

Assessment of Quality Instruction Indicators in Vocational Agricultural Education in South –South Universities Nigeria.

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Abstract: *This study assessed quality instruction indicators in vocational agricultural education in south – south Universities Nigeria. The specific objectives were to determine the input, process and output indicators of quality instruction in vocational agricultural education. The population of the study was all agricultural education lecturers in the south-south universities Nigeria. Simple random sampling technique was used to select 30 agricultural education lecturers in south-south universities Nigeria. The instrument used for the study was a self-designed questionnaire structured in four point rating scale. The instrument was used to obtain lecturers opinion on the indicators for quality delivery in vocational agricultural education. The instrument was validated by experts of vocational agricultural education in Rivers state university. The reliability of the instrument was established using Kuder-Richardson-20. From the analysis, reliability coefficient obtained was 0.90, this confirms the internal consistency of the instrument. Methods used in data analysis involves frequency, mean, standard deviation. Findings of the study revealed that availability of; demonstration farm, farm workshops qualified agricultural teachers and technicians among others are input indicators for quality instruction. Also, process indicators found for quality vocational instruction were community-based resources usage, inclusion of workshop skill training, and proper student assessment standard among others. Lastly the study revealed among other that employability of graduates, entrepreneurship ability of graduates, productivity of school farm are the outcome indicators defining quality instruction in vocational agricultural education. The study recommended that school administrators should provide adequate facilities for successful implementation of agricultural education curriculum.*

Keywords: *Assessment, Quality, Instruction, Indicators, Vocational, Agriculture, Education.*

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I. Introduction

Vocational education is any form of education designed to imbue individual with the right type of knowledge, skill, competencies and attitudes for specific occupations (Nwankwo, 2000). Vocational agricultural education is an education that promote agricultural skill mastery for graduates to prepare for world of work in the teaching of agriculture. Vocational agricultural education is aimed achieve the closeness of students with the learning materials and the knowledge needed in for agricultural productivity (Triyono, 2014). It referred to as the study of interrelationship between agriculture as a discipline and teaching of skills, knowledge, values and attitudes in the production of goods, processing and marketing of agricultural and related products (Arokoyu&Ndeobi, 2014; Amadi&Ekezie 2018). Simply put, VAE is a synergized effort within an institution that involves the transmission of agricultural heritage of the society to individuals through the formal education process (Akpomedaye, 2016). However, in light of the modern agriculture, vocational agricultural education is a discipline that involves the equipping learners with modern agricultural skills needed for effective operationalization in agricultural sector for the purpose of transmitting the knowledge to younger generation.

Vocational agricultural education is being taught at all level of education in order to inculcate in youth the basic skills and knowledge required to sustain them after school, thereby making them productive and self-reliant, instead the reverse has been the case (Amadi&Ekezie 2018). Vocational agricultural education deals with the skills necessary for ensuring high-level production of farm products and produce (Makusidi, 2016). It is an aspect of vocational education that is purposed to equip learners with required knowledge and competency to establish and manage farm and agric business (Amadi&Ekezie, 2018). According to Dipcharima (2004), vocational agricultural education assists and provides the individuals or the society with basic or essential agricultural knowledge and skills to innovate and explore the environment for the betterment of the whole society or nation. Agbulu and Ekele (2004) maintained that tertiary school curriculum in vocational agricultural education should be designed in such that it lay emphasis on the use of modem techniques in the area of agricultural mechanization crop and livestock production, and management. To achieve this demand, teaching

learning in agricultural education should be carried out to accomplish the following according to Nwozuzu (1985)

- To develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture.
- To develop agricultural competencies needed by individuals engaged or preparing to engage in agriculture.
- To develop an understanding of and appreciation for career opportunities in agriculture and preparation needed to enter and progress in agricultural occupations.
- To develop an ability to secure satisfactory placement and to advance in an agricultural occupation through a program of continuing education.
- To develop those abilities in human relations which are essential in occupation.
- To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social and civil responsibilities.

When the objective of vocational agricultural education is effectively pursued, it could lead to producing individuals who will be stakeholders in national agricultural production and education. In this view, Ochu (2004), council of the national partnership for excellence in agricultural and education (2012) described agricultural education is a systematic program of instruction available to students desiring to learn about the science, business, and technology of plant and animal production and/or about the environmental and natural resources systems.

However, it is worrisome that the teaching and learning of vocational agricultural education is fallen below quality in Nigeria. It is evident in the fact that graduates of agricultural education do not display the expected competencies for their livelihood instead majority are in search of white-collar jobs. This situation has led graduates of agricultural education to be job seekers instead of job creators. Nevertheless, this bridge can only be gaped when there is efficient and quality instructional delivery in vocational agricultural education.

Although, quality has been regarded as fitness for purpose as well as fitness of purpose (Wittek&Kvernbekk, 2011; Wittek& Habib, 2013), diversity of perspectives and approaches to the notion of quality, the question of what quality in education is remains crucially pertinent. Quality instruction has been the object of sustained concern among scholars in higher education for centuries. Sogunro (2017) described quality instruction as the soundness of all teaching and learning transactions in the classroom. He further expressed that quality instruction is the degree to which an instruction is delivered adequately, meets students' learning needs, learning styles, interests, expectations, and is well aligned to standards. Quality of instruction is considered a set of instructional characteristics, as for instance clarity and structuredness or teacher-student-interactions (Neumann, Kauertz& Fischer, 2012). Quality teaching is more holistic in nature, consisting of a willingness and effort by the learner, a social environment supportive of teaching and learning, opportunities to teach and learn, and good teaching as previously defined (Fenstermacher& Richardson, 2005). However, united nation educational scientific and cultural organization (n.d) stated that quality teaching could be determined using the input, process and outcome measures of the programme. The aforementioned three stages may help to draw relevant conclusion on the quality of any educational service

In the delivery of quality service in education system, human, financial and physical resources that have been set aside for educational activities are regarded as the input indicators (UNESCO, n.d, OCED, 2008). This implies that the availability of human, financial and material resources shows an aspect of quality instructional service. The educational input is a major determinant of the extent any educational objective will be achieved. The availability of such resources are the starting point of organizing the provision of educational service immediate output. At first sight, educational input are used to predict the likely standard of instructional delivery service. In vocational agricultural education Jenkins, Kitchel&Hains (2012) noted that, in an effort to instill quality teaching practice, students are indoctrinated with various forms of teacher performance criteria as evidenced by varying teacher certification requirements. That is, there is need for qualified/ certified agricultural instructor for effective delivery of agricultural education programme. In contrast Goldrick's (2002) assertion that the quality of the instructor is more than initial certification. Jenkin (2008) also is of the fact that effective instruction begins with an effective teacher who knows and understands the principles of teaching and learning. OCED (2008) noted that resource allocation as input indicator should be interpreted with enrolment data, resource quality, and conceptual range (e.g. library book topics) to determine teaching and learning quality. Cano in Jenkin (2008) in his suggestion stated that a well-planned curriculum that challenge students at all level of cognition should be developed at the onset of every successful vocational agricultural programme. National council of agricultural education (2016) in her opinion noted that input Facility size and farm layout must meets all pertinent standards or guidelines for all offered. Amadi and Edo (2017) noted that there is need to promote adequacy of qualified personnel, physical facilities and build efficiency in administration. For the diverse view, it is could be concluded that availability of qualified teachers, instructional facilities, well planned curriculum among others are input indicator for quality instructional delivery service.

Process indicators shows how educational inputs have been utilized to realizing intended objectives in educational service. In the process of carrying out an effective instructional delivery, the emergence of certain factor are inevitable. These indicators really shows what happens in the teaching process (UNESCO, n.d). Process or activity indicators “provide an important project management tool” that describes the implementation of a program and reveals gaps between planned versus actual implementation (Parsons, Gokey, & Thornton, 2013). Quality Vocational agricultural education is delivered in three categories namely, classroom instruction, supervised agricultural experience (SAE) and Future Farmers Association (FFA). In order to achieve the vocational agricultural education goal, it is expected that farm activities are combined with classroom instruction and social works to enhance quality instruction delivery. However, Jenkin (2008) asserts that agricultural education could be provided without directed or supervised practice on a farm. The reason was to broaden Agricultural Education to include more than just farming (Wilson & Moore, 2006). At the same time, there is need to integrate more farm activities and farm visit exercise in the curriculum because this defines their rate of competence in agricultural production and teaching.

Outcome indicator refers to the relative result of instructional delivery. Roberts and Dyer (2004) stated that vocational agricultural education carried out in the set standard and guideline should obtain positive outcome in these categories of instruction Future Farmers Association (FFA), Supervised Agricultural Experience (SAE), building community partnerships, marketing, professional growth, program planning and personal qualities. According to Nnodim and Johnwest (2016) the end product of Vocational Agricultural Education programme should possess necessary skills responsible for economic and social relevance. Nnodim and Amadi (2017) noted that vocational agricultural education is geared towards producing agricultural entrepreneurs will be valuable contributors to agricultural gross domestic product of the state. At the end of vocational agricultural education programme the graduates should be able to possess good agricultural content mastery and entrepreneurship skills in farming. Outcome indicators also include number of graduates implementing a new strategy learned at vocational agricultural education training and the development of new policies or changes in existing policies based on papers and publications produced (Childers & Kernaghan, 2016). “Output indicators should be monitored at regular intervals over the life course of an initiative, as a way of assessing progress towards project goals and detecting delays” (Parsons, Gokey, & Thornton, 2013; Childers & Kernaghan, 2016).

Purpose of the study

The main purpose of the study is to determine the quality instruction indicators in vocational agricultural education in south –south universities Nigeria. The study specifically sought to assess

- Input indicator for quality delivery of vocational agricultural education programme
- Process indicator for quality delivery of vocational agricultural education programme
- Outcome indicators for quality delivery of vocational agricultural education programme

Research Questions

The following research questions were asked to guide the study

- What are the input indicator for quality delivery of vocational agricultural education programme?
- What are the process indicator for quality delivery of vocational agricultural education programme?
- What are the outcome indicators for quality delivery of vocational agricultural education programme?

II. Methodology

The study adopted descriptive survey research design. The study was carried out in south-south universities Nigeria. The population of the study comprised all agricultural education lecturers in south-south universities offering agricultural education program. Simple random sampling was used to select 30 agricultural education lecturers in south-south universities Nigeria. The instrument used for the study was a self-designed questionnaire structured in four point rating scale. The instrument was used to obtain lecturers opinion on the indicators for quality delivery in vocational agricultural education. The instrument was validated by experts of vocational agricultural education in Rivers state university. The reliability of the instrument was established using Kuder-Richardson-20. The reliability coefficient obtained was 0.90, this confirms the internal consistency of the instrument. Methods used in data analysis involves frequency, mean, standard deviation.

III. Result and Discussion of Findings

Research Question 1: What are the input indicator for quality delivery of vocational agricultural education programme?

Table 1: Input indicator for quality delivery of vocational agricultural education programme.

S/N	Items	Mean	Std. Dev	Remark
	Availability of			
1	demonstration farms	4.00	0.84	Agreed
2	farm workshops	3.84	1.04	Agreed
3	qualified teachers and technicians	3.65	0.67	Agreed
4	farm land	4.00	0.98	Agreed
5	farm equipment/tools	3.84	0.78	Agreed
6	spacious classrooms	3.62	1.00	Agreed
7	up-to-date instructional materials	3.46	1.01	Agreed
8	adequacy of budget	3.62	0.84	Agreed
9	Farm implements/technology	3.52	0.77	Agreed
10	Equipped library	3.80	0.81	Agreed
11	Supportive administrators	4.00	0.65	Agreed
12	Fund for agricultural projects	3.80	0.72	Agreed
13	Teachers' commitment	3.81	0.90	Agreed

Field Survey, 2019.

Table 1 revealed the input indicators for quality instructional delivery of vocational agricultural education programme. Based on the criterion mean value item 1-13 were accepted by the respondents as the input indicator for quality instructional delivery in vocational agricultural education programme. The findings is in line with Jenkin (2008) who noted that effective vocational agriculture instruction begins with an effective agricultural teachers who knows and understands the principles of teaching and learning agriculture. He further asserts defining quality of vocational agricultural education programmes lies in the availability of learning inputs based in accordance to the set standard and guidelines of national council of partnership for excellence in agriculture and education. Also Cano (1999) supported the finding stating the quality of vocational education is known when a well-planned and implementation of academic curriculum that challenge students at all level of cognition is in operation. In addition OCED (2008) noted that effective resource allocation is a principal determinant of quality instructional delivery in agricultural training.

Research Question 2: What are the process indicator for quality instructional delivery of vocational agricultural education programme?

Table 2: Respondents opinion on the process indicator for quality instructional delivery of vocational agricultural education programme.

S/N	Items	Mean	Std. Dev	Remarks
	Process quality involves			
14	incorporation of leadership development	3.08	1.09	Agreed
15	uses community-based resources	3.62	0.98	Agreed
16	integration academic content with agriculture content	3.50	0.81	Agreed
17	inclusion technical and mechanical workshop skills training	3.71	0.70	Agreed
18	Updated curriculum	3.03	0.81	Agreed
19	Proper students' assessment standard	3.42	0.92	Agreed
20	classroom and laboratory instruction is used	3.51	0.81	Agreed
21	The use of appropriate farm technology for instruction	3.67	1.03	Agreed
22	Gearing the teaching process towards the learning style and capabilities of the students	3.09	1.00	Agreed
23	Farm practice	3.84	0.98	Agreed
24	integrated farm visit	3.59	0.71	Agreed
25	Utilization of classroom instructional materials	3.09	0.86	Agreed
26	Attendance in agricultural workshops and conference	3.35	1.02	Agreed
27	Out of class instructional activities	3.77	0.98	Agreed
28	Instruction occurs in appropriate facilities	3.21	0.75	Agreed
29	instruction that is hands on learning	3.82	0.81	Agreed
30	Functional students leadership organization (FFA, NYFEO, NPSASA)	3.46	0.70	Agreed

Field Survey, 2019.

Table 2 shows the agricultural education lecturers opinion on the process indicator for quality instructional delivery of vocational agricultural education programme. Based on the criterion mean value, the table analysis shows that items 14-30 were accepted. The findings is consistent with Jenkin (2008) asserts that in teaching vocational agricultural education, the quality of the instruction could be determined on the process of instruction. The further stated continuous students' assessment standard, gearing teaching process towards the learning style and capabilities of the students, incorporation of leadership development, using community-based

resources, integration academic content with agriculture content among others practically defines the quality of instructional process in vocational agricultural education.

Research Question 3: What are the outcome indicators for quality delivery of vocational agricultural education programme?

Table 3: Respondents opinion on the outcome indicators of quality delivery of vocational agricultural education programme.

S/N	Items	Mean	Std. Dev	Remark
31	Employability of graduates	3.60	0.76	Agreed
32	Graduate contribution to agricultural productivity	3.81	0.89	Agreed
33	Productivity of school farm	3.71	0.91	Agreed
34	Percentage of students pursuing agriculture careers or advance degrees	3.65	0.80	Agreed
35	Communication and interpersonal skill of graduates	3.31	0.99	Agreed
36	Percentage of Farm establishment by graduates	3.23	1.03	Agreed
37	Leadership and self-reliance ability of the graduates	3.53	1.03	Agreed
38	ability to function as a member of farmers association	3.65	0.78	Agreed
39	Graduates' ability to display pedagogical knowledge and agricultural content mastery	3.78	0.91	Agreed
40	Students' satisfaction with the instruction	3.09	0.83	Agreed
41	Graduates' ability train others in agricultural production	3.75	0.73	Agreed
42	innovation ability of the graduates	3.67	0.69	Agreed

Field Survey, 2019

Table 3 shows the respondents opinion on the outcome indicators of quality delivery of vocational agricultural education programme. Based on the acceptance mean value, the mean of item 31-42 were accepted as the outcome indicators of quality delivery of vocational agricultural education programme. Nnodim and Amadi (2017)' assertion affirmed the findings by stating that the end product of vocational agricultural education should result in the production "agro-prenuers" who will be valuable contributors to agricultural gross domestic product of the state. Also outcome indicators also include number of graduates implementing a new strategy learned at vocational agricultural education training and the development of new policies or changes in existing policies based on papers and publications produced (Childers &Kernaghan, 2016).

IV. Conclusion

Vocational agricultural education is basically a formal skill acquisition programme. Therefore, it objectives cannot be effectively realized without quality instruction delivery. The vocational agricultural education instruction will be absolutely ineffective if it's only geared towards cognitive development neglecting psychomotor and affective development of the learner. Based on the findings of the study, researcher concluded that the effectiveness of instructional delivery in vocational agricultural education is characterized by

- availability of necessary input for effective instructional delivery
- effective utilization of the input provided
- andthe production of competent agricultural education graduates who can contribute to the fight against global food insecurity.

V. Recommendation

Based on the findings the study recommended the following.

- School administrators should provide adequate facilities for successful implementation of agricultural education curriculum
- Agricultural science teacher should ensure that make effective use of the available input for quality instruction delivery.
- Vocational agricultural education teachers should be trained on how to integrate academic content with agriculture content to meet students' satisfaction.
- It observed that, student's agricultural organization is not effectively in function in most vocational agricultural education schools in Nigeria, hence the study recommends that agricultural education teacher enforce the functioning of students' agricultural organization, because it is a substantial aspect of quality instruction in vocational agriculture training.
- Vocational agricultural education teachers should imbibe the custom of visiting integrated farms, this will motivate learners for career pursuit in vocational agriculture.

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