IMPACT OF COVID-19 ON DELIVERING QUALITY AGRICULTURAL EDUCATION: CONTEMPORARY ISSUES AND PROSPECTS IN NORTH EAST, NIGERIA

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Abstract
This paper discussed impact of COVID-19 on delivering quality agricultural education in North East Nigeria and specifically emphasized contemporary issues that emanate as a result of the pandemic, and identified possible prospects beyond COVID-19. The paper highlighted that the impact of COVID-19 in agricultural education are negative and have different dimensions, and are more significantly detected on teachers, learners and their households. The paper also detected multidimensionality of issues that manifested as a result of COVID-19 pandemic in agricultural education to include social; economic; psychological and ICT issues. However, despite the challenges of COVID-19, agricultural education in North East Nigeria has brighter prospects that can be futuristically viewed through the opportunities created which are: increase in awareness; increase in job spaces; possibilities of enhancing e-agriculture; facilitating e-trade of agricultural produce; deployment of artificial intelligence, robotics and virtual facilities in teaching (such as use of drone in agricultural practical) and expanding the horizon of teachers thoughts in mitigation strategies against any unforeseen circumstance. The paper concludes that COVID-19 has opened another chapter in Nigeria's agricultural education process and strengthening Nigeria's agricultural education to facilitate the attainment of SDGs one and two within the shortest possible time and will guarantee employment opportunities to the teeming youth of North East Nigeria.

Keywords: Agricultural education, Contemporary issues, *COVID*-19, Prospects

Introduction

Education is a process towards developing individuals' knowledge, skills and attitudes that will make them fit and function effectively wherever one find her/himself. Training and re-training for administrative manpower, apprenticeship for skills acquisition and general knowledge for integration

are basic components that guarantee holistic development of a person. According to Ukeje (1995) education is the foundation for any type of development and nothing tangible can be noticed without highly professional manpower to derive the development process in any nation. This further affirmed that, growth and development of any nation can be judged from the achievement in the field of education and its tenets. Nigeria as a nation, cannot be in isolation from the above assertion, it is therefore imperative to stress that, we cannot develop as a nation, provided we fail to produce adequate manpower that possess the required knowledge, skills and attitudes that can drive the system and also survive the contemporary challenges of the labor market.

COVID-19 spread across Nigeria has mandated creating a rapid response mechanism development that motivated concern parties to coordinate preventive measures nationwide with a view of ensuring safety of the citizens and also plan a strategy for recovery within the long-term period. Covid-19 pandemic has affected quality of delivery process of educational activities in Nigeria which necessitated adoption of mitigating strategies to ensure low negative impact on education and its products (UNESCO, 2020). In addition, contemporary issues such as manifestation of COVID-19 delta variant, network availability for virtual classes and meetings, online conferences have mandated shift from culturally incline instruction to a new normal for consistency and sustainability of manpower production.

Disappointingly, manpower within the agricultural sphere is not given the attention it requires, despite the potentials embedded. The issues have to do with curriculum, funding, mentors, infrastructure and above all policy summersault. In most educational institutions, agricultural education programs are poorly handled either due to dearth of qualified staff or absence of facilities (Mbaba, 2016). These issues and many more have made knowledge, skills and attitude acquisition by the citizens in the area of agriculture low and poorly laid. Incidentally, mechanized and digital agriculture take up within the country is delayed. However, despite the challenges faced, experts in agricultural education are optimistic and have expressed high expectations on its revival, looking at the kind of changing trends in the area of financial support from international donor agencies, public private partnerships windows, institutional based researches and other assistance mobilised (Amadi & Liazarus, 2017).

The motives behind running programmes related to agriculture in Nigerian tertiary education is to produce graduates that are not only skillful and knowledgeable, but can also compete globally

with their peers in agriculture value chain for sustainable economic growth and development. Although, Abdulkareem (2015) noted that nations socio-economic development of any nation depends largely on the quality of available human capital, however, in the area of agriculture, it has long been established that the required competencies, knowledge and attitudes are holistic development and futuristic viewing are acquired through sound agricultural education. In addition, Massaquoi, et al., (2014) observed that, apart from teaching and research, Nigerian tertiary institutions undertake community services that guarantee prevention of illness such as COVID-19 and other diseases to facilitate manpower development. These components of teaching, research and community services in the areas of agriculture were found to have prepared all graduates across agricultural disciplines with requisite skills for taking up agriculture as a means of livelihood, which in the long-run also guarantee sustainable economic growth. Tertiary agricultural education is all about manpower training to inculcate values, ensure high production, promote culture orientation and facilitate sustainable growth and development (Amadi & Liazarus, 2017). Also, the institutions are to develop the intellectual potentials of individuals to understand and appreciate their environment; to assist individuals acquire positive skills that will enable them to be self-reliant and productive members of the society.

Nigerian governments recognise the important roles agricultural education in tertiary institutions play in entrenching the policy of technological and productivity growth. The role of agriculture is essential to all aspects of economic development through its educational curriculum, but there are many issues arising from the outbreak of COVID-19 and also the metamorphosis of insecurity in almost all parts of Nigeria, such as the kidnapping for ransom, banditry, and the ban of open grazing across the southern region. Another contemporary issue is the political system in Nigeria, which does not favour policy proposals made by others, hence abandonment of projects in agricultural education found everywhere. The paper therefore, focuses on delivering quality agricultural education in Nigerian tertiary institutions amidst COVID-19 pandemic and beyond, with analysis of experts perception on the contemporary issues.

Impacts of COVID-19 on Education and Agricultural Education in Nigeria

Agricultural education was perceived differently by many scholars and authors. Some conceptualised it from the perspective of their discipline and some misconceive it with general education. However, all the misconceptions are centered within the following three perspectives:

1. It is education concerned with training for the farmers of the society only.
2. A specialised education programs devised for the preparation of Agricultural teachers for different levels of education.
3. An education process used in assisting established farmers in their farms to enable them overcome their day-to-day problems in the farms.

Moreover, in the context of vocational education, Umoh (2020), defines it as a formal program of instruction, systematically organised for school learners and established farmers who are willing and ready to be trained for careers in Agriculture.

Agricultural education refers to that type of education which provides basic vocational knowledge, skills and attitudes required in agricultural production cycle. According to Olusola (2014) agricultural education is that type of education that involves practical and theoretical application for developing hands, heads and minds of the learner in agricultural production. It involves the training of both the head and the hands of the learners (Olusoga, 2014). The learner in this type of education is fully equipped with both the educational and agricultural knowledge (i.e the development of the three domains; cognitive, affective and psychomotor). In addition, agricultural education, even within the COVID-19 pandemic period involves use of strategic procedures in instructional delivery that help the learners willing and ready to acquire knowledge and skills that will change the process towards increasing the outcome positively.

The National Policy on agricultural education recommends use of teaching strategies that facilitates rapid development in the psychomotor domain which supports the learners perform specified task within the technical agricultural value chain successfully. Agricultural skills development is not restricted to growing crops or rearing animals only, it also has high level concern over the other components that support development the major areas such as soil analysis, classification and management; agricultural mechanisation, advertisement, grading, sorting, bagging and storage facilities of the produce (Umunadi, 2017).

Moreover, agricultural education constitute deployment of both scientific and technical knowledge in the areas of teaching and learning the procedures to be use after graduation for sustainable economic growth. The training components in agricultural cycle must be able to sustain raw materials availability for industrial usage in the areas of crops (higher and lower); livestock (ruminants and non-ruminants); aquaculture; conservation and other processing needs (Amadi &

Lazarus, 2017). Agricultural education stresses formal training in specialised chosen jobs that emphasises groundwork and involvement in agricultural career for sustainable social change (Odogwu, 2005). Contrary to general education, agricultural education is a skill-oriented, and apart from being trained as a teacher, agricultural education also prepares individual for self-reliance, job creation.

FAO (2020) opine that COVID-19 pandemic is the most devastating interference that education sector witnessed in the 21st century, especially in relation to specializations that are practical based or require high level of physical interaction, hands on engagement and workshops attendance such as agriculture. ILO and World Bank (2021) reported that about 90% learners were directly affected worldwide during the highest upsurge of COVID-19, which made teaching and learning environments not conducive, and also pushed majority of households under economic hardships.

Furthermore, COVID-19 pandemic has amplified the level of learners' dislocation with their mainstream school activities, particularly the vulnerable who already have underline ailments. The effect can be long-lasting on their immediate health and educational needs; can pose a threat to their life outcomes; has great impact on overall socio-economic growth and well-being of the students in general (UNESCO, 2019). The COVID-19 effect has created mandatory exploration of other alternatives on instructional approaches in agricultural education from the kindergarten to higher level (Asare *et al.,* 2020), which are provided to ensure inclusivity and socioeconomic growth. The effect has aggravated urgent adjustment in curriculum content to encapsulate wider range of cognitive, social and emotional skills in the curricula; the active involvement of parents in their children's education; and the adoption of technologies that allow for flexible and personalised learning.

With a speedily developing condition associated with COVID-19 many philanthropic donors in the education sector are making quick disbursements of funds, redirecting committed resources to new issues, and in some cases, redefining their mid and long-term strategies to ensure timely mitigation and create modern ways coping with the emerging issues. Although, lack of reliable data on the effect of COVID-19 across majority of Nigerian institutions has hindered many donor agencies potential to participate, collaborate and co-fund education initiatives to address the pandemic, but they have evolved mechanisms to provide general logistic support in the area of rapid spread strategies, technological instruction facilities and awareness creation (UNESCO, 2020).

Education is one of the biggest causalities in the fight against COVID-19 pandemic in Nigeria. The mass closure of schools, universities, technical and vocational training centers and

other centers of learning across the country has deprived many learners of their right to education (UNESCO, 2020). Similarly, according to OECD (2020) Covid-19 is the major interruption observed in education sector globally in 21st century. Prior to discovery of COVID-19 in Wuhan, already developing countries like Nigeria are battling with low enrolment, poor quality of graduates and large number of out of school children. UIS (nd) reported more than 280 million children are out of school in 2019 and about 67% of those attending are yet to acquire the requisite competencies in both reading, writing and performing simple arithmetic after many years of attendance (World Bank, 2018). Schools were forced to completely close by April, 2020 and about 95% of students worldwide are affected. The closure of schools globally affected teachers, families and the whole social system at large. At the beginning, school closures and halting all social gathering through social distancing mechanisms globally is crucial in combating the virus multiplication, but it also posed another challenge that led to further deepening poor learning levels and increase dropout rates, especially in the rural communities of developing countries.

While many parts of the world have resorted to distance learning, leveraging the use of ICT, unfortunately in most parts of Nigeria, it is not a viable option due poor infrastructure, inadequate power supply, low technical know-how, low availability of ICT gadgets, and large population in rural communities (Umunadi, 2017). Distance or open learning systems are too expensive for majority of students that are in low-socio-economic background and it also cause a shift of educational burden from government to more of parental support. The learning environment is distorted from a mixture of learners from different backgrounds to an exclusive domestic environment which may lack from of the learning support facilities.

However, failure to re-structure the conventional school routine activities to suit the need of the COVID-19 pandemic, students from the low and middle income families can hardly cope with households' economic stress which can easily isolate them from their educational needs (OECD, 2020). A further challenge arising from the closure of schools and other educational institutions and facilities as a result of COVID-19 pandemic, is the social impact this will eventually have especially on girls who no longer have access to schools, and are likely to be exposed to increased harm in their communities, including teenage pregnancies, rape etc (UNESCO, 2020). The immediate and long-term consequences of school closure will inevitably further exacerbate inequalities and disparities

in the education sector. This paper has categorized the effect of COVID-19 on agricultural education in relation to teachers, students and households as discussed below:

According to OECD (2020) report, in sub-Saharan Africa, only about 64% of primary, 50% of secondary and 67% of tertiary agricultural teachers have received the minimum pre-service training required, and this often excludes basic ICT training. Agricultural teachers who covered ICT in their pre-service education and professional development are more likely to integrate technology into their teaching practice (TALIS 2018; OECD, 2020). Results also indicate that when schools encourage educators to lead new initiatives, teachers are more likely to deliver technology-enabled instruction (OECD, 2020). According to PISA 2018 (OECD, 2019), Moreover, pandemic-induced interruptions to pre-service teacher training will likely aggravate teacher shortages, putting universalisation of education at risk.

Impacts of COVID-19 on Households of Agricultural Teachers and Learners (Students)

The negative impact of the pandemic has induced socio-economic challenges on the agricultural households across the globe and is more aggravated in North-east Nigeria. Education outcomes has deteriorated because households' witnessed reduced income which led to lower investments in children's education (UNESCO, 2019). On the other hand, education outcomes can improve if lower wage rates, for both caregivers and children, reduce the opportunity costs for children to attend school, and for parents to support children with school work (TTF, 2020). In addition, low income families and the countries at large enrolment rates tend to deteriorate in the face of negative income shocks (Ferreira & Schady, 2009). If unaddressed, the economic impact on low-income families could lead to a massive increase in dropout.

Specifically, girls, students in rural areas, migrant students, refugees and students with disabilities are particularly vulnerable to these shocks (Teachout & Zipfel, 2020). The pandemic has severely thwarted the flow of remittances, further weakening the ability of families to pay for children's education (Asare et al., 2020). On the one hand, this limits their capacity to cover the direct costs of schooling (such as school fees, uniforms, textbooks). On the other, it increases the opportunity cost for children to stay in school (instead of helping with domestic tasks, family business or engaging in paid employment). Negative shocks to households also disproportionately halt the education of girls (Grimm, 2011; Björkman-Nyqvist, 2013; Valero, 2018).

The effects of COVID-19 pandemic on agricultural learners is not only restricted performance or level of achievement, rather it has escalated to all other domains. However, global statistics has indicated only 23% of 15 year old students achieved the minimum level of skills in reading, 12% in mathematics and only 26% in vocational skills within the COVID-19 period in Nigeria (World Bank, 2022). The school closures allow only few learners that have the privileged to acquire IT facilities and have access to virtual learning tools (Kaffenberger, 2020). The impact of school closures on student learning loss hinges on multiple factors, including access to remote learning, student attitudes towards self-directed instruction, quality of remote instruction and home support. Children of a younger age are more likely to find self-directed learning difficult. For older students, the inability to attend lectures and access study material can generate frustration, and cancelled assessments can also take a toll on students' extrinsic motivation (Elikai & Schuhmann, 2019).

Furthermore, what students learn and how they learn is one of the major concern in all education sector. Students' engagement in instructional activities that ensure holistic development of individual at the basic level is another major concern in the midst of COVID-19 pandemic (OECD, 2020). Failure for education managers to restructure instructional models and other school routines towards creating more avenues to increase both physical and virtual contact between teachers and learners, it will lead to experiencing more drop-outs. Several interventions in low and middle-income countries have concluded structured pedagogy programs where educators receive detailed lesson guides, targeted materials for students and teachers, and short-term training courses with the aim of contributing to higher completion rates (Snilstveit et al., 2015). Disruptions in schooling may also affect school progression, particularly for students on the verge of transitioning onto a higher level or into the job market. Furthermore, student participation in remote instruction is completely inconsistent within the new normal we found ourselves due to multifaceted challenges we are before the eruption of COVID-19 pandemic in Nigeria. Statistics also shows only about 5% have access to remote learning in Nigeria, among which only 25% of students from the wealthiest quintile engaged in some form of remote learning against 7% of those in the poorest (Chikoti, 2020; Jaume & Willén, 2019).

Contemporary Issues in Delivering Quality Agricultural Education amidst COVID-19

COVID-19 pandemic is one of the most significant challenge faced globally in the whole socio-economic drivers globally such as education, health, agriculture and commerce in the past 100

years. The pandemic has interrupted our normal ways of life and also posed extraordinary concerns in our daily lives. ILO (2020a) reported loss of about 14% working hours across the world in 2020 when compared to 2019. The loss was estimated at equivalent of 480 million full time jobs and resulted to high level interruptions in the labour markets globally (ibid). These figures has stagnated driving force towards attainment of 17 Sustainable Development Goals (SDGs). The major sectors most affected is education which occupies the 4th SDGs which was tagged as ensuring inclusive and equitable quality education (World Bank, 2021). According to Statisticia, (2021) about 1.6 billion learners worldwide and 26 million students in Nigeria were affected by COVID-19 crisis that led to school closures in late March 2020.

Agricultural education and training institutions struggled to achieve a timely compliance with physical distancing measures in order to contain the spread of the pandemic and to switch from face-to-face training to distance learning. In the light of the crisis, International Donor Agencies (IDA) and other Non-governmental Organizations (NGOs) working in North East Nigeria launched surveys on agricultural education and training during the coronavirus disease (COVID-19) pandemic with a view to ascertain the effect, build resilience, and also facilitate mitigation mechanisms in living with the virus or switching to new normal of teaching (World Bank, 2020). Under normal circumstances, agricultural education programs typically involve school-based training, a combination of classroom, laboratory and field-based training, or wholly on-the-job learning. Given the severe disruption, it was of crucial importance to identify adequate, quick, practical and innovative solutions to respond to this crisis (ILO & World Bank, 2021). There are changes in work schedules, work modalities, employer-employee engagement and only those in perceived as essential service workers were allowed to work under strict compliance with COVID-19 protocols. ILO (2020a) this adjustments has caused many workers hardships that will last for a long-time before recovery, especially when the statistics shows about 42% of workers are in countries with partial workplace closures. This has also aggravated the number of underemployed and unemployed graduates to more than 62% globally, with the highest numbers coming from developing countries.

Furthermore, Northeast Nigeria that has the highest number of out of school children, high rate of poverty, poor infrastructure, high level of illiteracy rate and insecurity challenges are more affected in the country than any other part. These challenges has expose the regions in ability to adopt any drastic change in education delivery without high level commitment and support from the

government. In the context of these adjustments, modifications in both teaching and learning agriculture, issues not really raised before the pandemic were manifesting. These issues were perceived by different scholars to have direct effect on delivering quality agricultural education in North East Nigeria. In view of the aforementioned, this paper highlighted the issues under economic, social and psychological components.

Economic Issues of COVID-19 on Agricultural Education

Economically the COVID-19 pandemic shocks to the agricultural education have negative short and long-term effects. Scholars noted that the issues related to holistic economic gain might falter, human growth and capital growth will likely decline or come to a standstill and current gaps in learning equity will widen (World Bank, 2020). Financing agricultural education is another issue that north-east Nigeria will continue to battle with in the COVID-19 era and beyond, the gap may widen-up due to closure of businesses, low IGR, low FAAC allocation and the challenges of declining foreign reserves. Moreover, other micro-issues that metamorphosed into macro includes rise in inflation rate, high level of additional government expenditure, low income by the populace, high exchange rate and holistic economic backwardness due to closure of schools and other major economic activities (UNESCO, 2020).

COVID-19 pandemic on set has led to closure of almost all windows for revenue generation in educational institutions which contributed negatively to the financial inflow and viability, especially agricultural education programmes in both conventional tertiary institutions and research centers that require large quantity of consumables for both laboratory and field practical. Agricultural teachers in Nigeria highlighted the diminished financial viability of training centers owing to the loss of clients and parents' inability to pay fees. The inability of parents to pay school fees is likely to lead to young people dropping out of agricultural programs and the resulting impact on finances has constrained the ability of the institutions/centers to invest time and money in the development of distance learning infrastructure and in some cases to pay teachers/trainers' salaries. (ILO & World Bank, 2021).

Social distancing requirements and travel restrictions have prevented agricultural teachers and practitioners from active participation in processes that involves farm operations such as land preparation, planting, weeding, fertilizer/chemicals application and harvesting. COVID-19 protocols have added more burden in relation to labour distractions and causing disorders within both

production and supply chain (UNDP, 2020). COVID-19 protocols such as social distancing was reported to have cause about 30% increase in food prices at the beginning of 2020 and a sharp decline in small and medium households income that constitute about 60% of pre-service farmers of Africa's population (World Bank, 2020). Although the picture has been bleak, some say the pandemic has brought a wave of innovation that could transform the agricultural education sector in the long run (Root, 2021). According to OECD (2020) the pandemic has created additional opportunities to device additional means of developing mitigation strategies towards enhancing friendly environment for both teaching and learning agriculture. Some of the mitigation strategies facilitated freeing up financial resources for invest for investments in a more productive, sustainable and resilient food system able to meet new challenges. This paper argues that, the suggestion by OECD is multi-tasking and very difficult to achieve in the North-East because of the varying economic and social crisis the region is bedeviled with.

Social and Psychological Issues of COVID-19 on Agricultural Education

School closure across Nigeria, especially in the north-East that have been battling with major social issues due to insurgency, banditry and other security challenges has pushed up the learning inequalities between the poorest and the richest students. COVID-19 pandemic has increased the gap of distant relationships from the social distancing purview and build up fear among relations (World Bank, 2020). Sanctions that led to remaining indoors and schools closure has also facilitated inter-personal conflicts among relatives, friends and neighbors. Other social issues that arise due to COVID-19 includes increase in rape cases, increase in theft/burglary, increase in birth rate, teenage pregnancy, over stretching of health facilities and high number of school drop outs (UNESCO, 2020).

Moreover, social gatherings that are part of the culture, norms and values of agricultural teachers were halted due to COVID-19 protocols. In North-East Nigeria, agricultural shows are part of the educational activities silently embedded in school curriculum, its positive impact on concept clarification, improvisation of instructional materials, psychomotor domain objectives attainment and reward is unquantifiable (FMRD, 2020). These kind of agricultural gatherings that facilitate socialisation and also bridge the possibility of gap widening between the rich and poor, rural and urban agriculturist, traditional and modern techniques is very vital in teaching agriculture at all stages, but new normal has shattered the dreams of those that attend the event annually. The

social issues cannot be resolved through new approaches suggested such virtual/online teaching and the social distancing is affecting the mutual cohesiveness expected in such gatherings. In another dimension, rural markets that are mainly operational on specific days were also affected, as such the socio-cultural aspects of meeting weekly between family members, business associates and alumni of schools that are apart was not allowed due to COVID-19 pandemic.

Psychologically, agricultural teachers and students were dislodged due to closure of schools, social distancing and other measures embarked upon to cope with the COVID-19 pandemic. According to Frontiers (2021) COVID-19 has caused prolonged stress among teachers and their students, which in turn led to anxiety, depression, and the inability to manage traumatic and negative emotions. Furthermore, the constant fear of contagion affects daily life and leads to social isolation and modifying human relations. WHO (2020) observed that COVID-19 has affected the mental health services. In relation to teachers involved in laboratory and field practicals, bereavement, isolation, loss of income and fear are the major triggering mental health conditions or exacerbating existing ones. Moreover, agricultural teachers recorded increase in levels of alcohol and drug use, insomnia, anxiety, neurological and mental complications (e.g., delirium, agitation and stroke) in rural communities in Africa (WHO, 2020). In North-East Nigeria, the health facilities were judged to be of low quality, inadequate manpower, dilapidated infrastructure and in adequate funding (UNESCO, 2020), the educational sector suffered set back as a result of prolonged security challenges (World Bank, 2019) possibilities of negative psychological issues are therefore, bound to manifest in high rate.

According to ILO & World Bank (2021) COVID-19 pandemic has unveiled and interrupted mental health services provision and exposed teachers and students to many psychological disturbances. The disturbances in most cases appeared in different forms to include psychiatric symptoms due to self-isolation, phobia of COVID-19 vaccine (rejection), building local mitigation strategies, panic, fear, trauma (those infected) and loss of hope by the aged (Frontiers, 2021). Although, other sectors of the economy were also affected, but the negative impact on agricultural education is the most severe due to wider coverage and its link with food production that is among the 17 SDGs expected to be attained by the year 2030. Agricultural teachers in North-East Nigeria, found themselves in double-barrel challenges in both discharging official duties and managing family affairs, this has affected their level of assimilation, synthesis, application and wider consultations. It

has also affected their social cognition that usually help them to become steady in delivering curriculum content to the students in the laboratory, field and classrooms. Agricultural teachers and students' level of confidence and assessment schedules were completely distorted as a result of school closure, self-isolation, social distancing and extortive instruction on facemask usage.

ICT Issues of COVID-19 on Agricultural Education

One of the major setback encountered in agricultural education due to COVID-19 pandemic is infrastructure gap in almost all the sub-sectors. Scholars argued that COVID-19 pandemic has made digital technology utilisation in agricultural education content delivery, assessment, monitoring and evaluation very necessary (G-STIC, 2021). Digital technology has also boosted the morale of agricultural teachers rather than just communicating knowledge, they have now become co-creators of knowledge, coaches, mentors and evaluators (UNESCO, 2020). Agricultural education activities that require field practical, laboratory and mandatory physical interaction were modelled through artificial intelligence, these systems can help observe how students learn. Besides, they can discover what kind of tasks and thinking interest them the most, and what kind of problems they find boring or difficult (G-STIC, 2021). The systems has the potentials of adopting learning strategies that give each and every learner opportunity to learn based on his style, need and resources. The teachers and learners are at the liberty to do it with much more precision than any conventional learning centers could achieve. Despite the aforementioned positive impact of digital technology in agricultural education, there are some contemporary issues lingering towards achieving the expected income. Reports from OECD (2020) and ILO & World Bank, (2021) relates some sobering figures across Nigeria. For example, in North-East, about 68% of 15-year-old students do not have a quite study place to study in their homes, and this is disproportionately the case among disadvantaged students. Only about 45% of 15-year-olds are enrolled in schools where an online support platform is available; 62% of 15-year-olds are enrolled in schools where teachers do not have the necessary pedagogical and technical skills to integrate digital technology in education, according to head teachers; COVID-19 has kept nearly 99% out of the classrooms in North-East Nigeria; and majority of the teachers are not well prepared and engaged in online learning.

Moreover, other issues surrounding digital technology usage in agricultural education have to do with stable power (electricity) which is nearly absent in North-East Nigeria. The laboratories,

digital boards, classrooms, lecture halls, manpower (technicians) are not available and where available, they are grossly inadequate and dilapidated (Brian, Lisa, & James, 2014). COVID-19 pandemic has also raised alarm over poor planning and mismatched futuristic viewing in educational emergencies in the sector as a whole and agricultural education in particular. Despite the challenges posed by COVID-19 and the issues raised, the future of education is still bright and agricultural education has the prospect of attaining the objectives of food availability, food sustainability and food security.

Prospects of Agricultural Education amidst COVID-19 and beyond

Despite of all the problems identified and contemporary issues highlighted, there is still hope of great expectations that Agricultural Education will graduate from the present state to a greater height because agricultural education will provide both old and young people with a sound knowledge of the basic principles and techniques of agriculture and the motivation with which they can translate this knowledge into real improvements in agricultural productivity. Agricultural education will help rural farmers to develop an understanding of the interrelationship of urban and rural life and provide counseling about agricultural occupations and the means of preparing for them. Agricultural education has the potentials to provide training for specialist agricultural occupations such as livestock and plant breeding, food processing, preservation and storage techniques as well as agricultural financing and insurance to help reduce uncertainties for those producing in the future. Agricultural education in Nigeria can increase job opportunity for those interested in agricultural production as the continuous success of Agricultural education will attract many people into the profession.

Moreover, the knowledge and skills in Agricultural Education will help to increase export trade. This will definitely influence the exportation of output to other countries for use thereby creating more jobs for people and increasing the economy of the country through foreign exchange earnings. This will help to diversity the earnings of the nation and boost the economy tremendously thereby reducing poverty. There are many industries that could have been established to produce goods and offer employment to many people but this could not happen due to acute shortage of raw materials and infrastructures that prevented many investors from establishing industries in rural areas for the fear of failure. If Agricultural Education is encouraged, there will be sufficient raw materials to feed the industries which can produce finished goods or partially finished goods that can serve as raw materials to other industries. The experience gained in COVID-19 period will be

used towards developing futuristic model that will take care of any emergency that is anticipated. Agricultural Education has the windows of accommodating mitigation mechanisms on all emergencies such as climate change, infestation, natural disasters etc. to be part of the curriculum content to further expose the students on the need to be always ready for eventualities.

Conclusion

The survival of Nigeria as a viable society depends largely on the healthy educational institutions and how well the educators and other supporting staff are treated. The prospects of our agricultural education is laudable, looking at how fast agricultural teachers and students adopt and fit with the new normal despite the COVID-19 challenges. The paper also concludes that strengthening our own agricultural education can facilitate attainment of SDGs one and two within the shortest possible time and will guarantee employment opportunities to the teeming youth of North-East Nigeria.

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