

FLORICULTURE AS A TRADE SUBJECTS IN NIGERIAN SECONDARY SCHOOLS; AN ADVOCACY CALL

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Abstract

Floriculture is a subsector of horticulture in agriculture. It involves production of flowers and ornamental plants. Production of flowers is of great economic value to many countries of the world. In Nigeria, there is need to create awareness of floriculture so that youths can participate and acquire the needed skills that can empower them for employment. Floriculture provides employment opportunity directly or indirectly; it provides opportunity for self-employment and labour skills, such as nursery management, landscaping to mention a few. This study examined the need to develop floriculture as a trade subject in senior secondary schools. Having floriculture as a trade subject in senior secondary schools would bring about the following; increased awareness of importance and opportunities in floriculture, increased interest in acquiring the skills among the students, reduction in unemployment rate and meeting TVET objectives for sustainable development. However, floriculture was not one of the trade subjects, therefore, there is need for action to develop floriculture as a trade subject. Curriculum development and implementation of floriculture is necessary. The curriculum guidelines for developing trade subjects can be used to develop curriculum for floriculture in senior secondary schools. It was recommended that a review in agricultural and educational policy should be carried out to accommodate floriculture in its planning for effective utilization of its benefits to national development and economic recovery in Nigeria..

Keywords: floriculture, trade subject, economic development, curriculum.

Introduction

Floriculture is a branch of horticulture in agriculture. It is concerned with production of flowers and ornamental plants. Like other aspects of agriculture, floriculture has great potential in generating employment opportunities, but so far its awareness is limited in Nigeria. Countries like Indonesia, Netherlands and China have good export value from floriculture. Nigeria has been faced with a high rate of unemployment that calls for urgent attention. In 1992, the World Bank put the Nigerian youth unemployment rate at 28%. In April 2009, during the discussion of a panel of experts on youth and employment in Washington, the Director of the National

Planning Commission of Nigeria, put the rate of youth unemployment in Nigeria at between 60% and 70% (World Bank, 2009). Nigeria has the second highest global rate of unemployment (33.3%) in a recent report (Olurounbi, 2020). Recently approaches have been made to curtail the rate of unemployment in Nigeria. One of the approaches was development of 34 trade subjects in senior secondary schools referred to as entrepreneurship subjects. These were developed with the aim to equipping every senior secondary education graduate preparing for higher education as well as acquired relevant functional trade/entrepreneurship skills needed for poverty eradication, job creation and wealth generation;

and in process strengthened further the basic foundations for ethical, moral and civic values acquired at the basic education level (NERDC, 2013). As large as the scope of agriculture and its impact to national development, only two trade subjects; fisheries and animal husbandry were created from it, thereby neglecting plant components of agriculture. This may be accounted for unawareness of the potential of floriculture. Structural developments are at increase in Nigeria and are mostly beautified with ornamental plants. This shows that there are youth empowerment potentials in Nigeria through floriculture which can only be actualized through the educational sector.

This therefore, calls for action in development of curriculum for floriculture as a trade subject in senior secondary schools. This is because there is a need for increased awareness of the bountiful benefit of floriculture for national development. It would also enable the government to diversify the economy by developing and empowering floriculture industries so as to absorb more graduates with the technical know-how from Nigerian higher institutions in areas of floriculture.

Floriculture

Floriculture also known as flower/ornamental farmings is a branch of horticulture that involves cultivation of flowers and ornamental plants. Floriculture is the science and practice of growing, harvesting, storing, designing and marketing of ornamental crops (Akintoye et al, 2011). It involves intense production of flowers and ornamental shrubs. Floriculture includes a broad range of crops such as bedding plants, cut flowers, potted plants, perennials, foliage

tropical, Ugwu, Okechukwu, Ukonze, Ejiofor & Ali. (Nemali, 2016). According to the International Commission on Irrigation and Drainage (ICID), (2019), bedding and garden plants consist of young flowering plants and vegetable plants grown in cell packs, pots or hanging baskets, usually inside a controlled environment and used largely for gardens and landscaping. Ornamental plants are also described to include trees, leaves, flowers, foliage texture, fruits, stem, and bark that are used as part of a garden, park or landscape settings (Nemali, 2016). Development of new varieties of flowers through plant bedding is a major occupation of a florist. Growing floricultural crops requires special skills such as spacing, training & pruning for optimal flower harvest and post-harvest treatment such as chemical treatment, storage, preservation and packaging (ICID, 2016). Flowers are cultivated under protected, semi-protected and field conditions. It is an experiential learning program with many career paths such as research, production management, parks and garden (Nemali, 2016). Like other agricultural practices, there are several aspects/options in floriculture thus; nursery production, plant propagation, packaging and marketing of ornamental plants.

Floriculture is of economic importance to developing countries like Nigeria. Though less emphasis has been laid on the economic importance of floriculture in Nigeria, it plays a crucial role to the economy of countries like India, USA, and Pakistan. In Nigeria, a well-developed domestic ornamental business market is absent, making the industry to have little or no contribution to national income (Akintoye et al, 2011). The country has the capability of becoming a leading flower industry in Africa and

may even compete favourably with the world leading flower producers. Nigeria has a large flower market to be exploited, with a population of over 209 million (National Population Commission, 2020) as local market, this could be expanded to meet the need of neighboring West African nations before being exported to other international markets like Japan, Korea and Singapore (Akintoye et al, 2011). Nigeria's diversified agro-climatic conditions make it suitable for the production of a wide range of ornamental plants (Akintoye et al, 2011). The authors stated that Nigeria has comparative abundant land and labour as well as reasonably good water resources create ample opportunities for flower production. Again that the nation is endowed with enormous varieties of ornamental plants such as orchids, which may not be found in any part of the world, these plants when properly identified, classified and developed would be a good source of employment, income and foreign exchange for Nigeria. The structural development of Nigeria like individual houses, recreational parks and gardens, hotels, schools and churches are at increase and are always in demand of ornamental plants for beautification. Hence there is need for acquisition of floricultural skills in a country with high demand of ornamental plants and unemployment rate among secondary school graduates.

The Need for Floriculture in Secondary Schools

Awareness on the importance of floriculture is low in Nigeria. In the statement of Emokaro, Alufoai and Ogbeni (2014), not much research effort is known to have been undertaken on the economics of ornamental plants production compared to other crops like cereals in Nigeria.

Meanwhile, Ukwu, Okechukwu, Ukonze, Ejiofor & Ali. (2017) stated that in the USA, there is high economic value of floriculture due to its foreign exchange earnings to the country. As at 2015, China recorded 2,281.9 billion dollars export value from floriculture, USA, 1,503.9 billion dollars and Indonesia 162.8 billion dollars (Marwoto, 2017). However, in Nigeria, less emphasis and national support are paid to floriculture. Despite the enormous potentials of ornamental plant business for economic development, it has received very little attention in the nations plan for agricultural development (Oseni, 2004). Equally Fawusi in Akintoye (2011) stated that although flower business is flourishing in Nigerian metropolitan centres, their production and awareness still remain a serious problem. Developing floriculture in secondary schools will initiate the presence of floriculture and enable students develop interest and skills for effective floriculture in Nigeria.

The importance of floriculture is not limited to its economic value. Research has proved that floriculture is used for medicinal purposes. They are source of medicinal herbs which are primary form of therapy for treatment of diseases, they are also known to have therapeutic values (Fakayode, Adewumi, Rahji, and Jolaiya., 2008).

Another benefit of ornamental plants is in the area of sports and recreation. Turfs are cultivated for sports field and community garden plots that are strategically located along walking paths which serves as convenient places where people converse and interact, they also serve as environmental stimulant that trigger pleasant memories (Akintoye et al, 2011). The authors

further stated that ornamental plants play crucial role in cooling the atmosphere through the evapo-transpiration process on their leaves and other parts thereby preventing health hazard. In some societies also, flowers are associated with different event such as the use of rose flower as a sign of love during valentine celebration. Commonly known, flowers are used to create beautiful environment in individual homes, hotels, recreational parks and garden, shops, schools and churches. These benefits of floriculture need more emphasis for optimal utilization in increasing economic growth, reducing unemployment and alleviating poverty and the better place to start the awareness should be in senior secondary schools in Nigeria.

Developing floriculture as a subject in secondary schools would exposes students to the beauty of nature. Through plant propagation and landscaping, students would appreciate the beauty of nature and the need to encourage biodiversity. It would increase students' creativity and interest in plant breeding through biotechnology. Biotechnology is any technique that uses living organisms or substances from these organisms to make or modify a product for a practical purpose. Biotechnology can be applied to all genes of organisms from viruses and bacteria to plants and animals and it is becoming a major feature of modern medicine, agriculture and industry. Modern agricultural biotechnology includes a range of tools that scientists utilize to understand and manipulate the genetic make-up of organisms for use in the production or processing of agricultural products (Khan, Ahmed, Ahmed and Haider, 2018). Several improvements have been made in floriculture. Certain trees have been bred to serve

as orname ^{Ugwu, Okechukwu, Ukonze, Ejiofor & Ali.} produce the needed fruits. Desired flower colours have been produced through biotechnology in floriculture. Biotechnology has helped in exposing the beauty of nature. Floriculture as a trade subject in schools would enable students to acquire the knowledge and skill needed in maintaining biodiversity for sustainable living and create a path for them to pursue further studies on biotechnology or floriculture.

Creating awareness on floriculture in Nigeria should not end in newspaper, TV and radio programs but should be particularly made available to youths in senior secondary schools. This is because, creativeness and cognitive capacity tends to be high at younger stage. So far, several means have been employed by the government to increase skill acquisition for youth so as to reduce unemployment rate and control the mindset of white collar job. One of this means is developing trade subjects in secondary schools. In Nigerian secondary schools, trade subjects were created to meet the technical need of the country and the objectives of technical and vocational education and training (TVET) as stated in National policy on education 6th edition (2013). One of the objectives of TVET as stated in the policy is giving training and imparting the necessary skills to individuals who shall be self-reliant economically. Among the trade subjects are fisheries, animal husbandry, auto electrical work and garment making. It is shocking to observe that lucrative trade like floriculture was blatantly excluded as trade. Creating awareness on the importance of floriculture for skill acquisition, income generation, poverty alleviation and employment generation can be

achieved by developing floriculture as one of the trade subjects.

This will go a long way in solving the problem of unemployment by reaching the objectives of TVET, thereby enhancing skill acquisition for sustainable industries development.

Significant Absence of Floriculture in Nigerian Secondary Schools

It has been noted that not much research has been undertaken on the economic importance of floriculture unlike other aspect of agriculture. This is because there is limited awareness on its importance in Nigeria. In an economy with high percentage of working people but with unemployment problem, there is need for studies in secondary schools that create awareness for people about the hidden opportunities in floriculture (Emakaro, Alufohai & Ogbeni, 2014). Creating awareness on floriculture through secondary education will help to ease the pressure on the government for provision of jobs and increase awareness on how people can become self-employed. One of the significance of absence of floriculture in secondary schools is that the awareness of its benefit will be limited in Nigeria, when it would have been a source of livelihood to many if well known.

Limited awareness on floriculture definitely leads to lack of interest in this sector of agriculture. Developing floriculture in secondary schools would increase interest. Floriculture is a skill acquisition subjects that involves theoretical and practical learning. One of the strategies of developing entrepreneurial skills in students is by sensitization lecture/interactive session to sensitize the students on the need for acquiring the skill and to stimulate their interest (Kurawa,

2016). Th Ugwu, Okechukwu, Ukonze, Ejiofor & Ali. garden, students would be exposed to the beauty

of nature which will arouse their interest and make them entrepreneurs. According to Izedonmi and Okafor (2010), entrepreneurship education is focused on developing youth with the passion and multiple skills. It is designed to inculcate competencies, skills, knowledge and values needed to recognize business opportunity, organize and start new business venture (Gbemisola and Adeola, 2015). Absence of floriculture in schools would leave students/Nigerian youths with little or no interest in floriculture for further studies, acquisition of skills income and employment generation.

The practices of floriculture equip learners with skills for sustainable employment. The categories of skills include; labour skills such as nursery managers, propagation, marketing and packaging (Emokaro et al, 2014). Equipping youths with interest and skills in floriculture would be better if started from the secondary education level and in absence of it; these opportunities may not be utilized.

Developing floriculture in Nigerian secondary schools will not only equip students with skills, it would also add to their academic learning, social and personal development. The practical section of floriculture which would involve development of garden plot in the schools will be substantial to students' development. Floriculture garden plot in schools supports a students' centered experiential learning environment (Block et al, 2012). Swank and Swank (2015) also stated that school personnel can use the garden to promote academic learning, health, social and emotional learning and life skill development. Floricultural

garden plot can be used for science, mathematics and art education. It would enhance students' practice and increase scientific skills by observing, classifying, inferring, measuring, organizing and identifying variables in the garden (Swank and Swank, 2011). Exposure to nature fosters healthy growth and development in regards to both physical and mental health (McLurdy, Winterbottom, Mehta, & Roberts, 2014). However, these values would not be in use on absence of floriculture in secondary schools and equally significance use of floriculture garden for academic learning would be depreciated.

Developing Floriculture as a Trade Subject in Nigerian Secondary Schools

Achievement and utilization of all the emphasized benefits of developing floriculture in secondary schools, is dependent on the curriculum developed for the program. Floriculture is a technical subject if developed, therefore the aim, goals and objectives of trade subjects should be applied to it. Trade subjects as stated earlier are created to meet the technical and skill acquisition need of the country in solving the issue of unemployment. Therefore in developing floriculture as a trade subject, the contents, objectives, instructional method and evaluation should be of such that meets the goals of education as well as the objectives of TVET in order to achieve a positive outcome.

Developing floriculture in schools should be in senior secondary school curriculum. Senior secondary schools in Nigeria ranges from senior secondary (SS) 1-3 and are in use of new curriculum that comprises the trade subjects. The philosophy of the new Senior Secondary

Education ~~Ugwu, Okechukwu, Ukonze, Ejiofor & Ali. completion of the three years of senior secondary~~

education, every graduate/recipient should have been well prepared for higher education as well as acquired relevant functional trade/entrepreneurship skills needed for poverty eradication, job creation and wealth generation (Orji, 2013). National Educational Research and Development (NERDC) (2013) outlined the guidelines in developing curriculum for trade subjects in secondary school. The guidelines include; finding resources for teaching trade, which will answer the question of what, who, where, when and how the resources will be found? , Strategies for teaching trade subjects; best practices/skills, Use of the curriculum by the teacher.

Resources for Teaching Floriculture: in teaching floriculture, textbooks on flowers and ornamental plants, trained teachers and garden plot should also be available. Due to limitation of floricultural experts in Nigeria, agricultural science teachers trained on floriculture can teach the subject in schools. Learning should take place in regular classroom with more emphasis on the practical skills in the garden plot and guided by an intra-curricular activities (Orji, 2013). Placing more emphasis on the practical skill is to ensure that learners are giving adequate empowerment needed to be successful in the profession (Orji, 2013). In teaching floriculture, demonstration method, discussion method, field trip and workshop should be the strategies for teaching in order to impart to the needed skill to the students. Skills in plant propagation and breeding, landscaping, nursery managements, packaging and marketing should be integrated.

Strategies for Teaching Floriculture (Practices and Skills): as outlined by NERDC (2013), in teaching trade subjects, the teacher should;

- Be enthusiastic about the subject
 - Plan skills in advance
 - Practice the skills before going to teach
 - Show lesson, objectives and procedure with students
 - Adapt content to suit the needs of students
 - Motivate the students and foster active participation
 - Develop their keen sense of observation
 - Improve relevant instructional materials
 - Invite local artisan/persons with specialize skills
 - Maximize the use of available facilities
 - Explore the possibility of using community facilities
 - Incorporate excursions/field trips to workshops/ornamental sites/farms
 - Encourage students to consult books/internet
 - Allocate double or block periods for teaching
- Use of Curriculum by the Teacher:** For teaching floriculture, teachers should demonstrate how to use the curriculum in their subject area in according to NERDC (2013):
- Preparing scheme of work and writing lesson note
 - Selecting appropriate instructional materials
 - Designing appropriate instructional material
 - Assessing students
 - Planning, research and development project
 - Monitoring curriculum implementation at school level
 - Giving appropriate curriculum feedback.

Conclusion

Floriculture ^{Ugwu, Okechukwu, Ukonze, Ejiofor & Ali.} emphasized in a country with good market potentials, climatic and soil requirement for agricultural and faces mass youth unemployment. Developing floriculture as trade subject in senior secondary school would inculcate salable skills and competencies among the students to be self-reliant and create an avenue for further studies. Floriculture is an international agricultural products that can fetch exchange earnings for the country by increasing floriculture industry and securing employment opportunity for the youths. However, despite the benefits and economic potentials inherent in floriculture it is yet to be appreciated and considered as a trade in Nigeria secondary schools. Therefore, developing floriculture as a trade subject in Nigeria secondary school is ideal and timely now that the country is faced with unemployment, kidnapping, farmer-herder crisis, climate change and increased rate of poverty.

Recommendations

From the literature reviewed, it is therefore recommended that

- Agricultural policies should create room for floriculture industry and support the industry for maximum production in boosting the economy.
- The agencies in curriculum formation like NERDC should look into the economic benefit of floriculture and deem it fit to be a trade subject in secondary schools.
- There should be awareness creation from government at all levels on the profitability of floriculture and encourage Nigerian youths to participate in the production by acquiring the skill from available enterprises.

- Government should make credit facilities available for youths to go into floriculture enterprises

References

- Akintoye H.A, Idowu, O.O, Olufalaji A.O, Adebayo, A.G, Olatunji, M.F, Aina, O.O & Shokalu, A.O (2011). Prospects and Challenges of Floriculture Business in Nigeria *European Journal of social sciences* 19(3); 348-355
- Block, K., Gibbs, L., Staiger, P. K., Gold, L., Johnson, B., Macfarlane, S.,...Townsend, M. (2012). Growing community: The impact of the Stephanie Alexander Kitchen Garden Program on the social and learning environment in primary schools. *Health Education & Behavior*, 39, 419-432. doi:10.1177/1090198111422937
- Emokaro C.O, Alufohai, G.O & Ogbeni G.I (2014). Analysis or Ornamental Plants Production in Edo and Delta States, Nigeria. *Applied Tropical Agriculture* 19(1); 1-5
- Fakayode, B.S., Adewumi, M.O., Rahji, M.A.U. and Jolaiya, J.A. (2008). Viability and Resource use in Ornamental Plant Nursery Business in Nigeria. *European Journal of Social Science*, 6 (4): 9 – 28.
- Gbemisola, A.A & Adeola C. (2015). Assessment of the New Trade Entrepreneurship Education in Senior Secondary Schools; Evidence From Rural And Urban Areas Of Oyo State, Nigeria. *British Journal of Education, society & Behavioural science*, 5(1); 50-61
- International Commission on Irrigation and Drainage ICID (2019). Resources-Irrigation- Purpose of Irrigation. www.icid.org
- Izedonmi P, Okafor C (2010). The effect of Entrepreneurship Education on Students' Entrepreneurial Intentions. *Journal of Management and Business Research*. 10(6):49-60.
- Khan, F.F, Ahmed. K. Ahmed. A, & Haider.S (2017). Applications of Biotechnology in Agriculture-A Review Article. *World journal of biology & biotechnology*, 2(1)
- Kurawa, L.A (2016). Utilization of Biological Gardens to Develop Entrepreneurial Skills Among Biology Education Students in Colleges of Education. *Capital Journal of Education studies*, 4(1), 30-40
- Marwoto.B (2017). Development of floriculture industry Indonesia. *Indonesia ornamental plant research institute. in Raya pacet*.
- McCurdy, L. E., Winterbottom, K. E., Mehta, S. S., & Roberts, J. R. (2010). Using nature and outdoor activity to improve children's health. *Current Problems in Pediatric and Adolescent Health Care*, 40, 102-117. doi:10.1016/j.cppeds.2010.02.003
- National Bureau of Statistics (NBS) (2014). Annual Socio Economic Survey: Unemployment 2011; 2011. Accessed September. Available: www.nigerianstat.gov.ng
- National Policy on Education (NPE) (2004). Federal Ministry of Education, Abuja, Government press.
- National Population Commission (2006). Provisional Population Figures Available: http://www.nigerianstat.gov.ng/national_bureau_of_statistics/official_gazette (fgp 71/52007/2,500(124): pdf. Retrieved June, 2013

Nemali. K (2016) Introduction to Floriculture. asst. professor purdue horticulture & landscape Architecture 765-494-8179

Omotosho J, Idowu A, Esere M, Arewah M (2009). Problems and counselling needs of unemployed youth in Nigeria. *The Open Area Studies Journal*. 2:1-6

Orji. S (2013). The Trade/Entrepreneurship Curriculum for Nigeria Senior Secondary School. www.academia.org retrieved on June 12th 2019.

Oseni, T.O. 2004. Integrated Horticultural Crop Production and Extension services. A paper presented at the 22nd Annual Conference of Horticultural Society of Nigeria.

Swank J.M & Swank D.E (2015). Student Growth within the School Garden; Addressing Personal/Social Academic and Career Development

World Bank (2009). Youth employment a major challenge for African countries. Accessed may 24th, 2019. Available: <http://www.web.worldbank.org>