Square	F	Sig of F
Covariates	3648.096	1	3648.096	50.468	.000
Pretest	3648.096	1	3648.096	50.468	.000
Main Effects	18341.754	2	9170.877	126.869	.000
Strategy	16983.267	1	16983.267	234.946	.000
2-way Interactions	58.152	1	58.152	.804	.371
Explained	22048.002	4	5512.000	76.253	.000
Residual	10047.748	139	72.286		
Total	32095.750	143	224.446		

Significant at $P < 0.05$ In the ANCOVA table, the result of hypothesis 1 presented in table 4 showed that the value of F-sig (0.000) is lower than the value of F-cal (234.946) at 0.05 level of significance; this indicated that hypothesis 1 is rejected. This showed that there is a significant effect in the mean achievement scores of upper basic school students taught Social Studies using peer tutoring and those taught using conventional strategies.

Ho2: There is no significant main effect of peer-tutoring strategy on the mean achievement of male and female students in Social Studies.

Table 5: Analysis of Co-variance for students' mean achievement in Social Studies using peer-tutoring strategy based on gender

Source of Variation	Sum of Square	Df	Mean of Square	F	Sign of F
Covariates	5.886	1	5.886	.208	.650
Pretest	5.886	1	5.886	.208	.650
Main Effects	249.425	1	249.425	8.828	.004
Gender	249.425	1	249.425	8.828	.004
Explained	255.311	2	127.655	4.804	.014
Residual	1893.748	67	28.254		
Total	2148.343	69	31.135		

Significant at $P < 0.05$

The summary of results of test of ANCOVA as presented in table 5 showed that the value of F-sig (0, 004) is less than the value of F-cal (8.828) at point (P) 0.05. This indicated that the null hypothesis 2 was rejected on the ground that the value of F-sig (0. 004) is less than the value of F-cal (8.828) at 0.05 level of

significance. This implies that there is a significant main effect of peer tutoring strategy on the mean achievement of male and female upper basic school students in Social Studies in Onueke Educational Zone of Ebonyi State. Ho3; There were no significant interaction effects of instructional strategies and gender on

Table 6: Analysis of Co-variance for students' achievement based on methods and gender

Source of Variation	Sum of Square	Df	Mean of Square	F	Sig of F
Covariates	3648.096	1	3648.096	50.468	.000
Pretest	3648.096	1	3648.096	50.468	.000
Main Effects	18341.754	2	9170.877	126.869	.000
Strategy Gender	16983.267	1	16983.267	234.946	.000
	2023.852	1	2023.852	27.998	.000
2-way Interactions	58.152	1	58.152	.804	.371
Method Gender	58.152	1	58.152	.804	.371
Explained Residual	22048.002	4	5512.00	76.253	.000
	10047.748	139	72.286		
Total	32095.750	143	224.446		

Significant at $P < 0.05$

In the ANCOVA table, the summary of result of hypothesis 3 as presented in table 6 shows that the value of F-sig (0. 371) is less than the value of F-cal (0. 804) at a point 0.05 alpha level of significance. This indicated that hypothesis 3 is rejected on the ground that the value of F-sig (0. 371) is less than the value of F-cal (0. 804) at 0.05 level of significance. Therefore, there are

significant interaction effects of instructional strategies and gender on mean achievement of upper basic school students in Social Studies.

Discussion and Conclusion and Recommendations:

The findings of the study revealed that students taught Social Studies using peer tutoring

strategy performed better than those taught Social studies using conventional strategies. The study also proved that female students in both experimental and control groups performed better compared to the performance of male students in Social Studies classroom instruction when peer tutoring strategy is used. Finally, the study revealed that there were no significant interaction effects between strategies and gender in upper basic school students' achievement in Social Studies and the results of data analysis in ANCOVA tables revealed that there were significant differences in the mean scores achievement of upper basic school students taught Social Studies using peer tutoring strategy.

This empirical study has shown the effects of peer tutoring strategy on students' achievement in Social Studies. The findings of this study have some implications for education generally and for effective pedagogy in Social studies in particular. The findings of this study justify the urgent need for secondary school teachers to effectively utilize peer tutoring strategy for Social Studies classroom interaction in order to enhance students' achievement in both internal and external examinations. Thus, there is a need for government to organize seminars and workshops for training and retraining of Social Studies teachers on classroom effectiveness in delivery Social Studies instruction.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Government through its Ministries and agencies should organize seminars and workshops for training and retraining of Social Studies teachers for classroom effectiveness,
2. Teachers should be trained through workshops and seminars on the need to use instructional strategies that enhance students' active participation in Social Studies classroom instructional delivery,

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