



An E-learning component for agriculture graduates/post graduates

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ABSTRACT

The agricultural education system has undergone several changes in India from past few decades. There are different courses at graduate and postgraduate level for imparting training to the agriculture students to improve agriculture and allied sectors in our country. An e-learning course has been developed, to make the freshly passed agriculture students and agri business field assistants suitable for agri business industries. This study was conducted in Ikisan Limited, Hyderabad, Andhra Pradesh during 2009 and 2010. To develop the course, surveys were conducted with agriculture students and individuals at managerial level in agri business industries. The gaps that exist between knowledge/skills/attitudes for agriculture students and agri business industries were analyzed. The courses were selected based on gap analysis to assist the students in structuring their career. The content for the courses were obtained from various sources, made into IMS content package using eXe editor and were uploaded in Moodle which is a Learning Management System. The users can access the course online according to their convenience from any place. This module is useful and provides flexibility to working professionals and students who may not attend class room teaching.

Key words: Agri business industries, Agriculture students, Content, e-learning module

Two-thirds of India's population depends on agriculture for their livelihood. Agriculture sector contributes nearly 22% to national GDP and provides direct employment to millions of people. It is also interrelated with other segments like animal husbandry, health, education and e-governance. In addition, agriculture is a social segment where non-trading concerns like food and nutritional security, employment and income generation, poverty mitigation, gender equity, natural science and environment take centre stage in a significant manner (ICAR 2006).

Government of India in collaboration with Research Institutes is striving hard to improve agriculture in rural areas. To achieve this Government is coming out with many new schemes where young students are given preference to implement it in rural areas. The young students employed contribute either directly or indirectly to rural development.

Various organizations such as fertilizer, pesticide, seed industries, machinery, food processing units, insurance companies, banks and many more prefer agriculture students. There are different courses at graduate and postgraduate level that train these students to improve agriculture and allied sectors of our country. However, with the shifting time the requirements also vary. The same holds for education system also, which has undergone several changes.

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There are various kinds of education like informal education, formal education, distance education, adult education, electronic education (e-education) and many more.

In the current generation, e-education is in immense demand. Providing education by means of ICT tools such as projector, CD's, DVD's, Internet, Radio and Television etc is e-education. In agriculture sector, it is gaining much importance. This will be helpful for farmers, students and research institutes etc. Students of agriculture can make excellent use of e-education to undergo any certificate courses and to get information on the improved technology in agriculture. It facilitates a student to study by following the directions as mentioned by the instructor, where in, there will not be a direct interaction between the student and the instructor.

In the present scenario, there exist lot of gaps between the Knowledge/Skill/Attitudes of agriculture candidates and job requirements. The freshly passed agricultural graduates and postgraduates are new to the market and are unacquainted with the company's requirements. To overcome the gaps an e-learning course has been designed to fulfil the gaps that exist between the agriculture graduates/ post graduates and make them suitable for agri business industries.

The specific objectives of the study are to identify the skill sets requirements for recruitment in agri-business industries, to develop the content that bridges the gap and to build an e-learning module.

MATERIALS AND METHODS

The study was conducted at Ikisan Limited, Hyderabad, Andhra Pradesh during 2009 and 2010 to design the course. The methodology followed was conducting surveys,

developing content and making content available in e-learning module.

The survey was conducted with students of agriculture and individuals at managerial level in agri business industries with separate questionnaires respectively to identify the skill sets required by the students for recruitment in agri business industries. Simultaneously, the gaps existing between agriculture curriculum and job requirements were also analysed.

On the basis of gap analysis, the courses were selected so as to assist a student in structuring their career. The content for these is taken from a variety of sources like books, Internet, professors etc. While gathering the content, the inappropriate data is removed and prominence is given for collecting the information that had a practical approach. The points to bear in mind while gathering the content are easy grasp of student, follow a particular flow and assist a student to improve their knowledge.

The content developed for a variety of topics is made into IMS content package. IMS is a body, which helps define technical standards for various things, including e-learning material. The IMS Content Packaging specification makes it possible to store chunks of material in a standard format, which can be re-used in different systems, without having to convert the material into new formats. There are various options for displaying content in a pop-up window, with a navigation menu or buttons, etc (http://docs.moodle.org/en/IMS_content_package).

Here, the tool “eXe editor” is used to develop IMS Content. “eXe editor” is a simple, off-line authoring environment that enables teachers and academics to author web content without the need to become proficient in HTML or XML markup. Content generated by eXe can be used inside any Learning Management System, either as SCORM 1.2 packages, IMS Content Packages, or self-contained web sites (<http://www.eduforge.org/projects/exe-elearning-xhtml-editor-project>).

The IMS content developed is used in a learning management system to develop an effective e-learning module. A learning management system (LMS) is a set of software tools for delivering, tracking and managing online training and education. LMS options range from systems for managing training records to more flexible software for distributing courses over the Internet and offering features for online authoring (<http://www.nationaltrainingsoftware.com/lmsdefinition.html>).

Initially, the features that have to include in learning management system have been listed down. Later a comparison of some available learning management systems is made. Based on the comparison and requirement, the learning management system Moodle is being used to develop an effective e-learning module.

RESULTS AND DISCUSSION

The survey in agri business industries was conducted with people at managerial level. According to their opinion the students being recruited into agri business industries should have knowledge in agriculture (B Sc) and practical

work experience. The skills required by the students include flexibility to get adapted to any kind of situations and should possess proper communication ability. The attitude of the students towards work should be adventurous, challenging, motivating, aggressive, optimistic, curious and committed.

Gap analysis

From the data collected during survey, the gaps existing between knowledge/skills/attitudes of agriculture students and agri business industries were analysed. The responses given by individuals from various agri business industries and students from Agriculture College are given in Table 1. Also the response percent is shown in Fig 1.

Selection of courses

To overcome the gaps analyzed, the content for the course was developed to make the students suitable for agri business industries. Much emphasis was laid on the selection of courses as they assist a student in structuring their career. The topics covered herein for each subject have been arrived

Table 1 Responses from students and individuals from agri business industries

| Parameters | Organization | Students |
|------------------------------------|------------------------------------|----------|
| Knowledge in agriculture (B Sc Ag) | 3 | 4 |
| Skills | Flexible to any kind of situations | 2 |
| | Communication | 3 |
| Attitude | Adventurous | 1 |
| | Challenging | 1 |
| | Motivating | 2 |
| | Aggressive | 1 |
| | Optimist | 3 |
| | Curious | 2 |
| | Committed | 1 |
| No practical approach | 4 | 4 |
| Total Responses | 23 | 28 |

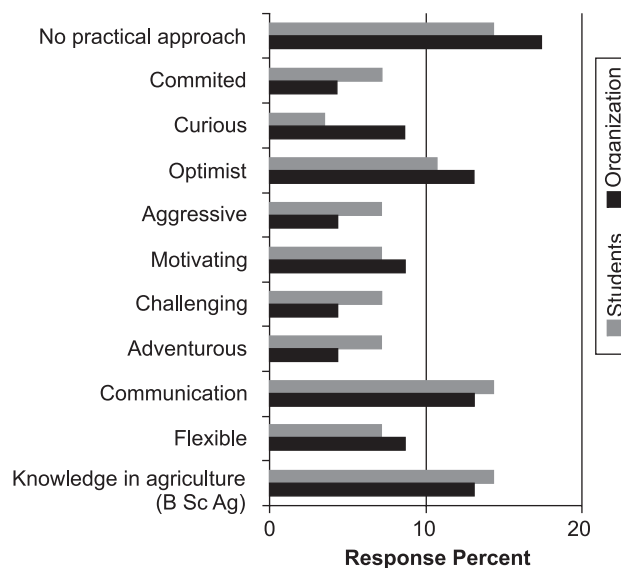


Fig 1 Gap analysis between agriculture students and agri business industries

after comparing and analyzing the syllabi of Acharya N.G. Ranga Agricultural University (ANGRAU) ([http://www.angrau.net/BSc\(Ag\)CourseCurriculum.htm](http://www.angrau.net/BSc(Ag)CourseCurriculum.htm)), Anand Agricultural University (ANAND) (http://www.aau.in/english/bacollege/UG_Syllabus.doc) and Indian Council of Agricultural Research (ICAR) (<http://www.icar.org.in/aeac/curricula/1-2000.pdf>). The main topics included Principles of Agronomy, Twelve Crops and Contemporary Agriculture. The content gathered for various topics is edited using a tool “eXe editor”.

Working with eXe

eXe enables users to select from pre designed instructional devices (iDevices) or create their own devices like objectives, case studies, reading activities, etc.

Users can manipulate the look and feel of their published content as well as export for different display or delivery technologies. The content that is developed in eXe can be saved and exported in the form of SCORM 1.2, IMS Content Package and.

The IMS Content Packaging specification makes possible to store chunks of material in a standard format, which can be re-used in different systems, without having to convert the material into new formats. The IMS content developed is used in a learning management system to develop an effective e-learning module.

Working with Learning Management System (Moodle)

Moodle is a Course Management System (CMS), also known as a Learning Management System (LMS). It is a free web application that educators can use to create effective online learning sites (<http://moodle.org/>). Moodle is e-learning software and its features include addition and deletion of courses, user ID's for students and instructors, assignments, chat, glossaries, surveys, events, calendar, etc. The categories, sub-categories and courses can be added. The addition of any features like events, calendars, courses, categories etc, can only be done by using the option “Turn editing on” (<http://demo.moodle.org/course/view.php?id=5>). The three courses added in Moodle is shown in Fig 2.

When new courses are added they are provided with two options “Add a resource” and “Add an activity”. In “Add a resource” option the content can be provided in the form of text page, web page, link to a file or website, add as an IMS Content Package. In “Add an activity” option various activities related to the course can be added for the students such as assignment, chat, choice, database, forum, glossary, lesson, quiz, survey, wiki.

For each course the content is added in the option “Add a resource” in the form of IMS Content Package, which will be displayed in the e-learning module as shown in Fig 3.

While developing an e-learning module for agriculture graduates/ postgraduates, the survey conducted concludes the main gaps that exist between agriculture students and company's requirements are the newly passed agriculture candidates do not have practical approach, the candidates should have knowledge of the current happenings in the market, the attitude of the candidates should be motivating,

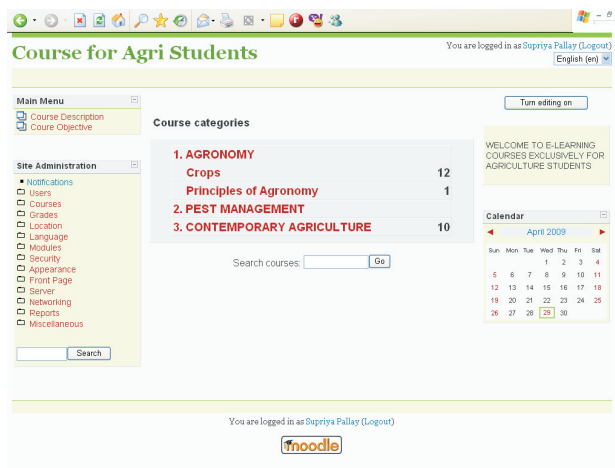


Fig 2 Courses added to Moodle

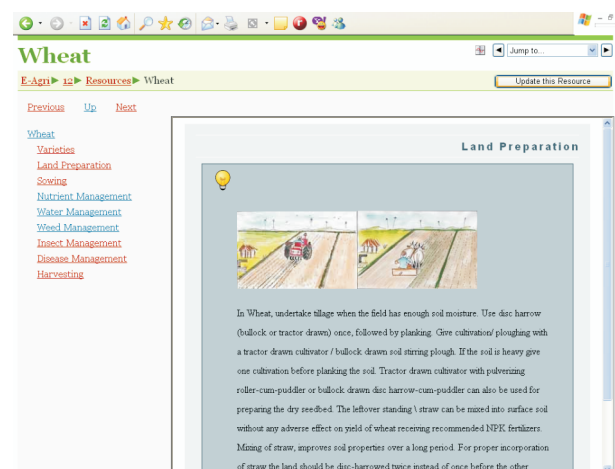


Fig 3 Content displayed in e-learning module

adventurous, optimistic, curious, committed, aggressive, etc, the skills they require include basic degree of agriculture, good communication skills and must be flexible enough to overcome any kind of situation. The content has been prepared for various topics that is Principles of Agronomy, Twelve Crops and Contemporary agriculture is made into IMS Content Package using eXe editor. The Learning Management System ‘Moodle’ is used to develop an effective e-learning module for agriculture graduates and post graduates.

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