
**COMPARATIVE ANALYSIS OF INDIVIDUALIZED AND
COOPERATIVE TEACHING METHODS IN AGRICULTURAL
SCIENCE IN SECONDARY SCHOOLS IN ITU LOCAL
GOVERNMENT AREA, AKWA IBOM STATE**

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Abstract

This study focused on comparative analysis of individualized and cooperative teaching methods in Agricultural Science in Secondary Schools in Itu Local Government Area of Akwa Ibom State. Four research questions and four research hypotheses were formulated to guide the study. Ten (10) public secondary schools were selected from the area. Using simple random sampling, 200 teachers were drawn from the population of 1,310 serving teachers in the area. Data were collected using the instrument of questionnaire entitled “Individualized and cooperative teaching methods in Agricultural Science questionnaire” (ICTMASQ). Analysis was carried out to test the hypotheses using t-test and Pearson Product Moment Correlation Analysis (PPMC). From the results, two hypotheses were rejected while two were also accepted. The

findings revealed that individualized and cooperative methods which are mutually exclusive significantly affected student's performance in the teaching of Agricultural Science. However, the methods did not affect the gender. Recommendations based on the challenges realized by the study are also highlighted.

Teaching is a skilled job that involves making sure that the learner learns and like all skilled job, it has some prescribed methods and techniques. Teaching can be defined as a process of making it possible for pupils to learn. The ways by which the teacher presents his materials to learners and engages them in the tasks at hand may hinder or promote learning. The method adopted comprising the principles and methods used for instruction depends largely on the information or skill that is being taught and it may also be influenced by the attitude and enthusiasm of the students.

The variations on the method of teaching by the teacher play a compelling role in preventing lesson monotony, boredom and rote learning (Edward, 2004). The manner a teacher presents his/her lesson could sharpen children's neutral activities which are the basis of social power or it may discourage initiatives and curiosity thus making self-reliance and survival difficult. For this reason, the teaching of Agricultural Science may indeed be cultural, economic, national or personal inclined.

It is in contention that there is clearly the gradual medication of teaching methods used in recent times. Both demonstration method and problem solving method are sequentially giving room for more result oriented methods such as individualized and cooperative methods. Individualized methods according to Ernest (2007); involves the use of information and communication technology devices to ensure individual learns effectively with or without the presence of an instructor. It involves the use of software packages which can be effectively utilized using computer, compact disk and television monitors.

Comparative teaching method involves group teaching methods in which students are involved in collaboration discussions which can take a variety of forms. After some preparation and with clearly defined roles, a discussion and inquiry may constitute most of a lesson, with the teacher only giving short feedback at the end or in the following lesson. These can be succinctly applied in the teaching of Agricultural science in Secondary Schools.

Let it be noted that the teaching of Agriculture by any known conventional method encourages certain attitudes and carries specific information content which are relevant to developing the society and this includes;

- agriculture requires a methodical study that is characteristic of all the sciences.
- agriculture illustrates the cumulative character of scientific thought showing how new concepts develop from the old.

- agriculture generates an opening to new ideas that offer a good preparation for life in a world of rapid change.
- agriculture is also concerned with identifying problems and then arriving at solutions to them. Emphasizing on problem solving is an important training for life, especially, in showing how important it is to ask meaningful questions (Ajibola, 2004).

The subject matter of agriculture has an obvious relevance to workers in many fields of specialization. Hence, teachers need to adopt teaching methods that would motivate and encourage students in the learning process to yield more positive learning outcomes made to evaluate the two outstanding teaching methods used in agriculture – individualized and cooperative methods.

The poor academic performance and low concept perception profile of students with regards to science and agriculture in particular at the Senior Secondary Schools in Akwa Ibom State and Nigeria in general have continued to raise serious questions among stakeholders in the education industry. This, majority of concerned people have simply attributed to the generally assumed fallen standard of education in the country. Poor perception which is contingent on concept perception profile has been consistent for the past couple of years.- 2009, 2010 and 2011 West African showed all time low results based on WAEC Chief Examiner's report and many have wondered what could be responsible for this trend most especially when it is considered against the background that agriculture is the bed rock for economic growth of the nation.

Again, there is seemingly no one exclusive teaching method that is perfectly indispensable of others in getting students to overcome their poor perception of subjects taught in schools agricultural science inclusive. However, varieties of teaching methods have evolved in this present times which include inquiring method, individualized method and cooperative or team teaching method, yet the result remain poor when students' level of achievement and performance is evaluated. Therefore, this study seeks to make a defaulted comparative analysis on the two major teaching approaches (individualized and cooperative) with respect to agricultural science in Secondary Schools in Itu Local Government Area of Akwa Ibom State.

Research Questions

The following research questions guided the study:

1. What is the influence of individualized teaching methods on students' achievement in agricultural science in Secondary Schools?
2. What is the influence of cooperative teaching methods in the teaching, learning and students' achievement in agricultural science in Secondary School?
3. Which of the two methods – individualized and cooperative – teaching method is more effective in the teaching and learning of agricultural science?

4. What is the significant influence of gender on the effectiveness of individualized and cooperative teaching methods used in the teaching of agricultural science in schools?

Research Hypotheses

The hypotheses were expressed in the null form as follows:

1. There is no significant influence of individualized teaching methods in students' achievement in agricultural science in Secondary Schools.
2. There is no significant influence of cooperative teaching methods in teaching, learning and students' achievement in agricultural science in Secondary Schools.
3. There is no significant relationship between individualized and cooperative teaching methods in the teaching of agricultural science in Secondary Schools.
4. There is no significant influence of gender on the effectiveness of individualized and cooperative teaching methods used in the teaching of agricultural science in Secondary Schools.

Methodology

The study is a simple survey design conducted in Itu Local Government Area of Akwa Ibom State. The population for the study consists of all teachers serving in Public Secondary Schools in Itu Local Government Education Committee (LEC). A simple random technique was used to select ten (10) secondary schools for the study. A total of two hundred (200) teachers form the sample for the study. All the teachers teaching agricultural science in the 10 schools were used for the study.

The instrument for data collection was the individualized and cooperative teaching method in Agricultural Science questionnaire (ICTMASQ). The questionnaire consisted of two sections. A and B. Section A measured the demographic data of the respondents, Section B measured the teaching method used, frequency of usage and the implication on students' achievement. The questionnaire was validated by two senior lecturers in the Department of Test and Evaluation, Faculty of Education, University of Uyo, Uyo, Akwa Ibom State.

Independent t-test and Pearson's Product Moment Correlation Analysis (PPMC) were used in summarizing and analysis the data collected through the ICTMASQ.

Result

The data collected were analysed based on the result of the study is presented in line with the hypotheses formulated for the study.

Hypotheses One: There is no significant influence of individualized teaching method on students' performance in agricultural science in Secondary Schools.

Table 1: T-test Analysis of Influence of Individualized Teaching Method on Students' Performance in Agricultural Science.

Comparative Analysis of ...

Variables	N	\bar{X}	S ²	SD	t – Cal.	t -Critical
Individualized Teaching Method	200	51.20	2.89	1.70	2.46	1.96
Students’ Performance in Agricultural Science	200	48.00	1.46	1.21		

N = 200 df = 198, t-crit = 1.96

As shown in table 1, the calculated t-value 2.46 is greater than the critical t-value 1.96. Thus null hypothesis stating a non-significant influence of individualized teaching method on students’ performance in agricultural science in Secondary Schools was rejected. This implies that there exist a significant influence of individualized, teaching method on students’ performance in agricultural science in Secondary Schools.

Hypothesis Two: There is no significant Influence of cooperative teaching method on teaching, learning and Students’ Performance in Agricultural Science in Secondary Schools.

Table 2: T-test analysis of influence of cooperative teaching method on teaching, learning and Students’ Performance in Agricultural Science in Secondary Schools.

Variables	N	\bar{X}	S ²	SD	t – Cal.	t -Critical
Cooperative teaching method	200	50.0	4.41	2.10	3.22	1.96
Students’ learning and performance in Agricultural Science	200	46.1	1.82	1.35		

* = Significant at 0.05 alpha level

As shown in table 2, the calculated t-value 3.22 is greater than the critical t-value 1.96. Thus, the null hypothesis is rejected. This implies that there exists a significant influence of cooperative teaching method on teaching, learning and students’ performance in agricultural science in secondary schools.

Hypothesis Three: There is no significant relationship between individualized and cooperative teaching method on the teaching of agricultural science in Secondary Schools.

Table 3: Correlation analysis of relationship between individualized and cooperative teaching methods.

Comparative Analysis of ...

Variables	N	ΣX	ΣX^2	ΣY	ΣY^2	ΣXY	r - Crit
Individualized method (X)	200	121	14641	-	-	52154	0.086
Cooperative method (Y)	200	-	-	203	41209		

* Significant at 0.05 alpha level

Table 3 shows that the coefficient of Correlation is 0.014, significantly less than the critical value of 0.086. Thus, the null hypothesis is accepted. This implies that there exist no significant relationship between the two methods of teaching.

Hypothesis Four: There is no significant Influence of gender on the effectiveness of individualized and cooperative teaching methods.

Table 4: T-test analysis of influence of gender on effectiveness of individualized and cooperative teaching methods.

Variables	N	\bar{X}	S^2	SD	t – Cal.	t - Critical
Gender effect	200	47.2	2.25	1.50	0.94	1.96
Individualized and cooperative teaching methods	200	51.3	4.41	2.10		

* = Significant at 0.05 alpha level

Table 4 shows that the calculated t-test value 0.94 is less than the critical t-test value 1.96. Thus, the null hypothesis is therefore valid and accepted. This implies that there exist no significant influence of gender on the effectiveness of individualized and cooperative teaching method in teaching agricultural science in secondary schools.

Discussion of Findings

The finding from hypothesis one indicates that individualized teaching method significantly influence students’ performance in agricultural science in secondary schools. The finding agrees perfectly with those of other scholars. Udosen (2005) stated that the individualized method allows for the teachers’ observation of the principles of individual difference which has a significant effect. In a similar study, Oguzor (2009) noted the significant influence of individual method of teaching on students level of performance by Hong Kong higher school students.

The finding in hypothesis two shows that the cooperative teaching methods pose a significant influence on students’ performance in agricultural science in secondary schools. The finding also agrees with that of the Udensi (2006) and Adesina (2010). In

their separate studies, both of them obtained significant effects of team learning or cooperative teaching method on the learning and performance in the Sciences.

The findings from hypothesis three indicate that there exist no significant correlations between the two methods of teaching. The result agrees with that of Inyang (2006) who posited empirically that the two methods are mutually exclusive. On the other hand, the study contradicts the position of Chimuwaze and Obanye (2011) when both noted a positive correlation between the two methods.

The finding in hypothesis four also shows that gender does not influence the efficiency of individualized and cooperative teaching methods if it is employed in the teaching of agricultural science in Secondary Schools. The finding agree is in line with the view of Etuk (2001) but contradicts the position of Hilary (2003). This implies that both can perform at similar rate depending on students' interest, degree of concentration and availability of learning resources. Therefore, gender as an indices of efficiency of teaching methods remains the least in the determining factors toward students' level of performance.

Recommendations

- Teachers should be flexible on the methods of teaching adopted. This should vary according to the topic and nature of the lesson.
- Teachers who adopt cooperative teaching method should endeavour to present equal proportion of students' in terms of sex, intelligence and behavioural conduct.
- Teachers should uphold the principles of individual differences while teaching.
- Government should organize regular seminars, symposia and workshops for teachers to refresh their minds on the rudiments of functional teaching methods in education.

Conclusion

From the finding of this study, it could be concluded that;

- Teachers should adopt both methods of teaching (individualized and cooperative) to achieve a more result – oriented work.
- The efficacy of the two methods depends upon students natural inclination and behavioral conducts.
- Both methods significantly influence teaching and learning of agricultural science as well as students' performance.
- There exist no mean difference between both males and females students taught using the two different methods. This adds value to the opinion that gender has no place in academic performance of learners.

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