



## USE OF MULTI MEDIA IN AGRICULTURAL

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### ABSTRACT

There are several organizations extensively using modern information technology in India to facilitate better communication between researchers, extension workers and their farmer clients to transfer technologies and information more cost effectively. But, many of these initiatives are focused on delivering generic information rather than providing the farm plot or crop specific advisories pertaining to the requirements of individual farmers. This paper through a well structured pre-tested questionnaire administered to participating farmers tried to find answers to the use of mobile multimedia agricultural advisory system (MAAS). The answers to the research questions had potential implications for refining the approach of making efficient agricultural extension services available through a call centre platform, equipped with mobile multimedia agricultural advisory system, to the rural farming communities. This study has shown that a majority of the farmers perceived information on pest and disease control as most important and they also felt that accessing information through mobile phone is easy and convenient. Although there were perceived benefits by farmers, the quality of information, timeliness of information and reliability of information were the three important aspects that have to be considered seriously to meet their requirements and prospects in the coming years. Correlation analysis proved that irrespective of the socio-economic characteristics, farmers were utilizing the mobile multimedia agricultural advisory system.

**Keywords:** organizations, individual farmers, socio-economic

### Introduction

Multimedia is an electronic device that uses a combination of content forms like text, pictures, music, sound, videos, records, films, animations that can be stored and played at any time. Agricultural extension services and its ramification is coterminous with the use of variegated communication strategies. The use of inter-personal communication appeared to have dominated in every phase of agricultural development. With the rise of the Internet, extension system now have the ability to not only transfer text-based materials, but to provide with hypertext, audio, video, interactive chat and many other methods of information delivery. The responsibility of collecting and disseminating information to the farmers in the most effective manner is the challenge before the information developers. Selecting a mode of delivery has become as important as the content. Multimedia have played an important role even before the extensive use of internet

facilities. An attempt was made with the objective to study the effect of multimedia in the knowledge and adoption of selected banana cultivation technologies among the farmers.

The main aim of the Project was to incorporate ICT concepts in teaching Agricultural Machinery subject through Cloud Computing. The project entailed e-content development in line with the established curriculum for training Diploma level students in Technical Institutions in Kenya. The first objective outlined the utilization of diverse multimedia – audio, text, videos and graphics to enhance comprehension of the operating principle of diverse agricultural machinery. The project recognized that this made learners more interested and provoked participation in the teaching-learning process. The second objective identified appropriate multimedia for the various topics of training in the subject. The third objective involved selection of appropriate Learning Management System. For this project, Moodle was identified as the most appropriate [1]. The e-content could be accessed by both learners and trainers via the Cloud. The fourth objective was to test the functionality of the adopted system as used in teaching Agricultural Machinery subject. This was done by generating system reports and analyzing the usage.

Media is the plural of medium referring to channel of conveying a message to a group or mass audience. Multimedia has diverse definitions which all revolve around utilization of various channels of communication. This project adopts that put forward by [2] as use of multiple modalities such as text, images, drawings (graphics), audio (including speech), animation and video together with interactivity to communicate. Multimedia production involves combination of various forms of media to a single output. Digital media is electronic media that entails use of computers to produce games, simulations, presentations,

## LITERATURE REVIEW

**Types of multimedia** The three common classification of multimedia are interactive, hyperactive and linear multimedia. Interactive multimedia enables users to control what and when the elements can be delivered. Hypermedia provides users with links for navigation to related e-content. For linear multimedia, the users must watch from the start to the end whereas for non-linear, the user can select different stages of the e-content [7]. In the project, utilization of all the above was essential in teaching various topics of agricultural machinery.

**Appropriate multimedia in the teaching and learning process** The teacher is at liberty to select the most appropriate multimedia for a given topic and at times, a combination may be required to deliver the e-content. Other research has pointed out that learners acquire more knowledge when words and graphics are used than from words alone [8]. According to [9], multi-sensory learning helps learners to interpret the information in a number of ways hence making learning richer and motivating.

**Types of Learning Management Systems** Content Management Systems Computer-Based Multimedia learning platform has the following benefits: - flexibility of space and time, personalized teaching & learning, enhanced learning methods and more concrete learning experiences [18]. Different Content Management Systems are at present accessible. These Systems can be utilized to make, alter, compose, store and distribute content for online/offline record [16]. It can bolster the making, distributing, upgrading, documenting, tracking and recovering of computerized data. There are subcategories of CMS programming, for example, Web Content Management, Digital Asset Management and Enterprise Content Management [19].

Benefits of Cloud Computing in Education The National Institute of Standards and Technology (NIST) defined Cloud computing as ‘a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction’. The free or low cost cloudbased services such as Twitter, Youtube, Google apps, Drop box among others have been used in education for e-content creation, social interaction and collaboration [16].

## **METHODOLOGY**

As the Project aimed at incorporating ICT concepts in teaching Agricultural machinery subject, the researcher adopted Case study approach and purposively selected Sot TTI in Bomet County, Kenya for the project. The institution has Smart-board facilities with unlimited internet access.

Due to the small number of students studying agricultural machinery subject, all the 27 students were selected to participate in system testing and a questionnaire administered after two weeks of interaction with the system. Out of the 27 students, 16 were males and 11 females. One instructor was involved from the engineering department. A pretest on engine operation was administered to the students after training using traditional lecture and text approach. They were directed to access e-content on tractor transmission system. After the system interaction, a posttest was administered relating to the transmission system operation. System logs were also extracted to identify e-content mostly accessed by the learners.

The participating farmers had to begin by registering for the project, using a newly developed mobile application by providing the personal profile and farm plot information such as soil physicochemical properties, history of the crops grown, inputs used, crop yields, pest and disease history and subsequent farm operations were being regularly updated. All this data was transmitted using general pocket radio service (GPRS), which is a wireless data service deployed as a standard feature in many mobile phones. The GPRS transmits data over the mobile operator’s network to an internet gateway, further to which it goes to a dashboard for expert’s view and Information needs of farmers The main focus of MAAS is to meet the information needs of the farmers. The study was designed to reveal these needs of the farmers for the crops under focus, which were chosen in the respective districts. Thus an attempt was made to find out the agricultural information which the farmers consider relevant to their needs,

## **CONCLUSION**

The objectives of the Project were to study the use of multimedia to enhance comprehension of the operating principle of diverse agricultural machinery, identify appropriate multimedia, and select appropriate Learning Management System as well as to test the functionality of the adopted system as used in teaching Agricultural Machinery subject. From the user responses, it was noted that the above objectives of using multimedia in teaching agricultural machinery subject were achieved.

This study has presented the potential of MAAS which has been field tested among the farmers. This is emerging as an effective modern ICT tool in the agricultural development services. An effective utilization of this ICT tool can improve farming communities and enable the speedy recommendation of requisite information in mobile based user friendly mode. The ability to access the information at the right time through any basic mobile phone saves time and cost of the farmer. However, this study has found that quality of information,

timeliness of information and reliability of information are some of the constraints experienced by the farmers during the advisories

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