
Development of a Power Point Instructional Material for Junior Secondary School (UBE 1-3) Agricultural Science

By

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Abstract

Computer applications have made life more comfortable and most tasks less arduous. The application of Information Communications Technology (ICT) in education or better still, E-learning has transformed education, making it less painstaking and bringing more life into the teaching and learning of “boring” subjects. Agricultural Science is seen as an uninteresting subject by most secondary school students because of the beliefs and attitudes they have developed over the years. To help students have a contrary stance on agricultural science, this paper examined the actualization of a power point graphic interface for teaching agricultural science at the Junior Secondary school level. The instructional material called “Agrisoft I” which could be used by both students and teachers will go a long way in reducing the burden of the classroom teacher in the teaching and learning process and also facilitate an improved students’ attitude to learning.

Introduction

E-learning and agricultural education in this present age should be two areas of education that must merge successfully if the world is going to solve the current problems of famine, hunger, desertification, deforestation and droughts the world's developing countries are being plagued with. Although the application of ICT in Agriculture or of e-learning in agriculture-related fields is still in the early phases of adoption even in the developed world, yet it is fast improving the way agriculture education is done. Leary and Berge (2006) submitted that the evaluation results of the first international e-learning projects in agriculture show that much good can be done

toward ensuring food security in the world if developed countries assist developing countries to implement e-learning methods.

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E-Learning in agriculture can unite farmers with far away researchers and experts. It can bring together resources and information from remote places that may otherwise be exclusive. It can also dramatically enlarge the numbers of farmers who can be reached by single training programmes. E-learning in agriculture can also start from the junior and senior secondary school levels. The application of E-learning in the teaching of agricultural science will change students' attitudes and stance about agricultural science. Most e-learning programmes in agriculture currently being undertaken in the world are in the pioneering phase. These efforts are attempting to use low-risk, low-cost e-learning technologies. One of such is this attempt to develop a power point instructional material for the agricultural science teacher in Nigeria's secondary school. This tool is a powerful guide to every needed note and illustrations a teacher teaching agricultural science might need and it is user friendly.

Agricultural educators should understand that e-learning is a major investment in their ability to maximize teaching efficiency and effectiveness. Research has clearly shown that electronic communication, information, and imaging technologies offer delivery methods much more convenient than traditional teaching methods once they surpass the initial load of administrative and skills training in the pioneer phase (Fritz et al. 2002; Murphy & Terry 1998).

There are current trends in the use of e-Learning in Agriculture. Such areas include Agricultural Management, Agribusiness, Agro-Terror Awareness / Pests and Disease Management. (Kirkland, 2002).

Although in Nigeria, there are challenges trainers and instructors in agriculture face daily. A lot could be solved through e-learning. Despite the fact that the country has not yet reached the threshold of connectivity due to such factors as fundamental problems with infrastructure, the lack of stable sources of electricity, and the overbearing cost of Internet through service providers, the country still does have plenty of trained and willing extension agents capable of joining distance learning programs based in neighboring countries (Adomi, 2005)

A student armed with the power point tool developed in this paper could go through the lectures without stress and with better understanding of the subject even at leisure. In all, this teaching tool is aimed at adding value and competitiveness of agricultural education in secondary schools so as to enhance the contribution of agricultural information and communication to the improvement of sustainable agricultural production.

Problem Definition

Agricultural Science as a course of study is not very interesting to most students. This may be partly due to field experiences which scare away many students and partly due to preconceived notions about farm work as a tool for punishing offenders. Some people even believe that Agriculture or farming is for the poor ones.

Iseyemi (1999) observed that one important aspect of education is the proper communication of information. A Student acquires much important scientific knowledge by receiving information in an easily understood form. Proper dissemination of information on agricultural science could and would eventually change students' perspective about the subject and therefore lead to improvement of agricultural production.

The development of this instructional material will go a long way in improving the shortcomings of the old method of instruction by bringing more life into teaching.

Although, the use of educational software for teaching and learning is still in its pioneering stage in this part of the world, the development of this instructional material will act as an encouragement to students on the capabilities of the microcomputer as a teaching and learning tool. Since most of these students now use the computer for many other activities, computer educational tools will go a long way in awakening the creative tendencies in the students and on the long run, enable them to learn effectively.

Theoretical Framework

The theoretical framework for this work is based on realism theory. This theory presumes that the more realistic an instructional material is, the more effectively it facilitates students' learning. Very related to this theory is the abstract – concrete concept which has become widely known owing to the works of Hoban and Zissman(1937); (Dale,1946). They organized various learning experiences in hierarchy. The teaching hierarchy depicts that the quality and quantity of learning that could be acquired by learners would increase as a teacher moves from the use of words through diagram to total situation.

Challenges Faced by Trainers/Instructors

Instructors in agriculture are faced with similar challenges as those experienced by persons working in other fields. These issues include:

1. lack of time and skills needed in adopting new technologies
2. lack of both formalized reward system and technical support
3. a concern about the loss of the teacher-student relationship
4. marketing for programs
5. financial rewards
6. maximizing returns on their investment in time and money
7. major increases in administrative work (Murphy & Terry, 1998)

The very first challenge listed above is that of lack of time and skills in adopting new technologies. This is very important in the sense that the skills for adopting new technologies must be sought and developed. This is one of the aims of this work.

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Teaching Tool Development

The Microsoft Power Point Teaching aid called AGRISOFT I is developed and executed using two to three interfaces – the Microsoft Word, The Microsoft Power Point and or the acrobat reader. It involves the use of slides and word document files. Most of the notes, which are located on Microsoft word files are accessed through the slides and a user is taken to the exact place where such notes are located.

To use the teaching aid, the following should be made available:

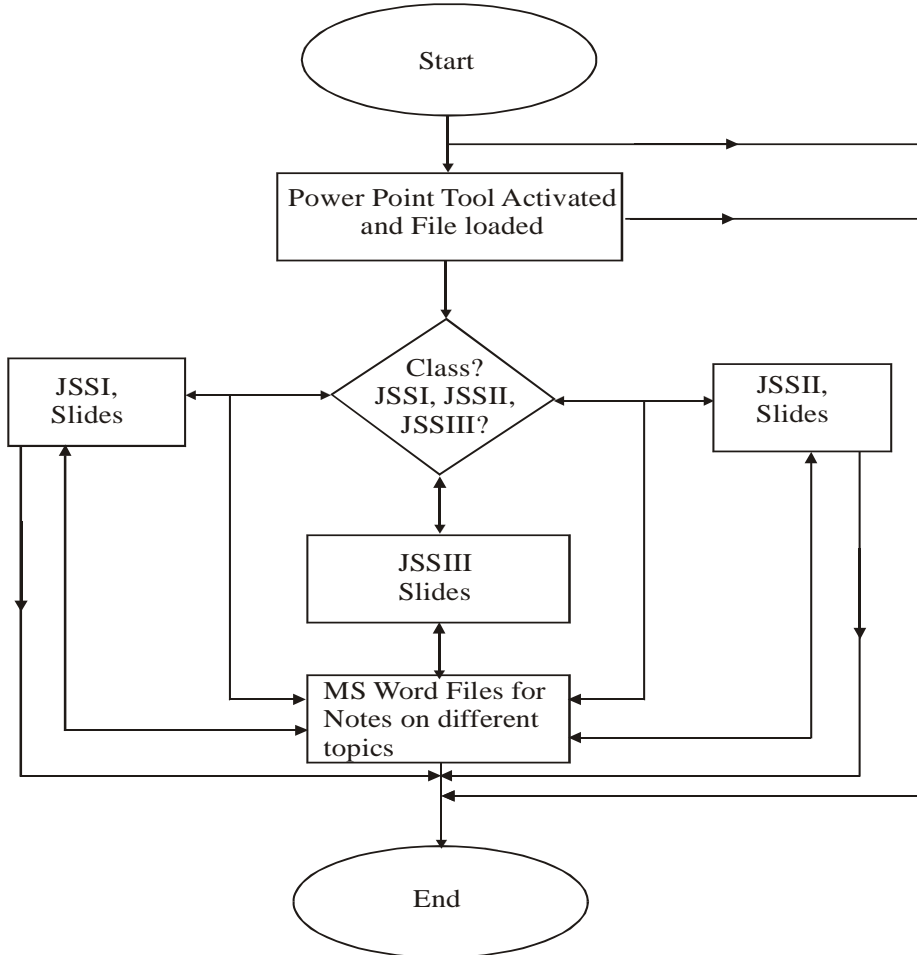
- i. A Monitor (Video Display Unit) or a Projector
- ii. A CPU (Central Processing Unit)
- iii. A Keyboard and mouse and
- iv. A UPS (Uninterruptible Power Supply) Unit (optional)

On the power point slide interface (where the tool is preloaded), hyperlinks are provided to allow the teacher or user move or navigate from a particular page to some other pages- next page, previous page, home page or any other desired accessible page on the slide or file. (*Hyperlinks are buttons or images that allow a user navigate in-between pages and slide with a single click*).

Design Methodology

The package is basically broken down into three modules using the top-down modular design approach. The three modules comprise the module for JSS I, module for JSS II and module for JSS III. Each of the modules is then subdivided into sub modules. Each module can be activated and used separately depending on the category of students involved and all topics to be taught in JSS classes I, II and III are expected to have been embedded in the teaching aid. The Teaching aid is subject to updating as the curriculum changes and as any need arises. Any of the topics could be chosen and studied depending on the interest of the student ors teacher.

The processing of information is done by the tool when it is given a command through the input – cursor (mouse or keyboard). Thereafter, the user will be taken to the environment where he/she could continue to learn. The output for the user is the monitor or the projector.



System Flow Chart

Fig 1: System Flowchart

Using the Teaching Tool

The Power point application on the system is activated and the folder AGRISOFT I is either opened from the hard drive or on an external disk/drive. The power point file: agric science for JSS is opened and the screen that comes up in the slide show is as shown below:

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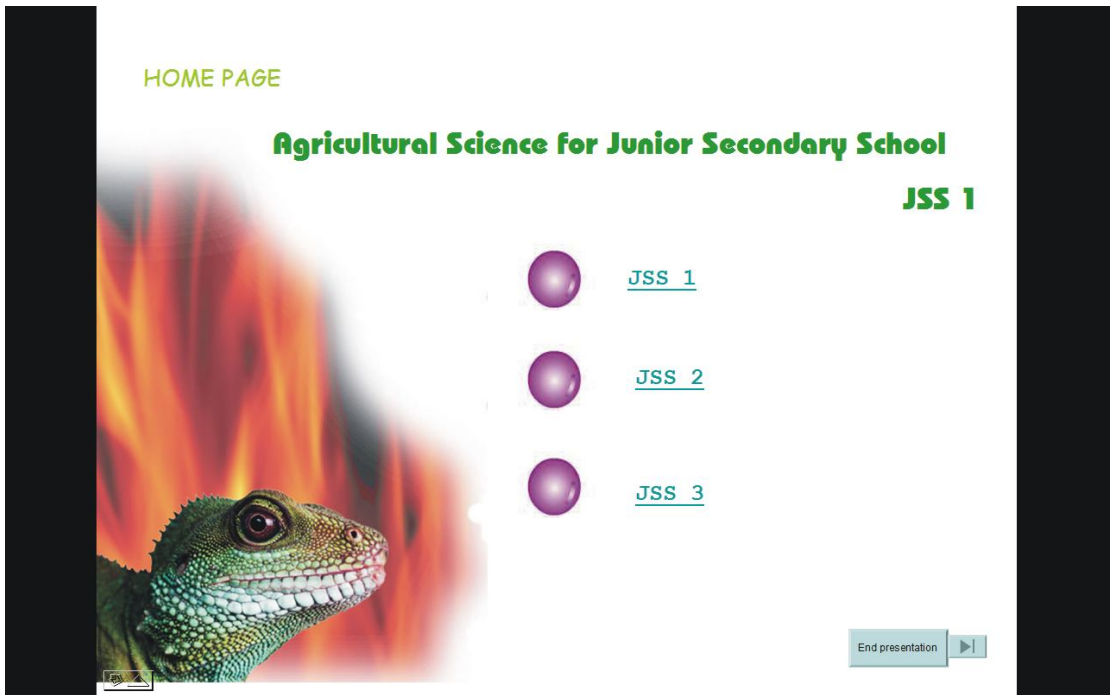


Fig 2: Home Page of AGRISOFT 1

The screen shown above (Fig 1) is the home page and any of the purple balls or the Classes could be clicked on to navigate to the next page as desired. For example if JSS1 is clicked on, the page that comes up is as shown below (fig 3):

Fig 3: Chapter Menu page

Clicking on CHAPTER ONE leads to the following page:

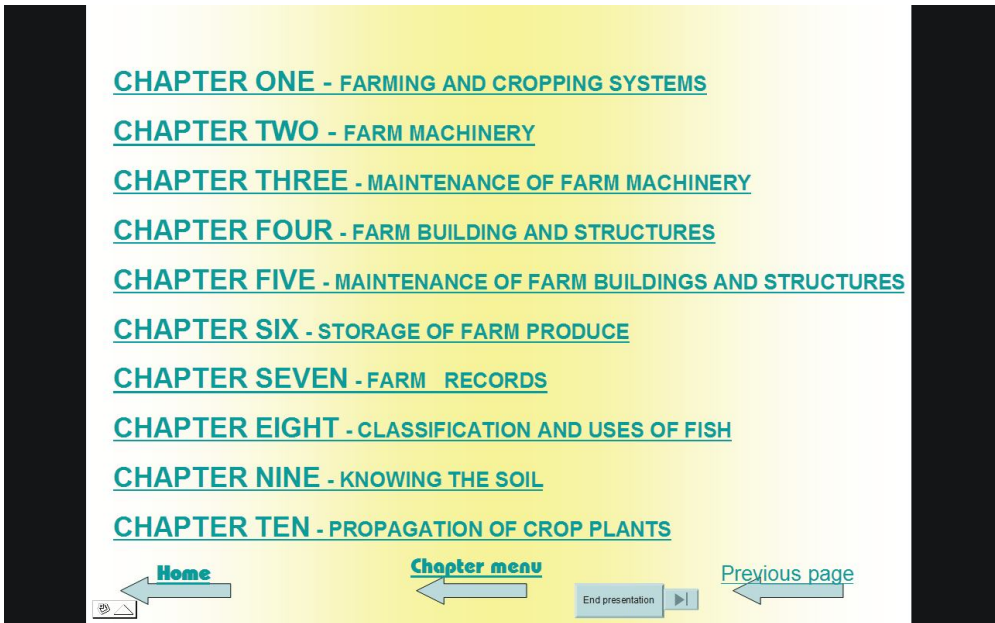
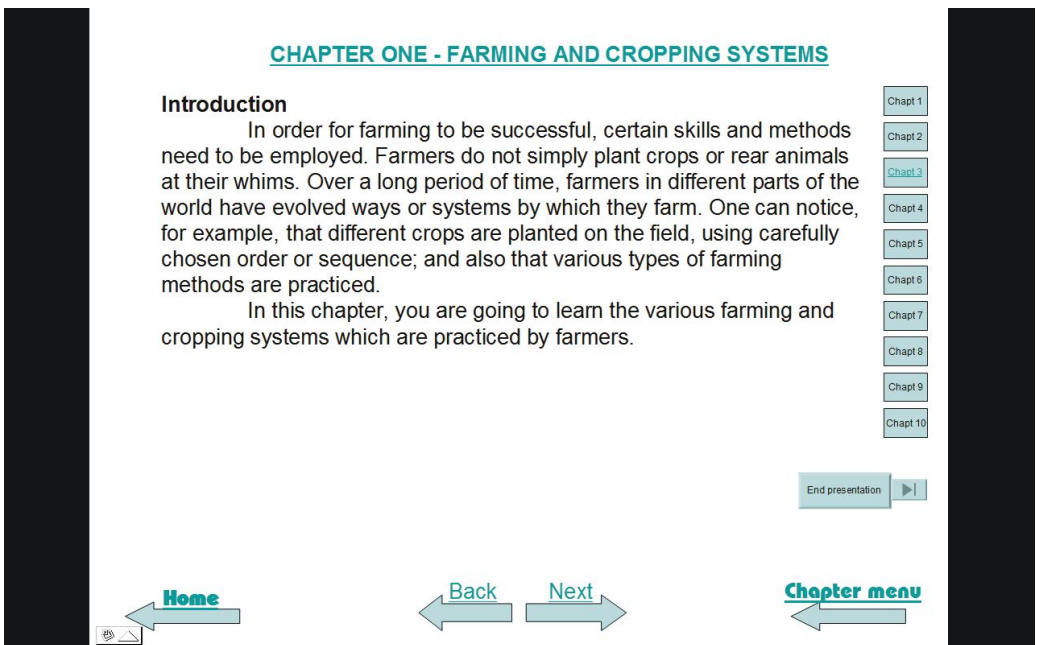


Fig 3 Chapter Menu Page

Clicking on Chapter One leads to the following page:



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Fig 4: Chapter 1, Introduction page

Clicking on “Next on the page shown in Fig 4 takes you to the Subtopics under Farming and Cropping systems as shown below in Fig 5:

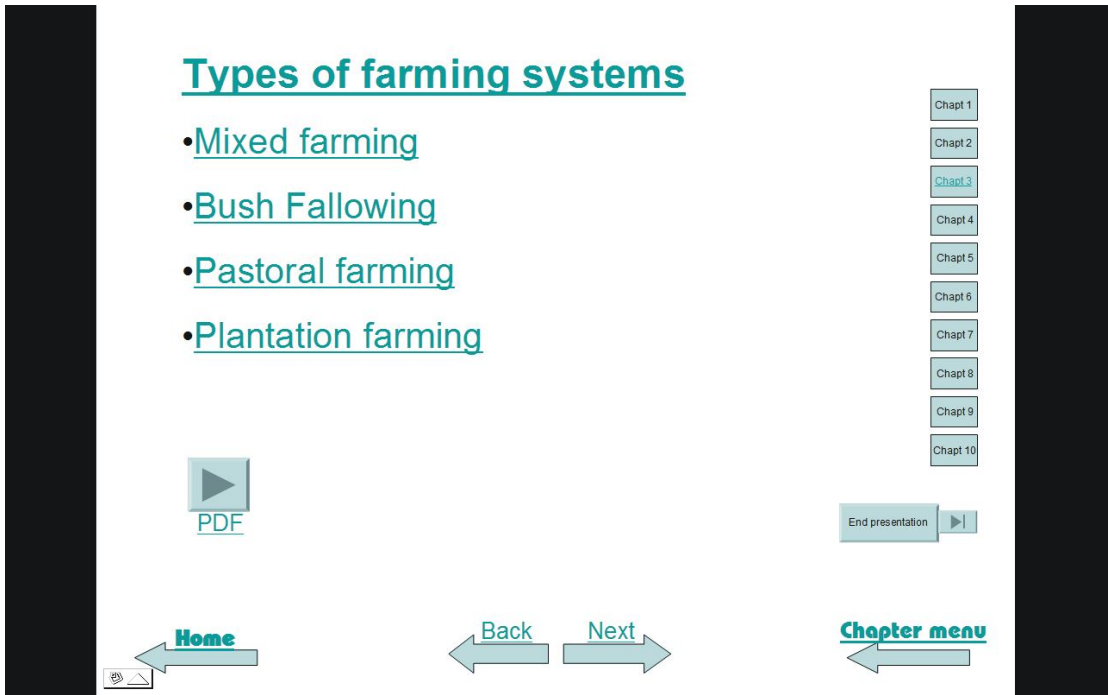


Fig 5: Chapter 1 Subtopics page

A click on any of the listed Farming systems will automatically take the user to the notes on the listed topics in MS word. The user can always navigate back from the notes to the presentation by using Ctrl + Click on the title of the Topic in MS Word.

It would be discovered that from any page, there is always a button to click to get to any of the chapters in the teaching tool. Every page also has an end button which will take the user out of the package; a Home button, a back button and a chapter menu button. A single click will always take the user to the desired page.

In using this package, the “mouse click on any place” in the presentation has been deactivated, meaning one can only click on the hyperlinked words or objects to navigate in and out of the pages. This restriction is necessary so as to maintain the flow process.

For easy understanding, the MS word files docking the notes on the different topics could also be assessed in PDF by clicking on a button labeled as PDF on the page. The PDF file has a special ability in the sense that a command to read the notes to

the user could be activated. The recommended installed Adobe Acrobat Reader is Version 8 and above.

Conclusions and Recommendations

Ricky Gray, Deputy Commissioner for Mississippi Department of Agriculture put forward that not only is agriculture a business, but programs change, whether with the bank or the government that agriculture depends on. You have to have skills where you're able to make rapid changes in your decision; you have to be able to read a profit loss statement and put one together and interpret with your banker. Farming is like any other career these days and it changes so rapidly that if you're doing the same thing you did five years ago, you're not going to make it." (Kirkland 2002).

This computer instructional material will change students and teachers attitude to the teaching and learning of Agric Science, and lead to one of the realization of the present Yaradua's administration 7 point agenda as it concerns education and wealth creation. The tool which could also be called an e – book approach to agric science is very user – interactive. It has tried to bring Computer Assisted Learning into practical application with regards to Junior Secondary School Agriculture. It could be therefore recommended that adequate computers should be provided in schools to facilitate the use of computer based resource and materials; that parents should also strive to provide computers and educational software for their wards as this enhances fast assimilation; that there should be greater computer literacy awareness in the nation as a whole and that the development of aids like these should be encouraged by trust fund initiatives.

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