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FUNCTIONALITY AND ADEQUACY OF INSTRUCTIONAL FACILITIES FOR TEACHING AGRICULTURAL EDUCATION STUDENTS IN COLLEGES OF EDUCATION IN NORTH EAST, NIGERIA

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***Abstract*:** *The study focus on functionality and adequacy of instructional facilities for teaching agricultural education students in colleges of education in North East, Nigeria, two objectives guided the study, two research questions were answered. The population of this study was two hundred and sixteen Lecturers (216).The Study used census sampling techniques as a sample; the study adopted a survey research design. All the two hundred and sixteen respondents were given the instrument to fill. The instrument was named Functionality and Adequacy of Instructional Facilities for Teaching Agricultural Education Questionnaire (FAIFTAEQ). This was used as an instrument for data collection; the instrument was found valid after the validations by three expert and later taken for reliability test. The instrument had reliability coefficients of 0.89 indicating that the instrument is reliable. Simple percentage was used to answer research question 1 & 2. The result shows that the higher percentage of the items (62.24%) were not functional which indicated that instructional facilities for teaching agricultural education is not functional in COE in the area among others. Based on the findings of this study, it was concluded that instructional facilities for teaching agricultural education were not functional and inadequate in the COE in the study area. From the findings, it is recommended among others that the College management should try their possible best to make the available facilities functional and adequate in the study area.*
Keywords: *Functionality, Adequacy, Instructional facilities and Agricultural Education*

Introduction

In the context of Agricultural education as a vocational subject, umoh (2002) define Agricultural education as a formal programme of instruction, systematically organized for in school learners and established farmers who are willing and ready to be trained for careers in Agriculture. Here educating people through Agriculture involves a structured information, delivered to an organized group of learners who are willing to participate in various programmes for innovation and ready to use acquired skills in changing the educational system in Nigeria. The national policy on Agricultural education at various levels of institution stresses on imparting skills that the learners must use on specific Agricultural jobs and the technical knowledge that support the learner's knowledge of the jobs they are doing for the successful execution of such jobs. Worthy to note is that development of skills is not limited to crops and animal production but it covers such areas as soil management, machinery operation, processing and storage of farm products, learner acquires information on maintenance of favorable environment, community leadership development, participating in rural leadership activities and agri-business such as crop dusting, soil testing machines and well devilling. Looking at agricultural education in all embracing perspective, it can be submitted that it is an education geared towards preparing people for skilled work. It also stipulate the training and retraining of individual to enable the person acquire specific appreciation of the patterns of behavior, attitudes, skills, knowledge, values and culture needed to become more productive and efficient in the society.

Instructional facilities constitute the media of exchange through which a message transaction is facilitated between a source and a receiver. In addition to extending the range of facilities that can be used to convey the same instructional message to learner's instructional facilities also facilitate the 'process' nature of communication. In this passage, the process nature of communication implies that both the source and the receiver of a message are actively involved in a communication encounter.

Infarct, it means that both the receiver and the source share and exchange ideas, feelings in any communication (Aijaz, 2010).

Functionality is the quality or state of being functional, which means having a practical use or performing a task or function is concern with the actual use rather than theoretical possibilities. Functionality refers to whether a facility works and helps the users meet their goals and needs. From the instructional facility such as computers, machines, buildings etc. when a facility is functional, it does what it's expected to do and does it well. Good facility has a purpose and is crafted in such a way that it will consistently and reality execute a particular function (Combs & Heaton, 2016). Facilities have a great impact on academic performances of students, and inadequate facilities translate to poor performance.

Mapaderum (2002) opined that adequacy is a satisfactory condition of facilities in an organization. Therefore adequacy is a condition in which something is enough in quantity for use. Facilities have a great impact on academic performances of students, and inadequate facilities translate to poor performance**.** Mapaderum (2002) opined that adequacy is a satisfactory condition of facilities in an organization. Therefore adequacy is a condition in which something is enough in quantity for use.

Facilities have a great impact on academic performances of students, and inadequate facilities translate to poor performance. Mapaderum (2002) opined that adequacy is a satisfactory condition of facilities in an organization. Therefore adequacy is a condition in which something is enough in quantity for use. The role of instructional facilities in the school system can be said to be unquantifiable. If educational objectives are to be met, the school system must integrate learning with instructional materials. Khal and Igbal (2012) stated that adequate and quality instructional facilities are basic ingredients for quality Education to achieve the intended goal of tertiary institution. To bring out the best of teaching and learning, modern instructional facilities are required to be applied in the process. Both the instructor and the learner benefits immensely when it is used. Learning will be meaningless to a student that feels bored when a teacher instead of physically exemplifying what is been taught will resort to under utility of instructional facilities. The need for teacher's awareness in utilizing instructional materials is paramount if job is to be done. Fafunwa (2010) is of the view that a large number of students are crowded in classrooms, using inadequate and obsolete equipment and with disillusioned teachers.

Objectives of the Study

The main purpose of this study was to assess the functionality and adequacy of instructional facilities for teaching of agricultural education (AE) in Colleges of Education in north east zone, Nigeria. The objectives of this study were to:

1. Determine the functionality of instructional faculties for teaching Agricultural Education in Colleges of Education in north east, Nigeria
2. Determine the adequacy of instructional facilities for teaching Agricultural Education in Colleges of Education in North East, Nigeria

Research Questions

The following research questions were formulated to guide the study viz:

1. What is the functionality of instructional facilities for teaching Agricultural Education in Colleges of Education in North East, Nigeria?
2. How Adequate are instructional Facilities for teaching Agricultural Education in Colleges of Education in North East, Nigeria?

Methodology

The research design to be use is a survey research design, the design is use for descriptive, explanatory and exploratory purpose (Kabir, 2016) therefore the design was considered appropriate for this study because it allows collection of data for the purpose of describing a given phenomena which is assessment of instructional facilities for teaching Agricultural Education in COE in north east zone, Nigeria.

The Population for this Study comprised all the two hundred and sixteen (216) Agricultural Education lecturers, in the eleven (11) Colleges of Education in north east zone, Nigeria. The study adopted census

sampling technique which involved the use of the whole teachers in the eleven COE in the study area with a total of two hundred and sixteen teacher (216), This was due to the limited number of the respondents in the study area, the afore statement is in line with the assertion of Creswell (2019) who stated that when a population is not large the whole population would be used for the study therefore the number of respondents obtained from each college were put together to get the total population of the study.

The instrument used for data collection was structured questionnaire, the instrument was designed by the researcher and was titled: Functionality and Adequacy of Instructional Facilities for Teaching Agricultural Education questionnaire (FAIFTAEQ).The instrument was divided in two sections A & B. Section, the check lists used in answering research questions 1 and 2 on functionality and adequacy. of instructional facilities in COEs in the study area.

The instrument was subjected to face validation by three expers, one from the Department of Educational foundation, Faculty of Education, University of Jos and two from federal college of education (Technical), Gombe. In order to ensure the internal consistency of the research instrument, the researcher conducted a trial testing of the instrument. Thirty (30) copies of the questionnaires on functionality and adequacy of instructional facilities for teaching Agricultural Education (FAIFTAEQ) were administered to the teachers in Federal College of Education, Zaria, Kaduna State, which was outside the study area. Cronbach Alpha reliability method was used to determine the internal consistency of the items of the instrument and a reliability coefficient of 0.089.was obtained.

On completion of the questionnaire, responses were converted to numerical values and analyzed using simple percentage, the simple percentage was used for research questions 1 and 2 in order to establish the degree of agreement or disagreement in each of the item statements, values were used to establish cut off points, which were used as basis for judgment (decision). For research question 1, the benchmark used was that when a facility on the check list is up to 50% such facility will be considered as functional (F), the same benchmark was used on research questions 2. The 50% which was used in taking decision on adequacy of instructional facilities , Any item with response of 50% and above was regarded as adequate while any item with response figure below 50% was regarded as inadequate (IA), (Abdulmumini, 2018).

Results and Analysis

Research Question 1: What is the functionality of instructional Facilities use for teaching Agricultural Education in COE in the study area?

Table 1: Percentage of Teachers' Responses on Functionality of Instructional facilities used For teaching Agricultural Education in North East-Zone Nigeria (n=216)

S/N	Items	Functional Percentage		Not-Functional Percentage (%)		Rmks.
		Freq.	(%)	Freq.		
1	Mechanical workshop	104	52.01	112	48.09	F
2	livestock unit	170	78.70	46	21.30	F
3	Fish pond	172	79.63	44	20.37	F
4	Individual student plots	193	89.35	23	10.65	F
5	Experimental plot for research	152	70.37	64	29.63	F
6	Crop farm	181	83.80	35	16.20	F
7	Facilities for Beekeeping	20	9.26	196	90.74	NF
8	furnished office by senior staff with computer and printers	10	4.63	206	95.37	NF

9	Books to cover all the areas of the subject to the ratio of ten (10) book titles to one student.	162	75	54	25	F
10	Current journals in agricultural education	172	79.63	44	20.37	F
11	current journals in other relevant field in the same ratio ten books tithes to one student	153	70.83	63	29.17	F
12	A tractor coupling implements, eg. plough (plow) harrow ridger, spreader etc.	40	18.51	176	81.48	NF
13	Overhead projector	166	76.85	50	23.14	F
14	Public address system	164	75.93	52	24.07	NF
15	Color television set	156	72.22	60	27.78	F
16	Cameras	30	13.89	186	86.11	NF
17	Voltage stabilizer	175	81.07	41	18.98	F
18	Printing machine	187	87.57	20	9.26	F
19	Drawing boards and table	90	41.67	126	58.33	NF
20	Drawing tables	96	56.04	120	44.06	F
21	Drafting sets	49	22.69	167	77.31	NF
22	T-square	55	25.46	161	74.54	NF
23	Set square	30	13.89	186	86.11	NF
24	Lettering set	32	14.91	184	85,19	NF
25	Arable farm	167	77.31	49	22.69	F
26	Horticultural garden	91	42.13	125	57.87	NF
27	Processing facilities for: tubers	5	2.31	211	97.69	NF
28	Processing facilities for: fruits	87	40.28	129	59,72	NF
29	Storages facilities for tubers	10	4.63	206	95.37	NF
30	Plant lifters	12	5.56	204	94.44	NF
31	Flame weeder	13	6.02	203	93.98	NF
32	Flame hedgers	5	2.31	211	97.69	NF
33	Water pump	13	6.02	203	93.98	NF
34	Rotary planters	133	61.57	83	38.43	F
35	Generator	12	5.56	204	94.44	NF
36	Secateurs	123	56.94	93	43.06	F
37	Planting hoes	132	61.11	84	38.89	F
38	Spade	203	93.98	203	93.98	F
39	Pick axe	199	92.13	17	7.87	F
40	Hand trowel	187	86.57	29	13.43	F
41	Wheelbarrows	189	87.5	27	12.5	F
42	Watering cans	131	60.65	85	39.35	F
43	Head pans	197	91.20	19	8.80	F
44	Plain meter	144	66.67	72	33.33	F
45	Theodolite	11	5.09	205	94.91	NF
46	Set of arrows	19	8.80	197	91.20	NF
47	Field book	131	60.65	95	43.98	F
48	Pantograph	31	14.35	185	85.65	NF
49	Stereoscope	65	30.09	151	69.91	NF
50	Functional tractor	171	79.17	45	20.93	F
51	Disc plough	111	51.39	105	48.61	F

52	Disc harrow	110	50.93	106	49.07	F
53	Disc ridger	120	55.56	96	44.44	F
54	4-wheeled trailer	20	9.26	196	90.74	NF
55	Mould board ridger	30	13.89	186	86.11	NF
56	Mould board plough	121	56.01	95	43.98	F
57	Seed cleaner	101	46.76	115	53.24	F
58	Seed grader	100	46.30	116	53.70	F
59	Cereal thresher	29	13.43	187	86.57	NF
60	Tractor scraps exhibiting tractor parts	39	18.06	177	81.94	NF
61	Complete tool boxes	16	7.41	200	92.59	NF
62	Incubator and hatcher	117	54.17	99	45.83	F
63	Egg handler	18	8.33	198	91.67	NF
64	De-beaker	30	13.89	186	86.11	NF
65	Vaccinator	49	22.69	167	77.31	NF
66	Manual maize planter	47	21.76	169	78.24	NF
67	Powered maize Sheller	40	18.52	176	81.48	NF
68	Grain drier	20	9.26	196	90.74	NF
69	Manure spreader	19	8.80	197	91.20	NF
70	Mowers	11	5.09	105	48.61	NF
71	Silos	20	9.26	196	90.74	NF
72	Rhombus	15	6.94	101	46.76	NF
73	Cold room/deep freezer	57	26.39	159	73.61	NF
74	Refrigerators	90	41.67	126	58.33	NF
75	Hook	97	44.91	119	55.09	NF
76	Sinker	107	49.54	109	50.46	F
77	Cast nets	121	56.02	95	43.98	F
78	Float lead	27	12.5	189	87.6	NF
79	Cassava pelleting machine	11	5.09	205	94.81	NF
80	Milling machine	21	9.72	195	90.28	NF
81	Oil screw press	37		179		NF
82	Post mortem kit	31	14.35	185	85.65	NF
83	Surgical kit	23	10.65	193	89.35	NF
84	Cattle hoof trimming set	50	23.15	166	76.85	NF
85	Caststrators	42	19.44	174	80.56	NF
86	Sterilizers	21	9.72	195	90.28	NF
87	Salt lick	161	74.54	55	25.46	F
88	Identification tags	41	18.98	175	81.02	NF
89	Tattooing set	23	10.65	193	89.35	NF
90	Candler	21	9.72	195	90.28	NF
91	Hanging scale	16	7.41	200	92.59	NF
92	Chick's trays	9	4.17	107	49.54	NF
93	Canopy brooder	27	12.5	189	87.5	NF
94	Kerosene stove	12	5.56	204	94.44	NF
95	Brooding thermometers	43	19.91	173	80.09	NF
96	Livestock skeletons	95	43.98	121	56.02	NF
97	Essential water supply (e.g. ponds, dam, well or reservoir).	16	7.41	200	92.59	NF
98	Beekeeping equipment	99	45.83	117	54.17	NF
	TOTAL		**37.76%**		**62.24**	**NF**

F = Functional NF = not functional

The results presented in Table 1 showed the frequency and percentage on the functionality of instructional facilities for teaching agricultural education in the Study area, The result showed that out of the 98 items presented to the respondents,only 37 items representing (37.76%) are functional while 61 times representing (62.24%) were not functional the decision rule used for this is, if a facility on the check list had 50% and above such facility will be considered as functional (F) otherwise not available(NF), therefore the result revealed that the higher percentage of the items (62.24% ≈ 62%) were not functional which indicated that majority of the instructional facilities required for teaching agricultural education in COE in the Study area are not functional

Research Question 2: How Adequate are instructional Facilities for Teaching Agricultural Education in COE in the study area?

Table 2: **Percentage of Teachers' Response on Adequacy of Instructional facilities use for teaching Agricultural Education in North East-Zone Nigeria (n = 216)**

S/N	Items	AD	Percentage (%)	IA	Percentage (%)	Rmks.
1	Mechanical workshop	40	18.52	176	81.48	IA
2	livestock unit	45	20.83	171	79.17	IA
3	Fish pond	103	47.69	113	52.31	IA
4	Individual student plots	198	91.67	18	8.33	AD
5	Experimental plot for research	186	86.11	30	13.89	IA
6	Crop farm	187	86.57	89	41.20	AD
7	Facilities for Beekeeping	4	1.85	212	98.15	IA
8	furnished office by senior staff with computer and printers	7	3.24	209	96.76	AD
9	Books to cover all the areas of the subject to the ratio of ten (10) book titles to one student.	47	21.76	169	78.24	IA
10	Current journals in agricultural education	35	16.20	181	83.80	IA
11	current journals in other relevant field in the same ratio ten books tithes to one student	170	78.70	46	21.30	AD
12	A tractor coupling implements, eg. plough (plow) harrow ridger, spreader etc.	35	17.20	181	83.80	IA
13	Overhead projector	190	46.30	26	12.04	AD
14	Public address system	187	86.57	29	13.43	AD
15	Color television set	105	48.61	1 11	51.39	IA
16	Cameras	16	7.41	155	71.76	IA
17	Voltage stabilizer	18	8.33	198	91.67	IA
18	Printing machine	44	20.37	172	79.63	IA
19	Drawing boards	45	20.93	171	78.17	IA
20	Drawing tables	26	12.04	190	87.96	IA
21	Drafting sets	158	73.15	58	21.76	AD
22	T-square	47	21.76	169	78.24	IA
23	Set square	30	13.89	186	86.11	IA
24	Lettering set	20	9.26	196	90.74	IA
25	Arable farm	127	58.80	89	41.20	AD
26	Horticultural garden	123	56.94	93	43.06	AD
27	Processing facilities for: tubers	10	4.63	206	95.37	IA
28	Processing facilities for: fruits	20	9.26	96	44.44	IA
29	Storages facilities for tubers	30	13.89	186	86.11	IA

30	Plant lifters	10	4.63	206	95.37	IA
31	Flame weeder	43	19.90	173	12.09	IA
32	Flame hedgers	104	49.15	112	51.85	AD
33	Water pump	30	13.89	186	86.11	IA
34	Rotary planters	10	4.63	206	95.37	IA
35	Generator	210	97.22	6	2.78	AD
36	Secateurs	116	53.70	100	46.30	AD
37	Planting hoes	117	54.17	99	45.83	AD
38	Spade	123	56.94	93	43.06	AD
39	Pick axe	189	87.5	27	12.0	AD
40	Hand trowel	30	13.89	186	86.11	IA
41	Wheelbarrows	6	2.78	210	97.22	IA
42	Watering cans	119	55.09	97	44.90	AD
43	Head pans	211	97.69	5	2.31	AD
44	Plain meter	23	10.65	193	89.35	IA
45	Theodolite	20	9.26	196	90.74	IA
46	Set of arrows	70	32.41	146	67.59	IA
47	Field book	100	46.30	116	53.70	LA
48	Pantograph	12	5.56	204	94.44	IA
49	Stereoscope	80	37.04	136	62.96	IA
50	Functional tractor	70	32.40	146	67.60	IA
51	Disc plough	67	31.02	149	68.98	IA
52	Disc harrow	68	31.48	148	68.52	IA
53	Disc ridger	16	7.41	200	92.59	IA
54	4-wheeled trailer	12	5.56	204	94.44	IA
55	Mould board ridger	16	7.41	200	82.59	IA
56	Mould board plough	15	6.94	201	93.06	IA
57	Seed cleaner	0	0	216	100	IA
58	Seed grader	15	6.94	201	93.06	IA
59	Cereal thresher	15	6.94	201	93.06	IA
60	Tractor scraps exhibiting tractor parts	12	5.56	204	94.44	IA
61	Complete tool boxes	15	6.94	201	93.06	IA
62	Incubator and hatcher	59	25.93	157	72.69	IA
63	Egg handler	94	43.51	122	56.48	IA
64	De-beaker	117	54.17	99	45.83	AD
65	Vaccinator	78	36.11	138	63.89	IA
66	Manual maize planter	13	6.02	203	93.98	IA
67	Powered maize sheller	56	25.93	160	74.04	IA
68	Grain drier	190	86.96	26	12.04	AD
69	Manure spreader	185	85.65	31	14.35	AD
70	Mowers	66	30.56	150	69.44	IA
71	Silors	60	27.78	156	72.22	IA
72	Rhombus	10	4.63	196	90.74	IA
73	deep freezer	3	1.39	203	93.98	IA
74	Refrigerators	80	37.04	136	62.96	IA
75	Hook	70	32.40	146	67.59	IA
76	Sinker	90	41.67	126	58.79	IA
77	Cast nets	30	13.89	146	67.59	IA
78	Float lead	36	16.67	180	83.33	IA
79	Cassava pelleting machine	10	4.63	206	95.37	IA
80	Milling machine	10	4.63	206	95.37	IA
81	Oil screw press	10	4.63	206	95.37	IA
82	Post mortem kit	10	4.63	206	95.37	IA
83	Surgical kit	30	13.89	186	86.11	IA

84	Cattle hoof	26	12.04	190	87.96	IA
85	Caststrators	130	60.19	86	39.81	AD
86	Sterilizers	30	13.89	186	86.11	IA
87	Salt lick	200	92.59	16	7.50	AD
88	Identification tags	112	51.85	104	48.61	AD
89	Tattooing set	90	41.67	126	58.33	IA
90	Candler	116	53.70	100	46.30	AD
91	Hanging scale	210	97.22	6	2.78	AD
92	Chick's trays	169	78.24	47	21.76	AD
93	Canopy brooder	206	95.37	10	2.63	AD
94	Kerosene stove	51	23.61	165	76.39	IA
95	Brooding thermometers	102	47.22	114	52.78	IA
96	Livestock skeletons	18	8.33	198	91.67	IA
97	Essential water supply (e.g. ponds, dam, well or reservoir).	34	15.74	182	84.26	IA
98	Beekeeping eequipment	10	4.63	206	95.37	IA
	Total		**8.45%**		**91.55 %**	

A = Adequate IA = Inadequate

The results presented in Table 2 showed the frequency and percentage on the adequacy of instructional facilities for teaching agricultural education in the Study area, The result revealed that out of the 98 items presented to the respondents, only 27 items representing(45.76%) are adequate while 71 times representing (91.55%) were not adequate, the decision rule used for this is, if a facility on the check list had 50% and above such facility will be considered as adequate (AD) otherwise inadequate(IA), therefore the result revealed that the higher percentage of the items (91.55% ≈ 92%) were not adequate which indicated that instructional facilities for teaching agricultural education in COE in the Study area were not adequate.

Summary of Findings

The findings of the study revealed that sixty two percent (62%) of the instructional facilities required for teaching agricultural education in COE in NE Nigeria were not functional and eighteen 18% percent of the instructional facilities for teaching Agricultural Education in COE in NE Nigeria were available which signifies adequacy of the instructional facilities for teaching Agricultural Education in the study area

Discussion of Findings

The main objective of this study was to determine the Functionality and adequacy of instructional facilities for teaching agricultural education students in Colleges of Education in North East zone. This study was carried out based on two objectives.

The findings from research question one that showed that 69% of the instructional facilities for teaching agricultural education were not functional in the COE in the study area, this is an indication that instructional facilities for teaching agricultural education were not adequate in the study area The current findings agreed with that of Onu and Ezhim(2019) who reported that most ICT facilities were not available, and the few available were not utilized because of non-functionality. The findings of the current study is contrast with the study of John (2016) who revealed that majority of the instructional facilities for teaching science subject were functional only that the students attitude and expertise hinder the utilization of these facilities furthermore, Gujjar et.el.(2010).reported a similar findings who observed that non functionality of laboratory and other facilities were not the factors that deprive teachers and students from the use of the facilities but there are other indices such as motivation and qualification. These contrary findings might be attributed to the methodology of the researcher

The findings from research question two showed that 92% of the instructional facilities for teaching agricultural education in COE in the Study area were not adequate; this indicated instructional facilities for teaching agricultural education students were not adequate. This finding is in agreement with that of James (2015) who opined that inadequate instructional facilities often influence the teaching and learning in a negative way; similarly the findings of Obidile and Obi (2020) revealed that students in public junior secondary schools did not adequately acquire the expected effective teaching as a result of inadequacy and poor usage of instructional facilities. Likewise Acharu and Solomon (2014) revealed in their studies that inadequate instructional facilities are evidently linked to inadequate funding by Governments. Amesi et al. (2018) proved that instructional facilities for acquisition of entrepreneurial skills among Business Education students are not adequate

The findings of the present study, however, contrasted that of khal and Igbal (2012), who found that instructional facilities were adequate for secondary schools only that most of the facilities were obsolete, A possible explanation to findings might be attributed to the fact that the previous study was conducted outside Nigeria This similarity generally shows the negative impact of inadequacy of instructional facilities in the teaching and learning process.

Conclusion

Based on the findings of this study, it was concluded that instructional facilities for teaching agricultural education were not functional and inadequate in the COE in the study area.

Recommendations

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

1. College management should try their possible best to make the available facilities functional
2. College Management should make the instructional facilities not only available but adequate in COEs in the study area

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