The Role of Distance Education and E-learning in Agricultural Extension Services

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ABSTRACT

Education has very significance and strategic role in all aspects of the development of any nation. Distance education and e-learning role in agriculture extension services is a viable mechanism for the upliftment of the standard of education and in the dissemination of advanced and adequate teaching. Distance education has become a popular method of instruction, especially for those with demanding full-time jobs or who find it difficult to invest time and expense in travel. The increasing improved connectivity to the internet and rapid development in mobile access in Africa accelerates the promotion of e-learning to provide quality higher education on the continent. To this end, this paper examines the role of distance education and e-learning in agricultural extension services empowerment to meet needs of informal and agricultural sector. It discusses the concepts of distance education and e-learning, Agricultural Extension as a concept, functions of Agricultural Extension Agents (AEAs). Finally, it highlights some examples of how technology and ODL have been used effectively in agricultural extension.

Key words: ODL, E-learning, AEAs, Extension Agents, ICT, Farmers, Empowerment.

INTRODUCTION

The issue of food security is central to socio-economic development in most African nations and is perhaps the most resonant reflection of the poverty level of Africans. The World Bank regular reports on fiscal performance of countries indicate that a vast majority of Africans are living on less than one dollar a day. In the same context, a relationship has been found to exist between poverty, education and development. For instance, most farmers in Africa are not just poor; they are also illiterate and cannot access knowledge of techniques which would have gone a long way in addressing a part of the food security problem in the continent. Consequently, a strategy for training and education of agricultural extension workers and other professional through e-learning facilities amidst other distance education approaches is considered. A massive expansion of learning is a requirement for achieving this. However, learning needs are so massive that convenient-face-to-face instruction cannot address the scale of the challenge. There are no enough teachers and extension agents to go round. This paper believes that using e-learning and distance education is a way to expand learning and address the issues and challenges. Technology has already transformed most aspects of life, including agriculture. It is time to apply it to the learning.

Education has very important and strategic role in all aspects of the development of any nation. Distance education has become a popular method of instruction, especially for those with demanding full-time jobs or who find it complex to invest time and expense in travel. The interest and rapid developing in mobile access in Africa accelerates the promotion of e-learning to provide quality higher education on the continent.
This paper therefore examines the concepts of Open and Distance Education and E-learning. It discusses Agricultural Extension as a concept and functions of Agricultural Extension Agents (AEAs) in food production. It focuses mainly on Empowerment in Action: meeting the needs of the informal and agricultural sector through open and distance education and e-learning.

**THE CONCEPTS OF ODE AND E-LEARNING**

Open education or learning refers to the flexibility of and access to instruction by the distance education mode in order to ensure that the broad availability of educational opportunities reach as many segments of the population as possible. The term distance education, according to Garrison (2009) grew out of the need for a concept wider than correspondence study that could encompass new communication technology for the delivery of education at a distance. Every attempt to define distance education refers to the separation of teacher and student as well as other illuminative perspectives.

**E-Learning.** E-learning is a logical and strategic approach to achieve the technological transformation of Nigeria. The deployment of the technology is critical in the implementation of education roadmap, which is designed to revamp the potential of education system. In order to maximize this potential, e-learning implementations should endeavor to satisfy the needs and concerns of all organs as much as possible.

**Agricultural Extension as a Concept**

Extension education is a voluntary out of school educational programme for children and adult. It employs the principles of teaching and learning that affect changes in the life of children, their parents and farmers. It is generally carried out in an atmosphere of mutual trust and respect between agricultural extension workers and their clientele.

**Functions of Agricultural Extension Agents**

Basically, Agricultural Extension Agents perform three major functions:

i. To get farmers into frame of mind and attitude to acceptance or adoption of technological change. This function is achieved by educating the farmers on the newly developed technology and to convince them on the viability of the new technology in agriculture.

ii. Dissemination of research results to farmers. Extension Agents disseminate to the farmers the results of research and carry farmers problems back to research system for solution.

iii. To help farmers make decision in farm management. That is, Extension Agents assist farmers to develop proficiency in the management of their farms.

**Empowerment in Action: Meeting the Needs of Informal and Agricultural Sector through ODE and E-learning**

Empowerment implies the ability of the population, in particular, the least privilege segment of the society, to participate in the decisions that affect its livelihood. Empowerment requires structure that provides for participation by the poor and the hunger in decision making and resource allocation, especially, at the local level. Education is the bedrock of rural people empowerment be it formal or informal.
Empowerment of the poor

Poverty is a multi-faceted phenomenon, defined (and explained) as a situation in which a person lacks the necessary capabilities and entitlements to satisfy his or her basic needs and aspirations. From this point of view, the fight against poverty must consist in establishing entitlements that will allow the poor access to material, social, and spiritual means to develop their capabilities.

Therefore, it becomes necessary to focus on empowerment of the poor in action as the crucial requirement for a sustainable solution to poverty and hunger. Empowerment is defined here as the ability of people, in particular the least privileged, to: (a) have access to productive resources that enable them to increase their earnings and obtain the goods and services they need; and (b) Participate in the development process and the decisions that affect them. These two aspects are related; one without the other is not empowerment.

Access to Resources

A key requirement for any escape from poverty and hunger is access to productive resources. For the rural poor, land and financial resources are of foremost importance.

Land

Enabling the rural poor to have access to land whether through land redistribution or resettlement, or through changes in the nature of the rights and duties that underlie tenure-remains a crucial element in the quest to eliminate poverty and hunger.

Credit and Savings. Most commercial banks do not lend to the rural poor, but limit themselves to the urban, formal sector. From the positive experiences of Internal Fund for Agricultural development (IFAD) and other organizations, it seems that rural credit has a better chance of working if: Collateral, credit disbursement and reimbursement mechanisms are flexible and adapted to the needs and capacities of the poor (e.g. small loans, in cash or in kind, for productive or consumption purposes, with or without physical collateral, and with possibilities for joint guarantees and non-monetary reimbursement if necessary.

Informal Sector

The informal sector is unorganized, unregulated and mostly legal, but unregistered. As observed by Garrison (2009), the massive additions to the urban labour force by this sector do not show up in formal modern sector unemployment statistics. The buck of new entrants to the urban labour force creates their own employment or work for small scale family owned enterprises.

The concept of “informal sector” since its invention in the 1970s has attracted much interest, discussion and disagreement. There are currently two approached to defining informal sector activities: the definitional and behavioural (Garrison 2009). Garrison defines the informal sector as one which consists of economic activities which are not recorded in the grow domestic product (GDP) and or the national income accounts. The behavioural which is a times referred to as the legalistic definition is based on whether or not an activity complies with the established judicial, regulatory, and institutional framework. Batliwala (2011) defines the informal sector as consisting of small scale units engaged in production and distribution of goods and services with the primary objectives of generating employment and income, notwithstanding the constraints on capital, both physical and human, and the technical-know-how.

Actions Taken to Fight Unemployment
1. National Directorate of Employment (NDE). The following actions were taken in combating unemployment. One of the steps taken by the Nigerian government to reduce the problem of unemployment in Nigeria was the establishment of the National Directorate of Employment (NDE). The objective of NDE was to promptly and effectively fight unemployment by designing and implementing innovative programmes, which are directed towards the provision of training opportunities through the guidance and management support services to graduate farmers and small scale entrepreneurs.

The aim of the agricultural programme is to generate employment for graduates, non-graduates and school leavers in the Agricultural sector, with emphasis on self employment in agricultural production and marketing.

2. National Economic Employment and Development Strategy (NEEDS)

The National Economic Employment and Development Strategy (NEEDS) were introduced in order to confront the various macroeconomic imbalances, social challenges and structural problems in the Nigerian Economy. NEEDS, as a development strategy anchored on the private sector is to engineer wealth creation, employment generation and poverty reduction, however, for NEEDS to achieve its objectives, there is need to design many integrated programmes that can generate employment for women and youths to enhance growth and development (Cooke, 2010).

Meeting the Needs of Unemployment through the Informal Sector

Studies on industrial development of different countries have shown that the informal sector constitutes an integral part in the overall industrial sector and play an active role in the growth and development of these countries.

In Nigeria, this sub-sector accounts for about 70% of the total industrial employment, generates about 6.2 percent of the aggregate employment in the United States, 22.3 percent in China, about 80 percent in India, as well as about 50 percent employment in Israel (Maryland, 2008). The foregoing therefore points to the fact that the informal sector given the needed support and regulatory framework could be a major player in the combat against unemployment saga in Nigeria, as well as in other developing countries.

However, the informal sector cannot operate effectively at this task without the support of other key players, which is basically the availability of credit; hence the availability of credit to fiancé the informal sector cannot be under placed.

Agricultural Development in Nigeria

Agricultural development according to Arthur Moster (2010), represent a bunch of related but separate concepts. Agricultural development may involve the promotion of agricultural growth which is brought about by expansion of traditional input of land, labour and capital. It may also be growth that spring from production or application of new knowledge about the relations that from production or application of new knowledge about the relations that underlie the biological process that are initiated and controlled in the endeavour that we called agriculture.

Problems of Agricultural Development in Nigeria

Illiteracy. Most farmers in rural areas are illiterate due to lack of access to education. Because of illiteracy level of some farmers, much of their farm products are wasted.
Poverty. Ninety percent (90%) of the Africans living in poverty are rural dwellers. Farmers lack access to improved seeds, fertilizers, pesticides as well as knowledge and information to use them effectively and efficiently. These also affect agricultural development.

Adverse Weather Conditions (Drought, Flood)

The unpredictable climatic conditions (drought, flood) affect food supplies to the teeming population in the country.

Political Instability

Civil wars and political instability have seriously affected economic development, and have taken a direct toll on food production by driving farmers off their lands affect agricultural development.

Lacking Fund for Agriculture

This is as a result of non-availability of credit or enough capital for farmers.

Inadequate Storage and Marketing Facilities

This point out the lack of insufficiency of marketing and storage facilities especially among the rural farmers who constitute majority of the farmers.

Lack of Improved Technology for Production

Because of the crude technology used by farmers in Nigeria, retard the output rate and encourage scarcity which tends to increase cost of the products.

Government Policies

Frequent changes in government policies arise from changes in government. The various policies do not achieve their aims before being scrapped by the next government. Most of these government policies are not well implemented, hence a challenge to agricultural development.

Low Status Accorded Farmers

In Africa and Nigeria in particular, farmers are often times looked at as second class citizens because of the nature their work. There is migration of farmers to the urban areas for neater jobs thereby leaving human resources in the agricultural sector.

Agricultural Research/Extension Linkage Problem

The low productivity in many developing countries can be attributed to the inadequate of research support and its weak linkage with the extension and training systems.

Solutions to Problems of Agricultural Development Using ODL and E-learning

For farmers to benefit from new technology in agriculture through ODL the following roles are expected to be performed by agricultural extension:
• They provide innovations to farmers: These are achieved by making them aware and understand new ideas. There are several and varied extension education methods at the disposal of the extension agent for creating awareness. Mass contact method (Radio, Television, Bulletin, leaflets, etc) are used generally to create awareness. Any of the above mentioned methods can be utilized for the farmers through open and distance learning.

• The development of human resources is essential for food security in Nigeria. An educated and informed populace through open and distance learning is fundamental to any policies and strategies to reduce poverty, excessive population growth, environmental degradation and other factors that are most often cause by hunger.

• Through ODL, restoration of peace and security, improvements in democracy and political stability in some African countries have enhances the prospects of renewed food production, distribution and purchase (Batliwala 2011).

• Information, education and training in open and distance learning, allow farmers to make use of new farming knowledge and technologies.

• Alleviation of poverty. ICTs are often viewed as near-magic solutions to problems of poverty. Traditional media and new ICTs have played a major role in diffusing information to poor people living in rural communities such as farmers. There are great potentials of ICTs in ODL as tools for enhancing people daily lives whether by increasing access to information relevant to their economic livelihood, better access to other information sources, health care, agriculture, transport, distance learning..

• Provision of Linkage. The special needs of the farmers must be well analyzed by extension agents and brought back to research. To contribute to increased food production through ODL, agricultural research must be innovative, relevant and its results should be broadly disseminated in the language that the farmers understand.

• The internet which is a functional member of the ICT family is particularly very beneficial in providing opportunities for distant education and training, thus, overcoming some of the problems of location and lack of time in family- run small business and in extension (Cooke 2010).

• ICT tools that have great potential for effective use in agricultural extension through ODL in Nigeria include: radio, Television, telephone, the web, computer, e-mail, cameras, CD Room, DVD among others.

• To date, it is the radio and TV, which have been the major ICTs used effectively in agricultural extension delivery in Nigeria.

• In Ghana for example, radio is the most important ICT currently used for extension delivery and to a lesser extent, TV and video.

E-Learning

One of the most recent forms of distance education to be expanded is interactive instruction via the e-learning. Compared to other distance learning methods such as a video course or live satellite instruction, e-learning courses provide the following potentials roles via ODL:
1. The logistic challenges of assembling a dispersed field staff at a physical location would likely restrict access to the courses for many who could greatly benefit from them.

2. E-learning offers convenient access for practitioner – anytime, anyplace, any pace – without costly travel or time away from work. It therefore enables action learning that is just – in time and related to education programme planning.

3. It offers the potential for cost-effective customization and scalability – to different audience, stakeholders, countries, regions, languages – and allow for ease of distribution and updates.

CONCLUSION

The ODL scheme holds a number of potentials for various stakeholders in the education and development process. Agricultural development is more encompassing than the meaning that may be generally given to it, namely that of increase in agricultural output and productivity.

This paper also examines how unemployment can be reduced by expanding the activities of the informal sector. Although the informal sector has its challenges, which revolves on inaccessibility of credit to finance its activities. Agricultural sector aims at contributing to the development objectives of greater agricultural productivity, food security and poverty reduction.

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