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RESEARCH ARTICLE

Utilization of Peer-Tutoring Strategy in Teaching and Learning of Practical Agriculture for Enhanced Skill Acquisition in Secondary Schools in Enugu Education Zone

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Abstract

The study focused on utilization of peer tutoring strategy for teaching and learning of practical agriculture for enhanced skill acquisition in secondary school in Enugu educational zone. Three research questions in line with purposes guided the study. Descriptive survey design was used for the study. Proportionate random sampling technique were used to select 15 students from each of the 10 secondary schools in Enugu Education zone given a total 150 respondents. A 26 items structured questionnaire was used for the study. The instrument was validated by three experts, two from the Department of Technology and Vocational Education and one from the Department of Mathematics and Computer Education, all form Enugu State University of Science and Technology, Enugu. The internal consistency of the instrument was tested using Cronbach Alpha method and a reliability co efficient of 0.88 was obtained. Mean with standard deviation was used to answer the research questions. The finding of the study revealed that utilization of peer tutoring is relevant in teaching and learning of practical agriculture because it makes student feel at ease to learn and build strong social relationship among students, but teachers utilize peer tutoring to a low extent in impacting knowledge to the students. Based on the findings, the following recommendation among others were made. Teachers of agriculture should be trained or retrained in the use of different method of teaching, especially in peer tutoring method. Parents should be convinced during P.T.A meeting to allow their ward tutored by peers who have higher academic achievements.

Keywords	*Peer-Tutoring Strategy; Learning of Practical Agriculture; Enhanced Skill Acquisition; Secondary Schools in Enugu Education Zone*
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Introduction

The method employed by teachers to impact knowledge, skills and attitude to learners are paramount on how efficient and meaningful the learner understands the concept. Teachers adopt different methods to deliver their instructions among which are discussion method, game and stimulation, collaboration / co- operative learning, field trip, mobile learning, social medium, lecture method, peer tutoring among others. In Nigeria setting, lecture method of teaching is highly used in both secondary school and higher institution. Osinem (2018), described lecture method as didactic teaching approach in which teacher's present information to the students and students merely listen. Aneke (2018), described lecture method as a conventional method of teaching which has lead to low academic achievement especially in skills/practical related topics, which are numerously embodied in agricultural curriculum. Alio (2016) stated that teaching which does not emphasis skill acquisition through practical method are meant for white collar jobs.

Practical agriculture are the aspect of agriculture that emphasis skill acquisition in area such as crop production, animal husbandry fisher forestry, among others. It is the aspect of agriculture that involves the use of hands to coordinate initiative in the head (brain) for innovation and creation of useful products (Ndem and Aneke 2016). The guiding principles of education in Nigeria is equipment of the learners with such knowledge, skills, attitude and values that will help him acquire full benefit from his membership of the community and also contributing fully towards the development of the community (FRN 2013) . Unfortunately, the academic achievement of Nigerian secondary school students in science-oriented courses such as agriculture, biology, remain low over the years (Wilson and Wright 2020). The low rate is partly attributed to poor mastering of scientific concept and poor skill acquisition. Since the conventional method of teaching does not aid students to be practically oriented and teachers exhibit little or no interest in exposing and guiding them in practical areas in agriculture, the needs for peer tutoring was initiated.

Peer – tutoring as an instructional delivery is the teaching approach which allows students to be paired together to practice academic skills and master concepts. It is a form of linkage education which exposes the students to learn from others. Onoh (2015) described peer-tutoring as a strategy because the tutor is more exposed to skills to be learnt. The author further described peer-tutoring as a form of peer – mediated instructional delivery which has the aim of targeting and tutoring group of the students. In this type of learning, the teacher collaborates with the peers of higher abilities to help in the development of the other peers who have less abilities. Rogifs in Ozougwu (2018) explained that peer tutoring is a socially medium of instructional delivery where students;

i. Work in group to socially construct meaning
ii. To be learned skills are modeled by teacher
iii. To be learned skills are made explicit by the teacher through think-aloud demonstration in application and regulations of component skills.

According to Ozougwu (2018) peers learn faster and clearer when given clear concept of what to be learnt. Wikipedia (2018) outlined the benefits of peer tutoring as a medium, to create more opportunity for students to:

i. Practice specific skills which lead to better retention
ii. Gain deeper understanding of the topic by teaching another student.(Tutee)
iii. Help student build better relationship and practice appropriate social interaction.
iv. Allow student have higher rate of responses and feedback which results in better academic achievements.
v. Learn fast, when they are paired with peer of their interest
vi. Achieve higher academically.
vii. Enhance learning of practical agriculture such as, gaming, project based activities, hands on activity learning among others

Care need to taken when organizing peer tutoring. It is not any tutor that is selected to partner with students because in more partnership, the student tutor may not turn out to be an effective teacher to the tutee so the tutee may mix out good instructions (Alio ,2016). Therefore careful and better strategies could be adopted when selecting a student tutor.

Strategies was described as way or road map to achieve a purpose (Aneke 2014). To achieve higher practical academic, students who achieve higher are assigned to work with peers in the classroom who are struggling or whose performance are low (Ozougwu 2018). The author further stated that it is good to choose peers based on social status and teachers judgment. The teacher may employ strategies of asking the student to list three peers, they would like to play or invite to party. The teacher reviewed the top candidate and select tutor based on social skills, language skills, classroom behavior and attendance to school. These strategies of selecting of tutor takes advantage of positive potentials of peer pressure and may integrate target student more in mingling with their peer groups (Mkpozi 2013).

Aneke and Agu (2015) acknowledge the use of crossing tutoring in which students with similar abilities can be paired to work together, each taking turns of being tutor and the tutee. Older students who have mastered the concept may be paired with younger students who are being introduced to the new concepts. Teachers must monitor student activities so that student would be accountable for their product and learning. Teachers need to re teach if student, show sign of misunderstanding, confusion and misinterpretation of the concept.

Since the benefit of peer-tutoring is numerous and is used to develop the understanding of practical skills, teachers need to organize such teaching strategies to enhance academic achievement. It could be utilize to teach agricultural skills because it will increase skill development in areas such as crop production, test of seed viability, site selection, tillage, cultivation, spacing, planting, Manuring, disease control, harvesting among others.

In animal rearing, it could be utilized to understand housing, selection of animals, management of animals, feeding, and disease control of animals among others. In soil science, peer tutoring will aid student's practical knowledge in fertilization of soil and in other agricultural areas such as forestry and fishery.

Hornby in Aneke (2015) described utilization as putting something into usefulness. One makes use of what is relevant for the achievement of specific purpose. An individual demand the use of a particular or combination of teaching method to enable him achieve the instructional objectives. This study regards utilization as employing peer-tutoring method to enhance student skill acquisition of agricultural practical skills in secondary schools in Enugu Education Zone. Enugu Education zone has 10 secondary schools, all the schools in this zone are studying practical agriculture because they have rich agricultural soil, but it is unfortunate that these students could not practice effectively after secondary education. For instance, students who were about to write Senior School certificate Examination (SSCE) could not perform during the practical agriculture in cassava planting (Olaitan 2017). The author noted that these students could not place cassava stem at the accurate angle that will enhance germination. Some turn the bud upside down, but were able to act when students who have the knowledge guide them. This then call for the need to encourage teachers to use peer tutoring in their teaching.

Statement of the Problem

The teaching method mostly used in secondary school agriculture is lecture method which deprives the student the practical knowledge that is needed on skills acquisition as recommended by the national policy on education (FRN, 2013).

This has made students after graduation go out half baked, this was in line with Osinem (2018), who noted that youths with requisite education and skills are quickly absorbed into jobs, while those without sufficient vocational skills live at subsistence level and many others remain unemployed and out of desperation and frustration constitute nuisance to the society.

It is expected that if peer tutoring method is utilized by teachers in teaching and learning of practical agriculture it will help students clarify doubts., gain deeper understanding of concept from peers, promote team work, leads to improve grades and academic performances of the students, but unfortunately many teachers do not make use of peer tutoring method in teaching and learning of practical agriculture and most of the parents do not allow their wards to be tutored by their peers. This will result in not allowing the students to mingle with their peers and learn the skills required to achieve academic performance. Therefore, this calls for the need for teachers to utilize peer tutoring method in teaching and learning of practical agriculture for enhanced skills acquisition, in secondary schools in Enugu education zone.

Purpose of the Study

The main purpose of this study was to determine the utilization of peer tutoring in teaching and learning of practical agriculture for enhanced skill acquisition in secondary schools in Enugu Education zone

Specifically, the study sought to determine the:

1. Relevance of utilizing peer-tutoring in teaching practical agriculture in secondary schools in Enugu Education Zone.
2. Extent to which teachers utilize peer-tutoring in enhancing learning of practical agriculture in secondary schools in Enugu Education Zone.
3. Challenges in the utilization of peer-tutoring in practical agricultural science instruction in secondary schools in Enugu Education Zone.

Research Question

The following research questions guided the Study:

1. What are the relevance of utilizing peer-tutoring in teaching and learning of practical agriculture in Secondary Schools in Enugu Education Zone?
2. What is the extent to which teachers in secondary schools utilize peer tutoring in enhancing learning of practical agriculture in Enugu Education Zone?
3. What are the challenges to utilization of peer-tutoring in delivering practical agricultural instruction in secondary schools in Enugu Education Zone?

Research Method

A descriptive survey research design was used for this study. The area of the study was Enugu Education Zone. The zone has ten secondary schools and many students who are studying agricultural Science. Agricultural Science students in Senior Secondary School (SSS 2 and SSS 3) was used for the study. Proportionate random sampling techniques were used to select 15 students from each of the ten schools. This gave a sample size of 150 respondents. Three research questions guided the study. A structured questionnaire containing 25 items was used for data collection. The questionnaire has three clusters based on the research questions and has four response categories of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) for research question 2 and Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) for research questions 1 and 3. Numerical values of 4, 3, 2 and 1 were assigned to the response categories respectively.

The instrument was face validated by three experts, two from Technology and Vocational Education and one from Department of Mathematics and Computer Education, all from Enugu State University of Science and Technology, Enugu. The correction, criticism and suggestion were effected before the production of the final instrument used for the study. The internal consistency of the instrument was tested using Cronbach Alpha method of testing reliability co-efficient. Alpha value of 0.88 was obtained. Mean and Standard deviation was used to answer the research question. It was detailed that any item with mean of 2.50 and above was regarded as High Extent, while items with Mean scores below 2.50 were regarded as Low Extent/ Disagree.

Results

Research Question 1

What are the relevance of utilizing peer tutoring in teaching and learning of practical agriculture in Secondary School in Enugu Education Zone?

Table 1: Mean scores with standard deviation of respondents on relevance of utilization of peer-tutoring in teaching practical agriculture in Secondary Schools in Enugu Education zone.

S/N	*Relevance of utilizing peer-tutoring in teaching practical agriculture*	*X*	*SD*	*Decision*
1	Students feel at ease to learn from their peers	3.24	0.54	Agree
2	There is freedom of expression from the tutor and tutee	3.62	0.62	Agree
3	Peer-tutoring helps to build strong student relationship and appropriate social interaction that enhances learning among agric students	2.86	0.51	Agree
4	Peer-tutoring helps student self-actualization	3.22	0.60	Agree
5	Students tutor gain deeper understanding of topic by teaching another students	3.48	0.53	Agree
6	Response and feedback rate is high using peer-tutoring	3.06	0.70	Agree
7	Peer-torturing enhances academic achievement of agricultural science students.	2.94	0.56	Agree
8	It creates opportunity for agricultural students to practice specific skills	3.36	0.48	Agree
9	Peer-tutoring aids retention	3.71	0.67	Agree
10	Skill acquisition in agriculture is high	3.52	0.59	Agree
Cluster Mean/ SD		2.98	0.61	Agree

NOTE: X=mean; SD=Standard Deviation; A=Agree

The data presented in table I above shows that the 10items had mean scores above 2.50. these means ranged from 2.86 to 3.71, these values shows that the statement in the items are relevance of utilizing peer tutoring in the teaching agriculture science practical in secondary schools in Enugu Education zone. Standard deviation ranged from 0.48 to 0.70, the values of the standard deviations shows that the respondents are homogenous in their opinion.

Research Question 2

What is the extent to which teachers of agricultural science in secondary schools utilize peer tutoring in enhancing learning of practical agriculture in Enugu Education zone?

Table 2: Mean scores with standard deviation of respondent on the extent to which teachers of agricultural science in secondary schools utilize peer tutoring in enhancing learning of practical agriculture in Enugu Education Zone.

S/N	*Extent to which teachers utilize peer tutoring in teaching practical agriculture include:*	*X*	*SD*	*Decision*
11	Hands-on-activity learning	2.31	0.74	Low Extent
12	Project based learning	1.94	0.55	Low Extent
13	Stimulation based learning	2.41	0.55	Low Extent
14	Experiential learning	2.11	0.62	Low Extent
15	Technology(use of ICT learning)	1.97	0.69	Low Extent
16	Gaming	2.34	0.58	Low Extent
17	Collaborating students to students	2.22	0.61	Low Extent
18	Problem solving learning	1.74	0.81	Low Extent
Cluster mean / SD		2.13	0.64	Low Extent

NOTE: X=mean; SD=Standard Deviation; LE= Low extent

The analysis of data presented in Table 2 above shows that the agricultural science practicals learnt through peer tutoring in secondary schools have mean score ranging from 1.74 to 2.41. These mean scores are below to 2.50 which is the bench mark. This implies that teachers utilize peer-tutoring in agricultural practical lesson to a low extent. The standard deviation also ranged from 0.55 to 0.81 indicating that the respondents have close view and are homogenous in their view.

Research Question 3

What are the challenges to utilization of peer-tutoring in teaching and learning of practical agricultural science in secondary schools in Enugu Education zone?

Table 3: Mean scores with standard deviation of respondents on challenges to utilization of peer-tutoring in teaching and learning of practical Agricultural Science in Secondary schools in Enugu Educational zone

S/N	*Challenges to utilization of peer-tutoring in teaching and learning of practical agriculture includes*	*X*	*SD*	*Decision*
19	Inadequate funds to organize materials for each group tutoring	3.22	0.61	Agree
20	Teachers incompetence's in utilizing peer-torturing	2.94	0.62	Agree
21	Parents non-acceptance of their children to be tutored by peers	2.88	0.70	Agree
22	Student tutor maybe mistakenly selected posing problem to tutee	2.94	0.66	Agree
23	Ineffectiveness to handle peer-tutoring by the students	3.04	0.70	Agree
24	School inability to invest time to organize peer-tutoring	3.01	0.58	Agree
25	Unavailability of materials/equipment to handle peer-tutoring	2.98	0.62	Agree
26	Some student may not put up interest to be tutored by fellow students	3.16	0.60	Agree
	Cluster Mean/ SD	3.02	0.63	Agree

The analysis of data in table 3 shows that 8 items identified as challenges for utilization of peer-tutoring by teachers in teaching and learning of practical agricultural science in secondary schools had mean above 2.50. This shows that the item statement are challenges to the use of peer-tutoring in teaching practical agriculture in secondary schools in Enugu Education zone. The standard deviation ranges from 0.58 to 0.70. This shows that the respondents have homogenous opinions.

Discussion of the Findings

The result of findings in research question one revealed that utilization of peer-tutoring is relevant in teaching and learning of practical agriculture because it make students feel at ease to learn, it builds strong social relationship which is appropriate for skill acquisition, students get deeper understanding of the topic, creates opportunities for agric students to practice specific skill which leads to competency among others. The result of the findings was in agreement with Alio (2010) that teaching skills can greatly influence student achievement and acquisition. Also Peter and Peters in Aneke and Ndem (2016) noted that peer medium of instructional delivery prepare students to be metacognitive, give them opportunity to plan, monitor and evaluate their learning process. Gbenedi (2017) supported this by saying that peer tutoring is relevant in helping low performing student improve by high performing students. Tutoring them, low performing students also makes them feel accepted and belonging.

The findings of the study in Table 2 shows that the 8 items in the study of practical agriculture by students, through peer tutoring is utilized to a low extent. These areas includes hands-on-activity, project based learning, stimulation based learning, experiential learning among others. This might be because of the use of conventional method of teaching as noted by Aneke (2015) that has eaten deep in Nigerian teachers, who fail to use peer tutoring to help students learn practical skills. This will lead to producing graduates without skills flooding the labour market hence not having place for employment because of incompetency. Gbenedi (2017) urged teachers to adopt various methods that could aid skills acquisition to produce self-reliance students. Onyebuenyi, Mba & Odeluga (2017) warned that conventional method which does not enhances skill acquisition needs to play, in low case, that modern technique which emphasis students active participation needs to be applied to meet up with world of work in times

like this, that there are unemployment. The findings of the study in Table three shows that teachers of agricultural science in Secondary Schools in Enugu Education Zone face some challenges in utilization of peer tutoring. Such challenges as identified by as findings of the study includes inadequate funds, teachers' incompetency in the use of peer tutoring, ineffectiveness of handling per tutoring by students, school inabilities to invest time for peer tutoring among others. The finding of the present studies is in consonance with the findings of Mkpozi (2023) regarding funding of agricultural programme, the author stated that teachers must be willing to work but lack of funds to purchase materials to work may pose a problem. The government need to make fund available to make sure that agricultural instruction are effectively implemented because funds are necessary to pay teachers' salaries to motivate them to work hard and to purchase input and equipment for practical agriculture.

Owodunni (2020) gave better strategies for selection of peers which include selecting top candidates based on social skills, language skills and attendance to class and teachers must have observed the tutor before selection, therefore care has to be taken to make maximum utilization of peer tutoring in teaching and learning of agricultural science for enhance practical skill acquisition.

Conclusion

Peer tutoring is a teaching method to pair students of higher academic achievement to those whose performance care low. It helps student to build better understanding of the concept to be learnt as the tutee feels ease and more relax to learn from the tutor. Peer tutoring helps student master skills in agriculture and requires that teachers of agricultural science in secondary school utilize the method through adopting effective strategy for achievement of its goal.

From the findings of the study, It was found that teachers of agricultural science in secondary school make use of peer tutoring in a low extent, however so many factors were attributed to teachers of agricultural science in secondary schools utilizing peer tutoring to a low extent among which are poor funding, incompetence on the part of teachers, ineffectiveness of handling peer tutoring by the students.

Recommendations

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

1. Government, school management, should fund educational activities to enhance learning.
2. Teachers of agricultural science in secondary schools should be trained/retrained in the use of different method of teaching, especially peer tutoring method.
3. Parents should be convinced during PTA meeting to allow their wards tutored by peers who have higher academic achievements.
4. Government should emphasize the use of peer tutoring in secondary schools.

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