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The Impact of Student's Field Trips on Academic Performances in Agricultural Science in Selected Secondary Schools in Rivers State

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Abstract
This study investigated the effects of Students' Agricultural field trips on their performances in agricultural science in selected secondary schools in Rivers State. In order to carry out the study, three research questions and two hypotheses were postulated. An Ex-Post Facto Design method was adopted, while a sample size of 300 respondents was used A validated questionnaire on a four point likert scale was used for data collection with a reliability coefficient of 0.88. Data collected was analysed using descriptive statistics and Chi-square at 0.05. The findings of the study revealed that learning experience in which agricultural field trips expose students to in selected secondary schools in Rivers State include among others broadening of knowledge and exposure of students to modern methods of farming. Field trip enhances knowledge on agricultural processing methods, improves farm product utilization and contributes to species improvement and genetics. The performance level of students in senior secondary school III examination and students overall performance in O' Level examination certificate in agricultural science in secondary schools in Rivers State improved significantly ($p<0.05$)
Keywords: Coefficient, Agricultural, Reliability Utilization, Examination.

INTRODUCTION

In the measurement of student academic performances in agriculture as a school subject; various tasks are undertaken within the school and outside the school. Within the school, such exercises include, assignments, farm practice and fieldwork supervised by the agricultural science teacher, teacher made tests, terminal examinations, continuous assessment etc. The results from the above exercises are graded and reported by the subject teacher as part of the progress report on the student. Furthermore, outside the school, external and independent examining bodies have emerged over the years to validate the assessment of student academic performance in agricultural science. These examination bodies include the West African Examination Council (WAEC) and National Examination Council (NECO). These examination bodies use standardized tests to measure student progress in agriculture. Such tests items measure student performances in all the secondary schools with respect to the stipulated national curriculum, making use of the same syllabus. In view of the above fact, Edwards (1993) noted that such examinations administered for purpose of national, regional or local monitoring covers the same content, topics and levels of difficulty and are administered and scored using the same marking scheme for all candidates taking the same examination. This constitutes a strong basis to monitor and measure trends in performances overtime and to equate test scores from one examination to the next as well as the disparities between and among schools, districts, zones and states.

However, in pursuit of better and satisfactory student performance in agricultural science in Nigerian Secondary Schools examination, West African Examination Council (WAEC) (2006) recommended that the study of agricultural science should be supplemented by visits to well established government and private experimental and commercial farms, agricultural research institutes and other institutions related to agriculture. This recommendation has become an accepted practice as part of the curriculum and or extra-curricular activities in many secondary schools in Rivers State. Such visits are packaged in various names such as field trips, excursions, tours etc. Organized and guided agricultural field trips according to Onyeabor, Botril and Amadi (2006) is a visit to farms, agricultural institutions and the like, either for pleasure, education, recreation or others. In-fact, Carolyn Fry (2009) admit that taking pupils outside the comfort of the classroom can be a daunting step for some teachers, but admits strongly that field trips provide unique opportunities to apply learning to the real world. To this end Offsted, (2008) reported that when planned and implemented well, learning outside the classroom contributed significantly to raising standards and improving pupils personnel, social and emotional development. It is a journey into the land of knowledge for the purpose of acquiring practical knowledge and skill for a specified operation or occupation, (Nwakor, Asumugha, Ekwe 2006).

In what appears like a tradition, several secondary schools in Rivers State organize field trips for their students to such institutes and farms as National Root Crop Research Institutes (NRSR), Green River Project, GRP. Obrikom, African Regional Agricultural centre (ARAC), Institute of Agricultural Research and Development, Onne etc usually between January and July each year.

The benefits of field trips in educational development among students in secondary schools cannot be

over-emphasized. It has motivational effects on students towards accepting agriculture as a profession. It also has the potential to expose and educate students in secondary schools in practical and real knowledge of what agriculture is. If well designed results in higher student academic performance in all study areas. Above all, the collaboration and improvement in the school community relationship in the joint task for national development is another dimension to these benefits.

WAEC/NECO results in the past 10 years show that student enrollment in Agricultural Science has dwindled from a height of 70% to 40% in Rivers State. The student's results have also not improved. (Sources Post Primary Schools Board 2009).

Some teachers in secondary schools in Rivers State believe that field trips to Agricultural sites and Research centres may make a difference. Thus in 2000, these secondary school teachers in selected secondary schools in Rivers State started taking their students on field trips. Ten years later, can one truly say that field trips have made a difference in the learning experience and performance of the students in Agricultural Science?
The following research questions shall be addressed in the study.

1. What learning experiences do agricultural field trips expose students to in secondary schools in Rivers State?
2. What is the performance level of students in O'Level certificate Agricultural Science amongst secondary schools that embarked on Agricultural field trips in Rivers State and those who do not?
3. What are the effects of Agricultural field trips on student performance in Agricultural Science in secondary schools in Rivers State?

The main purpose of the study was to ascertain the impact of student field trips to agricultural sites on academic performance in agricultural science in selected secondary schools in Rivers State.
In specific terms, the study was designed to:

(a) Identify the learning experiences provided by agricultural field trips to students in secondary schools in Rivers State.
(b) Ascertain the performance in O' Level certificate Agricultural Science amongst secondary schools that embarked on Agricultural field trips in Rivers State.
(c) Examine the effect of Agricultural field trips on student performance in Agricultural Science in secondary schools in Rivers State.

HYPOTHESES

The following hypotheses were postulated to guide the study:

1. There is no significant association between the learning experiences acquired by students who embarked on agricultural field trips and those who did not in selected secondary schools in Rivers State.
2. There is no significant association between the academic performance of students in senior secondary school III internal examinations and their overall performance in O' level certificate examinations amongst student who were exposed to agricultural field trips and those who were not in selected secondary schools in Rivers State.

LITERATURE REVIEW

THEORETICAL FRAMEWORK- THE CONSTRUCTIVIST CONCEPT

Theoretically, this work was based on the constructivist approach to learning. It is a learner-centre approach that emphasizes the importance of individuals actively constructing their knowledge and understanding with guidance from the teacher. In the constructivist view, teachers should not attempt to simply pour information into children's mind. Rather, children should be encouraged to explore their world, discover knowledge, and reflect and think critically with careful monitoring with meaningful .guidance from the teacher (Eby, Hervell, and Jordan, 2006; Halpern, 2006; Kafai, 2006).

According to the constructivist, which I quite agree, children for a long time have been required to sit still, be passive learners, and rotely memorize irrelevant and as well as relevant information (Henson, 2004; Silberman, 2006). But today, there in emphasis on collaboration by the constructivist which is children working with one other in their efforts to know and understand (Bodrova and Leong, 2007; Heyson, Copple, and Jones, 2006).

Agricultural science is a natural and practical subject which is taught both in the classroom and in the natural environment. When Agricultural Science teachers take out students on field trips and on practicals either within the school environment as in demonstration farms or outside the school environment for the purpose of teaching the students, it gives them the opportunity to meaningfully construct knowledge and understand the material while guiding their learning. (Ornstein, Lasley, & Mindes, 2005).

As students see, feel, touch and hear, they better assimilate, understand and link the new information to that which they previously know. Students in effect actively construct knowledge and understanding with guidance from teachers during field trips and by so doing, the student's knowledge widens and deepens as they

continue to build new links between new information and experiences and their existing knowledge base. The nature of the links can take a variety of forms such as adding to, modifying or reorganizing existing knowledge or skills.

AGRICULTURAL FIELD TRIPS IN CO-OPERATIVE EDUCATION

Agricu1ural tourism is an emerging industry with great potentialities for unlocking interests and inducing investment in agriculture as well as exposing students in primary, secondary and tertiary institutions to some practical details in agriculture. It is a welcome practice in the school system in many countries in the world. Onyeabor et al (2006) noted that there has been a growing interest in agricultural tourism in Botswana, Tanzania and Kenya due to its potential to increase farm income and increase employment on the farm, while creating other business opportunity for rural income. The case is not different in Nigeria. A survey carried out at the National Root Crops Research Institute (NRCRI) Umudike in 2006 on the status of field trips or tourism in the institute showed that 13, 518 tourist youths visited the institute farms between 2003 and 2005 to gain practical knowledge and to see new technologies in agriculture (Nwakor, et al (2006). In the united State of America, nature and agriculture-based tourism is reported to be the fastest growing industry in the tourism industry (Fogarty, 1997).

Agricultural tourism is popularly addressed as fieldtrips could be to a religious institution, education institution, political institution, but when it involves agricultural institution or farm, it is referred to as agro-tourism (Flyman, 2003). Agro or agriculture tourism involves a visit to a working farm or any agricultural or agri-business operation for the purpose of education enjoyment, active involvement in the activities of the farm or operations. Huffman (1987) noted that it is an authentic education away from the school and home - a means by which the theory of the instructional programme is put into practice by the student. Since the centers are actively involved, agricultural tourism offers a co-operative instruction between the participating school and the community. For such a co-operation to exist there must be agreement between the school programme coordinator and the learning centre.

Horver (1982) stated that for administering an effective field trips, the programme should be designed by the school. The school coordinator should list the skills, knowledge and competencies considered essential for entry into specific occupation. The students should know and understand the plan of work. The co-operating personnel should be a qualified specialist in an occupational area rather than a certified classroom teacher. Huffman (1987) asserted that as a member of an educational team, the centre personnel is charged with the responsibility of demonstrating skills, relating theory, promoting safety, developing a favourable attitude towards works and in general, presenting the ideal example of a skilled worker worthy of being supervised, observed and emulated. The selection of the co-operating learning centers depends on the availability of proper facilities and equipment as well as adequate on-the-job instructor. Ojoko (1994) emphasized that the cooperating instructor is even more important than the cooperating facilities and equipment. However highlighted the cooperating instructor must be willing and capable to impact his knowledge, ready to join in - service training classes for co-operating instructors, ready to promote interest and enthusiasm and prepared to enhance the learning process.

ACADEMIC PERFORMANCE INDICATORS

Performance indicators are measures of how well a work is being done (Borden and Bottril, 1994). In secondary schools, determining student academic performances is not an easy task because student performance depends on various goals and criteria resulting from numerous subject areas and different subject teachers and instructors. Each of these resource persons impact their experiences which in one way or the other build up to influence the performances of the students. In this vein, Eweasator (1997) noted that the output of any level of the educational system cannot be attributed to the efforts of a single teacher. Yet this is not an excuse for not expected, to be called upon to account for the academic performances of the students. In secondary schools, there are indeed subjective factors to indicate the academic performances of the students. In view of the above, Salganik (1994) stated that in the past, parents have generally viewed high test scores as a mark of a good school, but education practitioners and policy makers were reluctant to rely on these scores.

Gary and Booker (1992) in the same vein, associated increased academic achievement with better grades which earn rewarding careers. To Cutler and Waine (1999), qualitative measures of student performances were examinations test results and pupil attendance levels.

In another view, Lockheed and Verspoor (1991) noted that about half of all countries test students on their mastery of the primary curricular in end-of-cycle examinations. However, they observed that these examinations rarely provide information about how well the educational system impacts learning skills. This draws attention to the importance of developing the cognitive skills of the students. According to Gary and Booker (1992), cognitive competencies are needed to function effectively in our society and these include the ability to express oneself maturely and intelligently, to solve reasoning problems and to compete intellectually. Further more, with the rate of acceleration of technological change, good cognitive skills will be a key element

in the ability to adapt to the changes taking place in all fields of human endeavour. Especially in agriculture, the need for food security and competent workforce in agricultural sector is making much demand for improvement in knowledge, skills and attitudes of the younger generation.

THE VALUES OF FIELD TRIPS

Field trips are a critical component of standards-based instruction in the classroom, not a separate activity, but a direct extension of classroom instruction. Awotua-Efebo (1999) agrees that field work is a type of instructional medium in use today, since instructional medium according to the author, is "anything (materials and equipment) that can help the teacher to communicate effectively his or her ideas to the students, so that at the end of the instruction the student can do that which the teacher stated in the objectives. Examples are: real object (specimen, models, excursions, field work) projected/non-projected images, print non-prints etc. Basically, agricultural field trip is seen as a support for effective teaching and not a centre of attention. Awotua-Efebo (1999) argued that effective teaching should be the goal, and defines effective teaching as "getting the content (message) across in a manner that will accomplish the desired objectives, and add also that if at the end of the instruction, the student do what the teacher want them to do through the process of evaluation, then effective teaching has taken place.
Furthermore, agricultural field trips by secondary school students were expected to enhance student learning experiences through interaction with resource persons and the environment. Such centers were supposed to provide better resources than the school for first hand information, especially as learning outside the classroom aims at ensuring that all young people had chances to participate in high quality outdoor learning experiences. It also set out to improve academic achievement, developed skills and interdependent in a widening range of environments and provide the opportunity to acceptable levels of risk. But regrettably, many critics and observers have expressed that the whole exercise is a mere jamboree and a waste of time and energy and has not in any way responded to improve student's performance in agriculture.

METHODS AND MATERIALS

The study adopted an Ex-Post Facto Design model to determine the impact of agricultural field trips on student performance in agricultural science in selected secondary schools in Rivers State. In this design the researcher took students out to site already in existence e.g. the school farms, - ie. Crops and fish farms, animal farms, research centers etc. These students were taught. Their assimilation levels were tested by asking them questions related to specifics taught in course of the trips. On the spot tests were also administered and responses indicated that knowledge had been acquired. The result of this was that attitudes to learning was positive and responses to question and performances academically greatly improved, understanding became clearer and knowledge was indeed constructed.

Also, student's appetite towards the subject Agricultural Science became greatly stimulated because, they were taken to existing natural and man-made sites to see real objects, events and activities in their natural habitat and environment.

The population of the study includes all senior secondary school students in SSS Ill who have gone on field trips and those who have not been exposed to field trips to agricultural sites in Rivers State. Therefore the total population of the students in secondary schools in Rivers State is 9600 respondents.
In order to determine the sample size of the study, Yaro Yamen method of sample size determination was employed. It has the formula

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

Where n = Sample size sought
N = Population of the study
e = Tolerable error (0.05)
1 = Theoretical constant

Therefore,

$$n = \frac{9600}{1 + 9600(0.05)^2}$$

$$= \frac{9600}{25} = 384$$

Therefore, the sample size of the study is 384 respondents.

The data collected from the respondents were analyzed using mean score statistical method. These analyses were

presented in tables based on the research question asked. With regards to these, a range of mean was determined in used with the interpretative norm which ascertain its level of acceptance or rejection 0.1 to 2.4 means reject while 2.5 and above means do not reject. In order words mean a response below 2.50 was rejected while that above 2.50 was accepted. This was applied to the research questions posed, while the hypotheses were analyzed using chi-square statistical technique.

RESULTS

RESEARCH QUESTION 1

What learning experiences do agricultural field trips exposes students to in secondary schools in Rivers State?

Table 4.1 Analysis of The Learning Experience To Which Agricultural Field Trips Expose Students In Secondary Schools In Rivers State.

S/N	DESCRIPTION	SA	A	D	SD	TOTAL SCORE	MEAN SCORE	N	REMARK
1	Broadens and exposes students to modern methods of farming.	80	100	70	50	810	2.7	300	Accepted
2	Enhances knowledge on agric processing methods.	90	80	80	50	810	2.7	300	Accepted
3	Improved farm product utilization	100	60	60	80	780	2.6	300	Accepted
4	Species improvement and genetics	80	100	50	70	790	2.6	300	Accepted

The analysis in Table 4.1 shows that item 1 and 2 with a mean score of 2.7 respectively agreed to the fact that agricultural field trips broadens and exposes students to modern methods of farming and enhances knowledge on agricultural processing methods.

Item 3 and 4 has a mean score of 2.6 respectively shows that agricultural/field trips improves farm product utilization and contribute to species improvement and genetics.

RESEARCH QUESTION 2

What is the performance level of students in O' Level certificate Agricultural Science amongst secondary schools that embarked on Agricultural field trips in Rivers State and those who do not?

Table 4.2: Analysis of the performance level of students in O' Level certificate Agricultural Science amongst secondary schools that embarked on agricultural field trips and those who did not in selected secondary schools Rivers State.

S/N	DESCRIPTION	SA	A	D	SD	TOTAL SCORE	MEAN SCORE	N	REMARK
5	Carries out satisfactory practical exercise.	60	90	70	80	730	2.4	300	Rejected
6	Submitted a detailed weed album for external examination.	100	70	80	50	820	2.7	300	Accepted
7	More than 60 percent pass at credit level and above in SSCE/GCE examination over the last five years	100	70	70	60	810	2.7	300	Accepted
8	No case of examination malpractice during field trips on Agricultural Science subject.	90	80	80	50	810	2.7	300	Accepted

In Table 4.2 item 6,7 and 8 show a mean score of 2.7 which agreed that agreed that O'Level certificate Agricultural Science students submit a detailed weed album for external examination, that more than 60 percent pass at credit level and above in SSCE/GCE examination over the last five years and that there is no case of examination malpractice during field trips on Agricultural Science subject.

RESEARCH QUESTION 3

What are the effects of agricultural field trips on student performance in Agricultural Science in selected secondary schools in Rivers State?

Table 4.3 Analysis of the effects of agricultural field trips on student performance in Agricultural Science in selected senior secondary schools in Rivers State.

S/N	DESCRIPTION	SA	A	D	SD	TOTAL SCORE	MEAN SCORE	N	REMARK
9	Enhance an effective used of all faculties cognitively effectively and skillfully.	40	100	80	80	700	2.3	300	Rejected
10	Makes recall of learned experiences easy during tests and examinations.	70	80	80	70	750	2.5	300	Accepted
11	Boost students practical experiences	100	70	80	0	770	2.7	300	Accepted
12	Enhances their ability in the management of practical exercises in their farm projects.	90	70	90	50	800	2.7	300	Accepted

Table 4.3 shows that item 1 with a mean score of 2.5 agreed that agricultural field trips makes recall of learned experiences easy during tests and examination.
Item 2 with a mean score of 2.7 agreed that agricultural field trips boost student practical experiences. Item 3 with a mean score of 2.7 agreed that it enhances their ability in the management of practical exercises in their farm projects.

ANALYSIS OF HYPOTHESES

Hypothesis 1:

There is no significant difference between the learning experiences acquired by students who embarked on agricultural field trips and those who did not in selected secondary schools in River State.

Table 4.4: Chi-square Analysis for significant difference between the learning experiences acquired by students who embarked on agricultural field trips and those who did not in selected secondary schools in River State.

Degree of freedom	Calculated x^2	Critical x^2	Remark
9	**50.8**	**16.9**	Reject Null hypothesis and accept alternative**.**

SEE APPENDIX B

Table 4.4 indicates that the critical X^2 of 16.9 is lower than the calculated X^2 of 50.8 at 9 degree of freedom. The result suggests that there is a significant difference a between the learning experiences acquired by students who embarked on agricultural field trips and those who did not in selected secondary schools in River State. ($P<0.05$). The null hypothesis of no significant difference between the learning experiences acquired by students who embarked on agricultural field trips and those who did not in selected secondary schools in Rivers State is rejected while the alternative hypothesis is accepted.

HYPOTHESIS 2:

There is no significant relationship between the academic performance of students in senior secondary school III internal examinations and their overall performance in O'Level certificate examinations amongst students who were exposed to agricultural field trips and those who were not in selected secondary schools in Rivers State.

Table 4.6: Chi-square Analysis for significant relationship between the academic performance of students in senior secondary school Ill internal examinations and their overall performance in O'Level certificate examinations amongst students who were exposed to agricultural field trips and those who were not in selected secondary schools in Rivers State.

Degree of freedom	Calculated x^2	Critical x^2	Remark
9	**28.4**	**16.9**	Reject Null hypothesis and accept alternative**.**

SEE APPENDIX C

Table 4.6 indicates that the critical X^2 of 16.9 is lower than the calculated X^2 of 28.4 at 9 degree of freedom. The result suggests that there is a significant relationship between the academic performance of students in senior secondary school III internal examinations and their overall performance in O'Level certificate examinations amongst students who were exposed to agricultural field trips and those who were not in selected secondary schools in Rivers State. (P<O.05). The null hypothesis of no significant relationship between the academic performance of students in senior secondary school III internal examinations and their overall performance in O'Level certificate examinations amongst students who were exposed to agricultural field trips and those who were not in selected secondary schools in Rivers State is rejected while the alternative hypothesis is accepted.

DISCUSSION OF FINDINGS

Research Question one sought to find out the learning experience that agricultural field trips expose students to in secondary schools in Rivers State. The analysis on table 4.1 shows that all the four items had a mean score 2.7 of above the grand mean of 2.3. This shows that the respondents are in agreement with the learning experience in which agricultural field trips expose students in selected secondary schools in Rivers State. This is supported by Angba (2001) who is of the opinion that agricultural field trips expose students to areas such as crop protection principles and practices, farm management, storage and preservation of farm products, marketing and distribution of agricultural products, fisheries and agricultural practices and animal health and diseases.

Research question 2 also sought to find out the performance level of students in O'Level certificate Agricultural Science amongst secondary schools that embarked on Agricultural field trips in Rivers State and those who do not. The analysis of the data revealed that apart from item 1 which had a mean score of 2.4, each of the other three items had a mean score of 2.7 which is above the grand mean of 2.5. This confirms to a large extent, that the performance level of students in O'Level Certificate Agricultural Science among secondary schools that embarked on agricultural field trips in selected secondary schools in Rivers State. This is supported by Harrop (1983) who is of the opinion that concerning students of Agricultural Science, there are minimal or no case of examination malpractice during field trips on Agricultural Science subject, that students attempt questions from all aspects of Agricultural Science, and grades of students in terminal examination in agriculture are generally satisfactory; and majority of the students completed their farm projects within the deadline. And also in Ornstein, Lasley, and Mindes, (2008) opinion, because the students were given the opportunity to meaningfully construct knowledge and understanding of the material to be enables to links between new information and experiences and their existing knowledge base.

Research question three sought to find out the effects of agricultural field trips on student performance in Agricultural Science in selected secondary schools in Rivers State. The analysis revealed that item 1 has a mean score of 2.3 which rejects the statement that agricultural field trips enhance an effective used of all faculties cognitively effectively and skillfully. However, item 10 has a mean score of 2.5 while items 11 and 12 had a mean score of 2.7 each. This shows that the respondents are in agreement on the effects of agricultural field trips on student performance in Agricultural Science in selected secondary schools in Rivers State. This is supported by Huffman (1987) who is of the opinion that knowledge gained remains permanent and enhances transfer of learning.

SUMMARY

From the discussion of findings, it can be summarized as follows:

1. There is a significant difference between the learning experiences acquired from agricultural field trips and student performance in agricultural science in selected secondary schools in Rivers State. Owing to the fact that agricultural field tips broadens and exposes students to modern methods of farming. It enhances knowledge on agric processing methods. It Improves farm product utilization. It contributes to species improvement and genetics.

2. There is a significant difference between the performance status of students in O'Level Certificate and student overall performance in Agricultural Science in selected secondary schools in Rivers State. This is due to the fact that 0 'Level Certificate Agricultural Science students submit a detailed weed album for external examination. More than 60 percent pass at credit level and above in SSCE/GCE examination over the last five years. No case of examination malpractice during excursion on agricultural Science subject.

3. There is a significant difference between the effects of Agricultural excursions and student performance in agricultural science in secondary schools in Rivers State. Due to the fact that Agricultural field trips make recall of learned experiences easy during tests and examinations. Agricultural field trips boost student practical experiences. It enhances their ability in the management of practical exercises in their farm projects.

CONCLUSION

Based on the research findings, the following conclusions are made:
That the learning experience in which agricultural field trips expose students to in secondary schools in Rivers State includes:

1) Agricultural field trips broadens and exposes students to modern methods of farming.
2) It enhances knowledge on agric processing methods.
3) It Improves farm product utilization.
4) It contributes to species improvement and genetics.

The performance level of students in O'Level Certificate and student overall performance in Agricultural Science in Secondary Schools in Rivers State. Owing to the fact that that O'Level certificate Agricultural Science students submit a detailed weed album for external examination, more than 60 percent pass at credit level and above in SSCE/ GCE examination over the last five years. No case of examination malpractice during field trips on Agricultural Science subject.

The effects of Agricultural field trips and student performance In Agricultural Science in selected Secondary Schools in Rivers State include the fact that agricultural field trips make recall of learned experiences easy during tests and examinations. Agricultural field trips boost student practical experiences. It enhances their ability in the management of practical exercises in their farm projects.

RECOMMENDATIONS

Based on the findings of the study, it is certain that field trips is essential and fundamental to agricultural science teaching, and so, the following recommendations are made:

1. That regular field trips should be organized for agricultural science students so as to give them the needed exposure.
2. That places to be visited should be contacted in advance so that they will be prepared for the students1, because it is only when it is well planned and implemented that can it can raise standards and improve pupils' personnel, social and emotional development as this will motivate them, igniting a passion for learning by opening their eyes to the real world connection and uses of the content and skills they are developing in the classroom.
3. That the school authority should support the field trips by providing vehicles and also creating an enabling environment for the students going on tour.
4. That the students should be familiar with the general principles of agriculture so that they can combine theory with practicals.
5. The school coordinator should list the skills, know ledges and competencies considered essential for entry into specific occupation. The students should know and understand the plan of work and the co-operating personnel should be a qualified specialist in an occupational area rather than a certified classroom teacher.

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APPENDIX B
CHI-SQUARE ANALYSIS FOR HYPOTHESIS ONE

0	E	O-E	$(0-E)^2$	$(0-E)^2/E$
80	88	-8	64	0.7
100	85	15	225	2.7
70	65	5	25	0.4
50	63	-13	169	2.7
90	88	2	4	0
80	85	-5	25	0.3
80	65	15	225	3.5
50	63	-13	169	2.7
100	88	12	144	1.6
60	85	-25	625	7.4
60	63	-5	25	0.4
80	63	17	289	4.6
80	88	-8	64	0.7
100	85	35	1230	18.8
50	65	-15	225	3.5
70	63	7	49	0.8

Calculated = 16.9
Critical = 50.8

APPENDIX C
CHI-SQUARE ANALYSIS FOR HYPOTHESIS TWO

0	E	O-E	$(0-E)^2$	$(0-E)^2/E$
60	88	-28	764	8.9
90	78	12	144	1.9
70	75	-5	25	0.3
80	60	20	400	6.8
100	88	12	144	1.6
70	78	-8	64	0.8
80	75	5	25	0.3
50	60	-10	100	1.7
100	88’	12	144	1.6
70	78	-8	64	0.8
70	75	-5	25	0.3
60	60	0	0	0
90	80	10	100	1.3
80	78	2	4	0.1
80	75	5	25	0.3
50	60	-10	100	1.7

Calculated = 16.9
Critical = 28.4

APPENDIX D
DETERMINATION OF PEARSON PRODUCT MOMENT CORRELATION COEFFICIENT

$$r = \frac{n(\times y - \Sigma \times \Sigma y)}{}$$

$$r = \frac{n(\Sigma xy - \Sigma x \Sigma y)}{\sqrt{n\,\Sigma x^2 - (\Sigma x^2 \times \sqrt{n \Sigma y^2 - (\Sigma y)^2}}}$$

X	Y	X^2	Y^2	XY
2	4	4	16	8
3	5	9	25	15
I	3	1	9	3
6	8	36	64	48
3	3	9	9	9
2	2	4	4	4
4	6	16	36	24
2	4	4	16	8
1	3	1	9	3
2	3	4	9	6

$$= \frac{10 \times 128 - 28 \times 41}{10 \times 88 - 26^2 \times 10 \times 197 - 41^2}$$

$$\frac{214}{242.8085666} = 0.881353.$$

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