

A study on perception towards distance education – Factor analysis

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ABSTRACT

In India online education was in its primitive stage. Though, maximum educational institutes had adopted the process of online admission and online result announcement, but the method of teaching through online was relatively slow in India. It was important for the universities to understand the perception of students towards online learning. Accordingly this study was conducted to understand the perception of the students towards the distance education so that universities could develop strategies to initiate online courses. In order to understand the perception towards distance education, factor analysis was attempted. The total sample size was 180 students consisting of 90 agricultural students and 90 non agricultural students. A well structured questionnaire was prepared to collect the required information. From the results it was found that the students perceived the distance education positively because it was linked to online course attributes, convenient learning process, flexibility in communication and personal attributes.

INTRODUCTION

Distance education has been defined from a number of perspectives over the years. Rudolf (1987) said, "Distance education is a planned and systematic activity that comprises choice, didactic preparation, and presentation of teaching materials as well as the supervision and support of student learning. It is achieved by bridging the physical distance between the student and the teacher by means of at least one appropriate technical medium". The U.S. Department of Education's Office of Educational Research and Improvement defines

distance education as "the application of telecommunications and electronic devices which enable students and learners to receive instructions that originate from some distant location." Typically, the learner might interact with the instructor or programme directly and may meet the instructor on a periodic basis. The International Council for Open and Distance Education defines distance education as the mode of education in which the student and the teacher are separated in time and/or space and where two-way communication takes place through non-traditional means for the most part. UNESCO (2002) states the term open learning and

distance education represent approaches that focus on opening access to education training provision, freeing learners from the constraints of time and place and offering flexible learning opportunities to individuals and groups of learners.

Distance education in agriculture :

School of Agriculture (SOA) established in January 2005 at IGNOU, strived for a flagship role in turning the rural unemployed youth to first rate agricultural entrepreneurs and agri-business managers of tomorrow. The impact of agricultural education through distance mode would be discernible in development of new breeds of entrepreneurs, increased employment opportunities, higher earnings and better work environment. This would help to ensure poverty alleviation, livelihood security and sustainable productivity to change the quality of life especially in rural areas.

The Tamil Nadu Agricultural University established during 1971 has trifold functions *viz.*, teaching, research and extension education. The university had gained popularity in view of its quality research and education besides transfer of technology (TOT) programmes. The Agricultural College established during 1906 celebrated its centenary year during 2005.

In commemoration of the centenary year of the Agricultural College and Research Institute Coimbatore the function of TNAU *viz.*, teaching, research and extension had been enlarged with additional function of Open and Distance Learning which was first of its kind in India, among State Agricultural Universities. The Directorate of Open and Distance Learning, one of the constituent units of the TNAU was started during April, 2005 by renaming the Directorate of Publications. This Directorate has started offering certificate courses through Distance Learning Mode for those aspiring for self employment. The present study mainly focus on the perception level towards the distance education offered by the Tamil Nadu Agricultural University located at Coimbatore.

Distance learning meets the needs of those who are unable to study through the conventional education or to take a career break but who wanted to acquire knowledge through education. The findings of this study will be useful in understanding the characteristics of distance learning students, their aspirations towards career and how the ODL courses offered without the meet their aspirations.

Christensen *et al.* (2001) conducted a study with 399 students from two different universities revealed that the distance learning were significant relationship with the variables such as perceived technology usefulness, technology familiarity and accessibility, reputation, constrains, learning preferences and demographic factors. Junaidu and AlGhamdi (2004) reported that success of distance education program was related to providing activities for student. In order to be effective in distance education, the teacher should know the needs of students because students were the most important figures in distance learning environment. Moore (2005) found that faculty perceived face to face instruction to be more effective than web based instruction in all social work curriculum areas. Notably, faculty in this study reported web-based instruction in the area of practice to be least effective. Dykman and Dave (2008) focused his study on a comparison of online teaching and conventional teaching, resulting in a set of recommended practices. Essentially, it dealt with the mechanics of teaching online including course organization and planning, teaching guidelines and constraints, mentoring relationships, online tutorials, assessment of student performance and course evaluation. Perreault *et al.* (2002) compared graduate business students' access to online graduate programs and their perceptions relating to online learning over a five-year period. They concluded that students in 2006 had greater access to entire graduate programs being offered online than 2001 students. Both groups of students indicated that the main reasons they enrolled in online courses were for scheduling convenience and avoiding travel to campus for class. Tamta and Ansari (2015) conducted a study on perception perception towards e-learning and observed that majority of students (91%) have positive perceptions about e-Learning. The student's academic performance, computer/ Laptop ownership, computer proficiency and frequency of computer use were found to have positive and significant correlation with students' perception towards e-learning. Shaikh (2017) conducted a study on awareness to MOOCs which was divided into 3 parts- use of computers, use of Internet and awareness to MOOCs and it was found that student teachers were using You tube videos, online messaging tools such as email, blogging and Whatsapp groups, to learn things and clarify concepts. Use of Internet and online discussion tool for educational purpose was found to be very good among

the student teachers. The study showed that the awareness of MOOCs is very low among the student teachers. The perceptions to MOOCs were mostly negative.

MATERIAL AND METHODS

Coimbatore was one among the districts in Tamil Nadu which was well known throughout the country for its reputed educational institutes. Considering the objectives of the study, sample respondents were categorized into two groups *i.e.*, Agricultural students and non-agricultural students. The sample of 90 agricultural students and 90 non-agricultural students were selected based on their willingness to participate in the survey. Thus, the total sample size was 180 students. The required primary data were collected through a well-structured and pretested interview schedule. The sample respondents were interviewed personally from their colleges. The purpose of the study was briefly and clearly explained to the sample respondents to help them understand, respond better and entice their co-operation.

OBSERVATIONS AND ANALYSIS

From the results it was found that majority of the respondents (52 % of the agricultural students) were males and 48 per cent of them were females whereas 43 per cent of the non-agricultural students were males and 57 per cent of them were females. The results are similar with Compton and Schock (2000) study. They reported that Colleges and Universities percentage of students during the last decade were women. Yukselturk and Bulut (2009). The chi square analysis revealed that there were no significant differences in the gender distribution between agricultural and non-agricultural students. It could also be concluded that the distribution of gender was not significantly different between agricultural and non agricultural students.

It was observed that 8 per cent of agricultural students were experienced in online courses, whereas only 74 per cent of non agricultural students were experienced in online mode of distance education. The chi square analysis revealed that online experience of the agricultural and non agricultural students were statistically different. Majority (99 %) of the agricultural students were aware of TNAU distance education programme, whereas only 19 per cent of non-agricultural

students were aware about the TNAU distance programme.

Around 42 per cent of the agricultural student's source of information about the TNAU distance education courses were through friends, 31 per cent of them from brochure, 23 per cent of respondents from internet and remaining 3 per cent were from news paper. In case of non-agricultural students, 48 per cent of them got information about TNAU distance education courses from friends, 22 per cent from brochure, 20 per cent from internet and remaining 10 per cent were from news paper.

Perception towards distance education :

Perception towards distance education was evaluated to understand the belief or opinion of the sample respondents regarding distance education so as to improve the distance educational platform in such a way that would be comfortable to the distance learners. So knowing the perception of students about distance education was deemed necessary to know their intention in doing distance education programs. This was analysed using exploratory factor analysis. The list of items on perception of distance education was developed for this study by reviewing the existing literature. The sample respondents were asked to indicate their responses for the items on a five point scale [strongly agree (5) to strongly disagree (1)].

A total of twenty three variables regarding the perception of distance education were subjected to principle component analysis with varimax rotation by using the factor with an Eigen value more than one being retained.

KMO and Bartlett's Test of Sphericity is a measure of sampling adequacy that is recommended to check the case to variable ratio for the analysis. KMO and Bartlett's test play an important role for accepting the sample adequacy. For Factor Analysis to be recommended, KMO ranges should be from 0 to 1, the Bartlett's Test of sphericity must be less than 0.05. The results of KMO and Bartlett's test of sphericity are given in the Table 1.

It was evident from the Table 1 that KMO value

Kaiser-Meyer-Olkin measure of sampling adequacy		0.577
Bartlett's Test of Sphericity	Approx. Chi-Square	330.20
	Df	253
	Sig.	.001

was 0.577 and significant value for Bartlett’s test of sphericity was 0.001. It could be concluded that the results of KMO and Bartlett’s test proved the sampling adequacy of the data to run the factor analysis.

The Table 2 provided insights into how many variables could be clubbed together to make single factor. Totally ten factors were extracted assuming eigen value criterion more than one. Together these factors explained 60.20 per cent of variance. Harman (1976) indicated that factors with loading score greater than 0.29 at the 5 per cent level of significant could be considered. In this study, the factors having component loading greater than 0.5 was included to define the factor. For more simplification,

the factors which were similar in sense were clubbed together manually and named. The details on the factors and its name are given in the Table 3.

The first factor identified by clubbing 1st, 4th and 10th components with five items and these items were related to the online attributes in distance education. So, this could be named as online course attributes. The second factor obtained by clubbing 2nd, 7th and 8th components with three items was related to learning process in distance education. So it could be named as convenient learning process. The third factor obtained by clubbing 3rd and 5th components with four items was relevant to the nature of communication and related

Component	Initial Eigen values		
	Total	% of Variance	Cumulative %
1	1.90	8.27	8.27
2	1.69	7.37	15.64
3	1.53	6.63	22.27
4	1.48	6.43	28.69
5	1.37	5.95	34.65
6	1.28	5.58	40.23
7	1.28	5.55	45.78
8	1.18	5.15	50.93
9	1.10	4.78	55.71
10	1.03	4.49	60.20

Extraction method: Principle Component Analysis

Sr. No.	Items	Factor loading	Name of factor
1.	I am able to easily access the Internet as needed for my studies	0.789	Online course attributes
	I believe a complete course can be given by the Internet without difficulty.	0.713	
	I can work in a group during Internet activities outside of class.	0.668	
	I feel comfortable composing text on a computer in an online learning environment	0.668	
	Learning is the same in class and at home on the Internet	0.805	
2.	I like a lot of interaction with my instructors and/or teaching assistants	0.740	Convenient learning process
	I can ask my teacher questions and receive a quick response during Internet activities outside of class.	0.687	
	I can practice English grammar during Internet activities outside of class	0.608	
3.	I can discuss with other students during Internet activities outside of class.	0.559	Flexibility in communication
	I am willing to actively communicate with my classmates and instructors electronically	0.584	
	I am comfortable with written communication.	0.785	
	I can collaborate with other students during Internet activities outside of class.	0.621	
4.	I am motivated by the material in an Internet activity outside of class.	0.760	Personal attributes
	I believe an Internet course is possible but for Learning English it would be difficult.	0.695	
	As a student, I enjoy working independently.	0.584	
	I feel that face-to-face contact with my Instructor is necessary to learn.	0.848	

Extraction method: Principle Component Analysis

aspects of distance education. So it could be named as flexibility in communication. The fourth factor obtained by clubbing 6th and 9th components with four items was related to the personal interest of distance education. Hence the fourth factor could be named as personal attributes.

It could be concluded from the results of explanatory factor analysis that the students perceived the distance education positively because it was linked to online course attributes, convenient learning process, flexibility in communication and personal attributes.

Summary and conclusion :

It was observed that most of the sample respondents were female and major source of information for both agricultural and non agricultural students was friends followed by brochure, internet and news paper. Students perceived the distance education positively because it was linked to online course attributes, convenient learning process, flexibility in communication and personal attributes.

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