



Students Attitude Towards Online Learning in Acharya N.G. Ranga Agricultural University

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ABSTRACT

The COVID-19 pandemic has resulted in closure of schools and colleges for months together across the world, situations are unpredictable to reopen the educational institutes and this paved the way for online teaching and learning. Online learning is considered an alternative option to traditional learning. But coronavirus pandemic made it as the only option for maintaining the schools, colleges and universities. So, it has to be strengthened to make education interesting to the students. Acharya N G Ranga Agricultural University is reaching UG and PG students through synchronous online education. Therefore, a study was conducted to know the attitude of UG students and PG students towards online learning. The results revealed that more than three-fourth of the UG students had medium (79.44%) favourable attitude, followed by low (16.11%) and high (4.44%) favourable attitude. Less than three-fourth of the PG students had medium (73.33%) favourable attitude and 13.33 per cent each had high and low favourable attitudes.

Key words : Attitude; Online learning; Factor analysis; Z-test.

As the COVID-19 pandemic has resulted in closure of schools and colleges for months together across the world making face-to-face real classroom education impractical and examinations, admissions, entrance tests and competitive examinations are all detained. We cannot predict how long this pandemic situation would continue and when normalcy will be restored. In this regard to avoid the spread of the virus and to ensure the continuity of the educational process, universities transformed the centuries old, chalk and talk method of teaching to exclusively online teaching. Everything is digitalized now, where teacher and students started meeting online on digital platforms for educational purpose. e-learning platforms were launched and they became popular over time. e-learning connects the eminent academicians and learners from different parts

of the world. Various institutes around the globe are utilising e-learning to educate and train their students and employees.

After switching the education to fully online, teachers and students focussed on knowing new technological advancements in education and learn skills and competencies needed. There is a surge in participation of teachers, students, researchers, scientists etc. in online webinars, certification courses. Libraries have now moved from traditional resources to more dynamic and flexible e-resources. The traditional environment has been rapidly changing to an electronic one and the demand for internet and e-resources among the academic and research community has increased manifold. Although online education benefits in many ways, there are some concerns that need to be identified and rectified.

At this juncture a study was planned to know the attitude of UG and PG students towards online learning.

METHODOLOGY

The study was conducted at Acharya N G Ranga Agricultural University during 2020-21 using exploratory research design. Two agricultural colleges viz., Agricultural College, Bapatla and S.V. Agricultural College, Tirupati were selected for the study. From each of the selected Agricultural College 30 Post Graduate (PG) students and 90 Under Graduate (UG) students (30 each from 2nd, 3rd, 4th year of B. Sc. (Hons.) Agriculture) involved in online learning were selected using simple random sampling procedure, thus making a total sample of 60 PG students and 180 UG students. For the purpose of the study, attitude scale constructed by *Jyothi and Vijayabhinandana (2021)* which consisted of 20 statements measured on a five-point continuum i.e., strongly agree, agree, undecided, disagree and strongly disagree was used.

The data thus collected from the students through online questionnaire was processed and analysed with the help of Z-test and factor analysis using SPSS Version 20 and Excel respectively.

Z-test was used to determine whether two population means are different when the variances are known and the sample size is large. Here, Z test was used to find out significance of difference between attitude of UG and PG students towards online learning.

$$z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

\bar{X}_1 = Mean of first sample
 \bar{X}_2 = Mean of second sample
 σ_1^2 = Variance of first sample
 σ_2^2 = Variance of second sample
 n_1 = Number of respondents in first sample
 n_2 = Number of respondents in second sample

Factor analysis a multivariate analysis used to describe variability among observed correlated variables in terms of a potentially lower number of unobserved variables called factors. It was used to summarize the original information on attitude into minimum number of factors (*Hair et al 2007*). Principal Component Analysis (PCA) with varimax rotation was used for the study which maximizes dispersion of loadings within factors and tries to load a smaller number of variables highly onto factor.

The study employed the eigen value criterion for

determining the number of factors to be extracted, factors having eigen value greater than zero are considered significant. Eigen value represents an amount of variation explained by the factor. *Hair et al. (2007)* recommended interpreting only those factor loadings with an absolute value or greater than 0.4. Factor loadings less than 0.4 were not considered and the same variables were not considered for the study. Various factors extracted were named on the basis of common tone of the variables they include and on the mathematical considerations of magnitude of factor loading. Reliability was also checked and reported as Cronbach’s alpha. *Nunnally (1967)* suggests that a Cronbach alpha value of 0.7 is acceptable, with a slightly lower value might sometimes be acceptable. Bartlett’s test of sphericity (which is reported as Chi-square value) and the values have been reported in table of factor analysis diagnostics. For the purpose or the study, the level of significance for Bartlett’s test of sphericity has been taken as 0.05 i.e.5 per cent.

RESULTS AND DISCUSSION

The attitude of the students towards online learning was measured using a scale. Based on mean and SD, the attitude of the students was classified into three categories namely low, medium and high favourable attitude and the results are presented in Table 1.

Table 1. Distribution of students according to their attitude towards online learning

Category	UG (n=180)		PG (n=60)	
	No.	%	No.	%
Low	8	4.44	8	13.33
Medium	143	79.44	44	73.34
High	29	16.12	8	13.33
Total	180	100.00	60	100.00
Mean	48.93		55.47	
SD	9.01		11.03	

The results revealed that more than three-fourth of the UG students had medium (79.44%) favourable attitude, followed by low (16.12%) and high (4.44%) favourable attitude. Less than three-fourth of the PG students had medium (73.34%) favourable attitude and 13.33 per cent each had high and low favourable attitudes. The results are in conformity with that reported by *Jyothi et al. (2011); Ghadei and Rudd (2015); Jyothi and Vijayabhinandana (2020)*.

The attitude towards an object depends on the

individual's experience and interpretation. Attitude denotes readiness towards online learning. Greater portion of the respondents had medium favourable attitude towards online learning indicating that they are comfortable and ok with online learning. Low favourable attitude might be due to the problems associated with internet connectivity and data balance. High favourable attitude is a good sign for online learning and it indicates that connectivity and data balance was not a problem at all for them.

It was found (Table 2) that Z test value (-4.15) is not in the range of Z critical value (-2.57 to 2.57) at 0.01 level of significance ($p=0.00$). It indicates that there is a significant difference in the attitude of UG and PG students. Considering the mean, it can be interpreted that PG students (Mean=55.47) had high attitude towards online learning than UG students (Mean=48.93) may be due to the reason that PG students are more familiar with the internet and electronic devices for their course and research purpose. The findings are supported by *Almobarraz and Farag (2012)* and *Ghadei and Rudd (2015)*.

Table 2. Z-test to find out the significant difference between attitude of UG and PG students

Categories	Mean	SD	'Z' value
Attitude of UG students	48.93	9.01	-4.15**
Attitude of PG students	55.47	11.03	

**Significant at 0.01 level of significance

Factor analysis is a commonly used data/ variable reduction technique to identify the key factors that affect the attitude of the students towards online learning. A reliability test was conducted, which resulted in a Cronbach's Alpha of 0.830 which is excellent and acceptable.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin measure of sampling adequacy.	.847
Approx. χ^2	1222.422
Bartlett's Test of Sphericity	df
	190
	Sig.
	.000

Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were used to determine the appropriateness of data for factor analysis. As per the Table 3, the result of KMO measure of sampling adequacy is 0.847, higher than 0.5 which shows that data collected is appropriate to conduct factor analysis. Moreover, chi-square value of Bartlett's test of sphericity is also 1222.422, very high and is significant at 5 per

cent level of significance indicating that variables are correlated in the population.

Principal component analysis method with varimax rotation was applied to extract the factors regarding attitude of students towards online learning. The attitude of students can be represented by six factors (eigen values >1.0) and the variance explained by the extracted factors was 58.84 per cent variance which is near 60 per cent expected value. Each factor is constituted of all those variables that had factor loadings greater than 0.4. These factors had been named appropriately on the basis of constituent variables. The extracted factors names along with the constituent variables, their factor loadings, the variance and the eigen values had been summarized in Table 4.

Personal factors : It includes six variables which explained 25.52 per cent of variance with eigen value 5.11 and thus forms an important factor in studying the attitude construct. The factor loading of the variables ranges from 0.472 to 0.764. It represents disconnectedness of the students, distraction, boredom, exploring the subject, less responsible and accountable in online learning.

Self-development : It consisted of five variables which explained 11.22 per cent of variance with eigen value 2.24. The factor loading of the variables ranges from 0.491 to 0.746. This factor mainly represents the tech savvy, brainstorming, note taking and enhancement in learning.

Time management : It includes two variables which explained 5.86 per cent of variance with eigen value 1.17. The factor loading of the variables were 0.568 and 0.614. This factor mainly represents the stress and time management.

Usefulness : It consists of two variables which explained 5.76 per cent of variance with eigen value 1.15. The factor loading of the variables were 0.688 and 0.734. This factor mainly represents the easy to question and workload.

Comfort and ease : It includes three variables which explained 5.46 per cent of variance with eigen value 1.09. The factor loading of the variables ranges from 0.538 to 0.798. This factor mainly represents the comfort and internet access for online learning.

Impact : It consists of two variables which explained 5.02 per cent of variance with eigen value 1.00. The factor loading of the variables were 0.710 and 0.744. This factor mainly represents the flipped approach and lower retention of subject in online classes.

Table 4. Factors summary for attitude towards online learning

Items for attitude towards online learning	Factor Loadings	Component		
		Factor name	Variance explained (%)	Eigen value
I feel I am disconnected with my class mates in online learning	.697	<i>Personal</i>	25.52	5.11
Online classes distracts my attention	.682			
Online learning lacks practical learning	.604			
Online learning is boredom	.603			
Less responsible in class, less accountable	.472	<i>Self-development</i>	11.22	2.24
Online learning helps in exploring more about the subject	.764			
Online learning enhanced the quality of teaching	.683			
Online learning made learning easy	.658			
Online learning made me tech savvy	.491	<i>Time management</i>	5.86	1.17
I am not getting enough time for brainstorming in online classes	.746			
Note taking is avoided here	.627			
Difficult to manage study time at home	.614			
Online learning is stressful	.568	<i>Usefulness</i>	5.76	1.15
It is easy to question without shyness	.734			
Online learning includes increased workloads	.688	<i>Comfort and ease</i>	5.46	1.09
Saves time as I need not travel to class room	.538			
Students can turn anywhere with internet into a classroom	.798			
I listen to online classes comfortably and relaxed	.559			
Combination of Online and traditional approach would be better	.744	<i>Impact</i>	5.02	1.00
Lower retention rate for online learning				

CONCLUSION

Due to the covid-19 pandemic, the educational institutions suddenly changed the educational system from traditional to completely online. We cannot predict when the normalcy would be seen. Online learning is here to stay even in future. By using factor analysis, it is found that there are six factors which have significant

impact on the attitude of the students towards online learning. It was found from Z test that there exists significant difference between UG and PG students. PG students are more acquainted with digital tools whereas UG students are not much familiar with online learning until now. Therefore, students should be provided with training programmes and workshops in ICT usage to enhance their learning.

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