

Influence of Infrastructures in the Implementation of Inclusive Education on Skills Acquisition among Students with Learning Disability in Agricultural Science Subjects

Umar, M. A.

Department of Science and Technical Education, Faculty of Educational Studies, Univesiti Putra Malaysia, Serdang, Selangor, Malaysia.

**Corresponding Author: Umar, M. A.*

Abstract: School infrastructure is a key base for effective teaching and learning in schools. The goal of school infrastructure in secondary school education is to increase school attendance of students, enhance staff motivation and improve academic achievements of students. School infrastructure includes classrooms, laboratories, halls, open fields, games equipment, dormitories and sanitation facilities. School infrastructure is therefore a very important component in ensuring successful and accessible education. On this backdrop, the Nigerian government must pursue school infrastructure development if the broad national goals are to be achieved. This study aims at determining the influence of availability of infrastructure in the implementation of inclusive education on skills acquisition among students with learning disability in Adamawa State, Nigeria. The study employed a cross-sectional survey design with multi-stage cluster sampling technique. A validated survey instrument was distributed to 243 agriculture teachers in Nigeria that asked about their perception on the selected factors in implementing inclusive education on skills acquisition among students with learning disability in agricultural science subject. 237 valid responses were returned representing 94 percent. The collected data were analyzed using descriptive statistical tools; percentage, mean and standard deviation. Findings of the descriptive analysis revealed that, the level of availability of infrastructure examined in this study was moderate level. Based on the findings of the study, it was concluded that the influence of availability of infrastructure in the implementation of inclusive education on skill acquisition among students with learning disabilities in agricultural science subject needed to be addressed for successful inclusive education practice in the study area. The study recommends amongst other, that in order to minimize the limitation of self-reporting data, further study is required to adopt a qualitative research technique. However, since the skills acquisition of the students with learning disability in inclusive education is at moderate level; there are needs to provide a substantial measure for improving the levels of availability of infrastructure in other bring about high level of skills acquisition among students with learning disability in agricultural science subject.

Keywords: Technical and Vocational Education and Training, Accessible Education, Special Needs Education, Skill Acquisition, Learning Disability, School Infrastructure

Date of Submission: 21-08-2019

Date of Acceptance: 05-09-2019

I. INTRODUCTION

Inclusive Education (IE) is a philosophy based in the principle that every school should be able to accommodate all children including those with learning disabilities. This philosophy was emphasized by The Universal Declaration of Human Rights in 1948 where it was declared that education is a fundamental right for all children regardless of individual differences. This right was further emphasized and affirmed as a plan of action in the World Conference of Special Needs Education held in Salamanca, Spain, (United Nations Educational Scientific and Cultural Organization [UNESCO], 1994). The Salamanca statement firmly called on the international community to endorse the approach of inclusive schools by implementing practical and strategic changes in the schools.

The member states agreed on the provision of quality education for all children including those with learning disabilities in the schools near their homes. The guiding principle of inclusive education is that ordinary schools should admit all children irrespective of physical, intellectual, social, emotional, linguistic and other conditions. Flecha (2014) stated that inclusion fosters institutional strategies to increase the participation and learning of children who are perceived to be vulnerable within the existing educational arrangement. Ndurumo (1993) states that the concept of disability has undergone significant changes. Initially the special needs learners

were placed in special schools. This was determined by people who thought that such children were not capable of learning the same concepts as their non-disabled peers. Then there was a concept of integration. This meant educating children with disabilities together with their non-disabled peers. However, no environmental or instructional modifications were adapted to accommodate their different learning styles therefore the educational goals of the learners were not achieved. Inclusive Education modifies the school learning environment.

According to IE principle, every school should be able to cater for every learner including those with ranging abilities and disabilities (Clark, Dyson & Millward, 2018). This is done by mobilizing appropriate human, physical and material resources for the transformation of such regular schools. Inclusion basically creates a child friendly school which operates with the interest of the learner by creating a safe and healthy environment endowed with trained teachers, adequate resources and appropriate physical, emotional and social conditions for learning. It also provides dignity and personal empowerment (Bryant, Bryant & Smith, 2019).

In many countries around the world, IE has been supported to prohibit discrimination in education under the human rights law (Kanter, Damiani & Ferri, 2014). In the United State of America, around 96 per cent of children with disabilities are presently educated within mainstream schools, and almost half spend the majority of their school day in general inclusive classrooms as opposed to being withdrawn for segregated lessons (Brown, Welsh, Hill & Cipko, 2008). This picture demonstrates a progressive increase in the number of children with Special Educational Needs being included in mainstream settings over the past twenty years. Furthermore, 'Public Law 108-4462 individuals with disabilities Education improvement Act of 2004', continues to advocate for the inclusion of children with Special Needs Education (SNE) within mainstream education settings. This law not only advocates accessibility to a high quality for children with special educational needs, it also promotes accountability for results; enhanced parental involvement and the use of proven practices and resources (Block & Obrusnikova, 2007). In Nigeria for example, the ultimate goal of special education is the integration of with SNE into the 'regular school system' and eventually in to the community.

Nigeria, Ghana, Kenya, Malaysia, Indonesia and Thailand were among some of the developing countries to introduce individual learning programmes to support children with Special Needs Education. In addition, Thailand accepted Sign language as a legitimate language and produced one of the earliest Sign dictionaries. In china classes, mainly for slow learners, affiliated to ordinary schools were began alongside the first in-service teacher training programmes to provide support for children with mild learning difficulties. According to Education for All report (2008), wide-ranging policies have been put in place in many countries to reduce some of the barriers to schooling, access to education for all remains wanting. Being fair and just refers, not so much on how the majority of the people attains or are accorded their rights, but rather to a conscious and deliberate attention to the extent to which the minority are also accorded and enabled to pursue their rights to education.

The world education forum held in 2000 in Dakar Senegal, recognized education as an important basic right for all people that can be used to facilitate education for all policy in Kenya. In the Dakar meeting, 164 governments together with partner institutions adopted a framework for action focusing on the achievement of six Education for All goals pertaining to the expansion of inclusive learning and the achievement of universal opportunities for all youth and adults, the achievement of gender parity and gender equality in education and the improvement in education quality and equity (Torres, 2001). The forum also confirmed that education can play a pivotal role in overcoming exclusion of the convention on the rights of persons with disabilities adapted by the United Nations General Assembly in 2006 Article 24 which covers education, ensuring that persons with special needs are not excluded from the general education system on the basis of their handicapping conditions and that children with special needs are not excluded from free and compulsory primary education (Minkowitz, 2006).

However, children with special needs continue to be discriminated within the education systems on the basis of access, provision of human and material resources and negative attitudes of those entrusted in the implementation of education policies. This ignores Article 2 of United Nations Convention on the Rights of the children, 'that a child shall not be discriminated irrespective of race, skin colour, sex, language, religion, political or other opinions, national, ethnic or social origin, disability birth or status.' (Minkowitz, 2006). This creates a gap, hence there has been a need to have a deeper concern on the approach of educating learners with special needs. The earlier structures of special schools separate from where the children without special needs attended school, has been faulted as discriminative. Many Nations are now increasingly recognizing that the policy of inclusion, where those children with special needs are taught in ordinary schools with various forms of special support, is preferable to segregating them in those special institutions. In Nigeria, the government has been trying to develop towards this global trend of inclusive education as the persons with special needs make a certain percentage of the marginalized population.

People with disabilities comprise 15 per cent of the global population and an estimated 785 million persons of working age. They represent a marginalized group in the labour market in all countries around the world, being far more likely than persons without disabilities to be unemployed, underemployed or

economically inactive. Where they have participated in vocational training, it is often in segregated settings where courses are frequently not linked to labour market requirements or at a standard lower than that required by employers. And where they are employed, workers with disabilities are more likely to be in low-paid jobs with poor promotional prospects and working conditions. Their labour market situation entails social and economic losses which have been estimated by the ILO to be between 3 and 7 per cent of GDP. Linked to this, in countries where disability benefit systems are in place, more and more people of working age rely on sickness and disability benefits as their main source of income, and public spending on these benefits has increased significantly. In countries where such benefits are not available or are sparse, those out of work often rely on the support of their families. There is thus an urgent need to address the marginalization of people with disabilities in the labour market, and to take steps to reduce the significant social and economic cost this represents to individuals, communities, economies and society at large. Providing greater opportunities to develop skills and qualifications relevant to the local, regional and national labour markets by making TVET and skills systems disability-inclusive is an important part of this process. Government of Nigeria has been trying to assist persons with disability to develop towards realization of full participation in skills acquisition for self-reliance (Umeasiegbu, Diallo & Gere, 2018).

Skills acquisition programmes have dual objectives of supporting economic growth, and contributing to broader social objectives in the interests of society as a whole. These social objectives include expanding access to TVET and skills acquisition opportunities for marginalized groups, such as persons with learning disabilities. The growing international interest in TVET and skills acquisition programmes has led to a wave of reform and investment in both the developed and developing countries around the world. The inclusion of vocational education and training as explicit outcomes in the 2030 Sustainable Development Goals (SDGs) gives TVET and skills acquisition programme an unprecedented profile on the international stage. The SDGs include a target of ensuring equal access to vocational training at all levels for persons with disabilities along with other vulnerable groups (Target 4.5). The focus on disability-inclusive Vocational Training has been heightened by the UN Convention on the Rights of Persons with Disabilities (CRPD), 2006. Member countries are required to ensure that persons with disabilities can access general tertiary education, vocational training, adult education and lifelong learning without any discrimination and on equal ground with others (Art. 24), and to enable them to have effective access to technical and vocational guidance programmes, placement services and vocational and continuing training (Art. 27).

The CRPD highlights the multiple discrimination faced by women and girls with disabilities and requires States to take all appropriate measures so that they can enjoy the rights and fundamental freedoms that it sets out, including the right to vocational training (Art. 6). The CRPD gives further impetus to the ILO's long-standing call for persons with disabilities to be included in general training and employment-related services. These trends combine to present a unique opportunity for government, TVET decision-makers and social partners including organizations of persons with disabilities to address the barriers that people with disabilities face as steps are taken to reform TVET and skills acquisition programme. To effectively promote the inclusion of children with learning disabilities in mainstream TVET and skills acquisition programmes the provision of accessible infrastructural facilities has to be heavily recognized. Ennis (2017) described infrastructure as buildings, buildings, including physical and material resources. In schools, infrastructure facilities consist of the entire school facility that administrators, teachers, and students harness, allocate, and use to manage the educational institution smoothly and efficiently, with the aim of delivering effective and purposeful teaching and learning activities (Goel & Vijay, 2017). Teaching facilities include all the infrastructure and material resources used to promote quality education delivery. Kerzner and Kerzner's infrastructure (2017) relates to the fundamental physical and organizational structures required to manage any organization effectively.

Other significant amenities in the classroom setting include textbooks, laboratory equipment, computer machines, seating facilities, electricity supply and other technical and vocational facilities, all of which are essential for quality schooling (Sephania, Too & Kipng'etich, 2017). In Nigeria, the rate of public and some private school enrollment has continued to increase without a corresponding increase in the teaching and learning infrastructure to be efficiently implemented. The state is now promoting the maintenance of accessible infrastructure equipment in multiple schools as a consequence of underfunding academic organizations in Nigeria (Ogunbayo, Ajao, Alagbe, Ogundipe, Tunji-Olayeni & Ogunde, 2018). Many scientists such as Porter, Graham, Spring, and Welch (2014); Akomolafe and Adesua, (2016); Ifeyinwa and Serumu (2016) have recognized the importance of teaching and learning infrastructure. In the teaching and learning operations, these facilities have experienced deterioration and absence of maintenance that spells doom for educators and learners. It is usually recognized that high-quality education requires excellent infrastructure. According to Ackah-Jnr and Danso (2019), providing the academic organizations with appropriate infrastructural equipment will guarantee quality education for all. All of these would have consequences for LD student education and conducting academic operations in different teaching organizations, which could result in a general fall in norms of education.

II. STATEMENT OF THE RESEARCH PROBLEM

Many studies (Ogonor & Sanni, 2001; Yadar, 2007; Yara & Otieno, 2010; Owoye & Yara, 2011) provide evidence of poor student academic achievement because of unavailability of infrastructural facilities in secondary schools. The problem of ineffective implementation of continuous assessment by school principals and teachers is also blamed on overcrowded classrooms and inadequate school infrastructural facilities. But not much is known about availability and adequacy of the school infrastructure. This study was therefore carried out to examine the influence of availability of school infrastructure on skills acquisition among students with learning disabilities in agricultural science subject.

Some researchers (Adeyemi & Adi, 2010; Oleforo & Maxwell, 2015; Osuji, 2016; Ojeje & Adodo, 2018) carried out studies on the influence of school facilities on students' performance in some states in Nigeria – Ekiti State, Lagos State, Akwa Ibom State, and Kaduna State respectively. These researches focused on the effect of school facilities on the performance of students, but the present research focused on the adequacy and availability of school infrastructure to find out whether they are adequate to carry out the TVET skills acquisition for students with learning disabilities in secondary education in Adamawa State, Nigeria, as provided in the national policy on education (2004).

This study, therefore, set out to examine the level of availability of infrastructure in the implementation of inclusive education among students with learning disabilities in agricultural science subject in Adamawa state secondary schools, because it appears that not much has been done to find out the influence of school infrastructure needed for the effective implementation of inclusive education in secondary education system, their level of availability, and adequacy. Identifying their level of availability and adequacy for effective implementation of inclusive education programme in Adamawa State can help the government and education planners to provide the school infrastructure that are needed and suitable to enhance the effectiveness and efficiency of inclusive education programme in Adamawa State, Nigeria.

III. THEORETICAL FRAMEWORK

The psycho-productive domain model of Ezewu have contributed to this study's theoretical structure. The researcher also used the perspective of the psycho-productive domain model as there are some ideas that learners with special needs may have issues adjusting to new settings such as being an inclusive classroom in the implementation of inclusive education. The psycho-productive domain model assumes that it can be routine and even automatic under certain circumstances to learn qualified behaviors. The psycho-productive domain is thought to be not just a skill development theory, but a general learning theory ranging from cognitive to psychomotor abilities. The essence of these frameworks is always to provide an awareness of the impact of environmental processes in human development and to outline the duties of the school, parents, society and government in contributing to the provision of life-long learning to bring about the personal development of all learners.

The psycho-productive domain model of Ezewu (1985) would be appropriate for technical and vocational education and training (TVET) skill acquisition reasons. This is because Ezewu rightly noted that there are many elements in the nature of TVET involving training both in theory and in practice. And the theory acts as the basis for studying the practical skills in these parts. Thus the theory is put at the reduced stage in Ezewu's model, whereas the practical is positioned at the greater stage of the subject's knowledge. Moreover, behavioral modifications are so patterned in a linear order that before the learner receives a knowledge of the procedure of the greater level in TVET; he / she must have first learned the fundamental values or steps.

A critical examination of the model of Ezewu would reveal that it is educationally based. This model involves all the taxonomies and thus involves the three skill elements. The model took care of Padelford's (1988) observation that acquiring and developing skills are learning operations that involve not only the psychomotor, but also the affective and cognitive domain. Garba (1993) regarded Ezewu's model as a remedy in an attempt to provide a means of evaluating the psychomotor result of technical and vocational education and training programs among learners. This is because Ezewu has stated that the proposed classification is tentative and only curriculum planners and educators can determine its applicability and usability through exercise in associated areas. Garba (1994) attempted Ezewu's model to develop a tool to evaluate practical ability acquisition in TVET classrooms. According to him, it was discovered worthwhile.

This means that the development of abilities in inclusive education among students with learning disabilities in agricultural science depends largely on the kinds of abilities taught to the learners, methods or transmission techniques, assessment techniques used to evaluate the learners, and the accessibility of equipment to teach the learners the abilities. Olaitan (1996) said the need to develop gained skills in vocational work is necessary as one may possess a skill but the abilities are not created. Olaitan further explained that it is necessary to teach understanding and capacity in the course of obtaining abilities in an occupation needed for achievement in that occupation. This is because abilities consist of habits that need to be adapted. Skill development theory is therefore important to this research.

Levels	Direction
1. Low level	Understanding of: - Terminology - Scope of job or task - Job specification - Instructions and materials
2. Middle level	Task identification: - Identifies task in a job and - Break jobs into tasks Task element specification: - Identification of task elements - Break tasks into elements - Select appropriate materials and instruments
3. High level	Execution: - Willingness to execute - Handles materials and instruments - Properly execute with required speed - Execute according to specification - Cooperate with necessary orders - perseveres

Figure 1: Psycho-productive domain model (Ezewu, 1985)

IV. AIM OF THE STUDY

The primary aim of this study was to determine the influence of availability of infrastructure in the implementation of inclusive education on skills acquisition among students with learning disabilities in agricultural science subject. This aim underpinned the following one specific research questions:

- (1) What is the level of availability of infrastructure in the implementation of inclusive education among students with learning disabilities in agricultural science subject?

V. METHODOLOGY

This section discusses the researcher's procedure for conducting this survey. It involves a description of the instrument's research design, participants, Questionnaire Recruitment, and Data Collection Procedures.

Participants

It has been determined that agriculture teachers are among those most probable to have important contact in inclusive school environments with learners with LD. Potential respondents in this research were approached directly to see if they were interested in answering the questionnaire of the survey. Following the study area outreach, 237 agricultural science teachers in three education areas across Adamawa State, Nigeria, were among the respondents in this research. The research included all five education zones in the study state. Agricultural science teachers were primarily males for the five education zones and similar in terms of their average age and number of years of teaching.

Questionnaire

In this study, the research instruments used is questionnaire divided into seven sections (A to G). Section 'A' relates to the demographic information of the respondents. Sections B to G of the questionnaire were developed by the researchers. Section 'B' contained a questionnaire on availability of infrastructure in implementing inclusive education of students with disabilities in the agricultural science subject. Section 'C' on the other hand contained skills acquisition of students with disabilities in the agricultural science subject. In total, all the constructs in sections 'B' and 'C' were measured by a total of 33 items.

Recruitment and Data Collection Procedures

This study was conducted in accordance with the ethical norms suggested by Adamawa State, Nigeria, Post Primary Schools Management Board. Within zone one that could be contacted in the study fields, the study chosen a number representing the areas of schools. The exception was in Zone 3 and 5, inviting all schools to participate in the studies. Then the principal of each selected school was approached within each educational zone and provided with the study's main goals and parameters, requesting that him or her to invite all teachers of agricultural science to engage in the study. To have a representative sample of teachers, the study developed the criterion for considering the school only if all agricultural teachers agreed to complete the questionnaire. The answers from the respondents remained anonymous. Questionnaires have been distributed and presented in

paper form within a school. A research assistant who could distribute a paper version of the questionnaire and who would answer questions or concerns about study processes was hired in each education zone.

VI. RESULTS

In this section, the study focused on presenting the results of the content analyses of the data, alongside the description of the results. The descriptive analysis of the items contained in each of the four dimensions of availability of infrastructure was presented. The dimensions for availability of infrastructure are: buildings, classroom furniture, laboratory and school size. Table 1 presents the results of the mean and standard deviations of responses to the availability of infrastructural facilities was measured using 24 items on a 5-point Likert scale used for the study. The overall mean score for availability of infrastructure was (M=3.24, SD=1.30). Results in the Table have shown that dimension with classroom furniture recorded the highest mean 3.29, and item with mean “Classroom furniture is available for the comfort of students for inclusive education” 3.08. Then followed by school size with a mean of 3.28, and item with lowest mean “Students in smaller environments for inclusive education achieved at a higher level than their cohorts in larger schools” 3.17. Next is building with a mean of 3.24 and its lowest item is “Well sited buildings for inclusive education contribute to achieving higher education attainment by the students having mean of 3.08. Laboratory recorded the lowest mean among the four dimensions of availability of infrastructure with a mean of 3.15 and its lowest item is “Instructions given to students by laboratory methods had higher attitude’s score for inclusive education” 3.05. Table 1 shows that, three out of four dimensions recorded mean above and equal to the overall average, mean, while laboratory recorded mean below the overall mean of all the dimensions. Results showed that the respondent’s perception on the level of availability of infrastructure indicated a moderate category. This implies that schools in the study area is more equipped with infrastructural facilities like the classroom furniture, school size and building above the overall average and have less infrastructure like the laboratories below the overall average. Generally, the mean were fairly distributed among all the dimensions for availability of infrastructure.

Table 1 Mean and Standard Deviations for Items Related to Availability of Infrastructures (n = 237)

Construct/Item	Mean	SD
Buildings		
Availability of buildings for inclusive education contribute to good academic performance.	3.29	1.38
Well sited buildings for inclusive education contribute to achieving higher education attainment by the students.	3.08	1.31
There is judicious use of building facilitates learning in inclusive education	3.21	1.33
Classroom buildings are accessible to all students in inclusive education setting	3.29	1.35
New buildings can improve students’ as well as teachers’ attitudes for inclusive education setting.	3.27	1.43
The buildings help improve attendance, morale as well as attainment in inclusive education	3.35	1.27
Mean Score of Buildings	3.24	1.34
Classroom Furniture		
Classroom furniture is available for the comfort of students for inclusive education	3.08	1.38
Availability of classroom furniture has an impact on students in inclusive education.	3.36	1.24
The classroom furniture is ergonomic to the students’ ages/sizes in inclusive education	3.65	1.21
Arrangement of classroom furniture can improve on-task behavior in inclusive education	3.37	1.30
Students seating more frequently, with comfortable chairs are a significant issue in inclusive education	3.09	1.36
The classroom furniture is up to standard for inclusive education	3.22	1.26
Mean Score of Classroom Furniture	3.29	1.29
Laboratory		
The laboratory is well equipped for inclusive education setting	3.13	1.21
Using laboratory for inclusive education helps students to understand and recall what they were told.	3.27	1.27
Laboratory helps learners to subject their ideas, beliefs, theoretical propositions etc. Some forms of experimental test	3.24	1.27
Subjects involving laboratory work arouse the interest of students in inclusive education	3.18	1.40
Well-equipped laboratories have better results in school certificate examinations.	3.11	1.27
Instructions given to students by laboratory methods had higher attitude’s score for	3.05	1.31

inclusive education.		
Mean Score of Laboratory	3.15	1.28
School Size		
Smaller environment for inclusive education provides a safer environment for the students	3.20	1.22
Students in smaller environments for inclusive education achieved at a higher level than their cohorts in larger schools.	3.17	1.42
The school size is conducive to promote advanced academic achievement for inclusive education	3.35	1.37
To have a larger school serve more students with common facilities which is more cost efficient for inclusive education.	3.39	1.27
To larger inclusive school provide a wide range of curricular choices such as arts and science classes.	3.30	1.22
To have a larger inclusive school employ more specialized and diverse teachers	3.31	1.30
Mean Score of School Size	3.28	1.3
Overall Mean Score for Availability of Infrastructure	3.24	1.30

VII. DISCUSSIONS OF RESEARCH FINDINGS

The findings of this research revealed that agricultural science teachers' perception on all the four dimensions (buildings, classroom furniture, laboratory and school size) of availability of infrastructure in this study were at moderate level. This mean that the way and manner at which the infrastructural facilities were made available to the students in the study area were not at the expected level. It shows also that practices regarding availability of infrastructural facilities in secondary schools in the study area are not high to communicate high performances in skills acquisition. It also points out that the ministry of education must take provision of school infrastructure as priorities if they want high performance in skills acquisition among students with learning disability. This is an indication that the secondary schools in the study area moderately stress on all the four dimensions of availability of infrastructure considered by this study.

Adequate provision of buildings as one the dimension of infrastructure bring about conducive teaching and learning environment for teachers, students and other staff members to perform their duties effectively. A good school building fosters desirable behaviour, creativity, harmonious relationship and problem-solving skills among students. According to Ojeje and Adodo (2018), the provision of school building should be made after the diagnosis and estimation of school demands and the identification of the optimal societies and sites where new school structures are to be located and where extra funds are to be provided to satisfy present and future needs of social education. Classroom furniture is one of the infrastructure equipment for all learners that add to a favorable learning setting and quality education. The quality of furnishings accessible in an academic organization has a beneficial connection to the quality of teaching and learning operations, which in turn contributes to the achievement of the objectives set (Ayeni & Adelabu, 2016). Furniture quality will describe how long this will last while comfortable classrooms and appropriate provision of educational resources will assist educators perform their educational job and the learning outcomes of learners.

Nigeria's National Education Policy (NPE, 2013) obviously indicated that there is a need to train learners so that they can manipulate their environment efficiently to develop society. This can only be feasible with the appropriate funds in the laboratory in a scenario where the learners receive the correct training. Basic science teaching without laboratory resources is to cover science values and render the topic alien to learners, a preventive consequence of studying physics, chemistry and biology in high schools. Laboratory practice is one of the most efficient experiences aimed at developing student science abilities (Olajide, Adebisi & Tewogbade, 2017). Society and country on this platform can profit from science and technology. In shaping and reshaping intellectual capacity, the classroom size is of paramount significance. However, a positive and supportive classroom atmosphere fully provided with sufficient teaching equipment and a favourable climate can make learners more comfortable and more focused on their academic operations, which can lead to elevated academic results. A proper and sufficient classroom size is essential for the learners to learn fruitfully.

Apagu, Ibrahim and Adamu (2016) noted that the acquisition of practical skills by learners is a significant component of TVET's curriculum, but the accessibility of infrastructure equipment is one of the key requirements for effective curriculum execution. Only where workshop facilities, instruments, machinery and machines are accessible and applicable can this element of the curriculum be applied. The availability of suitable workshop equipment enhances the acquisition of abilities by enabling all learners to take part in demonstrations and exercise that will assist them to continue building their abilities.

The results of this study also verified the observation of Lyimo, Too and Kipng'etich (2017) who recognize that the atmosphere in classrooms is relatively directed at making infrastructure services available and accessible to all learners that can make them feel they are in an extended family environment that would

enhance their ability by sharing knowledge. Gil-Flores Rodríguez-Santero and Torres-Gordillo (2017) disclosed in support of this finding that school infrastructure facilities must be available to all learners regardless of criteria and made accessible to all students' physical and mental well-being. A host of scientists including Ilomo and Mlavi (2016) observed that infrastructure accessibility such as classroom construction and other facilities contributes to excellent academic results by enhancing efficient teaching-learning operations. They also said that a well-sitting classroom building with aesthetic circumstances, playground, lavatory, etc. generally helps attain a higher education.

Similarly, Mokaya (2013) found that enhanced academic performance is linked to appropriate classroom space, extensive library spacing, well-equipped laboratories / workshops, appropriate water and hygiene equipment, and active involvement in co-curricular operations. Tondeur, Herman, De Buck and Triquet (2017), Ntawiha (2016) and Nasir and Efendi (2017) also indicated that school infrastructure facilities should be made accessible and assigned to schools based on the efficiency of government school programs meeting strategic instructional goals. It involves the ability of the officials concerned not to address this problem and thus shift scarce funds from ancient to fresh priorities and from less to more efficient college programs. Koroye, (2016) also disclosed that the school's esthetic beauty and the accessibility of infrastructure equipment have a significant impact on the academic performance of learners.

Going by the result of the study it is obvious that what is operating in various schools in the study area meets the recommendation of the National Board for Technical Education (NBTE) with regards to availability of infrastructural facility requirement. Puyate (2014) pointed out that effective TVET require high level of availability of infrastructural facilities. This indicated that the level of availability of infrastructural facilities for TVET enhances the vital process of the skills to be acquired. Skills acquisition can be achieved by the students in a situation where the infrastructural facilities are made available and well-staffed with competent and experienced teachers that adopt effective and efficient teaching methods (Anindo, Mugambi & Matula, 2016).

The study also confirmed the observation of Khan and Iqbal (2016) who acknowledged that the basic components of quality education and achieving the intended goal of the school program are sufficient and high-quality school physical infrastructure. They also reinforce the concept by emphasizing that learning is a complicated activity that requires the motivation of learners and educators, the accessibility of classroom facilities such as conventional houses and classrooms with their facilities, educational materials and growth equipment for children.

VIII. THEORETICAL IMPLICATIONS

Although, there are no studies found on the level of availability of infrastructure in inclusive education on skill acquisition among students with learning disabilities, few studies were found on the relationship between the variables and students' academic achievement. The present study contributed for the first time in exploring the level of availability of infrastructure in inclusive education on skills acquisition among students with learning disability in agricultural science subject concurrently. Furthermore, the established positive and significant relationships among the variables that will provide a support for the psycho-productive domain model skills because, the results of this study indicates how the dimensions of infrastructure (buildings, classroom furniture and layout, laboratory and school size) can contribute as input in skills acquisition among students with LD in agricultural science subject as output.

Another contribution of this research to the literature is that, it proposed a model on skills acquisition among students with learning disability in agricultural science subject. This proposed model can be used in order to enhance a better understanding of skills acquisition among students with learning disabilities in agricultural science subject. This research have also succeeded in utilizing questionnaire on availability of infrastructural facilities and skills acquisition questionnaire in the context of inclusive education settings.

IX. IMPLICATIONS TO PRACTICE

The findings of this research have some implications to practitioners. It serves as a source of empirical evidence to the policy makers and teachers on the level availability of infrastructure on skills acquisition among students with learning disabilities in secondary schools in Adamawa State, Nigeria. Prior to this research, there is lack of empirical and theoretical evidence in relation to the research variable in TVET area and this can lead to ambiguity and doubt among the policy makers and practitioners to put the variable into use within the context of inclusive education. Majority of past researches focused on academic achievement of students with learning disabilities in general subjects.

However, this study studied variables' dimensions of infrastructure that include (buildings, classroom furniture and layout, laboratory and school size) in TVET and found them to be instrumental to skills acquisition among students with learning disabilities. Hence, policy makers can adopt and set modalities to encourage skills acquisition among students with learning disabilities in TVET.

The results of this study revealed that the level of availability of infrastructure on skills acquisition among students with learning disabilities were moderate. This informs the need for the policy makers and other practitioners to find ways of improving the skills acquisition in inclusive education settings by improving on the variables of the study. In other words, all the dimensions of availability of infrastructure used in this study needs to be improved to a higher level

X. RECOMMENDATION BASED ON THE FINDINGS

Findings of this study offered recommendations for the policy makers, school principals and teachers about the link between availability of infrastructure and how they could foster the implementation of inclusive education on skills acquisition among students with learning disabilities in Adamawa State, Nigeria. According to the findings of the study, the perception of agriculture teachers on the level of availability of infrastructure was at a moderate level. This shows that the modalities taken by Adamawa State Government that were aimed at revitalizing the status of secondary education in the state are not at the desired level. Hence, the government should also consider funding of schools for acquisition of the required infrastructure and teaching and learning materials for effective implementation of inclusive education.

XI. RECOMMENDATION FOR FUTURE RESEARCH

This study provided the ground for future studies to increase the understanding of the relationship between principals' competence, availability of infrastructure and parents' involvement with skills acquisition among students with learning disabilities in agricultural science subject. In addition, this study is important because the concept of skills acquisition was examined in the context of inclusive education for the first time in Adamawa State, Nigeria. Based on the results and conclusions of this study, a number of recommendations for future researches were offered. The recommendations are as follows:

1. The population of this study is limited to agricultural science teachers in Adamawa State, Nigeria. Therefore, a similar research can be conducted in other states of Nigeria. Furthermore, future researches should include other stakeholders such as the school principals and parents as respondents.
2. The study used demographic information of the respondents only for descriptive purposes. Therefore, future studies should look into the possibility of using demographic variables to examine the differences in the levels of availability of infrastructure dimensions in inclusive education based on teachers' perspectives.
3. This study used demographic variables only for description purpose. Therefore, future studies should look in to the possibility of using demographic variables such as gender, age, qualification and experience to examine the differences in the levels of availability of infrastructure on skills acquisition among students with learning disability in agricultural science subject.
4. This study was based on self-reporting data. Thus, in order to minimize the limitation of self-reporting data, further study is required to adopt a qualitative research technique.

XII. CONCLUSION

Based on the finding of this study, it is evidenced that the level of availability of infrastructure in various secondary schools in the study area were perceived as moderate by the respondents. There are needs to improve the levels of (buildings, classroom furniture and layout, laboratory and school size and skills acquisition). This is because they are not strong enough to bring high level in the implementation of inclusive education among students with learning disability in agricultural science subject skills acquisition.

Availability of infrastructure and other learning materials suitable to the needs of all students are necessary in an inclusive education setting. This would enable the teachers to teach and all students to learn effectively. It was evident that the schools had strived to adapt the physical environment to make it accessible and more conducive for learning. For continued provision of appropriate infrastructure for students with learning disability to learn effectively, financial support is also very necessary. Without financial support to the schools, then it would be difficult for the school management and the parents alone to provide and maintain the available infrastructures required for the students with learning disability as the need may arise. For successful implementation of inclusive education therefore there is also the need for parent's involvement in order to maintain the available infrastructure in the school. Overall findings of the study showed that the success of inclusive education solely depends on availability of availability of infrastructure (buildings, classroom furniture and layout, laboratory and school size) to be addressed in the implementation of inclusive education in the study area.

REFERENCES

- [1]. Ackah-Jnr, F. R., & Danso, J. B. (2019). Examining the physical environment of Ghanaian inclusive schools: how accessible, suitable and appropriate is such environment for inclusive education?. *International Journal of Inclusive Education*, 23(2), 188-208.
- [2]. Adeyemi, T. O., & Adu, E. T. (2010). Enrolment Analysis and the Availability of Physical facilities for the Universal basic education programme in Ekiti State, Nigeria. *Middle East Journal of Scientific Research*, 5(1) 14 – 21
- [3]. Akomolafe, C. O., & Adesua, V. O. (2016). The Impact of Physical Facilities on Students' Level of Motivation and Academic Performance in Senior Secondary Schools in South West Nigeria. *Journal of Education and Practice*, 7(4), 38-42.
- [4]. Anindo, I., Mugambi, M., & Matula, D. (2016). Training Equipment and Acquisition of Employable Skills by Trainees in Public Technical and Vocational Education and Training Institutions in Nairobi County, Kenya. *Training*, 3(4), 103-110.
- [5]. Apagu, V. V., Ibrahim, M., & Adamu, N. S. Adequacy Of Brick/Blocklaying And Concreting Building Tools And Equipment For Effective Teaching And Skill Acquisition In Construction Trade In Yobe State Technical Colleges, Nigeria.
- [6]. Ayeni, A. J. & Adelabu, M. A. (2012). Improving learning infrastructure and environment for sustainable quality assurance practice in secondary schools in Ondo State, South-West Nigeria. *International Journal of Research Studies in Education*, 1(1), 61-68.
- [7]. Block, M. E., & Obrusnikova, I. (2007). Inclusion in physical education: A review of the literature from 1995-2005. *Adapted physical activity quarterly*, 24(2), 103-124.
- [8]. Brown, K. S., Welsh, L. A., Hill, K. H., & Cipko, J. P. (2008). The efficacy of embedding special education instruction in teacher preparation programs in the United States. *Teaching and Teacher Education*, 24(8), 2087-2094.
- [9]. Bryant, D. P., Bryant, B. R., & Smith, D. D. (2019). *Teaching students with special needs in inclusive classrooms*. Sage Publications. Clark, C., Dyson, A., & Millward, A. (2018). *Towards inclusive schools?*. Routledge.
- [10]. Education for All (Project). (2007). *Education for All Global Monitoring Report 2008: Education for All by 2015. Will We Make It?*. Oxford University Press.
- [11]. Ennis, F. (Ed.). (2017). *Infrastructure Provision and the Negotiating Process*. Routledge. 169-183
- [12]. Flecha, R. (2014). *Successful educational actions for inclusion and social cohesion in Europe*. Springer.
- [13]. [13]. Garba, L. N. (1993). Development of an Instrument for evaluating practical project in woodwork. Unpublished *Doctoral Dissertation*, University of Nigeria, Nsukka, Enugu State.
- [14]. Gil-Flores, J., Rodríguez-Santero, J., & Torres-Gordillo, J. J. (2017). Factors that explain the use of ICT in secondary-education classrooms: The role of teacher characteristics and school infrastructure. *Computers in Human Behavior*, 68, 441-449.
- [15]. Goel, D., & Vijay, P. (2017). Technical and vocational education and training (tvete) system in India for sustainable development.
- [16]. Ifeyinwa, M. C., & Serumu, I. (2016). Constraints and remedy to quality vocational skills development among vocational education students in Nigeria as perceived by vocational educators. *Journal of Innovative Practice in Vocational Technical Education (JIPVTE) Vol, 1(1)*, 016-023.
- [17]. Ilomo, O., & Mlavi, B. (2016). The Availability of Teaching and Learning Facilities and Their Effects on Academic Performance in Ward Secondary Schools in Muheza-Tanzania. *International Journal of Education and Research*, 4(6).
- [18]. Kanter, A. S., Damiani, M. L., & Ferri, B. A. (2014). The right to inclusive education under international law: Following Italy's lead. *Journal of international special needs education*, 17(1), 21-32.
- [19]. Kerzner, H., & Kerzner, H. R. (2017). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. John Wiley & Sons.
- [20]. Khan, P. & Iqbal, M. (2012). Role of Physical Facilities in Teaching Learning Process. *Interdisciplinary Journal of Contemporary Research in Business*, 4 (3), 210-216
- [21]. Koroye, T. (2016). The influence of school physical environment on secondary school student's academic performance in Bayelsa State. *Asian Journal of Educational Research*, 4(2), 1-15.
- [22]. Lyimo, N. S., Too, J. K., & Kipng'etich, K. J. (2017). Perception of teachers on availability of instructional materials and physical facilities in secondary schools of Arusha District, Tanzania. *International Journal of Educational Policy Research and Review*, 4(5), 103-112.
- [23]. Minkowitz, T. (2006). The United Nations Convention on the Rights of Persons with Disabilities and the right to be free from nonconsensual psychiatric interventions. *Syracuse J. Int'l L. & Com.*, 34, 405.
- [24]. Mokaya, Z. M. (2013). Influence of School Infrastructure on Students' Performance in Public Secondary Schools in Kajiado County, Kenya. *A Research Proposal Submitted in Partial Fulfillment of the*

- Requirements for the Award of the Degree of Master of Education in Corporate Governance, University of Nairobi.*
- [25]. Nasir, M. N. A., & Efendi, A. N. A. E. (2017). Special education for children with disabilities in Malaysia: Progress and obstacles Muhammad Nadhir Abdul Nasir. *Geographical-Malaysian Journal of Society and Space*, 12(10).
- [26]. National Policy of Education (2013). Federal Republic of Nigeria. Lagos: NERDC Press
- [27]. Ntawiha, P. (2016). *Educational Inputs and Their Implications for Output in Public Secondary Schools in Nyarugenge and Nyamasheke Districts, Rwanda* (Doctoral dissertation, Kenyatta University).
- [28]. Ogunbayo, B. F., Ajao, A. M., ALAGBE, O. T., Ogundipe, K. E., Tunji-Olayeni, P. F., & Ogunde, A. (2018). Residents' facilities Satisfaction in Housing Project Delivered by Public Private Partnership (Ppp) in Ogun State, Nigeria. *International Journal of Civil Engineering and Technology (IJCIET)*, 9(1), 562-577.
- [29]. Ogonor, B. O., & Sanni, G. A. (2001). Maintenance of secondary school facilities in Midwestern Nigeria. *Current issues in educational management in Nigeria*, 320-331.
- [30]. Olajide, S. O., Adebisi, T. A., & Tewogbade, T. A. (2017). Assessment of Laboratory Resources, Teachers' and Students' Involvement in Practical Activities in Basic Science in Junior Secondary Schools in Osun State Nigeria. *Journal of Educational and Social Research*, 7(3), 139-146.
- [31]. Olaitan, S.O. (1996). Vocational Education in Nigeria and Manpower Development (Unpublished Manuscript) University of Nigeria, Nsukka
- [32]. Owoeye, J. S., & Olatunde Yara, P. (2011). School facilities and academic achievement of secondary school agricultural science in Ekiti State, Nigeria. *Asian social science*, 7(7), 64-74.
- [33]. Porter, W. W., Graham, C. R., Spring, K. A., & Welch, K. R. (2014). Blended learning in higher education: Institutional adoption and implementation. *Computers & Education*, 75, 185-195.
- [34]. Sephania, N., Too, J. K., & Kipng'etich, K. J. (2017). Perception of teachers on availability of instructional materials and physical facilities in secondary schools of Arusha District.
- [35]. Puyate, S. U. O. B. E. R. E. (2014). Technology and Major Innovations In Nigeria. *International Technology Research Journal*, 2(1).
- [36]. Tondeur, J., Herman, F., De Buck, M., & Triquet, K. (2017). Classroom biographies: Teaching and learning in evolving material landscapes (c. 1960-2015). *European Journal of Education*, 52(3), 280-294.
- [37]. Torres, R. M. (2001). What happened at the world education forum?. *Adult Education and Development*, 45-68.
- [38]. Umeasiegbu, V. I., Diallo, A., & Gere, B. O. (2018). Rehabilitation Practice, Employment, and Policy for Rural Development for People with Disabilities in West Africa. In *Disability and Vocational Rehabilitation in Rural Settings* (pp. 297-315). Springer, Cham.
- [39]. UNESCO. (1994). *The Salamanca Statement and Framework for action on special needs education: adopted by the World Conference on Special Needs Education; Access and Quality. Salamanca, Spain, 7-10 June 1994*. UNESCO.
- [40]. Yadav, K. (2001). The teaching of life sciences. New Delhi. Anmol Publication Ltd India.
- [41]. Yara, P. O., & Otieno, K. O. (2010). Teaching/learning resources and academic performance in mathematics in secondary schools. *Bondo County, Kenya. Asian Social Science (ASS)*, 6(12).

IOSR Journal Of Humanities And Social Science (IOSR-JHSS) is UGC approved Journal with Sl. No. 5070, Journal no. 49323.

Umar, M. A.. " Influence of Infrastructures in the Implementation of Inclusive Education on Skills Acquisition among Students with Learning Disability in Agricultural Science Subjects." IOSR Journal of Humanities and Social Science (IOSR-JHSS). vol. 24 no. 09, 2019, pp. 33-43.