

Open and Distance Learning Programme of Tamil Nadu Agricultural University: An Innovative Approach in Technology Transfer

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Abstract

Tamil Nadu Agricultural University (TNAU) has ventured "Distance Education", based on the experiences gained with the expertise of the Commonwealth of Learning (COL), as its fourth frontier area to accelerate agricultural development and ensure food security. TNAU aims at empowering people through knowledge transfer by creating demand driven avenues for a life long learning process in a developing economy. TNAU offers 7 certificate courses, 2 PG Diploma and 2 PG Degree courses through distance learning mode. The courses are designed to transfer know how and do how in agriculture and allied enterprises leading to improvements in adoption of modern technologies and establishment of agro based enterprises in rural areas. The course materials meant for ODL programmes were prepared on Self Instructional Materials (SIM) mode. Scientists of TNAU were given hands on training through Tech Mode workshop at ICRISAT in various softwares available for open and distance learning materials preparation. This paper addresses issues in offering education programmes in distance mode to the farmers, unemployed rural youth, self help groups and middle level extension functionaries, extent of knowledge transfer and avenues for strengthening this mode. The experiences gained have enabled to prescribe policies for strengthening knowledge transfer through the ODL mode.

SCOPE OF OPEN AND DISTANCE LEARNING

Education is going through a rapid transformation with learning needs expanding and the number of learners getting multiplied. New ways of knowledge transfer and exchange are being developed and as a result educational institutions, mainly universities, are striving to adapt to these new changes in terms of their functions as well as functioning. Over the last two decades there has been a sudden surge in the interest placed on Open and Distance Education mode as an alternative for formal mode of education. As a result, many Open Universities are seen to be established in several countries. The Government of India is encouraging distance learning by establishing Open Universities across the country with a basic objective to make the masses educated.

Distance Education has established its relevance and efficiency across the globe. Development of distance education / learning is a worldwide phenomenon. It is cost effective and provides with the benefits of large-scale economy. Distance education is flexible in nature and able to cater to the needs of innumerable that could not be blessed with the education provided in conventional temples of learning. Distance education can be defined as the method of imparting knowledge, skills and attitudes which is rationalized by the application of division of labour and organizational principles as well as by the extensive use of technical media specially for the purpose of reproducing high quality teaching materials which makes it possible to instruct great number of students at the same time wherever they live. It is an industrialized form of teaching and learning". Singh (2002).

Invent of distance mode of learning has resulted into the establishment of educational institutions imparting education and training through the mode of distance learning. In the last two decades many open universities in several countries have been established. Government of India is also encouraging distance learning by establishing open universities across the country with a basic objective to make the

masses educated. The activity ranges from offering education and training in significant professional areas for developing and managing large communication networks. In many of the countries, open universities have proven essential and innovative component of the higher education and are perceived by educational planner and policy makers as well as the community as a vital instrument of institutions rendering education and training through distance mode of learning.

Distance Education has been a boon to India because of its continental dimensions, numberless diversities and gigantic size. Adoption of distance mode of learning in the country is applauded for its following qualities:

- Distance education is capable of advancing and disseminating knowledge for learning by a diversity of means and modes.
- Distance education provides opportunities for higher education to a large segment of the population.
- Distance education promotes the educational well being of the community.
- Distance education is affordable by those who can not spend more for education.
- Distance education is able to provide quality education

Distance mode of learning is able to benefit the following through its unique characteristic of providing education to those who can not opt for regular mode of education, example

- Working people
- Adult learners specially, women
- Part time students
- Those who could not get opportunity earlier in life
- Those living in remote and backward areas
- Those who belong to socially and economically disadvantaged sections of the society

EVOLUTION OF DISTANCE EDUCATION

Twenty five years ago it was only a prophecy that the home would be at the center of society - the 'electronic cottage' - in which paid work, education, service consumption and leisure would be mediated through new technologies. What was then a prophecy is more than a reality today. Rapid developments in technology, involving the convergence of telecommunication, computers and micro electronics, and the emergence of the Internet have revolutionized both the speed and nature of communications. These new information and communication technologies (ICTs), have not only facilitated the globalization of society and economy on the one hand, but have also made a major impact on education, particularly the distance education. Srivastava and Venugopal Reddy (2002).

In fact technology-mediated distance education came into existence 150 years ago, as an efforts to replace live, face to face instruction. Ever since then distance education has evolved and taken on several distinctive forms that reflect the characteristics of different technologies. Essentially distance education has evolved through three generations: correspondence education, open and distance education and virtual education.

The phenomenal developments in computer and tele-communication technologies are exuding enormous impact on the ways in which learning

(instructional) materials are created, stored, acquired and delivered to potential end-users. It enables interaction between students and instructors and among students almost instantaneously. Thereby, opening up new opportunities for joint learning activities. Literally it is possible to deliver instruction through computer mediated communications media to learners anywhere in the world without any restriction of time, space and number of persons accessing the materials (Powar, 1999).

OPEN AND DISTANCE LEARNING IN TNAU

The Tamil Nadu Agricultural University (TNAU) established during 1971 has a good track record of offering distance education programmes through print and electronic media since 1974. "Correspondence courses" and "Farm School on All India Radio" were the early attempts in distance education. These programmes enabled various segments of the farming community and middle level extension functionaries to improve their agriculture leading to over all improvement in socio-economic aspects of living. A total of 138 courses on Farm School on All India Radio were organized for the benefit of more than 46,000 farmers. Similarly, certificate courses on 196 topics organized helped more than 12,000 farmers to improve their livelihood. Studies conducted to evaluate these two programmes have clearly indicated that the programmes have made a far reaching impact on the rural audience over the years. The success achieved in non-formal mode of education, rising demand for distance education programmes, and the pressing need to educate the rural masses on scientific agriculture prompted TNAU to expand its non-formal education system.

TECHNOLOGY MEDIATED OPEN AND DISTANCE EDUCATION

Like any other State Agricultural University, TNAU carries out its three fold functions; research to create new knowledge, teaching for preservation and dissemination of knowledge and extension to take its new knowledge from 'lab to land', the land which the university serves. All the three programs have organization and management systems well integrated into the University Act and are in practice since its establishment. Extension programmes always needed its separate establishment to carryout its distinctive functions; it simultaneously relied on resources from research for knowledge and that from teaching for training the farmers. Over the years, the management and operational structure for extension has been well developed with proper participation of and integration with teaching and research functions.

The University is organized under the authorities of the two main bodies; the Board of Management for its executive authority and Academic Council as an academic authority. All the functions of teaching, research and extension are organized under the two university authorities. The teaching is served by the authorities of faculties and is organized through Departments & Colleges, constituent or affiliated and each one is headed by Director or Dean. The Research and Extension are supported by the Research Council and Extension Education Council, and are headed by the Director of Research & the Director of extension education respectively.

It is now essential to add in the university structure, the function and management of e-education in such a way that it enables to carry out its distinctive functions as well as integrative functions related to teaching, research and extension. Like extension, e-education would depend on teaching and research functions, and would support extension in its delivery and outreach, but not limiting to it. It would also support teaching & research in their out reach to out-of campus students. In the convergent mode Open and Distance Learning as a separate wing / division headed by Director, since he would be coordinating responsible for development and delivery of e-education and e-extension activities / courses in partnership with other divisions. The Director has also to ensure timely support of media in course / activity development and delivery. It would therefore be functionally appropriate to entrust coordination of teaching and media resources to the Director, who would be heading the e-education division.

With development of Open and Distance Learning, it would be able to enlarge the objects of each course to include development of the farm and farmer, which should be

assessed in terms of productivity, profitability and quality of produce given out by farmers, and also the services provided by farmers to customers and users of farm produce. Technological and social networking that TNAU is establishing throughout the state could be used in various ways to strengthen the old functions.

Considering the potential and the future of Open and Distance Learning (ODL) mode of education, the Directorate of Open and Distance Learning was established in TNAU during April, 2005. The major aim being to transform TNAU from its formal educational system to a dual and convergent mode, by adopting appropriate policies and systems of ODL and ICT (Information & Communication Technology) so as to provide entrepreneurial skills for self-employment, continuing professional education and extension education to the rural people of Tamil Nadu. Necessary technical guidance and support is extended by the Common Wealth of Learning (COL), Canada for this purpose regularly in the areas of man power development, preparation of self-instructional materials, conducting conferences, seminars, etc. Based on the advice of COL, efforts have been initiated to form a consortium for ODL among the frontier institutions of distance education.

Objectives

The objectives of ODL include:

- To promote entrepreneurial skills for self employment,
- To offer continuing professional education,
- To offer developmental extension education for the rural people of Tamil Nadu,
- To offer Agricultural Education to special groups of rural people in general, and school dropouts, small and marginal farmers and women in particular,
- To provide innovative, open system of education by using distance learning and teaching methods supported and enabled by modern Information Communication Technology (ICT), and
- To orient the courses that would provide for developmental needs of the individuals, institutions / organizations and the State.

Target Groups

TNAU has identified its target groups and stakeholders as:

Primary: Farmers, Local Institutions, Field service providers from local communities, School dropouts, and Villagers.

Secondary: Entrepreneurs, State Extension Personnel/Field service providers, NGOs, Self Help Groups, and Private sector Institutions.

At present, the Directorate offers the following programmes through ODL mode:

CERTIFICATE COURSES (12)

- Sugarcane Production Technology
- Coconut Cultivation
- Cotton Cultivation
- Waste Recycling and Vermicomposting
- Bee Keeping
- Mushroom Production

- Cotton and Maize Hybrid Seed Production
- Vegetable Seed Production
- Preservation of Fruits and Vegetables
- Repair and Maintenance of Farm Equipments and Machineries
- Wasteland Development
- Nursery Techniques and Propagation of Horticultural Plants

Course Details

- Educational Qualification: 6th Standard
- Language : Tamil
- Registration Fee : Rs.1,500/- per Course
- Duration : 6 months

Interested farmers, farmwomen, entrepreneurs, youth and those intending to start small scale industries can join these courses, besides school dropouts. These courses offer a unique opportunity for improving the technical knowledge on agriculture and allied sciences. Based on the nature of course that is offered, "Personal Contact Programme (PCP) Centres" have been identified from among the research stations of TNAU functioning in different parts of the state.

PG DIPLOMA COURSES (3)

- Production and Quality Control in Medicinal Plants
- Food Biotechnology
- Bioinformatics

Course Details

Criteria	Production and Quality Control in Medicinal Plants	Food Biotechnology	Bioinformatics
Duration	1 year	1 year	1 year
Eligibility	Any degree	Graduates of life sciences	Graduates of life sciences
Pattern	Semester	Semester	Semester
Medium of instruction	English	English	English
Courses	6 courses / semester	4 courses / semester	4 courses / semester
Fees	Rs.25,000 / semester	Rs.13,750 / semester	Rs.20,000 / semester

PG DEGREE COURSES

- Master of Business Administration (MBA)
- M.Sc. in Environmental Management

Criteria	M.B.A.	M.Sc. (Environmental Management)
Duration	3 years	2 years

Eligibility	B.Sc.(Ag.) / allied subjects	Any science degree graduates except physics and mathematics
Pattern	Semester	Semester
Medium of instruction	English	English
Courses	4 courses / semester	4 courses / semester
Fees	Rs.10,000 / semester	Rs.12,500 / semester

PERSONAL CONTACT PROGRAMMES

The college campuses, research stations and transfer of technology centres of the TNAU were identified as centres to organize personal contact programmes for the certificate courses on agriculture and allied sciences. Personal contact programmes in respect of all PG programmes will be organized at TNAU Main campus. All the personal contact programme centres were strengthened with adequate infrastructure facilities including networking facilities for offering quality hands on training to the learners of the distance learning programmes. The university has a future vision of linking all the centres with computer connectivity for continuous flow of technology among the learners.

RESOURCE MATERIALS

The resource materials play a pivotal role in enhancing knowledge and skill of the learners in any educational programmes. In this direction, the resource materials of high quality were compiled on Self Instructional Materials (SIM) mode to enable the learners to learn the subject matter taught without any difficulty. The course materials were prepared by the team of experts in the respective disciplines with inclusion of more diagrams, illustrations and research base data to increase the credibility on the technology. The course materials were prepared well in advance and supplied to the learners. Quality assurance of the study materials is being ensured to promote continuous learning.

MONITORING AND EVALUATION

The entire activities of the Open and Distance Learning is monitored by the Steering Committee comprising of scientists and experts in the respective disciplines. This committee meets periodically to discuss and formulate strategies on designing future programmes under distance education mode. This committee also assigned with the task of making policy issues, framing rules and regulations for the approval of the university. The entire monitoring of the programme is vested with the formal approval of the Academic Council and Board of Management of the university.

HUMAN RESOURCE DEVELOPMENT

In order to implement distance learning programmes effectively, the Directorate of Open and Distance Learning has taken constant initiative in organizing various programmes leading to human resource development. In this direction, the scientists of the university were trained on the preparation of course materials on SIM mode. The scientists were exposed to hands on training with adequate exposure to computer technology for effective preparation of self instructional materials. A team of scientists participated in a Learning Management System (LMS) workshop cum training funded by COL organized at ICRISAT where in leading institutions involved in distance learning were given exposure on preparation of multi media course materials, e-learning, creation of repository, knowledge sharing etc., The scientists were given hands on training in various softwares available for learning materials preparation. The workshop also focused the possibilities of partnership mode of offering courses utilizing IT related e-tools like audio-conferencing etc.

FEED BACK ON THE DISTANCE LEARNING PROGRAMMES

In order to offer the distance learning programmes effectively, a feed back analysis was made among the learners of certificate courses, PG diploma programmes and PG degree programmes besides trainees of various programmes of the university. The feed back analysis revealed the following :

- The course materials prepared were of high quality with wider coverage of subject matter content related to the subject.
- The technologies learnt through the ODL programmes enabled the participants to set up agri-business enterprises in rural areas.
- The ODL programmes enabled the participants to establish a linkage between TNAU scientists to solve complicated field problems.
- The participants of the programmes were inculcated with more practical knowledge and skill on the subject leading to considerable improvement in farming.
- The ODL programmes enabled the participants to improve their efficiency to perform their duties effectively in various organizations.

COLLABORATIVE VENTURES

Among the recent developments, an MoU (Memorandum of Understanding) has been signed recently by TNAU with the International Food Policy Research Institute (IFPRI), Washington DC, USA for the Global Open Food and Agricultural University, Washington DC, USA in order to implement the collaborative activities for the ,ODL programmes. The collaborative institutes will support, facilitate and stimulate development of self-instructional learning materials in agriculture and allied sciences for delivery through distance mode. This MoU also envisages development of new programmes under ODL. The other proposed organizations for collaboration and partnership include:

- Commonwealth of Learning (COL), Canada
- International Crops Research Institute for Semi Arid Tropics (ICRISA T), Hyderabad
- M.S Swaminathan Research Foundation (MSSRF), Chennai
- State Agricultural Universities
- Maharashtra Fishery and Animal Sciences University
- Maharashtra Knowledge Corporation
- Yashwanth Rao Chavan Open University
- Tamil Nadu Veterinary and Animal Sciences University
- Madras University
- Anna University
- Tamil Nadu Open University

FUTURE VISION

In the days to come, TNAU proposes to undertake the following activities:

- Production of multimedia modules in CD ROM related to agriculture and allied sciences to supplement ODL lessons.
- Starting ODL programmes through "e-learning mode" to reach more people.

- Establishing tech-mode partnership in collaboration with COL to. promote ODL activities; involving private agencies / development departments for conduct of ODL programmes.
- Establishment of internet connectivity for online technology transfer through ODL programmes.

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