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Teacher-Learner Training Needs Assessment of Agricultural Universities - A Comparative Analysis

Seema Kujur¹, S. Senthil Vinayagam², H. K. Awasthi³ and G. R. K. Murthy⁴

ABSTRACT

The study investigated the variability in training need assessment among teachers and students representing Agricultural Universities (AUs) from northern and southern part of the country. A total of 30 teachers and 60 students were randomly selected as respondents from various subject domains from each AU and surveyed through structured questionnaire probing their training needs with reference to Educational Technology (ET). The study indicated that the majority of the teachers need training on designing ET based modules for agriculture knowledge management, evaluation of teaching and learning and digital teaching techniques. The study highlighted training need of the students regarding adoption of educational technology in learning process that the online learning, self-evaluation of learning and training on advance learning applications. The findings related to comparative study on training needs for both teachers and students in agricultural universities indicated that there is no significance difference in training need of teachers regarding adoption of educational technology in teaching. Similarly, there is no significance difference in training need of students in learning. The result revealed that there was not much difference between teachers and students in their training needs pertaining to educational technology. The study helps organisations of ICAR and AUs to prioritise their capacity building strategies and areas for effective teaching-learning ecosystem.

Keywords: Educational technology, students, training need, teaching-learning process.

INTRODUCTION

Education is acknowledged as one of the crucial allies of the development process (Kayode, 2007). Educational Technology is an important component which included the hardware and software support systems to host and deliver learning resources, the technical expertise required for implementation, support, maintenance and the financial sustenance (Gani, R., Devi, S., Goundar, S., Reddy, E. and Saber, F., 2019).

ET being a source domain which influence constantly changing scenarios of technology, training/capacity building of the stakeholders from time to time is very important for providing contemporarily relevant educational system. Training is the systematic acquisition

of attitudes, concepts, knowledge, rules, or skills that should result in improved performance. Training can significantly influence the ways in which a teacher includes technology tools in the classroom. Sabzian, F., & Gilakjani, A. P., (2013) concluded that the training should not be confined merely to use of computer technology; but sensitise teachers on application of make use of computer technology in improving the quality and effectiveness of their instruction, and effective technology integration into curriculum.

Thus, there is a need for ongoing training and assistance in helping teachers to employ computer technology resources for better pedagogic practices. Both personal theories of teaching and the level of competence with technology play a major role in how teachers

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implement technology and in their self-perception, (Gobbo & Girardi, 2001). It is important to the teachers to exploit use of computers beyond a word processor in the classroom, (Ridgway and Passey, 1991) and Jones (2002) stated that teachers need to become informed users of educational technology in teaching and explored the importance of educational technology training for development of knowledge and skills about educational technology tools.

In light of these, a study was conducted to assess the training needs of the teachers and students regarding adoption of educational technology in teaching-learning processes and investigate if there any locational difference in training needs among AUs and suggest for future road map in using of educational technology in Teaching-Learning process. The study aims: to identify the training needs from the stand point of teachers and students in adoption of Educational Technology (ET) in teaching-learning process and to investigate the locational difference for training needs among teachers and students regarding adoption of educational technology in teaching-learning process in AUs.

Following were the hypothesis of the study: H0:1 There is no significant difference between teachers of two AUs in respect to their training need on adoption of educational technology, H0:2 There is no significant difference between students of two AUs in respect to their training need on adoption of educational technology and H0:3 There will be no significant difference between teachers and students of AUs in respect to their training need on adoption of educational technology.

METHODOLOGY

The study was done through survey and predesigned questionnaire to teachers and students and the data was statistically analysed for drawing inferences. *Ex-post facto* research design was carried out for the study. An *ex-post facto* research design is a method in which groups with qualities that already exist are compared on some dependent variable. Also known as "after the fact" research, an *ex-post facto* design is considered quasi-experimental because the subjects are not randomly assigned—they are grouped based on a particular characteristic or trait. Taking into consideration the aforementioned studies and research, this study aimed to analyse the training needs of teachers and students for their professional development in educational technology in teaching-learning process. A further objective was to identify the presence of statistically significance differences in the teachers and students training needs on educational technology. The study was conducted at AUs

of the country namely- northern and southern AUs. These two state agricultural universities were purposively selected for the study based on the integration of educational technology in the present educational system and the importance of educational technology in education. It should be noted that the mentioned universities are located in capital cities of their states; they are among the prominent universities in their countries; and they consist of ET facilities for teaching-learning purpose and have central library. *Stratified sampling* procedure was followed for the study. Data was collected through interview schedule. The responses for each statement recorded on five-point continuum *i.e.* most needed to not needed. Collected data was analysed by suitable statistical tools, *i.e.* *Ranking, t-Test for unequal variance.*

The training needs are prioritised by eliciting the responses on a scale of 1 to 5 from the respondents and the mean scores were recorded.

A *t-test* is a type of inferential statistic used to determine if there is a significant difference between the means of two groups, which may be related in certain features. Mathematically, the *t-test* takes a sample from each of the two sets and establishes the problem statement by assuming a null hypothesis that the two means are equal. Based on the applicable formulas, certain values are calculated and compared against the standard values, and the assumed null hypothesis is accepted or rejected accordingly. If the null hypothesis qualifies to be rejected, it indicates that data readings are strong and are not by chance. The *t-test* is just one of many tests used for this purpose. Statisticians additionally use tests other than the *t-test* to examine more variables and tests with larger sample sizes. The *unequal variance t-test* is used when the number of samples in each group is different, and the variance of the two data sets is also different. This test is also called the Welch's *t-test*.

RESULTS AND DISCUSSION

The first part of the findings present training needs for teachers and students to integrate ET in teaching and learning by using descriptive statistics. The other part presents comparative results of training needs teachers and learners by using *t-test* for *unequal variances*. The results of the study are presented below:

Prioritisation of training needs on ET adoption

Training needs regarding effectively use or adoption of educational technology in teaching-learning process were enlisted in Table 1 and Table 2. The results indicated prioritisation of the teacher's training need areas conclude

training on designing ET based modules for agriculture knowledge management, followed by evaluation of teaching and learning, digital teaching techniques, preparation and use of ET based teaching material, experiential learning methods, classroom management, low cost instructional and teaching aids, recent advances in training methodology, designing learning modules and curriculum development. These findings indicated that the teachers have moderate needs in training for effective teaching.

Table1: Prioritised training needs of teachers

n=60

Training need area	Most needed	Needed	Somewhat needed	Undecided	Not needed	Rank
	f (%)	f (%)	f (%)	f (%)	f (%)	
Designing ET based modules for agriculture knowledge management	54 (90.0)	06 (10.0)	0 (0)	0 (0)	0 (0)	I
Evaluation of teaching and learning	52 (86.6)	0 (0)	8 (13.3)	0 (0)	0 (0)	II
Digital Teaching Techniques	49 (81.6)	11 (18.3)	0 (0)	0 (0)	0 (0)	III
Preparation and use of ET based teaching material	45 (75.0)	10 (16.6)	0 (0)	0 (0)	06 (10.0)	IV
Experiential learning methods	44 (73.3)	16 (26.6)	0 (0)	0 (0)	0 (0)	V
Classroom management	42 (70.0)	08 (13.3)	10 (16.6)	0 (0)	0 (0)	VI
Low cost instructional and teaching aids	35 (58.3)	09 (15.0)	05 (8.3)	0 (0)	11 (18.3)	VII
Advances in training methodology	32 (53.3)	25 (41.6)	0 (0)	0 (0)	3 (5.0)	VIII
Designing learning modules	25 (41.6)	5 (8.3)	22 (36.6)	0 (0)	8 (13.3)	IX
Curriculum development	22 (36.6)	28 (46.6)	0 (0)	0 (0)	10 (16.6)	X

* Figures in parenthesis indicate priorities of the training needs
 * F = Frequency
 * % = Percentage

Similarly, students had also given their prioritisation on training needs areas were online learning, followed by self-evaluation of learning, recent advances in training methodology, use of new learning technology, designing learning modules, training on advance learning applications, preparation and use of ET based learning material.

These finding indicated that the students are more seeks to training programme regarding advanced learning tools or applications and for online or e-learning. It may be concluded that the students having more interest in educational technology tools for learning. Ganguli (2006) were recorded as same findings.

Table 2: Prioritised training needs of students

n=60

Training Areas	Most needed	Needed	Somewhat needed	Undecided	Not needed	Rank
	f (%)	f (%)	f (%)	f (%)	f (%)	
Online learning	98 (81.6)	22 (18.3)	0 (0)	0 (0)	0 (0)	I
Self-Evaluation of learning	89 (74.1)	20 (16.6)	11 (9.1)	0 (0)	0 (0)	II
Recent advances in training methodology	80 (66.6)	25 (20.8)	15 (12.5)	0 (0)	0 (0)	III
Designing learning modules	77 (64.1)	34 (28.3)	09 (7.5)	0 (0)	0 (0)	IV
Use of new learning technology	78 (65.0)	42 (35)	0 (0)	0 (0)	0 (0)	V
Training on advance learning applications	75 (62.5)	25 (20.8)	20 (16.6)	0 (0)	0 (0)	VI
Preparation and use of ET based learning material	60 (50.0)	25 (20.8)	35 (29.16)	0 (0)	0 (0)	VII

* Figures in parenthesis indicate priorities of the training needs
 * F = Frequency
 * % = Percentage

Findings of hypothesis framed for the study

The analysis has been given below according to the hypotheses framed for the study:

Table 3: Statistics of independent sample t-test for teachers training needs of northern and southern universities.

Sample category	Sample size	Mean	Variance	P Value
University1	30	34.96	54.51	0.54
University2	30	36.13	56.67	

It could be seen from Table 3 that the calculated value (0.54) was lower than the table value (2.00) at 5 per cent level of significance, suggestive acceptance of the null hypothesis. Therefore, it could be concluded that the there was no significant difference between the mean level of training need regarding use of educational technology of teachers in AUs.

Table 4: Statistics of Independent sample t-test for students training needs of northern and southern universities.

Sample category	Sample size	Mean	Variance	P Value
University1	60	30.25	11.64	0.00076
University2	60	27.95	14.92	

It could be seen from Table 4 that the calculated value (0.0007) was lower than the Table value (1.980) at 5 per

cent level of significance, suggestive acceptance of the null hypothesis. Therefore, it could be concluded that there was no significance difference between the means level of training need in use of educational technology of students AUs.

Table 5: Statistics of Independent sample *t*-test between teachers and students training needs of northern and southern universities.

Sample category	Sample size	Mean	Variance	P Value
Teachers	60	35.55	54.99	1.24
Students	120	25.78	15.78	

It could be seen from Table 5 that the calculated value (1.24) was lower than the Table value (1.99) at 5 per cent level of significance, suggestive acceptance of the null hypothesis. Therefore, it could be concluded that there was non-significance difference between the mean level of training need in use of educational technology of teachers and students of northern and southern AUs.

CONCLUSION

The findings indicated that teachers had higher training need son the areas *viz.*, designing ET based modules for agriculture knowledge management, evaluation of teaching and learning, digital teaching techniques, classroom management, low cost instructional and teaching aids, Similarly, findings concluded that students had higher training needs on the areas *viz.*, online learning, self-evaluation of learning, recent advances in training methodology, designing learning modules and training on advance learning applications. Teachers and students had training needs on different training needs area accordingly their professional development in educational technology. *t*-test carried out to find the difference in training needs between teachers and students of AUs. The results indicated that the there was no significance difference between teachers training needs in adoption of educational technology and there was also no significance difference between students training needs in adoption of educational technology. Results also revealed that there was no significance difference between teachers and students training needs in educational technology.

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