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**P Prashanth**
Electronic Wing, Professor Jayashankar Telangana State Agricultural University (PJTSAU) Hyderabad, Telangana, India

**V Laxminarayanamma**
Electronic Wing, Professor Jayashankar Telangana State Agricultural University (PJTSAU) Hyderabad, Telangana, India

**Laxman M Ahire**
ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, Telangana, India

**Correspondence**
**P Prashanth**
Electronic Wing, Professor Jayashankar Telangana State Agricultural University (PJTSAU) Hyderabad, Telangana, India

# Online distance education in agriculture-A case of PJTSAU

**P Prashanth, V Laxminarayanamma and Laxman M Ahire**

**Abstract**
Online distance education is a popular method of instruction in Agriculture since independence. Especially for the illiterate farmers or who find it difficult to invest time and save money in travel to enhance knowledge and skills. The advanced communication technologies in India with improved connectivity to the internet and technologies generated at labs are reaching to the stakeholders due to online distance education. Mobile technologies are accelerating the promotion of online education to provide quality education to the scattered group of communities. Due to advanced network development in India, the information and communication technologies are available in a cheaper rate. Hence, it is easy to reach the farmers by using online distance education media which will be helpful for farmers to increase their knowledge and skills for the growth of agriculture. Agricultural education can be provided in the form of formal, non-formal and informal way so that the farmers can learn easily by acquiring specialized skills for adoption of latest technologies. Presently Professor Jayashankar Telangana State Agricultural University (PJTSAU) is providing online distance mode of formal education in the form of establishing virtual rooms in all its campuses for providing invigorating learning environment to provide quality education in Agriculture. Online distance non-formal education to the farmers is provided from various E-Blogs, PJTSAU YOUTUBE Channel, and public and private broadcast media such as Television News Channels, Doordharshan and All India Radio. One such information and communication technology strategy is Chenukaburlu student run radio programme, which caters the need of rural community. A study was undertaken in Telangana State to assess the status of online distance education for the students and farmers. Based on this fact the present study was planned to examines the role of online distance education in agricultural extension.

**Keywords:** Online Distance Education, Non formal education, Agricultural Extension, Farmers, Empowerment

## Introduction
It is an undeniable fact that majority of the people in the third world are illiterate. If we add to these the number of those who cannot continue their studies due to lack of money or distance from the educational institutions, the number of underprivileged would touch alarming figures. Conventional education system cannot cater to the needs of these people because of its limitations. Due to this, the governments of different countries have felt the need of a distance education as a substitute for formal education. In the field of agriculture and rural development also, there is wide gap between actual requirement and availability of able human resources for agricultural research, education, extension, occupation and management. Realizing this, application of distance education has been advocated by the planners and administrators. Thus, before implementation of distance education in agricultural higher education, one should understand feeling of academicians and others towards application of distance education in agricultural higher education.

It could be argued that the 19$^{th}$ Century as an era of industrial revolution, 20$^{th}$ century as golden age of electronics, and the 21$^{st}$ century may herald as revolution of distance education for Knowledge generation, refinement and dissemination. The distance education mode has begun moderately for arts subjects first and later entered in to the science subjects. However, the distance education in agriculture started to play an increasingly important role in the LPG era for agricultural knowledge management system. The distance education programmes were introduced into agriculture programmes from 1980s onwards with the development of Farmers Field Schools, Radio Schools and Contact Classes etc and later on it was dynamically changed to various video lessons, CD/DVDDs, e-blogs and internet based mobile applications and portals. The objectives of the paper is to know how the Online Distance Learning system emerged as a vibrant and dynamic component of distance education have opened up new avenues and challenges as an alternative mode of quality education for knowledge management and provided opportunities for un ending learning to reach the unreached.

However, the methodology adopted was data collection and quantitative analysis of different distance education programmes implemented.

Professor Jayashankar Telangana State Agricultural University (PJTSAU), Electronic wing first of its kind initiated distance education to the farmers in the year 1993 through private TV channels like E-TV. Then onwards it is continued with more than 30 news channels. PJTSAU is also recognized the problems of the extension sector and states by using its extension centres and uses information technology along with the involvement of the personal contact methods for providing information for the farmers through Radio, Television for education and technology dissemination.

*Chenukaburlu* in India is a very recent phenomenon. Chenu Kaburlu is another innovation in use of media and it caters to the information needs of communities living in surrounding areas. It is fact that poorest of the poor or farmer or farm women can be improved by providing them with the most basic information so that they can learn to sustain in their environment by most efficient use of the resources available to them and henceforth improving their worsening condition. One such information and communication technology strategy is i.e. *Chenukaburlu* which caters to the need of the rural community hence giving way to bottom up approach, and providing a voice to the voice less. The C*henukaburlu* is characterized by the active participation of the student community in the process of creating news, information, entertainment and culturally relevant material, with emphasis on programme using local voices. The success of C*henukaburlu* essentially depends on the extent of student's production quality control over the topics and programming. While Agriculture and Home Science students managed radio programmes have been able to broadcast a much more diverse portfolio of programmes, those managed by other institutions are run on very rigid lines, with the content obviously influenced by the expertise in or objective of the educational institution.

The PJTSAU YOUTUBE channel is an initiative of PJTSAU that uses and shares videos for agricultural development particularly on agricultural development, farmer's success stories, agricultural innovations, extension approaches, events, and guest lectures of eminent personalities for the benefit of farmers, entrepreneurs and students with the shrot duration.

The unique components of PJTSAU YOUTUBE channel are (1) timely and need based content production, (2) a locally generated video database with scientific and technical expertise; (3) Scientist led instruction for dissemination, and (4) regimented sequencing to initiate a new community. It works with existing Krishi Vigyan Kendras (KVKs) and District Agricultural Advisory Technology Cenre (DAATTCs) Services of extension systems and aims to amplify their effectiveness. It aims at building a model for the use of ICTs in meeting the knowledge and information requirements of rural families by taking into account the socio-economic context and gender dimension. Creation and updating of relevant content to suit local needs is a key element of the programme.

In the present context of increasing importance of mass media such as videos lessons, e-blogs for communication of farm information, what is expected is that an appropriate content, process, structure and system that are to be pragmatically developed. For that purpose, a detailed study in relation to content and trend of usage of farm information communicated through mass media was carried out with the following objectives.

1. To analyze the content or farm Information broadcasted under C*henukaburlu* Radio programme
2. To analyse the trend and response of viewers towards video modules published in the PJTSAU YOUTUBE channel

**Methodology**

The present study was conducted in the Telangana state in the year 2018 to analyze the content which is used for analyzing the characteristics, causes and effects relationships and to assess the response of viewers towards video modules published in the PJTSAU YOUTUBE channel. According to Berelson (1952) [1], content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication. All the major categories are again separately divided into different sub-categories according to type of information broadcasted during the period of study. The response analysis is carried out for PJTSAU YOUTUBE channel subscribers i.e. 4300 users.

In general most of the farm information was broadcasted under 'Extension' category, crop Production, food and nutrition, Central and State Developmental Programmes and Days with national importance and events, Crop Protection, Horticulture, Seed Technology and Development, Water Management, Agricultural Engineering, Soil Health Management, Apparels and Textiles, Food and Nutrition, Resource Management and Consumer Studies, Human Development and Family Studies, Fashion Technology, Post-Harvest Management, Entrepreneurship Development.

**Results and Discussion**

The study results revealed that most of the farm information was broadcasted under the 'Extension' category and as such on seasonality observed in terms of dissemination of farm information followed by 'Crop Production, food and nutrition, Central and State Developmental Programmes and Days with national importance and events and Crop Protection. Extension, Horticulture, Seed Technology and Development, Water Management, Agricultural Engineering, Soil Health Management, Apparels and Textiles, Food and Nutrition, Resource Management and Consumer Studies, Human Development and Family Studies, Fashion Technology, Central and State Developmental Programmes and Days with national importance and events, Post-Harvest Management, Entrepreneurship Development were covered by the radio programme, whereas students mostly broad casted farm information regarding 'extension, 'Crop Production, Food and Nutrition followed by Central and State Developmental Programmes and Days with national importance and events.

It is observed from above table that the topics related to climate change, women entrepreneurship, youth development, weather forecasting and Agricultural Marketing aspects maybe given more priority. Most of the programmes are covered under deliberation format because of most effectiveness in terms of immediate knowledge gain for the dissemination of information. The results which are highly correlated with Silva and Garforth (1997) [8].

In this programme videos that are produces are instructional in nature. A programme normally involves small groups of 3-6 students who are willing to come to gather at a common site within a short distance from their respective college

campuses. The coordinators make the content active as they reiterate concepts between clips, ask questions to gauge comprehension and announce follow-up visits and subsequent screenings (Gandhi *et al*., 2009) [4].

**Table 1:** Sub-Category Wise Distribution of Farm Information Broadcasted under '*Chenukaburlu* Radio' Category

| S.No. | Name of the subject Area | Number of modules covered | Percentage of coverage |
|---|---|---|---|
| 1. | Crop Production | 41 | 10.73% |
| 2. | Apparels and Textiles | 14 | 3.66% |
| 3. | Food and Nutrition | 40 | 10.47% |
| 4. | Extension | 88 | 23.03% |
| 5. | Horticulture | 25 | 6.5% |
| 6. | Seed Technology and Development | 13 | 3.40% |
| 7. | Crop Protection | 22 | 5.7% |
| 8. | Water Management | 17 | 4.4% |
| 9 | Agricultural Engineering | 18 | 4.7% |
| 10. | Soil Health Management | 17 | 4.4% |
| 11. | Resource Management and Consumer Studies | 12 | 3.14% |
| 12. | Human Development and Family Studies | 12 | 3.14% |
| 13. | Fashion Technology | 1 | 0.26% |
| 14. | Central and State Developmental Programmes and Days with national importance and events | 33 | 8.6% |
| 15. | Post Harvest Management | 11 | 2.8% |
| 16. | Entrepreneurship Development | 18 | 4.7% |
| | **Total** | **382** | |

PJTSAU has also been using the media, especially the radio and television to promote information on different aspects of agriculture. For instance, the chenu kaburlu programme of the All India Radio (AIR)/e-blog named PJTSAU vari *Chenukaburlu* not only provides information about agriculture but also create awareness about the ways and means to improve the quality of farmer's lives. It is also in similar to the results of Sasidhar *et al*. (2008) [7]. The programmes are broadcasted every week in the 1.00 to 2.00 PM. The programme may be strengthened by providing information to local farmers about the future weekly market rates, agro advisory services related to weather, pests and disease incidence and activities in their area at micro level. Providing information to farmers by students is similar to the information given by agricultural graduates from Kisan Call Centres is similar lines of Chandragowda, (2010) [2].

**Table 2:** Response analysis of video modules published in the PJTSAU Youtube channel

| S. No. | Date of publishing (Upto 22nd September 2018) | Name of the topic/Event | Number of viewers and percentage of viewers | Number and Percentage of sharing with viewers | Duration of video |
|---|---|---|---|---|---|
| 1. | 12 Sep 2018 | 4th foundation day of PJTSAU Awards Ceremony | 277 (6.28%) | 100 (36.10%) | 17.13 min |
| 2. | 7 Sep 2018 | 4th foundation day of PJTSAU Chief Guest Lecture | 345 (7.93%) | 50 (14.50%) | 27.58 min |
| 3. | 6 Aug 2018 | Paddy Nursery On Polythene Sheet Suitable For Machine Transplanting | 747 (17.17%) | 170 (22.75%) | 7.49 min |
| 4. | 15 Jun 2018 | Paddy Hybrid Seed Production Doubling Of Farmers Income | 708 (16.27%) | 91 (12.85%) | 3.36 min |
| 5. | 8 Jun 2018 | seed Mela 2018 at PJTSAU Hyderabad | 1,100 (25.29%) | 192 (1.74%) | 9.59 min |
| 6. | 5 Jun 2018 | Bio Fertilizers Sale at PJTSAU | 880 (20.23%) | 320 (36.36%) | 2.04 min |
| 7. | 17 May 2018 | Paddy Seed Production | 549 (12.62%) | 130 (23.67%) | 7.00 min |
| 8. | 11 May 2018 | Success Story on Integrated Farming System | 2,395 (55.07%) | 510 (21.29%) | 5.43 min |
| 9. | 28 Apr 2018 | Release of Vyavasaya Panchangam of PJTSAU | 355 (8.16%) | 110 (30.98%) | 0.56 min |
| 10. | 7 Apr 2018 | Sugarcane Early Shoot Borer | 393 (0.9%) | 20 (5.08% | 1.53 min |
| 11. | 12 Mar 2018 | Chilli Post Harvesting Technology | 295 (0.6%) | 60 (20.33%) | 2.18 min |
| 12. | 6 Mar 2018 | Milky Mushroom Production | 15,773 (361.76%) | 1679 (10.67%) | 5.24 min |
| 13. | 10 Feb 2018 | Agri Tech South 2018 PJTSAU HYDERABAD | 2,006 (46.12%) | 181 (9.02%) | 6.07 min |
| 14. | 7 Feb 2018 | Maruka spotted pod borer management | 345 (7.93%) | 80 (23.1%) | 3.00 min |

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|---|---|---|---|---|---|
| 15. | 22 Jan 2018 | Success story on Paddy Mechanization | 1,576 (3.62%) | 310 (19.67%) | 2.23 min |
| 16. | 9 Jan 2018 | Zinc deficiency symptoms, identification and rectification | 4,555 (104.7%) | 415 (9.12%) | 5.19 min |
| 17. | 23 Dec 2017 | Chancellors Speech in First Convocation | 438 (10.07%) | 100 (22.83%) | 14.41 min |
| 18. | 14 Dec 2017 | First Convocation Of Pjtsau Photos - | 1,672 (43.5%) | 220 (13.15%) | 2.00 min |
| 19. | Streamed live on 13 Dec 2017 | First Convocation Of PJTSAU - 13 DEC 2017 STREAM LIVE | 9,103 (209.3%) | | 2 hours 8 min |
| 20. | 11 Dec 2017 | Stem Borer In Maize | 1,514 (34.81%) | 170 (11.22%) | 3.19 min |
| 21. | 6 Dec 2017 | Agricultural Exhibition At Rajbhavan | 645 (14.83%) | 90 (13.95%) | 3.58 min |
| 22. | 20 Nov 2017 | Rice Blast Management | 4,006 (92.1%) | 294 (7.3%) | 2.11 min |
| 23. | 6 Nov 2017 | Leaf Spot and Blotch Management in Turmeric | 878 (20.18%) | 70 (7.97%) | 1.47 min |
| 24. | 1 Nov 2017 | PJTSAU University Song | 12,133 (278.98%) | 2470 (20.35%) | 3.44 min |
| 25. | 26 Oct 2017 | Paddy Panicle Mite | 3,520 (80.93%) | 451 (12.81%) | 3.00 min |
| 26. | 13 Oct 2017 | Paddy seed Discoloration | 1,901 (43.71%) | 111 (5.83%) | 2.07 min |
| 27. | 9 Oct 2017 | Brown Plant Hopper Management | 6,609 (151.96%) | 462 (6.7%) | 1.50 min |
| 28. | 6 Oct 2017 | Bacterial leaf blight symptoms in paddy | 4,833 (111.12%) | 311 (6.43%) | 1.20 min |
| 29. | 29 Sep 2017 | PJTSAU Third Foundation Day Celebrations 2017 | 604 (13.88%) | 51 (8.4%) | 6.09 min |
| 30. | 27 Sep 2017 | Rice Farmers day at ARI | 519 (11.93%) | 30 (5.8%) | 7.29 min |
| 31. | 26 Sep 2017 | Mandal Agricultural officers as Agronomists | 650 (14.94%) | 82 (12.61%) | 5.08 min |
| 32. | 18 Sep 2017 | Rythuku varam WGG - 42 | 794 (18.25%) | 140 (17.56%) | 3.50 min |
| 33. | 16 Sep 2017 | Kandisaguto kanaka varsham | 1,051 (24.16%) | 150 (14.27%) | 3.03 min |
| 34. | 15 Sep 2017 | Rice bacterial leaf blight management | 3,803 (87.44%) Scientists statement | 291 (7.65%) | 5.04 min |
| 35. | 12 Sep 2017 | Soyabeen Stem Girdler Beetle Management | 191 (4.4%) | 30 (15.70%) | 0.59 min |
| 36. | 11 Sep 2017 | Pink Bollworm In Cotton | 13,907 (31.97%) | 6910 (49.68%) | 8.28 min |
| 37. | 9 Sep 2017 | Eco Ganesha 2017 | 316 (0.72%) | 61 (19.30%) | 9.24 min |
| 38. | 20 Sep 2018 | Success Story on Integrated Crop Management | 102 (2.3%) | 80 (78.43%) | 6.07 min |
| 39. | 20 Sep 2018 | Success Story on Waste Decomposer | 181 (4.16%) | 120 (66.29%) | 7.03 min |
| 40. | 20 Sep 2018 | Cotton followed Bengal Gram Cropping System Farmer Success Story Kvk Adilabad | 84 (2%) | 40 (47.61%) | 5.36 min |

It was observed from Table 2 that majority of viewers are higher in Milky Mushroom Production, PJTSAU University Song followed by first Convocation of PJTSAU, Brown Plant Hopper Management, Bacterial leaf blight symptoms in paddy and bacterial leaf blight management. Least preference was given to Chilli Post Harvesting Technology, Sugarcane Early Shoot Borer, Eco Ganesha 2017. It is inferred that most of the viewers are giving importance to entrepreneurship activities followed by university mandatory activity of university song and pest, disease incidence symptoms. It is also observed that majority of them are not preferred post-harvest management aspects and Environmental aspects though these aspects are drawing attention from policy makers and government.

It is also observed that majority of the viewers are preferred with the duration of 3.00 to 10.00 minutes i.e. mush room production technology followed by Pink Bollworm in Cotton and university events in comparison to less than 1 minute and lengthy programmes (more than 10.00 minutes).

The percentage of sharing is also very much higher in case of success stories i.e. Success Story on Integrated Crop Management, Waste Decomposer followed by advertisements relates to sales i.e., bio fertilizer sales, vyavasaya panchangam.

There are several constraints like dependence on conventional system, lack of need based training to faculty, service guarantee for academics lacking, lack of adequate and qualified human resources, inadequate funds, doubts about quality of instructional programmes, poor incentives to hired

faculty, poor interaction with students and quality of guidance and high dropout rate. Distance education is a right option in this regard. Further, the key features of distance education concerning students, learning materials and methods, logistics and economics. To overcome disabilities and strengthen distance education system in India, it is necessary to strengthen dual mode of distance education and increase government funding in universities should not become degree distributing institutes by help beneficiaries to stand on their own feet. There are several vocational courses in agriculture sector which can be brought under one umbrella of distance education in future. Distance education and online distance learning system are long term solutions in making agriculture education more accessible to masses.

Summary of results reported that distance education in agriculture can be provided in two different purposes as a system of providing education to the public either as a complement to the traditional class room teaching system or as an independent one with a host of methodologies. However, many general institutions have been established in the country, these institutions are known by different name like Open University, Correspondence School etc. Invariably, the target population of this approach to education is either the adults particularly farmers, entrepreneurs and students who could benefit from general education or those would like to attain some knowledge for improving their livelihoods and farm productivity. It is well known that most of the farmers who need agricultural education to make their business profitable and livelihood sustainable.

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