



Scaling-Up Interventions in the Teaching of Agriculture in Junior Secondary Schools for Sustainable Development: Challenges and Prospects

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Abstract

The study focused on scaling-up interventions in the teaching of Agriculture in Junior Secondary Schools for Sustainable Development: Challenges and Prospects in Ikwuano and Umuahia North Local Government Areas of Abia State, Nigeria. The study adopted survey research design. Three research questions were answered and three hypotheses tested. The population was 92, made up of all the Teachers of Agriculture in area of study. Questionnaire was used for data collection. The instrument was face validated by three experts and tested for reliability using Cronbach Alpha technique. The reliability test yielded a coefficient of 0.84. Data collected were analyzed using mean and standard deviation to answer research questions. It was found among others that, insecurity in schools, poor and delayed modes of salary payments were challenges to scaling-up interventions in the teaching of agriculture in Junior Secondary Schools. It was therefore recommended that principals should provide the desired security and facilities in their schools as well as motivate the teachers under them.

Key words: Scaling-Up, Intervention, Agriculture, Prospects, Sustainable Development.

Introduction

Junior Secondary Education is the education which a child receives immediately after primary education. One main objective of education at this level is to equip the child with diverse basic knowledge and skills for entrepreneurship and educational advancement (Federal Republic of Nigeria (FRN), 2013). It is believed that children will acquire basic knowledge and skills required to help them to proceed to higher education or enter into occupational areas in pre-vocational studies. Pre-vocational studies are new subject curricula created from the integration of Agriculture and Home Economics. These subjects were formerly taught as single subjects. However, the focus of this study is on agriculture.

Agriculture is usually associated with the production of crops and rearing of animals in farms and ranches (Sharma, Tiwari and Sharma, 2013). Agriculture is known to supply food to the growing population of Nigeria, raw materials to industries and employs significant percentage of the population of the country (Food and Agricultural Organization, 2013; Orié and Ibekwe, 2014). Because of its importance, agriculture is taught as a subject in Junior Secondary Schools and in this regards, it is a programme of



study which involves the teaching and learning of agricultural practices and principles. The introduction of the subject into the school system is Government's intervention initiative to popularize Agriculture among the Nigerian children and to prepare them for the world of works.

Intervention is the act of becoming involved in a difficult situation in order to change it for good. According to the report of the Nigeria Education Innovation Summit (NEDIS)(2016), intervention is the involvement of individuals and organization in worthwhile venture or situation in order to improve it. In the context of this study, it involves efforts made by various stakeholders in education towards improving the teaching of Agriculture in Junior Secondary Schools.

It is necessary to appreciate Government's effort at introducing Agriculture as a subject at the basic levels of education. This Government intervention was followed by the responses of other stakeholders in Education. For instance, the Nigerian Educational Research and Development Council (NERDC) restructured and re-aligned all instant Primary and Junior Secondary Schools (JSS) Curricula into a 9-year Basic Education Curriculum (FRN, 2012). This was particularly developed for the attainment of the Education for All (EFA) Goals, the critical targets of the National Economic and Empowerment and Development Strategies (NEEDS), and the Millennium Development Goals (MDGs)(FRN, 2013). Government also built schools, employ teachers and provide other resources for teaching the subject. These initiatives among others were necessary for strengthening the implementation of the Agriculture subject Curriculum. Communities and non-Government bodies (NGO) worked to provide other assistance. However, some of these teachers have low knowledge of the subject. According to Olaitan (2017), students at the JSS level are meant to be taught by trained teachers of Agriculture; those with relevant technical and pedagogical skills from colleges of Education. He regretted that at present, graduates of monothechnics, polytechnics and universities who lack these skills are employed. These teachers lecture instead of teaching students. Consequently, students do not develop sufficient interest in the subject. The education system also suffers from insufficiently and poorly administered funding, ineffective monitoring mechanism, poorly motivated teachers and teacher shortages (NEDIS, 2016). This leads to low learning outcomes for the country as a whole. In the light of these constraints, it became necessary for the scaling-up of interventions in the teaching of Agriculture in Junior Secondary Schools.

Scaling-up is the act of increasing the amount or size of something. According to Perlman, Winthrop and McGivney (2016), scaling-up is a deliberate effort to increase the impact of successfully tested pilot study, demonstration or experimental projects to benefit more people. In this study, scaling-up is a deliberate effort to increase the involvement of governments, individuals and organizations to foster greater improvement in the teaching and learning of Agriculture in Junior Secondary schools. The subject of agriculture needs scale-up in the area of teacher-education (development), instructional delivery system, and policy implementation (Olaitan, 2017). In the view of ExpandNet/World Health Organization (WHO)(2009), agriculture like other vocational subjects, needs scale-up in the area of monitoring of the school system ,policy implementation and funding.

For scaling-up to succeed, it must be guided and effective and focus on expansion to benefit more people. Some educational interventions successfully scale-up, while



others do not. It is therefore necessary to identify factors that lead to successful scale-up. WHO (2010) called these factors scalability factors and they include – skill enhancement programmes, motivation of teachers, nature of working environment and heterogeneity of skills of teachers. Scaling-up intervention in agriculture is bound to produce good quality teachers to the jobs, a functional curriculum (Ugbaja, 2016), adequate functional facilities and have opportunity for gainful employment (Abdulla,2012;Agi and Yellowe,2013).

Despite the visible benefits of scaling-up of intervention in the teaching and learning of agriculture, the initiative is still saddle with many challenges. Ugwuoke, Onah and Offor (2013) outlined the barriers to include insecurity of school environment, poor funding of education programmes, high cost of instructional materials, poor government support, low student and teachers morale. WHO (2010) also identified poor infrastructural provision, poor monitoring of schools and poor implementation of policy directives as challenges to scaling-up of initiatives.

Olaitan (2017) observed that the employment of graduates of monothechnic and polythenics to teach agriculture in JSS is against the policy on education because the teachers adopt lecture method in instructional delivery and this gives wrong impression of agriculture to students at that level. These challenges reduced learning out comes and made the objectives of the programme unachievable. The challenges need to be addressed headlong for scale-up initiatives to be effective and sustainable.

Some solutions have been suggested. According to Perlman, Winthrop and Mchivney (2016), solutions to mitigate current challenges should include: reforming the instructional practices and curriculum to include more practical skills and development of teachers who will double as teachers of theory and instructors of practical skills. It is also advisable to promote collaboration between schools and industries to train teachers on technical skills as well as organize workshops to update their skills in pedagogy in order to improve the instructional delivery. Abdulla (2012) is of the view that teachers should be adequately motivated by prompt payment of salaries and allowances and provision of decent office accommodations.

Despite the challenges to scale-up initiatives, there are evidences of a bright tomorrow; hence the study also examined the prospects of scaling-up of intervention in agriculture. Prospect is a possibility that something one hopes for will happen. It is hoped that in no distance future, the teaching of agriculture will be revolutionized on account of the scaled-up interventions proposed. Accordingly, the prospects of scale-up interventions will lead to provision of good quality teachers who are dedicated to their job and can go a long with the learners in their efforts to learn (Sternbery and Constance ,2016;ExpandNet/World Health Organisation,2010).The prospects of agriculture can also be seen in the following areas: provision of good quality teachers who are dedicated, functional curriculum that is within the capability of and competence of teachers and learners, provision of adequate functional facilities, proper funding and so on(ExpandNet/WHO,2009). These could help the programme to meet its objectives of employment creation and sustainable National Development. Sustainability has been a major issue of the United Nation since the inception of the Millennium Development Goals (MDGs) in 2000 and subsequently, the Sustainable Development Goals (SDGs) in 2015.Sustainable development is explained as a development agenda that meets present needs without compromising the ability of future generations to meet their own



needs(United Nations,2015). They constitute 17 global goals designed to go much further than the MDGs to address among others, poverty, hunger and ensure healthy lives of the citizenry and promote wellbeing for everybody at all ages. Howarth (2012), opined that a sustainable future will come into being if the biophysical and social conditions needed for wellbeing are met. Therefore, a programme of Agriculture predicated upon scaled-up interventions is bound to help the Nigerian Nation achieve sustainable development. It will impart competence on the youths thereby brightening their chances of employment which enable them to earn a sustainable living.

Secondary schools in Ikwuano and Umuahia North Local Government Areas offer Agriculture in their Junior Secondary Schools. However, government, communities and other stakeholders in the area have intervened in various ways to reposition the teaching of the subject. But their efforts could not yield the desired result. Consequent to this, learning outcomes remains low and the objectives of the programme not well achieved. To overcome these challenges, it is suggested that intervention should be scaled-up. Intervention efforts also have some challenges and prospects, but they remain a mirage. This study was therefore carried out for the purpose of finding out the challenges and prospects of scaling of interventions in the teaching of agriculture in Junior Secondary Schools. It is expected that the results of the study will help the Ministry of Education, Boards and stakeholders in charge of education to identify areas needing scale-up. It will also help them to overcome challenges of scale-up.

Purpose of Study

The major purpose of the study was to identify the challenges and prospects of scaling-up interventions in the teaching of Agriculture in Junior Secondary Schools, in Ikwuano and Umuahia North Local Government Areas of Abia State, Nigeria. Specifically, the study sought to identify:

1. Areas of Agriculture where interventions needed to be scaled-up in Junior Secondary Schools;
2. Challenges to scaling-up of interventions in the teaching of Agriculture in Junior Secondary Schools; and
3. Prospects of scaling-up interventions in Agriculture?

Research Questions

1. What are the areas of agriculture where interventions need to be scaled up in JSS?
2. What are the challenges to scaling-up interventions in the teaching of Agriculture in JSS?
3. What are the prospects of scaling-up intervention in the teaching of agriculture in JSS?

Methodology

The area of the study was Ikwuano and Umuahia Local Government Areas of Abia State, Nigeria. Junior Secondary schools in the area, study Agriculture as a subject. In spite of various interventions, learning outcomes remain low. This informed the choice of the area for the study.

The study adopted survey research design. The design, according to Feldman (2013) and Uzoagulu (2011), is one in which a group of people is studied by collecting



and analyzing data from a sample considered to be representative of the population or the entire population when not too large to manage. The design is appropriate since the researcher gathered information from teachers of Agriculture on scaling-up interventions in Junior Secondary Schools using questionnaire. The population is 92, made up teachers of Agriculture in the area.

The instrument for data collection was questionnaire developed by the researcher to solicit information from the respondents. The questionnaire was structured on a four point response options of Strongly Agree (SA), Agree (A), Agree Little (AL) and Strong Disagree (SD) with corresponding value 4, 3, 2 and 1. The respondents were requested to rank the response options to an item based on the level at which each item is required to scale-up intervention in the teaching of Agriculture in Junior Secondary Schools. The instrument was validated by three experts and tested for reliability using Cronbach Alpha method. Cronbach Alpha coefficient of 0.84 was obtained for the instrument.

Ninety-two (92) copies of the questionnaire were administered and retrieved by the researcher with the help of three research assistants. The research assistants were given orientation on what to do before the beginning of the exercise. The data obtained were analyzed using mean and standard deviation to answer research questions. Items with the mean 2.50 and above were regarded as Agree, while those below were Disagreed.

Table 1: Mean results of the responses of teachers on areas of Agriculture where interventions need to be scaled up in the teaching of agriculture in Junior Secondary Schools (N=92).

S/n	Areas needing scaled up	\bar{X}	SD	Remarks
1.	Lesson planning.	3.47	0.64	Agree
2.	Instructional delivery methods.	2.97	0.99	Agree
3.	Retraining of teachers.	3.00	0.90	Agree
4.	Inspection/monitoring of schools activities.	3.60	0.49	Agree
5.	Education policy implementation.	2.87	0.94	Agree
6.	Curriculum reform.	2.88	0.97	Agree
7.	Collaboration between schools and industries.	3.51	0.56	Agree
8.	Funding.	3.58	0.50	Agree
9.	Security of schools.	3.01	0.93	Agree
10.	Provision of infrastructural facilities.	3.15	0.94	Agree

Remarks: \bar{X} = Mean, SD = Standard Deviation, N = Number of Respondents.

Result presented in Table 1 revealed that all the 10 items obtained mean scores above the cut-off point of 2.50. This implies that teachers agree that all the items should be areas where interventions are needed to be scaled up in the teaching of Agriculture in Junior Secondary Schools. The standard deviation of the responses of the respondents on the 10 items ranged from 0.50 to 0.99, indicating that the respondents were not far from the mean and from the opinions of one another in their responses.

**Table 2:** Mean results of the responses of teachers on challenges to scaling-up of interventions in the teaching of Agriculture in Junior Secondary Schools (N=92).

S/N	Challenges To Scaling-Up Interventions	\bar{X}	SD	Remarks
11.	Insecurity In Schools.	2.79	0.99	Agree
12.	Teachers Low Knowledge Of The Subject Of Agriculture.	2.50	1.04	Agree
13.	Poor Monitoring Of Schools.	3.39	0.71	Agree
14.	Poor Remuneration Or Motivation Of Teachers.	2.52	0.39	Agree
15.	Inadequate Instructional Resources.	3.32	0.78	Agree
16.	Unreliable Public Power Supply.	3.35	0.83	Agree
17.	Curriculum Of Agriculture Takes A Long-time To Be Reviewed.	3.62	0.55	Agree
18.	Ineffective Education Policy Implementation.	2.15	0.84	Disagree
19.	Poor Funding Of The Subject.	3.68	0.56	Agree

Remarks: X =mean, SD =standard deviation, N =number of respondents.

The data presented in Table 2 showed that all the items except 18, with mean 2.15 and standard deviation of 0.84 obtained mean scores above the cut-off point of 2.50. This means that the respondents agreed that the items were challenges to scaling-up interventions in the teaching of agriculture in Junior Secondary Schools. The standard deviation of the responses of respondents on the items ranged from 0.39 to 1.04, meaning that the respondents were not far from the mean and from the opinions of one another in their responses.

Table 3: Mean Results of the Responses of Teachers on Prospects of Scaling-Up of Agriculture in Junior Secondary Schools (N=92)

S/n	Prospects of scaling-up interventions	Mean	SD	Remark
20.	Regular supply of good quality teachers.	3.71	0.46	Agree
21.	Innovative partnership between the schools and the host community.	3.66	0.74	Agree
22.	Provision of good quality facilities for teaching and learning.	3.15	0.86	Agree
23.	Opportunities for capacity building of teachers to learn methods of teaching.	3.40	0.79	Agree
24.	Building new schools and/or renovating old ones.	3.36	0.81	Agree
25.	Better funding of school activities and programmes.	3.25	0.78	Agree
26.	Better employment opportunities for youth.	3.39	0.66	
27.	Collaboration between schools and agro-allies industries for teachers to update their skills on entrepreneurship.	3.71	0.46	Agree
28.	Ensuring good living standard for the citizenry.	3.34	0.74	Agree

Remarks: X =mean, SD =standard deviation, N =number of respondents.



Result presented in Table 3 revealed that all the 9 items obtained mean scores above the cut-off point of 2.50. This implies that the respondents agree that they are prospects of scaling-up interventions in the teaching of Agriculture in Junior Secondary Schools. The standard deviation of the responses of the teachers on the 9 items ranged from 0.46 to 0.86, implying that the respondents were not far from the mean and from one another in their opinions.

Discussion of Findings

Result presented in Table 1 indicated that lesson planning, instructional delivery methods, retraining of teachers, in security/monitoring of schools activities, education policy implementation, among others were found to be areas where interventions needed to be scaled up in the teaching of agriculture in Junior Secondary Schools. The findings were in agreement with Olaitan (2017) who reported that the subject of agriculture needs a scaling-up in the area of teacher education, instructional delivery system and policy implementation. This is also in line with the submission of Expand/WHO (2009) that the teaching of agriculture needs scale-up in the area of school monitoring among others.

The result of the study presented in Table 2 showed that insecurity in schools, teachers low knowledge of the subject of Agriculture, poor monitoring of schools, poor remuneration or motivation of teachers and other five items were found to be challenges to scaling-up of interventions in the teaching of Agriculture in Junior Secondary Schools. These findings are in consonant with the opinions of Ugwoke, Onah and Ofor (2018) who cited poor funding of educational programmes, as well as low students and teachers morale as a great challenges to scaling-up initiatives in the teaching and learning of Agriculture in secondary schools.

Result presented in Table 3 showed that regular supply of good quality teachers, innovative partnership between schools and the host communities, provision of good quality facilities for teaching and learning, opportunities for capacity building of teachers, building of new schools and/or renovating old ones among others, were found to be prospects of scaling-up of interventions in the teaching of Agriculture in Junior Secondary Schools. These findings are in line with the submission of Egbule (2004) who named provision of competent teacher of agriculture, functional facilities as possible prospects of scaling-up of the teaching of Agriculture in JSS.

Conclusion

The study established that in spite of interventions by various stakeholders on the teaching and learning of agriculture in Junior Secondary School, learning outcomes have not been encouraging. If the trend continues, it is possible that the objectives of teaching the subject many not be achieved. Therefore, there was need for scaling-up interventions in the teaching of the subject. This informed the study. The study indentified areas where scaling-up is mostly needed for retooling the teaching of agriculture, the inherent challenges and prospects.

The study had, therefore, made the following contributions to knowledge: it has provided information on areas of agriculture where scaling-up is needed for revolutionizing the teaching of the subject. The study also provided information on the challenges and prospects of scaling-up interventions which were not available, but were necessary to improve the performances of students and service delivery of teachers.



Recommendations

Based on the findings of the study, it is therefore recommended that:

1. Federal and State Governments should ensure strict compliance to the National Policy on Education.
2. Teachers should be well paid while bright students should be offered scholarship.
3. The Federal Ministry of Education should use the information provided by the study to retool the teaching and learning of Agriculture in Junior Secondary Schools.
4. There should be greater collaboration between schools and agro-allied industries for teachers of Agriculture to update their skills in practical agriculture and entrepreneurship.

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