



Teachers' Perception on Vocational Skills Needed Among Agricultural Science Secondary School Graduates for Career Choice in Crop Production for Food Security in North East, Nigeria

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ABSTRACT

The study determined teachers' perceptions of the vocational skills needed among agricultural science secondary school graduates for career choice in crop production for food security in the Northeast, Nigeria. Two specific objectives, research questions and research hypotheses respectively guided the study. The study adopted descriptive survey research design. The area of the study was Northeast, Nigeria. The population of the study comprised (113) vocational agricultural teachers. The researcher developed a Questionnaire that was validated by experts. The reliability coefficient of the instrument was 0.99, obtained using Cronbach's alpha reliability method. The researcher and trained research assistants partake in the collection of data. The data collected was analysed using mean and standard deviation while the data used to test the two research hypotheses was analysed using an independent samples t-test at 0.05 alpha values. Finding of the study revealed 17 pre-vocational agricultural skills teachers and 17 graduated students readiness to pursue agricultural career aspiration in arable crop production, and 14 pre-vocational agricultural skills teachers and 14 graduated students readiness to pursue agricultural career aspiration in vegetable crop production, The result of the null hypotheses tested revealed that there is no significant differences between the pre-vocational agricultural skills teachers and graduated students readiness to pursue agricultural career aspiration in maize crop production, and vegetable crop production, It was recommended amongst others that vocational agricultural training centres should be build and equip with modern facilities in all the senatorial zones in Northeast, Nigeria

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INTRODUCTION

Agriculture stands as one of the fundamental pillars of human civilization, providing sustainable, economic stability and employment opportunity across the globe, however, despite its significance, the agricultural sector faces challenges such as aging demographic among farmers and diminishing in agricultural careers among younger generations. Encouraging young individuals to pursue agricultural exploration requires a strategic focus on pre-vocational agricultural education to equip them with the new

skills and knowledge. Apka (2020) stated that agriculture sector has always been an important component of Nigeria economy with over 70% of the population engaged in agriculture and agricultural related activities. Crops and livestock agriculture is important in the life of most Nigeria (Benson, 2017). Nigeria agricultural policy places the small scale farmers in central focus. This because the nations agriculture have always been dominated by the small scale farmers who represent a substantial proportion of the total population and produce about 90-95% of the total

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agricultural output in the country (Benson, 2017). To enhance food production and eliminate food insufficiency in Nigeria, there is the need to involve secondary school graduates in agriculture who can easily adapt to new farming techniques and technologies. This prevents mass unemployment and lack of sustainable live hood activities among secondary school graduates (Benson, 2017). This is necessary in order to showcase agriculture as a career which secondary school graduates could engaged in different farming, such as livestock production and marketing activities. Involvement of youth in agriculture would increase production, reduce food input bills, prevent rural to urban migration and provide employment for the teaming unemployed youths in Nigeria (Isreal, 2021).

Factors influencing career choice among secondary school graduates in agriculture are the schooling as one of the cultural and socioeconomic factors affecting the choice of a career, farming is considered a default career for villagers with little or no education in many third-world countries. Even in developed countries, youths in rural areas with limited access to higher education may simply choose to inherit the family. Resources availability especially land and access to credit facilities may influence the choice of agriculture as a career. The influence of peer groups is also an important factor in choosing a professional career. (Abayomi, 2019) said early Intervention in a child's career plays a significant role in the choice of a career.

One of the key factors that influence career choice is opportunity, and this is closely tied to social class and the economic circumstances of her parents. Key events in a girl's life often appear to influence choice, might means that a girl spends a lot of time in the company of nurses and doctors at a formative time of her life. This can lead to a fascination with the work they do. And can make the child want to become nurse or doctor when she grow up. Children's family background and home experiences are found to extend powerful influence over educational career. (Abayomi, 2019) point out that in Nigeria, parents who are doctors, nurses, lawyers, politicians, members of the armed forces and others, want their children to

take up their careers but this is not so in the agricultural profession. The farmers wish their children to become professional in other fields (law, medicine, accounting, and engineering) other than agriculture.

Vocational agriculture skills is a practical experience aimed at training individuals with various skills in agricultural education trades and related matters with a view of achieving self-reliance and self-sufficiency on food security and youth empowerment. Pre-vocational agriculture aid students to develop desirable and effective work habits, acquire the necessary knowledge and skills to progress in an occupation. Israel (2021) opined that vocational skills programs vary considerably across the world due to a wide variety of economic and social benefits. Vocational agriculture preparing youth to involves in actual farming activities. Vocational agricultural education encompasses farming and agro-allied business organizations including others involved services and sales in agriculture (Ekele, 2015). It is the responsibility of vocational agricultural education to develop the individual skills, attitudes and knowledge required to develop individual into responsible and productive member of the society (Edward, 2019).

Abdu (2015) defined arable crop production is a type of crop that encompasses a wide range of crops. Concretely, arable crops that complete their life cycle, from germination to seed production, within one year According to Manyasa (2019) 75% of today's food comes from 12 arable crops and five animal species, with just three arable crops (rice, maize and wheat) accounting for about 60% of the calories and proteins obtained from plants. Worldwide, arable crops enjoy remarkable dominance, playing significant roles in the socioeconomic lives of both rural and urban peoples. Arable crops production such as tubers, examles are cassava, cocoyam; grains grasses examples are maize, sorghum, millet; fibers examples are jutes, kenaf; they are covers crops or legumes examples are groundnut, soybeans, mucuna peas and centroma. They can be miscelleous examples are vegetables or little crop grown around houses, which required good soil quality and a favourable climate to grow, and

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land amenable to the use of ploughing and harvesting machinery. Arable crops include a wide range of annual crops of primary importance such as maize, rice, sorghum, millet, cassava, cowpea, wheat, soybeans, melon, groundnut, yam, vegetables and so on. Mohammed (2019) said in Nigeria, production of arable crops is essentially the prominent feature of agricultural activities. Indeed, almost all farmers in Nigeria cultivate one or more arable crops for food and income.

Skills for agricultural career could be acquired through vocational education, as stated in the National Policy on Education (NPE, 2014). Also Mohammed, (2020) highlighted that the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of agricultural, economic and social life is critical for individual development. The vocational agricultural skills could include among others, arable crop production, vegetables crop production, livestock production, poultry production, fisheries production and marketing of agricultural crop production. However, the National Policy on Education explains vocational skills as basic subjects who will enable individuals acquire further knowledge and skills; this in return pays for such students' living standard through earning an income for a living (Alam & Osundu 2019).

It is on this premise that the researcher is triggered into determination of teachers' perception on vocational skills needed among agricultural science secondary school graduates for career choice of arable crop production for food security in North East, Nigeria. It will help the recipients to acquire skills and reduce the over dependence on government paid jobs through preparing people for an employment and makes them more productive in various economic fields.

Statement of the Problem

Despite the crucial role of agriculture in global food security and economic development, there is a noticeable decline in the interest of secondary school graduates towards poising careers in agriculture. This trend raise, concerns about the future sustainability of the agricultural sector and rural communities, at the love of this

issue lies the inadequately of vocational agricultural education in equipping younger generation with necessary skills and knowledge to make informed career choice in agriculture. Despite the initiative taken by government and organized agriculture, the secondary school graduates perception in agriculture remains a challenge. Various reasons and constraints have been identified as the cause of the lack of secondary school graduates perception toward agriculture, which include non-competitive salaries, and lack of information on diverse jobs within the industry. Therefore, there is need to remove this perception on secondary school graduates in agriculture. However, little attention has been given to the awareness and the willingness of the youths to participate in agriculture. There is need to reorient Nigerian and the secondary school graduates in general on the importance of their participation in agriculture. Small and medium-sizes businesses, family-owned farming enterprises around the world have lagged in the deployment and adoption of digital technologies for a variety of reasons, including, physical, cultural, locational and attitudinal issues. There is need to move with the changing world in terms of technological innovation in agriculture.

Purpose of the Study

The main purpose of this study was to determine the teachers' perception on vocational skills needed among agricultural science secondary school graduates for career choice of crop production for food security in North East, Nigeria. Specifically, the study will

1. Determine the teachers' perception on vocational skills needed among agricultural science secondary school graduates for career choice of arable crop production for food security in North East, Nigeria.
2. Determine the teachers' perception on vocational skills needed among agricultural science secondary school graduates for career choice of vegetable crop production for food security in North East, Nigeria.

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METHODOLOGY

A descriptive survey research design was used for this study. The study was carried out in the Northeast Nigeria, the zone encompassing of six states which includes: Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe. The area is found between latitudes 9, 4° N and 12° 58N and longitudes 8° 40'E and 5° 54'E located in the guinea and Sahel savannah zones of the country. The population of the study comprised (678) vocational agriculture teachers. A multi-stage sampling technique was used for selection of the respondents. The first stage was purposive selection of (3) states which are Adamawa, Bauchi and Borno state respectively. The second stage was the selection of (3) educational zone in the study area. The third stage was the selection of (3) Local Government Areas in each State in the study areas (through random ballot selection). The fourth stage was stratified random selection of (113) of vocational agriculture teachers. The fifth stage is selection of (56) graduates ready to pursue agriculture career aspiration respectively. In this study, the researcher developed a questionnaire and was used for data collection.

The questionnaire titled: (Perception of Teachers and Graduates on Vocational Skills needed on the Career Choice of Agriculture in Arable Crop Production among Secondary School Graduates Questionnaire (PTGVSCAAPASSGQ). The structured questionnaire was developed by the researcher from the literature reviewed and was used for data collection. The questionnaire was divided into two sections namely Section A

and B. Section A comprised respondents' demographic profile; Section B featured questions on the pre-vocational agricultural skills needed on choice of agricultural occupation among secondary school, agricultural science. Four-point rating scale questions ranging from highly Needed to Not Needed was adopted (Highly Needed (HN) = 4, Moderately Needed (MN) = 3, Needed (N) = 2 and Not Needed (NN) = 1 ($4+3+2+1=10/4=2.5$). Therefore, any score greater than 2.5 were regarded as Needed while any score less than 2.5 was considered as Not Needed.

The data collected was analyzed using mean and standard deviation using Statistical Package of Social Sciences (SPSS). Research questions 1, 2, 3 4, 5 and 6 were answered using mean and standard deviation. Any item with the mean of 2.50 and above was considered (means X1, and X2 are significantly relationship at a chosen level of differences in the case of .05 percent. In testing the hypotheses, any item with a t-test value of less than 2.50 below will be regarded as significant, (Not Retained) while any item that obtain a t-test value above 2.50 above was considered not significant, (Retained). Means X1, and X2 are significantly difference at a chosen level of differences in the case of .05 percent. In testing the hypotheses, any item with a t-test value of less than 2.50 below will be regarded as significant, (Not Retained) while any item that obtain a t-test value above 2.50 above were considered not significant, (Retained) (Needed). But any item with a mean less than 2.50 were considered (Not needed).

RESULTS

Table 1: Teachers' Perception on Vocational Skills Needed among Agricultural Science Secondary School Graduates for Career Choice of Arable Crop Production for Food Security in North East, Nigeria

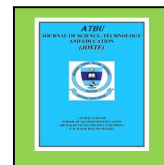
No.	Statement	Mean	Std. Dev	Remark
1.	Skill of agronomic practices	3.73	0.87	Needed
2.	Ability to perform farm operations	3.56	0.92	Needed
3.	Skill to selects a suitable farm land	3.52	0.98	Needed
4.	Pre-planting operations e.g. ploughing	3.65	0.99	Needed
5.	Skill in planting operations	3.73	0.87	Needed
6.	Skill to perform post planting operations	3.57	1.08	Needed
7.	Ability to markets arable crops	3.66	1.03	Needed
8.	Skill to perform market intelligence on crops	3.44	1.17	Needed

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No.	Statement	Mean	Std. Dev	Remark
9.	Recognize common diseases and pests on arable crops	3.43	1.08	Needed
10.	Skill in keeping farm account and records	3.66	0.90	Needed
11.	Ability to source for funds from other reputable organizations	3.54	0.94	Needed
12.	Skill on irrigation equipment maintenance	3.63	0.91	Needed
13.	Selecting appropriate planting methods for various crops	3.44	0.93	Needed
14.	Application of herbicide and fungicide	3.67	0.94	Needed
15.	Determining the amount of fertilizer to apply for various crop	3.62	1.03	Needed
16.	Skill to remove excess water on farm lands	3.71	1.00	Needed
17.	Determining nutrients deficiency symptoms in crop	3.73	0.87	Needed
Grand Total		3.60		

Source: Field data Survey, 2023

Results from Table 1 show the perception of teachers and graduates of vocational skills needed for agriculture career aspiration in arable crop production among secondary school graduates. The table revealed that all the items had their mean values ranged from 3.43 to 3.77 were above the cut-off point of mean 2.50 indicating that all the items were needed by the

secondary school graduates as vocational skills needed for agriculture career aspiration in arable crop production among secondary school graduates in Northeast, Nigeria. The table further revealed that the standard deviation of all the 17 items ranged from .87 – 1.17 which imply that there was less variability in the opinion of the respondents.

Table 3: Teachers' Perception on Vocational Skills Needed among Agricultural Science Secondary School Graduates for Career Choice of Vegetable Crop Production for Food Security in North East, Nigeria.

No.	Statement	Mean	Std. Dev	Remark
1.	Skill for selecting the best planting material for vegetables	3.83	0.90	Needed
2.	Skills to control weeds on vegetables crop	3.73	0.96	Needed
3.	Skill on the efficient watering techniques	3.77	0.93	Needed
4.	Ability to improve soil structure	3.86	0.92	Needed
5.	Skill to recognize common insect pests of vegetable crops	3.96	0.76	Needed
6.	Ability to perform cultural practices to minimize soil erosion in vegetables farming	3.86	0.99	Needed
7.	Recognize pests, and diseases on vegetable crops	3.84	0.98	Needed
8.	Skill on how to irrigate vegetable crops to maintain a predetermined moisture content in the farm	3.80	0.97	Needed
9.	Skill on soil preparation for transplanting	3.71	1.04	Needed
10.	Entrepreneurial skill on vegetables enterprise	3.83	0.83	Needed
11.	Skill for caring seedlings in nursery bed	3.71	0.91	Needed
12.	Skill for seed production techniques	3.79	0.91	Needed
13.	Skill for mulching of seedlings for transplanting of vegetable crops	3.62	1.01	Needed
14.	Skill for manure application in vegetable farming	3.75	0.92	Needed
Grand Total		3.68		

Source: Field data Survey, 2023

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Results in Table 3 show the teachers and graduates perception of vocational skills needed for agriculture career aspiration in vegetables crop production among secondary school graduates. The table revealed that all 14 items had their mean values ranged from 3.50 to 3.96 were above the cut-off point of mean 2.50 indicating that all the items were needed by the graduates as the vocational skills needed for agricultural career aspiration in vegetables crop production among secondary school graduates in Northeast, Nigeria. The table further revealed that the standard deviation of all the 14 items ranged from .89 – 1.04 indicating that the respondents were not far from the mean and from one another in the opinion.

DISCUSSION OF FINDINGS

The finding of the study revealed that teachers and graduates have perceived without any significant difference that all the 17 items listed as the vocational skills needed for career aspiration in maize crop production among secondary school graduates in Northeast, Nigeria. These finding are in consonant with the view of Abdu (2015) who identified skills in maize crop production as identification of type of maize definition of the problem, collection of information, identifying alternative, planning in the basic management function as it means deciding on a course of action any systematic, planning necessary has the following component. He added that clear the storms and bushes for cultivation, burn the storms and the bushes, fumigate the areas to get rid of pest, separate organic manure if available and cultivate the land with harrow and ridges to which are important skill maize crop production. These skills are, Skill of agronomic practices, Ability to perform farm operations. ability to perform farm operations, skill ,operations, skill to perform post planting operations, ability to markets arable crops, skill to perform market intelligence on crops, recognize common diseases and pests on arable crops, skill in keeping farm account and records, ability to source for finds from other reputable organizations, Skill on irrigation equipment

maintenance, selecting appropriate planting methods for various crops, skill in application of herbicide and fungicide, determining the amount of fertilizer to apply for various crop, skill to remove excess water on farm lands, and determining nutrients deficiency symptoms in crop. The career choice aspiration in maize crop production are, grain merchandizer seller, grain marketing specialist, crop financial analyst officer, crop farm labour specialist, crop sale and service representatives, crop management consult, organic crop grower, fertilizer distributor dealer, herbicides distributor dealer, labour job in crops, purchasing agent job, grain storage manager and ware house store keeper.

Finding number two revealed that teachers and graduates have perceived without any significant difference that all the 14 items listed as the vocational skills needed for career aspiration in vegetables crop production among secondary school graduates in Northeast, Nigeria. These findings is in lined with the opinion of Aggie (2018) who identified tools in seed production for onion production which are: mortar and pestles for pounding to separate seeds and chaff plastic rubber or bucket, shade trees for drying seeds, mats for spraying seeds and knives or sickle for harvesting umbels is useful. He further stressed that seeds umbel should be supported in the palm of hand and held between the fingers to avoid seed shattering, the harvested umbels should be dried by spreading the umbels on canvas and putting under shade or in the morning or late afternoon sun for few days, the seeds must be properly separated from the umbels, seed extraction should be carefully done to avoid seeds damage, seeds can be threshed by mowing or rubbing of dried umbels and then cleaning the seeds by winnowing followed by pure seed separation, the dry umbels are gently mowed and winnowed to separate the seeds from chaffs, the winnowed and unclean seed be put in a bucket and soaked with clean water and left for 3-5 minutes in the water. Also, Kibanyu, (2019) outline skills in nursery practice in onion production which are: broadcasting onion seeds on nursery beds to raise seedlings for transplanting in the field, seedlings are raised on beds of size 3×0.6 meters

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and 10-15cm in height that are prepared. About 70cm distance is, kept between two beds to carry operations of watering, weeding among others. The surfaces of the beds should be smooth and well leveled. Add sieved farm yard manure (FYM) and fine sand on the seed bed. Raised beds are necessary to avoid problem of water logging in heavy soils, however, sowing could be taken up in flat beds. To avoid seedling mortality, as a result of dumping off and drench the seedbeds, first with water, then with a chemical Bavistin (15.20g/10litres) of water. Kibanyu (2019) also supported the finding of this study who indicated that secondary school leavers need to have skills in determining nursery operation for onion production using tools such as: cutlass or axes for clearing, hoe for raising beds, dried grasses for mulching, True seeds for sowing, watering can for watering. Using the above tools, secondary school leavers should then be introduced to the following skills in nursery operation for onion production, site should be near water and with good soil condition, soil should be well prepared and seed bed be leveled, treat onion seed with fungicide like Apron Star is Bed size to be of 1m width x5m length (most commonly used bed size), bed can be raised, flat or sunken depending on soil type and moisture condition of an area, seed rate should be 80-100gm/1mx5m bed, 3.5-4 kg/ha, seeds are drilled on the rows opened, broadcast at 10cm space and 0.5-1cm depth against the bed length and slightly covered with soil, apply 100gm Urea fertilizer per bed (1mx5m), manure should be applied during sowing, bed should be covered with grass (dry) at 3-5cm thickness, the grass cover is removed when seedlings emerge and the bed should be irrigated with watering-can in the morning or afternoon from sowing until two weeks after seedling emergence. These skills are: skill for selecting the best planting material for vegetables, Skills to control weeds on vegetables crop, skill on the efficient watering techniques, ability to improve soil structure, skill to recognize common insect pests of vegetable crops, ability to perform cultural practices to minimize soil erosion in vegetables farming, recognize pests, and diseases on vegetable crops, skill on how to irrigate vegetable crops to maintain a

predetermined moisture content in the farm, skill on soil preparation for transplanting, Entrepreneurial skill on vegetables enterprise, skill for caring seedlings in nursery bed, skill for caring seedlings in nursery bed, Skill for seed production techniques, Skill for mulching of seedlings for transplanting of vegetable crops, and Skill for manure application in vegetable farming. The career choice aspiration in vegetable crop production are, fruit and vegetables grower, horticulturalist, plant and flowers growers, plant and floriculture inspectors, agricultural extension education in vegetables, farm service agent, nursery bed caring attendant, sale of seedling attendant, vegetable crop production manager, sale of fruits job, selling of vegetable job, orange fruits dealer, cabbage sells dealer, storage and selling of vegetables, growers of vegetables, growing of vegetables consultant, vegetables farm worker, processing, sorting, and grading of vegetables.

CONCLUSION

Teachers perceived that vocational agricultural skills are needed for career choice in agriculture among secondary school graduates that constitute the population of unemployed youth in Northeast, Nigeria. These vocational skills include but not limited to 17 for career aspiration in maize crop production and 14 in vegetable crop production. There was no significant difference in the perception of the teachers and graduates.

RECOMMENDATIONS

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

1. State governments should liaise with the National Directorate of Employment (NDE) to provide training to the secondary school graduates on different aspects of career in agricultural production.
2. National Directorate of Employment (NDE) should train Secondary school graduates in different areas of agricultural production.

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