Imperativeness of the use of ASSURE Model in Inclusive Agricultural Education in Nigerian Universities

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Abstract
Implementing inclusive Agricultural Education effectively in this digital era in Nigerian universities has been a serious challenge to lecturers in Nigeria. In most cases, they change the learners' learning styles which are more digitally inclined to fit their teaching method instead of adapting an innovative teaching method to suit the learners for effective learning. Since there was no adapted model that could help the lecturers of Agricultural Education to achieve inclusiveness, the learners struggle to adapt to the teaching method first rather than learning the content of the course. To avoid such waste of time, energy, effort, and most importantly, frustration for students, this theoretical paper, therefore, identified the gap existing in the use of ASSURE Model in inclusive agricultural education in Nigerian universities. It explored the immeasurable steps involved in the use of ASSURE Model for effective teaching and learning of inclusive agricultural education in Nigerian universities. The review also summarizes the constituents of ASSURE Model for better assimilation and planning of subsequent instruction in inclusive agricultural education in Nigerian universities. It also reported the features, practices, and imperativeness of the use of ASSURE Model in inclusive agricultural education in Nigerian universities for improved learning.

Keywords: Media, Imperativeness, Inclusive Agricultural Education, Learning Approaches and Teaching

Introduction

It is a well-known fact that education which involves giving of instruction and its assimilation has an essential effect on learners and nation's economy advancement. Therefore, productive, maximized, effectual and result oriented teaching and learning is dependent on not only careful planning of instruction but also on skillful planning involving the use of media and technology. However, a model is a simplified description, design, or a system of assisting teaching and learning. Models are extraction from natural entities which are designed to produce outcomes (Coronel *et al.,* 2011). The relevance of models in teaching and learning cannot be over-emphasized; it offers imaginary, visionary and an all-encompassing communication gadget for assimilating and promoting instruction (Sirui, 2018; Hassan, 2014). According to Singh (2005), a model guides in the entire process of designing an instruction while Gustafson et al. (2002) opined that it is useful in the determination of adequate results, data collection, data

analysis, media selection, assessing, implementation and results revision.

It is disheartening that despite the high level of government involvement in agriculture, agricultural educationist is yet to carry out specified tasks with adequate facilities as a result, there is a great gap between agricultural output and labour force. Hence there is need for application of ASSURE Model into agricultural curriculum where different steps, methods, media, and technology will be used to obtain the desired instructional process. Impediments to teaching and learning of agricultural education may occur because of a given arrays of factors such as ineffective instructional model. Therefore, with regards to the above, it is important to adopt an instructional model like ASSURE Model due to its imperativeness and interactiveness between teaching and learning process hence promoting full participation and engagement of learners. ASSURE is a teaching and learning approach with the tendencies of yielding recommendable outcome. ASSURE as its name implies is an instructional design model consisting of six (6) unique processes such as A (Analyze Learners), S (State Standards and Objectives), S (Select Strategies, Technology, Media, and Materials), U (Utilize Technology, Media, and Materials), R (Require Learner Participation), E (Evaluate and Revise) (Kurt, 2015). ASSURE Model is an effective instructional design model with encompassing benefits cutting across effective integration of media and technology into teaching and learning processes as to assure assimilation and customized experiences needed to enlarge the scope of learning (Spencer, 2015).

Although some instructors apply this model, a lot has been pointed out on the limitations in the use of this model for technological learning on willingness and individual development. More importantly, the need for the adoption of an ASURRE model lesson plan was discovered using the Technology Integration Matrix (TIM), which was initiated to facilitate in the complex activities of assessing technology integration during instruction process (Florida Center for Instructional Technology, 2011). It was on this basis that the researchers embarked on this study to ascertain the imperativeness of the use of ASSURE Model in inclusive agricultural education in Nigerian Universities.

Therefore, this paper discussed the concept of agricultural education and inclusive agricultural education, constituents of inclusive agricultural learning environment, concept of ASSURE Model, relevance of ASSURE Model in inclusive agricultural education, and procedures for utilizing ASSURE Model in inclusive agricultural education. It also presented a step-by-step lesson plan for an inclusive agricultural education in Nigerian Universities using the ASSURE Model since there is limited information on designing of instructional plan for inclusive agricultural instruction.

Concept of Agricultural Education and Inclusive Agricultural Education

Agricultural education is the study of land cultivation, breeding, rearing and management of animal for the purpose of inculcating the right attitude toward the management and maintenance of crops and livestock for self-reliance in universities/higher learning. Agricultural education is a vocational course and occupational oriented field geared towards engaging, instilling, and enlarging agricultural scope of learning, workable, capabilities and behaviors. It makes available appropriate approach, and insight with which the individuals can efficiently progress in any field or chosen area and in corresponding agricultural fields (Suleiman, 2011; Ogundipe, 2009). Agricultural education in Nigerian Universities is basically initiated to prepare the minds of students to be gainfully employed in the agricultural sector of the country.

Agricultural education in the tertiary institution is a course that proffers solutions to the advancement of knowledge in various aspects of agriculture such as horticulture, land management, agricultural science, environmental management, vocational education, plant and animal nutrition, livestock management, crop cultivation, farm tools usage and its care (Philip *et al.,* 2008). Moreso, Agricultural Education cuts through instructional requirements of all parts of the inexhaustible natural assets such as forestry, fisheries, wildlife, and land use management (Alu *et al.,* 2003).

Agricultural Education deals with the provision and conservative sound education and appropriate instructional processes to encourage an ecologically sound and economically sustainable agriculture. Nigerian Universities offer a wide range of agricultural education courses cutting across pre-production, production, and post-harvest technologies related to crops and livestock. They also provide curricula on arrays of agricultural related disciplines which are agricultural economics, fishery, soil science, agricultural engineering, food security, forestry etc (Alu *et al.,* 2003).

Inclusive education refers to a logical position as well as setting of institutional facilities and steps; as to ensure entry terms towards progress in teaching and learning for all, involving even the ones in the margin, either with understanding barriers because of unstable mental functioning or socio-economic status (NCFTE, 2009). Therefore, inclusive agricultural education is simply the introduction of changes to improve the agricultural educational system for all learners because it relates to changing and adapting the system to benefit the learner and not changing the learner to fit in (McLeskey and Waldron, 2000). Furthermore, it is a system that calls for reformation of the agricultural learning environment at large (Ahuja, 2002; Stakes and Hornby, 2000).

It is necessary that the steps involved in development of an inclusive agricultural school have the support of the school community at large. The creation of an inclusive agricultural education system has a pronounced effect on the availability and accessibility of teaching and learning aids to a conventional learning environment (Lomofsky and Lazarus, 2001). According to Booth *et al.* (2000), inclusive agricultural education deals with the advancement of agricultural instructions, learners' involvement, and the tendency of reducing the opposition to their learning involvement. To a wider range, it involves career advancement of all learners not withstanding their beliefs, way of life, sex, colour, learning patterns and tongues (Department of National Education, 1997).

Inclusive Agricultural Education may be applied at different levels of education and subjects, with different objectives and aims, project different styles of special education needs, and provide services in different contexts. Inclusive agricultural education is based on the following assumptions as contained in Mugambi (2017):
   a) adequate provision of all instructional aids required for a successful instructional process;
   b) the privilege to agricultural education is a basic right for all individuals;
   c) every individual matter and has unique needs and potentials;
   d) all individuals can learn and have the right to belong to mainstream society;
   e) it is the responsibility of the agricultural education system to understand the barriers of learning, recognize diverse needs of individual and cater to them;
   f) an inclusive agricultural learning environment improves the quality of learning for all individuals; and
   g) involvement of parents and community matters in ensuring inclusive agricultural

education.

Meanwhile, the inclusive agricultural education curriculum could be recognized by the following features.

1) Inclusive agricultural education curriculum development has a continuous process closely intertwined with social inclusion.
2) It assures uniformity and standards by efficiently seeing to learners' uniqueness and retains instruction process in a long term for all.
3) Helps to foster a comprehensive citizenship education.
4) Promote a balance between global, national, and local expectations, realities, and needs.
5) Reflects diversification of models of instruction and learning materials.
6) Incorporates content relevant to the needs and future of learners.
7) Discusses education for sustainable development.
8) Considers and builds on students" prior learning and experiences.
9) Presents learning materials that reflect a diversity of viewpoints and representation.
10) Makes available diverse learning opportunities and options of learning activities.
11) Presents learning activities that promote interaction, collaboration, and shared reflection among the learners; and
12) Provides assessment tasks designed to take account of diverse values, goals, experiences, and perspectives of learners (Griffin & Shevlin (2011).

Constituents of Inclusive Agricultural Learning Environment
The constituents of inclusive agricultural learning environment include the following:

a) **Interaction with individuals:** Agricultural tutors in an inclusive agricultural learning environment ought to develop a cordial rapport with learners and is sensitive to the specific needs of technological utilization by the individuals. Another vital note to adhere to is absolute engagement of the learning process by encouraging active participation/demonstration of the instruction both individually and collectively as a class;

b) **Classroom make-up:** There should be adequate recognition of the classroom make-up based on learners' attributes and socio-economic background thereby providing reliable agricultural technology, media, and material for the various classroom make-up to utilize;

c) **Seating Position:** Seating pattern creates a good conducive environment for a perfect learning process and for proper engagement of the students in the agricultural instructional process;

d) **Teaching/Learning:** Methodologies for active participation of agricultural learning through different approaches are adopted at various stages throughout the learning period. Strategies for active engagement through a range of different styles are used at various points throughout lessons; followed by a functional teaching/learning method which develops a connection with already established idea which paves way for progressive teaching and learning in agricultural students' endeavors;

e) **Learning Materials (Instructional aids):** Use of a wide range of aids for agriculture such as agricultural machineries, demonstration farms for active participation of learners; and

f) **Evaluation:** Use of assessment tools that varies with the students' needs and requirements. There should be an evaluation of the different materials and methods used

during an instructional process, to ascertain the degree to which the learner has assimilated the lesson.

According to Griffin and Shevlin (2011), inclusive Agricultural Education becomes relevant if it can:

a) develop classroom routine that is sensitive to individual needs;
b) provide instructional resources that reflect diversity of learners;
c) make education relevant to students' needs and interests;
d) teach and model independent learning skills;
e) recognize and value learner improvement, acknowledging success of each individual learner;
f) use evaluation methods that are equitable and consider the diversity of learner's life experiences and learning needs, for example refugee experience;
g) use of flexible approaches to eliminate barriers and transform learning experiences; and
h) provide differentiated instruction by acknowledging that students learn at different rates and in different ways.

Concept of ASSURE Model

The ASSURE Model developed by Heinrich and Molenda in 1999 is a well-recognized teaching and learning design approach which makes use of behaviouralist perspective and integration of multimedia and technology to promote learning (Patrick, 2006). Theodorio et al. (2018) affirmed that Gagne described the ASSURE Model as a model that has the tendency of triggering learners' interests through a hands-on experience and students are fully engaged through the utilization of the media or technology. In comparison, ASSURE Model is an advancement of traditionally generic models like the ADDIE Model for instruction and tutoring development (Sirui, 2018; Kurt, 2015; Smaldino et al., 2008). However, several factors may be the reason why lecturers of Agricultural Education in Nigeria Universities have not been using ASSURE Model for their instructional delivery.

1. **Awareness:** Many lecturers of Agricultural Education in Nigeria Universities had not heard of ASSURE model before this study let alone having good knowledge of how it is used for classroom instruction.
2. **Time Consumption:** It requires some time for one to accurately develop ASSURE Model for instruction especially when one is not trained. According to http://gailalleynebayne.weebly.com/id-models.html, ASSURE Model is time consuming to create for several lessons.
3. **Personal Preference:** Many lecturers prefer to use a teaching method that they are conversant with rather than searching for new ones or what fits the students. They rather prefer recycling already mastered that may not even be effective to the students than inconveniencing themselves in struggling to learn a new method like ASSURE Model.
4. **Lack of Capacity building:** Many lecturers of Agriculture Education hardly attend capacity building workshops where new teaching and learning methods are discussed among colleagues due to lack of sponsorship. Daniel (2009) found that lack of adequate technological training in teachers' colleges reduces the chances of having technological trained teachers teaching in schools with modern teaching methods.

Relevance of ASSURE Model in Inclusive Agricultural Education
The ASSURE Model is quite useful in enhancing learning experiences through technological integration such as use of computers, media, e-portfolio, internets, audio gadgets, images, audio-visual related appliances to create personalized learning experiences (Theodorio, 2016; Ertmer *et al.,* 2007). Theodorio et al. (2018) posited that ASSURE Model was initiated for a coordinated work environment where there is availability of instructional aids as to facilitate blended learning, participatory learning, and group learning approaches in technologically motivated classrooms. The ASSURE model is a reliable model for constructing instructional plan targeted for re-collective learning (Hassan, 2014).

Procedures for Utilizing ASSURE Model in Inclusive Agricultural Education
The ASSURE model consists of six (6) different steps as shown in Figure 1 as listed in Kurt (2016):

1) **Analyze Learners:** Analyzing learners entails taking into consideration learners attributes such as their socio-economic background, age, sex, learning culture and intellectual preparedness.
2) **State objectives:** In stating objectives, four (4) contingent factors must come into play such as the audience, behavioural factors of the learners, conditions (determinant factors) for performance and the degree of mastery of skills.
3) **Select methods, media, and materials:** This deal with selection of the most appropriate method, technology/media suitable for the stated objectives.
4) **Utilize Media, Materials and Methods:** This deal with the appropriate use of the selected method, media, and materials to suit the stated instructional objectives. Therefore, in achieving this, the following must be adhered to: Previewing the media, materials, and methods; preparing the media, materials, and methods; preparing the environment, preparing the learners, and providing the Learning Experience.
5) **Require Learners Participation:** This step has to do with absolute engagement of the learning process by encouraging active participation/demonstration of the instruction both individually and collectively as a class. Instructors should encourage the learners to ask questions where they need clarity.
6) **Evaluate and Revise:** This is the final step, and it involves the evaluation of the different materials and methods used during an instructional process to ascertain the degree to which the learner has assimilated the lesson.
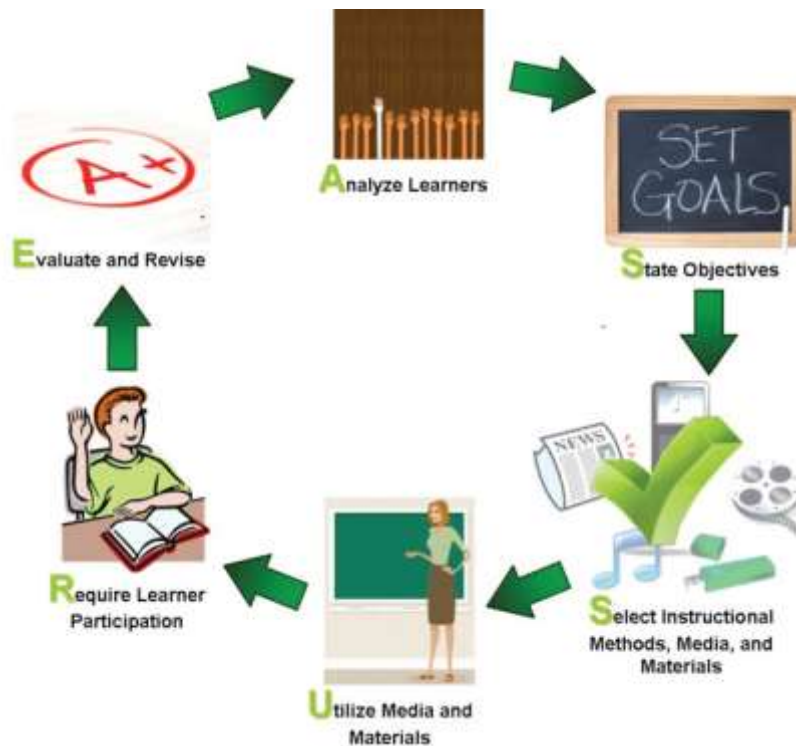
Figure 1: Schematic Representation of ASSURE MODEL

Source: Adapted from Theodorio et al. (2018)

A Sample of Lesson Plan Prepared Using ASSURE Model

Topic:	**Farm Power and Machinery**
Name of Tutor:	**Miss Sunday Chidinma Mary**
Level:	**200 Level**
Course Code:	**AED 221**
Duration:	**1 hour**

ANALYZE LEARNERS

Class Make-up: 50 200L students comprising of 29 female and 21 male students

Age of Students: 21-25 years

Learning Culture: Visual, Auditory, Kinesthetic and Tactile

Entry Competences: Learners have already been exposed to farm settings, land cultivation and different farm tools

STATE OBJECTIVES

By the end of the lessons, the students should be able to:

    i.   demonstrate mastery of the different types of farm power and machinery;

    ii.   describe the operations and functions of each of the farm machines.

SELECT METHODS, MEDIA, AND MATERIALS

    a) *A software* that will incorporate all kinds of farm power and machineries will be developed as to increase level of students' engagement and participation.

b) *Farm machineries* ranging from tractor, harrows, cultivators, seeders, disc plough, broadcasters, fertilizer spreaders, mould-board plough etc., that will be operated on by students

UTILIZE MEDIA, MATERIALS AND METHODS

Media:
The teacher will use the designed software to promote active participation on the subject matter by the student.

Materials:
The students will appreciate the different types, its uses, and constituents of farm power machinery, types and components of farm power and machinery.
Also, the teacher will avail a cart containing all the various farm machineries and farm power during the instruction process for easy comprehension.

Method:
Group work – students will work in groups to promote active participation in class.

REQUIRE LEARNERS' PARTICIPATION

The method is learner- centered, hence students will be allowed to participate in the process of operating these machineries individually and as a group. Also, the students will be inspected by the instructor throughout the period of participation.

EVALUATE AND REVISE

To know the impact of learning, at the end of the lesson, the teacher would have observed students and awarded scores based on students' level of participation.

Correction/clarifications will be made available based on students' performance.

Conclusion

The use of ASSURE Model is an indispensable demonstration tool for inclusive agricultural education in Nigerian Universities as it promotes active participation and engagement of students. The researchers are of the opinion that, if ASSURE Model is introduced into inclusive agricultural education curriculum across Nigerian Universities there will be an improved instructional process and learners of agricultural education will be empowered technologically as to pave way for robust agricultural development, advancement, and post utilization of agricultural technological tools. The authors have identified and filled the gap existing in the use of ASSURE model in preparation of inclusive agricultural education and its related instructional steps across universities in the country. Furthermore, the authors reviewed the constituents and imperativeness of the use of ASSURE Model in inclusive agricultural education, its features, procedures, and practices for effective teaching and learning of inclusive agricultural education in Nigerian Universities and a sample of an inclusive agricultural lesson plan designed with the use of the ASSURE Model.

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