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Technical Skills Improvement Need of Fishery Teachers in Fishpond Construction and Management for Effective Instructional Delivery in Nigerian Secondary Schools

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Abstract: This study determined technical skills improvement need of fishery trade teachers in fishpond construction and management for effective instructional delivery in Nigerian secondary schools. Three research questions guided the study. The population was 55; comprising lecturers of agricultural education in colleges of education and universities. There was no sampling due to small size of population. The instrument for data collection was questionnaire which was validated by three experts. The internal consistency of the instrument was determined using Cronbach alpha method which yielded a reliability coefficient of 0.81. The researchers with the help of two research assistants collected data. All 55 copies of the questionnaire administered were retrieved. Mean and Improvement Need Index (INI) were used to answer the research questions. Findings indicated that fishery teachers needed improvement on 8 planning skills, 18 fishpond construction and 17 skills in management and maintenance of fishpond for effectiveness in instructional delivery in Nigerian secondary schools. It was concluded that fishery trade teachers in Nigerian secondary schools possess low technical skills in fishpond construction and management. The study recommended among others that workshops, seminars and conferences be organised by relevant agencies for updating the knowledge and skills of fishery trade teachers in planning, construction and maintenance of fishpond.

Key words: Fishpond, fishery teachers, improvement needs, instructional delivery technical skills, trade

INTRODUCTION

Fishery is a branch of agriculture that deals with rearing of fish and other aquatic creatures for human use. Fishery according to Olaitan and Omonia (2009) is the branch of agriculture that deals with the use of water to culture types of fish species. Fish is an important source of food nutrient and contains up to 40% of protein consumed as diet by man (Asogwa *et al*., 2013; Brown *et al*., 2017). In the view of Asogwa *et al*. (2013), fish is an aquatic cold-blooded animal that lives in water and which body temperature fluctuate within the surrounding environment. It means that fish is naturally adapted to water. Apart from serving as food, man has domesticated the fish which became adapted and is reared under various artificial water bodies with other numerous benefits to human kind. For instance, the skin of some species of fish are used for leather works and polishing materials and besides, fish scales yield substances that could be coated as glass beads for decoration (Iwena, 2008). In Nigerian secondary educational setting, fish production is hitherto, studied under agricultural science. However, trade subjects were recently introduced in the curriculum of secondary schools.

Fishery is one of the 34 trade subjects introduced into the Nigerian secondary school curriculum to provide avenue for learners to acquire livelihood skills (Okafor and Ifeanyieze, 2014, Asogwa, 2016). Fishery trade subject teaches the students entrepreneurial skills for subsequent establishment of fishery enterprises upon graduation Nigeria Educational Research and Development Council (NERDC., 2009). Consequently, Orji (2013) mentioned among others that one rationale of introducing trade/entrepreneurship subject by the government in secondary school was to address the dearth of technical skills and a growing demand for skill services in Nigerian economy. For effective teaching of any aspect of fishery trade subject in the secondary schools, the teacher needs both theoretical knowledge and practical skills to be able to teach the students using the appropriate and recommended teaching resources. Besides, Ogwo and Oranu (as cited in Asogwa, 2016) asserted that for

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teachers of vocational education with fishery trade background, to be effective in instructional delivery they need to be constantly upgrading their knowledge for effective performance in their profession. Moreover, Asogwa (2016) contended that a situation whereby teachers without refresher programmes implemented a new curriculum after long time training gap does not auger well for effectiveness in the teaching and learning in a new era.

Because of continuous technological advancement, teacher's technical capacities need to be up-graded on continuous basis for them to be effective in their instructional delivery process (Olaitan *et al*. as cited in Asogwa, 2016). Accordingly, fishery teachers require higher-level knowledge and skills in the aspects of determining appropriate resources and planning for delivering instructions in the fishery trade subject to the secondary students. Of course, it has been stated that the major teaching resource for fishery is the pond (Orji, 2013). The pond, in the view of Erebor (2003) is an artificial body of water where fish and other aquatic creatures are reared for food. The author further stated that the pond is an artificial body of water made or constructed by man to rear fish and other aquatic creatures such as shrimps and snails. In addition, the pond is a controlled environment in which fish could be cultured (Are *et al*., 2010; NERDC., 2013). The focus is not to establish and manage a large fish farm by the schools but for the purpose of delivering instructions and inculcating skills to the students using the small water-body. Since, ancient times, fish were confined in various fabricated structures (Oriyomi, 2010) but these days, different forms of ponds exist and include; metal tanks, earthen-pond, concrete pond or ordinary plastic ponds (Erebor, 2003; Are *et al*., 2010). This study focused on the teaching of fishery using constructed pond as an instructional facility. In any case because of its confined nature, the best man made structure for intensive management of fish is the earthen pond (Are *et al*., 2010). The fishpond is a prerequisite and teachers must understand the rubrics involved in its construction. Construction is the process of building or erecting structures or things (Webster, n.d.) and which require engineering skills. In the context of this study, we refer to the process of building a fishpond. Building of the fishpond involves utilization of building materials which the fishery teachers ought to be competent to enable effective instructional delivery to students in Nigerian secondary schools.

Fishpond management refers to all the practices and activities carried out in the fishpond with the aim of ensuring healthy growth and development hence ensuring increased fish yield (Erebor, 2003, Iwena, 2008; Are *et al*., 2010). Fishpond management in this study connotes the management practices which the fishery teachers need the requisite skills to demonstrate for the students to learn. Usually, those practices are required after locating a good site and preparing the pond. The process of preparing the pond ready for stocking is regarded as fishpond construction which requires engineering construction skills. According to Are *et al*. (2010), the establishment of a standard fishpond begins from the process of site selection. An appropriate site is chosen with the necessary considerations at the background. Foremost, land is selected considering factors as soil type, water availability, market site, and availability of prolific fingerlings and feeding stuff (Erebor, 2003; Are *et al*., 2010) among others. The authors identified fishpond management practices to include among others; providing feed at the right time and amount, maintaining good quality water, controlling weeds, application of fertilizer, lime and control of pest, predators and diseases.

Most of the time, teachers of agriculture do not have adequate technical skills for fishpond construction and management as their pre-service training were inadequate in teaching practical skills in fishery instructions (Okafor and Ifeanyieze, 2014). Therefore, such teachers need additional update of their practical skills in fishpond construction and fishpond management to do well in the classroom instructional delivery. Thus, this study dwelt on fishery trade teacher's technical skills improvement need in fishpond construction and management for effective instructional delivery to students. Technical skills according to Doyle are knowledge and abilities needed to perform tasks that are practical and often relate to mechanical or scientific tasks. Doyle further stated that many technical skills require training and experience to master. Thus, teachers of fishery require sufficient training and as often as possible, need improvements in what they might have known or learnt during pre-service training. In this study, a teacher of fishery is one who must have had the technical ability acquired through training to teach students required skills in fishery. The Federal Government of Nigeria (FGN) through the Federal Ministry of Education (FME) directed the inclusion of the subject in the curriculum from 2012/2013 academic session Nigerian Education Research and Development Council (NERDC., 2013). According to NERDC. (2013), the objectives of the subject in secondary schools include: enabling students learn and acquire skills in fishery trade for livelihood on completion of their school programme and to produce fish that will increase the nutritive value of man's diet. Others are to be able to meet the gap between demand and supply of fish and to bridge the gap between poverty and hunger.

Literature has indicated that teacher's level of fishery curriculum implementation in secondary schools is low and hence, there was need improvement (Asogwa, 2016). Unfortunately, before the introduction of the fishery trade

subject, there were no specialist teachers trained for the purpose of teaching skills in fishery. Prior to its introduction into the senior secondary school curriculum as a subject, fishery is hitherto, part of the agricultural science curriculum with agricultural science teachers teaching the contents (Asogwa *et al*., 2013). In order to achieve the objectives of the fishery trade, teachers of the subject must possess the requisite technical skills in construction, maintenance and management of a fish farm. The teacher of fishery is thus, expected to possess the intellectual and manipulative ability to impact skills in fishpond construction and management. It is quite worrisome that as soon as government directed the implementation of the subject, schools redeployed existing teachers of agricultural science to teach the fishery subject. Because of insufficient trained teachers, some teachers who did not even specialise in agriculture were co-opted to teach fishery trade subject. In most cases, the teachers comprise those who studied other branches of agriculture such as animal science, crop science and soil science or agronomy including some of those who specialised in Biology.

Since, the teachers who presently teach the subject (fishery) are those who were trained many years ago, then, there was need to ascertain their competence to teach fishery-based content in the schools (Asogwa *et al*., 2013; Okafor and Ifeanyieze, 2014). The reality is that due to improper planning in terms of staff training and development, fishery trade teachers in the Nigerian secondary schools may still be lacking in the requisite technical skills in fishery. A focus group discussion with 15 teachers of the subject in three schools visited by two of the researchers revealed that over 95% of the teachers were not trained in fishery rearing skills. Apart from that, the interaction further revealed insufficiency of instructional resources which the pond is major. Besides, only a very few schools had functional fishpond which were even substandard. Apart from having a substandard pond, most of the schools visited did not have a pond but presented students on fishery trade subject in the West African Examination Council (WAEC) and National Examination Council examinations (NECO), respectively.

In addition, the researchers also had a focused group discussion in 4 communities with 20 senior secondary school leavers in the Federal Capital Territory, Abuja Nigeria. This was to find out if they learnt skills that could enable them establish a small pond on their own. The responses were disheartening and showed that the teachers did not influence sufficient skills on fishpond construction and management. This led to the conclusion that the teachers of fishery really need skills to enable them effectively deliver on their mandate. Above claim was preceded in literature by Okafor and Ifeanyieze (2014) and Asogwa *et al*. (2013). Specifically, Asogwa *et al*. (2013) noted that most secondary schools have selected fishery among other trade subjects but implemented it the same manner fish production was taught as a sub-topic in the former curriculum of agricultural science. In their study, Isiwu and Ibe (2014) revealed that about 94% of the secondary school graduates lacked the entrepreneurial skills to embark on any fishery occupations such as fish production, processing, preservation and marketing which was one of the objectives of the curriculum review.

There are evidences that the teaching of fishery to students by teachers of agricultural science is not effective since the graduates could not engage in fish production as a trade for livelihood on completion of secondary education (Asogwa, 2016). This agrees with WAEC. (2015) which stipulated that only 48% of senior secondary school students who enrolled in the national examination passed fishery in Nigeria at both credit and pass levels. In any case by 2014, the pioneer students of fishery trade curriculum had graduated but their achievement was generally very low in the senior secondary school external examinations (WAEC as cited in Asogwa, 2016). The fact that most of the teachers of the fishery trade subject were drafted/co-opted to teach the subject calls for urgent need to ascertain and advocate for their technical skills improvement through a research of this kind.

Only a few related literatures were accessed (for instance (Asogwa *et al*., 2013; Okafor and Ifeanyieze, 2014). The researchers felt that if the status quo remains, then, the goal of introducing fishery as an entrepreneurial subject in the Nigerian senior secondary schools would be defeated. Thus, the schools would end up turning out school leavers who may neither be useful to themselves nor to the national economy as purported. A study on the technical skill improvement needs of the fishery trade teacher in Nigerian secondary schools would add value to the existing literature. It would also benefit the teacher training institutions in reviewing their curriculum to lay more emphasis on technical skills required in fishpond construction skills and management practices. The main purpose of the study therefore was to determine the technical skill improvement needs of fishery trade teachers in fishpond construction and management for effective instructional delivery to students in Nigerian secondary schools.

Specifically, the study determined technical skills improvement need of the fishery trade teachers in: planning for teaching systematic skills in establishment of a fishpond, construction and stocking of the fishpond and maintenance of the fishpond.

MATERIALS AND METHODS

The study adopted survey design. The researchers adopted this design because it used questionnaire

restricted data from respondents to colleges of education and universities which offer agricultural education programmes. A survey design is appropriate for assembling the opinions of a selected sector of a population on a phenomenon (Emaikwu, 2012). The study was carried out in the North-Central zone of Nigeria made up of Benue, Kogi, Kwara, Nasarawa, Plateau, Niger states and the Federal Capital Territory. The population of the study was all lecturers of agricultural education in North Central Nigeria. About 55 lecturers comprising 32 and 23 Heads of the Departments (HODs) of colleges of education and the universities offering agricultural education programme, respectively were the accessible population. The choice of this population was appropriate because the lecturers are professional educators who impart knowledge and skills on the teachers during teacher's pre-service training programmes. This was also to ensure genuineness of the improvement needs of the lecturers since the HODs are responsible for rating performance of teachers during their training programmes. The entire population was involved as respondents for the study hence no sampling was done. A questionnaire containing 42 items titled Technical Skill Improvement Needs of Fishery Teachers Questionnaire (TSINOFITQ) was developed based on literature reviewed. The questionnaire has two columns of improvement needed and performance columns. Numerical values of 4-1 was assigned to improvement needed as Highly Needed (HN), 4; Moderately Needed (MN), 3; Slightly Needed (SN), 2 and Not Needed (NN), 1, respectively.

The column for performance also had four scales of High Performance (HP), 4; Moderate Performance (MP), 3; Low Performance (LP), 2 and No Performance (NP), 1, respectively. The aim was to elicit responses from the lecturers who were the target population. Three experts in the university setting validated the instrument one was from the Department of Agricultural Education, Federal University of Agriculture, Makurdi and two others from Department of Agricultural Education, University of Nigeria Nsukka. The observations by the experts were effected and the instrument was prepared for administration on respondents. The instrument was then pilot tested on a similar group in a school in Kogi state, Nigeria. Cronbach alpha method was used to determine the internal consistency of the instrument which yielded a coefficient of 0.81. Three research assistants helped in data collection. The researchers and assistants administered and retrieved on the spot all the copies of the questionnaire, hence, there was 100% return rate. Data were analyzed using weighted mean and Improvement Need Index (INI). The weighted mean was used to analyze data on extent of technical skills needed in establishment, construction, and management of the fishpond. The Improvement Need- Index (INI) was used as benchmark for taking decisions on each item where the teachers needed technical skill improvement. The analysis adopted the following procedures in accordance with Ellah (2007).

- Weighted the mean of each item under needed column was determined as $(\overline{X}N)$
- Weighted mean of each item under performance was also calculated as $(\overline{X}P)$
- Then, the difference between the two means $(\overline{X}N - \overline{X}P)$ = PG (Performance Gap)

The study used the above criteria for decisions as follows: where the difference in Performance Gap (PG) is zero (0), there was no need for technical skill improvement which implies that there was a balance, hence, Technical Skill Improvement is Not Needed (TSINN).

Where the difference in PG is positive (+ve); there is need for technical skill improvement. This implies that the skill needed was at higher level than performance on the item. Thus, Technical Skill is Needed (TSIN).

Then where difference in PG is negative (–ve); there was no need for Technical Skill Improvement (TSINN). This implies that the skill needed was at lower level than the performance (Olaitan and Ndomi in Ellah, 2007).

Findings of the study were based on the research questions which were answered as presented in the following tables.

RESULTS AND DISCUSSION

Research question 1: What are the technical skills needed for planning to teach establishment of fishpond which teachers of fishery trade needed for effective instructional delivery in Nigerian secondary schools?

Table 1 revealed that the performance gap values of eight planning skills ranged between 0.01 and 1.29 and were positive. The positive values indicated that the teachers of fishery trade in the study area needed technical skills improvement in the 8 items in planning for effective teaching of fishpond establishment to students. The findings, however, revealed negative PG values of between -0.21 and -0.02 for structuring out topics from syllabus and varying methods of teaching, respectively. The PG for other skill items was positive and thus, the trade teachers did not need them. On the overall, the mean of needed category minus the mean of the performance was 0.62 and was positive. That is the level at which the teacher needed improvement. Since, it was positive it was indicative that fishery trade teachers needed improvement in most of technical skills identified in planning for the establishment of a fishpond in Nigerian secondary schools.

Table 1: Performance gap analysis of mean ratings of teachers of fishery trade and managers of fishery enterprises on skills needed in planning for establishment of a fishpond (N = 55)

Items statement on planning for establishment of a fish pond	$(\overline{X}n)$	$(\overline{X}p)$	$(\overline{X}n - \overline{X}p)$ (PG)	Decision
Relate fishery content of curriculum to fish pond	3.21	2.91	0.30	TSIN
Structure out topics from fishery trade curriculum	2.58	2.37	-0.21	TSINN
Formulate achievable teaching-learning objectives	3.08	2.11	0.97	TSIN
Locate and select learning resources needed	2.82	2.02	0.80	TSIN
Plan lesson unit within duration	2.98	2.97	-0.02	TSINN
Varying methods of lesson delivery	2.83	2.02	0.81	TSIN
Determine appropriate evaluation questions	3.17	2.59	0.58	TSIN
Administering test item	2.86	2.01	0.85	TSIN
Ascertaining attainment of set goals	3.08	1.97	1.29	TSIN
Grand mean	2.96	2.34	0.62	TSIN

N_1 = Number of fishery teachers; N_2 = Number of fish farm managers; $(\overline{X}n)$ = Mean of needed skill; $(\overline{X}p)$ = Mean of performance on a skill; PG = Performance Gap; TSIN = Technical Skill Improvement Needed; TSINN = Technical Skill Improvement Not Needed

Table 2: Performance gap analysis of mean rating of lecturers of agricultural education in colleges of education and universities on the technical skills in construction of fishpond (N = 55)

Items statement on construction of fish pond	$(\overline{X}n)$	$(\overline{X}p)$	$(\overline{X}n - \overline{X}p)$ (PG)	Decision
Lead students to locate an appropriate site for fishpond	2.94	2.08	0.86	TSIN
Make sketch/design of a simple fish pond	3.42	1.28	2.14	TSIN
Demonstrate removal of stumps (stumping)	3.48	1.83	1.65	TSIN
Measure and mark out the dimensions of fish pond	3.23	1.66	1.57	TSIN
Determination of size/area of the marked out land	3.62	1.46	2.16	TSIN
Excavation/construction of core trench	3.65	2.28	1.37	TSIN
Construction of inlet and outlet	3.58	2.33	1.25	TSIN
Cover the inlet/outlets with wire mesh/gauze to screen fish	2.84	1.19	1.69	TSIN
Place pebbles at the centre of the pond	3.50	2.48	1.02	TSIN
Construct and fortify the dykes/embankments	3.48	3.02	0.46	TSIN
Impound the pond with clean water	3.36	2.14	1.22	TSIN
Liming of pond	3.42	2.51	0.91	TSIN
Inoculate the pond/introduce plankton	3.36	2.14	1.22	TSIN
Apply manure/fertilizer	3.44	2.49	0.94	TSIN
Determine stocking rate	3.30	2.22	1.08	TSIN
Choose/purchase prolific fingerlings	3.32	2.16	1.16	TSIN
Transportation of fingerlings	3.08	2.11	0.97	TSIN
Stock the pond	2.83	2.02	0.81	TSIN
Grand mean	3.33	2.08	1.25	TSIN

N_1 = Number of fishery teachers; N_2 = Number of fish farm managers; $(\overline{X}n)$ = Mean of Needed Skill; $(\overline{X}p)$ = Mean of performance; PG = Performance gap; TSIN = Technical Skill Improvement Needed

Research question 2: What are the technical skills needed by fishery trade teachers for effective delivery of skills in construction of fishpond?

Data in Table 2 revealed that the performance gap values of all the items on needed skills ranged from 0.46-2.33 and all were positive. This indicated that the teachers needed improvement in all the 18 technical skills in construction of the fishpond for effective teaching of skills to students in secondary schools in Nigerian secondary schools.

Research question 3: What are the technical skills in fishpond management where teachers of fishery trade needed improvement for effective instructional delivery to students in Nigerian secondary schools?

Data in Table 3 revealed that the performance gap values of 12 out of the 15 needed items ranged from 0.41-1.47 and were positive. The positive value indicated that the value of the performance was lower than that of the needed. Thus the fishery trade teachers needed technical skill improvement in the 12 items on management of the fishpond. The rest of the three items showed negative performance values of PG (-0.44, -0.71 and -0.77) which showed that the level of performance was above level of needed. Thus, the fishery teachers do not need technical skill improvement in those items for effective delivery in Nigerian secondary schools.

The findings of the study revealed that teachers of fishery trade in secondary schools, in Nigeria were deficient in 43 skills (i.e., 8 planning skills, all 18 and 17 technical skills needed in construction and management of fishpond, respectively) out of the 42 skills needed for effective teaching of skills in fishery to students. This finding, therefore, indicates that the teachers needed improvement in the technical skills in nearly all the planning and technical skills identified by this study for effective preparation and delivery of skills in fishpond establishment and management in secondary school in

Table 3: Performance gap analysis of mean ratings of teachers of fishery trade on the technical skills in management of fishpond (N = 55)

Items statement on management of fish pond	($\overline{X}$n)	($\overline{X}$p)	($\overline{X}$n – $\overline{X}$p) (PG)	Decision
Feed the fingerlings with good feeds twice daily	2.60	3.31	-0.71	TSINN
Carryout weeding of pond	2.71	3.42	-0.77	TSINN
Get plankton for fish	3.01	2.15	0.86	TSIN
De-silt the pond	3.21	2.20	1.01	TSIN
Drain the fish pond to change dirty or polluted water	3,35	2.40	0.95	TSIN
Refill the pond with clean water	3.01	3.45	-.0.44	TSINN
Repair leakage in the pond	3.42	3.01	0.41	TSIN
Check pond water quality by testing pH	3.41	2.01	1.38	TSIN
Take pH reading using the meter	3.45	2.01	1.44	TSIN
Use litmus paper to check level of acidity or alkalinity	3.56	2.55	1.01	TSIN
Control predators	3.21	2.20	1.01	TSIN
Aerate the pond	3.01	2.50	0.51	TSIN
Apply inorganic fertilizer in the pond	3.42	3.01	0.41	TSIN
Apply organic manure to the pond	3.02	2.45	0.57	TSIN
Test crop the fish for market weight	3.52	2.05	1.47	TSIN
Check weight of test-crop using meter	3.64	1.67	1.97	TSIN
Check weight of test-crop manually	3.42	1.43	1.99	TSIN
Carryout partial harvesting	3.63	2.21	1.42	TSIN
Carry out total harvesting	3.47	3.12	0.34	TSIN
Clean pond in preparation prior to next stocking	3.92	2.60	0.92	TSIN
Grand mean	3.30	2.49	0.81	TSIN

N_1 = Number of fishery teachers; N_2 = Number of fish farm managers; ($\overline{X}$n) = Mean of needed skill; ($\overline{X}$p) = Mean of performance on a skill; PG = Performance Gap; TSIN = Technical Skill Improvement Needed; TSINN = Technical Skill Improvement Not Needed

Nigeria. Item 6 in Table 1 had mean of needed and performance very closer (2.98 and 2.97). The reason may be because the teachers may have got adequate skills on those items which has direct link with normal teaching principle. It implies that the teachers possessed the skills and therefore have no need for improvement on those items.

The findings of the study agrees with those of Olaitan *et al*. (2009) in their study on capacity building needs of teachers of agriculture for effective teaching in basic skills in different entreprises in Abia state. Olaitan *et al*. (2009) found out that those teachers of agriculture portrayed low performance in curriculum content implementation in agricultural programme in colleges of education. Thus, the teachers needed capacity building in order to be more effective in teaching in basic entrepreneurial skills. The present study however revealed that the teachers needed improvement in technical skills for teaching establishment and maintenance of fishpond to students in the study area which agreed with the findings of the present study as presented in Table 1.

The findings also agreed with those of Isiwu and Ibe (2014) in a study on the capacity building needs of lecturers of agriculture in colleges of education in Teaching farmland survey and farmstead planning in South East, Nigeria. The study revealed that lecturers of agriculture needed capacity building for effective teaching of skills in farmland survey and farmstead planning in the study area. The present study also revealed that teachers were very effective in the practices adopted in establishing the fishpond which involves survey of the chosen site. The findings of the present study also conforms with the study by Okafor and Ifeanyieze (2014) on capacity building needs of teachers of agricultural science in fishery for effective teaching of students in secondary schools in Anambra state. Okafor and author found out that those teachers of agriculture in secondary schools in Anambra State needed capacity building inn fishery management.

In a similar vein, the fishery trade teachers in the study area do not need technical skills improvement in feeding the fingerlings with good feeds twice daily, carrying out weeding of pond and refilling the pond with clean water. They, however, needed technical skill improvement in de-silting the pond, getting plankton for fish, drain the fish pond to change dirty or polluted water, repairing leakage in the pond, checking pond water quality by testing pH, taking pH reading using the meter, and using litmus paper to check level of acidity or alkalinity among others. The present study contradicts the study by the Okafor and author because three skills (i.e., feeding of fingerlings twice daily, weeding and refilling of the pond with PG -0.71, -0.77 and -0.44) were not needed. Their study however indicated only one technical skill (fertilizer application) that was lacking in their study. This is probably because the trade teachers proved to be efficient in those skills in the present study based on the responses of the respondents. The findings of the present study also conforms with those of Ukonze *et al*. (2010) who studied capacity building needs of teachers in safety practices in farm workshops in colleges of Agriculture in South Eastern Nigeria. The authors found out that lecturers of agriculture needed improvement in skills in

safety practice in farm workshops including in the area of farm tools, digging and carrying tools, implements and equipment use and therefore, require retraining. From the findings and discussions above, it can be inferred the method of preparing the teachers during their pre-service training was inadequate and could only breed poor quality teachers with weak practical knowledge in the fishery trade subjects in schools.

CONCLUSION

Over 5 years now secondary schools in Nigeria adopted the policy of teaching trade subjects including fishery trade subject. The aim was to develop entrepreneurship skills in various vocational subjects. According to the policy, students must offer and register one trade subject in their school leaving examination which fishery is an option. Unfortunately, most teachers of these subjects were simply co-opted from some general subject areas (fields) like Biology, agricultural extension, crop science among others. An obvious challenge confronting the effective teaching and acquisition of skills in fishery trade subject is that many teachers were not professionally trained on the skills for establishing and managing a fishpond. Thus, the findings revealed in this study suggest that although teachers were trained for instructional delivery, most of those teaching fishery were grossly lacking in the delivery of technical skills in fishpond management. Based on the findings, there was need for government to adopt necessary measures to update the knowledge of available teachers of the fishery trade subject for effective teaching of fishpond management through workshops, conferences and seminars. Besides, future preparation of the fishery trade teachers should be based on practical application of skills on how to teach the practical aspects of the subject to students.

RECOMMENDATIONS

The study, therefore, recommends that government should expedite action plans to raise the technical skill capacities of existing fishery trade teachers by organizing workshops, seminars and conferences. Established and experienced fishery entrepreneurs should be deployed from time to time to schools to demonstrate for teachers and students how the construction and management of fishpond are done.

Schools administration should ensure adequate provision for practical lessons in the timetable to allow for regular and enough practical skill training by the teachers. Government should provide funds, so that, befitting fishponds can be constructed to enable both students and teachers to appreciate teaching and learning of the trade. Both government and private organizations including philanthropic individuals should provide scholarship for fishery trade teacher's and student's training to encourage prospective teachers to enroll into the training in fishery trade teacher-training programmes. This will enhance the choice of fishery trade subject as a lifelong learning.

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