Original Research Article

A STUDY ON STUDENTS' ATTITUDE TOWARDS ONLINE LEARNING USING PAIRED COMPARISON TECHNIQUE

ABSTRACT

The purpose of this paper is to assess students' attitude towards online learning using a paired comparison technique. A total of five stimulus were selected and paired in 10 combinations. A shift in the ranking of stimulus when compared with other stimulus would indicate a change in attitude. The questionnaires were distributed to 45 college students using google forms. Analysis of the paired comparisons resulted in rankings for the stimulus from least to most preferred. Findings of the study shows that online learning is effective and it reported that online learning makes learning interesting followed by it motivates the students to taking up advanced courses often developed the positive attitude of students towards online learning.

Keywords: Online learning, Attitude, Paired comparison, Advanced course

INTRODUCTION

Education plays a vital role in the all-around and inclusive development of students as well as nations. Education provides the individual with knowledge and skill and enables the individual to know his duties and rights. It expands vision and outlook to see the whole world. It enables us to fight against corruption, injustice and many other evils in the society. So, learning of all the learners of all ages and stages must be safeguarded.

Nowadays in the advanced universe, education may develop a significant movement through guaranteeing that learners don't take in the manner in which they are taught, rather they may be taught in the manner they learn. The instructive movement, which is incorporated into educational programming with suitable innovation, may develop learning as energizing and charming when getting fruitful results in a short period (Divjak&Begicevic, 2006). Today we are in the era of e-learning or online learning and it is very important to make the students aware of the importance and utility of online learning or e-learning. Online learning as an educational conveyance framework to one of utilizing the computer as a learning apparatus found that the pattern of utilizing online learning as learning and/or showing apparatus is presently quickly venturing into training (Lee & Busch, 2005). Online learning is new way of learning technique. Student attitude toward online learning is a critical factor in the learning environment supported by online learning tools. The pattern of utilizing online learning as a learning and showing instrument is presently quickly venturing into training. Numerous teachers and specialists had

high trust in online learning, believing that it will provide extra right to use data and communication, and will ultimately rapid further unrest in a drill. A small number of studies have directed to analyse mentalities in the direction of online education in the various portions of the world. Yet, in India, linking research in this heading was not enough (Baker, 2004). Based on the research results, a good instructional video has a duration of 5-10 minutes. Video-based learning with a duration that is not too long will increase the curiosity of students to find out the next learning video. If the video learning is too long, the students will be tired and sleepy, which will reduce the students' learning concentration (Daniel, 2020).

Recent studies (Nadeem *et al*.2021) revealed that major problems which were faced by students in online learning includes (1) Low quality of internet availability (2) Costly learning (3) Lack of immediate feedback. A majority of the past research work identifies barriers regarding the use of online learning and the factors, which has impact on students' interest towards online learning. However, few studies have fully investigated students' attitude towards online learning using paired comparison technique. So this topic is of crucial importance and needs special attention from the researcher point of view. Being an emerging and new field, it is necessary to conduct studies on every aspect of online learning. Hence, the present study will help to know how the students reacted and think about online learning and what is their attitude towards it.

METHODOLOGY

The research employs the survey method for data collection. The survey instrument for this study used a paired comparison technique to assess students' attitude toward online learning. Therefore, attitude toward online learning is addressed in a comparative way rather than directly. A shift in the ranking of items when compared with other items should indicate a change in attitude. A lowering of the ranking of item would indicate a more positive attitude.

To form the attitude instrument, each item was paired with every other item for a total of 10 combinations. Each item was listed first in the pair an equal number of times since order might have an effect on selection, using a procedure similar to that suggested by Ross (1939).The study group consists of 45 students. After review of literature regarding paired comparison method, five items were written about online learning and were selected as stimulus and a suitable template was created for these items with their instructions for paired comparison. All students were given brief information about the type of scale and shown the way on how it should be filled with instructions.

FINDINGS AND DISCUSSION

The data were tabulated using the method for paired comparisons described by Edwards (1982). Table 1 represents the proportion of the five stimulus. Proportions were obtained based on the number of times each item was selected as the less preferred of the pair. A matrix of proportions for all the items was formed. A larger proportion reflects the fact that the item listed in the column was less preferred than the item in the corresponding row. In Table 2 the stimulus or statements are rearranged in rank order of the column sums of the P matrix with the stimulus with the smallest column at the left and that with the highest at the right following Edwards

(1982) method. Then, the normal deviates (Z scores) corresponding to the proportion each item was ranked less preferred were calculated and a matrix based on the resulting Z scores was formed in Table 3.

Table 4 represents the scale values and rank order of the stimulus. For this instrument, the scale value reflects the extent to which each stimulus was indicated as the less preferred of the pair, i.e., higher scale value means lower preference. First item is the important stimulus regarding attitude of students' towards online learning. We can say that the item that is ranked at the bottom in order of importance in online learning was "Online learning causes tiredness when staring at screen " and the item that is ranked at the top in order of importance in online learning was "Online learning makes learning interesting."

Table 1: Proportion showing how frequently items were selected as the less preferred for the pairs

Statement number	Statements	Statement number				
		1	2	3	4	5
1	Online learning highly motivate the students for taking advanced course	0.500	0.733	0.533	0.400	0.667
2	Online learning causes tiredness when stare at screen	0.267	0.500	0.267	0.222	0.511
3	Quality of learning can be increased through online learning because it integrates various type of media	0.467	0.733	0.500	0.289	0.600
4	Online learning makes learning interesting	0.600	0.778	0.711	0.500	0.778
5	Slow computer and poor internet connection discouraged to use online learning	0.333	0.489	0.400	0.222	0.500
	Sum	2.167	3.233	2.411	1.633	3.056

Table 2: Rearranging stimulus from smallest column sum lowest at the left and highest at the right

Statement number	Statements	Statement number				
		4	1	3	5	2
4	Online learning makes learning interesting	0.500	0.600	0.711	0.778	0.778
1	Online learning highly motivate the students for taking advanced course	0.400	0.500	0.533	0.667	0.733
3	Quality of learning can be increased through online learning because it integrates various type of media	0.289	0.467	0.500	0.600	0.733

5	Slow computer and poor internet connection discouraged to use online learning	0.222	0.333	0.400	0.500	0.489
2	Online learning causes tiredness when stare at screen	0.222	0.267	0.267	0.511	0.500
	Sum	1.633	2.167	2.411	3.056	3.233

Table 3: Z matrix corresponding to proportions

Statement number	Statements	Statement number				
		4	1	3	5	2
4	Online learning makes learning interesting	0.000	0.253	0.556	0.765	0.765
1	Online learning highly motivate the students for taking advanced course	-0.253	0.000	0.083	0.432	0.622
3	Quality of learning can be increased through online learning because it integrates various type of media	-0.556	-0.083	0.000	0.253	0.622
5	Slow computer and poor internet connection discouraged to use online learning	-0.765	-0.432	-0.253	0.000	-0.028
2	Online learning causes tiredness when stare at screen	-0.765	-0.622	-0.622	0.028	0.000
	Sum	-2.339	-0.884	-0.236	1.478	1.981
	Mean	-0.468	-0.178	-0.047	0.296	0.392
	Add largest –ve value	+0.468	+0.468	+0.468	+0.468	+0.468
	Rank (Scale value)	0.000	0.290	0.421	0.764	0.860

Table 4: Ranks of stimulus based on scale value

Statements	Scale values	Rank	Order of importance
Online learning makes learning interesting	0.000	5	1

Online learning highly motivate the students for taking advanced course	0.290	4	2
Quality of learning can be increased through online learning because it integrates various type of media	0.421	3	3
Slow computer and poor connection discouraged to use online learning	0.764	2	4
Online learning causes tiredness when stare at screen	0.860	1	5

Reliability of the survey

Based on Edwards' (1982) method, a measure of internal consistency was computed for the survey. The internal consistency was calculated by comparing the observed or empirical proportions pij with those to be obtained in terms of theoretical or expected or derived scale values. For this the first step is to obtain the theoretical normal deviates zij. Table 5 shows the theoretical normal deviates zij where the scale values are written in the left hand side are then subtracted columnwise from the scale values written at the top of the table. Table 6 represents the theoretical proportions pij corresponding to the theoretical normal deviates zij by consulting the table of normal deviates. As shown in Table 7 the internal consistency measure involves comparing the observed proportions of pij of Table 2 and with those theoretical pij of Table 6 based on the derived scale values. The value obtained for the average discrepancy between observed and theoretical proportions was 0.028. According to Edwards (1982), the average discrepancy values usually reported for paired comparisons ranges from .024 to .032.

Table 5: Theoretical normal deviate zij corresponding to the scale distance between the statements

Statement number	Statements		Statement number				
		Scale value	4	1	3	5	2
4	Online learning makes learning interesting	0.000					
1	Online learning highly motivate the students for taking advanced course	0.290	-0.290				
3	Quality of learning can be increased through online learning because it integrates various type of media	0.421	-0.421	-0.131			
5	Slow computer and poor	0.764	-0.764	-0.474	-0.343		

	connection discouraged to use online learning						
2	Online learning causes tiredness when stare at screen	0.860	-0.860	-0.570	-0.439	-0.096	

Table 6: Theoretical proportion pij corresponding to normal deviate (zij)

Statement number	Statements	Statement number				
		4	1	3	5	2
4	Online learning makes learning interesting					
1	Online learning highly motivate the students for taking advanced course	0.386				
3	Quality of learning can be increased through online learning because it integrates various type of media	0.337	0.448			
5	Slow computer and poor connection discouraged to use online learning	0.222	0.318	0.366		
2	Online learning causes tiredness when stare at screen	0.195	0.284	0.330	0.462	

Table 7: Discrepancies between observed proportion of pij and the theoretical proportion pij

Statement number	Statements	Statement number				
		4	1	3	5	2
4	Online learning makes learning interesting					
1	Online learning highly motivate the students for taking advanced course	0.014				
3	Quality of learning can be increased through online learning because it integrates various type of media	-0.048	0.019			
5	Slow computer and poor connection discouraged to use online learning	0.000	0.015	0.034		
2	Online learning causes tiredness when stare at screen	0.027	-0.017	-0.063	0.049	
	Sum	0.089	0.051	0.097	0.049	

CONCLUSION

Based on the study it can be concluded that majority of the students had positive attitude towards online learning. Consideration of students' attitude towards "online learning makes learning interesting" is an important stimulus mostly preferred by the students. Being able to measure attitudes and any desired change in the attitudes is essential to the educational program. The paired comparison technique employed in the attitude survey offers an effective method for attitude measurement and has the potential for a variety of applications in educational programmes. So online learning can be encouraged in universities. The study recommended that the government ought to establish and formulate goals and objectives for ensuring initiation of e–learning programs.

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