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A scale to analyse the perception of students and teachers towards online classes

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Abstract

An attempt is made in the present study to develop and standardize a scale to analyze the perception of students and teachers towards online classes. The developed perception scale with 15 statements was found to be highly reliable and valid. The developed perception scale was administered to 34 students and 32 teachers of Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences Shivamogga of Karnataka state during February 2024. The results revealed that a larger proportion of students (38.24%) had better perception towards online classes, while 35.29 and 26.47 percent of the students had good and poor perception towards online classes, respectively. On the contrary, as high as 37.49 percent of the teachers had good perception on online classes, whereas 34.38 and 28.13 percent of teachers had better and poor perception towards online classes, respectively. There existed a non-significant difference in mean perception score between students and teachers towards online classes.

Keywords: Online classes, students, teachers, perception, reliability

Introduction

Education is tool through which society pass on its accumulated knowledge and skills across generations. Modes of education are the means through which this transmission of the knowledge takes place. It can be broadly divided into online and offline modes of learning. Online learning is the education that takes place over the Internet and it is often referred to as "e-learning or online classes". However, online classes are just one type of "distance learning" - the umbrella term for any learning that takes place across distance and not in a traditional classroom (offline classes). The emergence of Coronavirus (COVID-19) pandemic has affected almost all of the political, social, cultural and economic deeds, shaking the world to its roots. As a preventive measure, educational institutions in India were closed in the first (24th March to 14th April 2020) and second (15th April – 3rd May 2021) phases of national lock down. Academic institutions across the world have also been forced to momentarily suspend the face-to-face classes (offline classes) as safety measures to stop the spread of virus and for well-being of the society. All types of academic institutions encompassing schools, colleges and Universities have been using one or the other online teaching tool (s) for reaching out to the students to ensure their continuous learning.

Though, online teaching has been seen as the best replacement of face-to-face classes during emergent COVID-19 situation, it cannot completely replace the traditional classroom teaching, not only in the case of professional and practical courses but also for other subjects. Teachers would need to be trained in using online teaching tools so that they may feel comfortable in imparting education online. Ultimately it is the acceptance of students and teachers that helps in reaping the benefits of online classes held normally during pandemic situations, environmental disasters etc. In this backdrop, the present study is carried out with the following specific objectives:

1. To develop and standardize a scale to analyze the perception of students and teachers towards online classes.
2. To analyze the perception of students and teachers towards online classes

Methodology

The present study was taken up during 2023-24 to develop and standardize a scale to analyse the perception of students and teachers towards online classes. A common scale was developed in the study to analyse the perception of students and teachers towards online classes. The developed scale was administered to analyze the perception of students and teachers towards online classes in Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences

Shivamogga, Karnataka. Thirty four students and 32 teachers were interviewed to know there perception towards online classes. Based on the cumulated score obtained by the respondents, they were categorized as poor, good and better levels of perception considering the mean and half standard deviation as a measure of check.

Results and Discussion

A) Development of scale to analyse the perception of students and teachers towards online classes

Perception of students and teachers towards online classes is operationally defined in the present study '*the extent of mental awareness of students and teachers towards online education'.* The method of summated rating scale suggested by Likert (1932) [2] and Edwards (1969) [1] were followed in the development of the perception scale. Identification of components, collection and editing of perception statements, relevancy test, item analysis, reliability and validity are the six stages followed for developing and standardization of scale towards online classes (Jagadeesh *et al.*, 2018) [3]

1. Identification of components: Statements related perception of teachers and students towards online classes were identified based on review of literature and discussion with teachers.

2. Collection and editing of perception statements: The first step in the construction of perception scale was to collect statements pertaining to the perception of students and teachers towards online classes. A tentative list of 50 statements pertaining to the perception of students and teachers towards online classes were collected through extensive review of literature and by consulting teachers. These 50 statements were edited as per the 14 criteria enunciated by Edwards (1969) [1]. As a consequence 22 perception statements were included for the study to develop and standardize the scale towards online classes.

3. Relevancy test: Twenty-two statements were sent to 80 experts/judges in the field of teaching working in State Agricultural Universities to critically evaluate the relevancy of each statement *viz.,* Most Relevant (MR), Relevant (R), Somewhat Relevant (SWR), Less Relevant (LR) and Not Relevant (NR) with the score of 5,4,3,2 and 1, respectively. The experts/judges were also requested to make necessary modifications and additions or deletion of perception statements, if they desired to. A total of 65 judges/experts returned the questionnaire duly completed and the perception statements were considered for further processing. From the data gathered, 'Relevancy Percentage (RP)' and 'Mean Relevancy Score (MRS)' were worked out for all the 22 statements pertaining to online classes. Using these criteria, individual perception statements were screened for relevancies using the following formulae.

i) Relevancy Percentage (RP): It was obtained by using the following formula

$$\text{R.P.} = \frac{\text{MR}\times5 + \text{R}\times4 + \text{SWR}\times3 + \text{LR}\times2 + \text{NR}\times1}{\text{Maximum possible score}} \times 100$$

ii) Mean Relevancy Score (MRS): It was worked out using the following formula

$$\text{M.R.S.} = \frac{\text{MR}\times5 + \text{R}\times4 + \text{SWR}\times3 + \text{LR}\times2 + \text{NR}\times1}{\text{Number of judges/experts responded}}$$

Accordingly, statements having 'relevancy percentage' of 75.00 percent and above and 0mean relevancy score of 3.75 and above were considered for final selection. Eighteen perception statements were retained after relevancy tests and these statements were suitably modified and written as per the comments of the judges wherever applicable.

4. Item analysis: Eighteen perception statements related to online classes were subjected to item analysis to delineate the items based on the extent to which they can differentiate the respondent having better perception from the respondent with poor perception regarding online classes. A sample of 34 students and 32 teachers of Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences Shivamogga were randomly selected for the study. The respondents were asked to indicate their degree of agreement or disagreement with each of the 18 perception statements related to online classes on a five-point continuum ranging from 'strongly agree' to 'strongly disagree. The critical ratio, that is, the 't' value which analyses the extent to which a given statement differentiates between the high and low groups of respondents for each statement, was calculated by using the following formula:

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum X_H^2 - \frac{(\sum X_H)^2}{n} \times \sum X_L^2 - \frac{(\sum X_L)^2}{n}}{n(n-1)}}}$$

Where,

$\bar{X}_H$= The mean score on given statement of the high group

$\bar{X}_L$ = The mean score on given statement of the low group

$\sum X^2_H$ = Sum of squares of the individual score on a given statement for high group

$\sum X^2_L$ = Sum of squares of the individual score on a given statement for low group

n = Number of respondents in each group

$\sum$ = Summation

t = The extent to which a given statement differentiates between the high and low groups.

After computing the 't' value for all the 18 perception statements of online classes, 15 perception statements with 't' value equal to or greater than 1.671 were finally selected and included in the final perception scale.

5. Reliability: Reliability refers to precision of the scale constructed for any purpose. A reliability test will be *reliable* when it gives the same repeated result under the same conditions. In any social science research, a newly constructed scale has to be tested for its reliability before it is used. The split-half method was employed to test the reliability of the perception scale. The value of correlation coefficient was 0.756. This was further corrected by using Spearman Brown formula to obtain the reliability coefficient of the whole set. The 'r' value of the perception scale of the

online classes was 0.861, which were significant at one percent level indicating the high reliability of the scale. It was concluded that the perception scale constructed was reliable.

a) Half test reliability formula

$$r_{1/2}= \frac{N(\sum XY)-(\sum X)(\sum Y)}{\sqrt{(N\sum X^2-(\sum X)^2)\,(N\sum Y^2-(\sum Y)^2)}}$$

Where,
$\sum X$= Sum of the scores of the odd number items
$\sum Y$ = Sum of the scores of the even number items
$\sum X^2$= Sum of the squares of the odd number items
$\sum Y^2$ = Sum of the squares of the even number items
b) Whole test reliability formula

$$r_{1/1} = \frac{2_{r1/2}}{1 + r_{1/2}}$$

Where,
$r_{1/2}$= Half test reliability

6. Validity: It refers to how well a scale analyses what it is purported to measure. The data was subjected to statistical validity, which were found to be 0.927 for perception scale of online classes which were greater than the standard requirement of 0.756 (Validity=$\sqrt{r_{11}}$). Hence, the validity coefficient was also found to be appropriate and suitable for the tools developed. Thus, the developed scales to analyze the perception of students and teachers towards online classes were feasible and appropriate.

Administration of perception scale and method of scoring

The final scale consists of 15 statements for analyzing perception towards online classes by teachers and students (Table 1). The response could be collected on a five-point continuum, namely, strongly agree, agree, undecided, disagree and strongly disagree with assigned score of 5,4,3,2 and 1, respectively. The perception score of a respondent could be calculated by adding up the scores obtained by him/her on all the 15 statements. The perception score of this scale ranges from a minimum of 15 score to a maximum of 75 score, respectively. Based on the mean and half standard deviation the respondents could be categorized into three perception categories, *viz.*, poor, good and better. Higher score on this scale indicates that the respondent has better perception towards online classes and the lower perception score indicates that the respondent has poor perception towards online classes.

Table 1: Scale to analyze the perception of students and teachers towards online classes

Sl. No.	Perception statements	SA	A	UD	DA	SDA
1	Students and teachers often struggle with technical issues like internet connectivity and device compatibility in online classes					
2	Students feel isolated in online classes, leading to a sense of disconnection when compared to offline classes					
3	Students may feel lack of screen time during online classes					
4	Teachers and students welcome the opportunity to conduct/attend classes from the comfort of their homes					
5	Students often struggle with staying motivated in online classes					
6	Teachers and students do not have concerns about the security and privacy of online class sessions					
7	Students anywhere in the world have access to educational resources created and shared by the teachers					
8	Teachers and students struggle with finding a quiet and ergonomically suitable space for conducting/attending online classes					
9	Teachers do find easy ways to incorporate guest speakers and experts in virtual lectures					
10	Teachers and students feel online classes have more excitement and energy					
11	Use of online quizzes and polls enables teachers to easily assess student understanding during lectures					
12	Online class provides flexibility of scheduling classes, pacing of course syllabus and personal commitments.					
13	It's easy for the teachers to use a variety of multimedia tools in online classes					
14	Students struggle with information overload in online courses					
15	Students and teachers prefer online classes during pandemic and emergency situations only					

SA= Strongly Agree; A=Agree; UD=Undecided; DA=Disagree; SDA=Strongly Disagree

The perception scale developed was administered to 34 students and 32 teachers of Keladi Shivappa Nayaka University of Agricultural Sciences Bangalore during February 2024.

B) Perception of students towards online classes

A perusal of Table 2 reveals that a larger proportion of students (38.24%) had better perception towards online classes, while 35.29 and 26.47 percent of the students had good and poor perception towards online classes, respectively. It could be inferred that more than three-fourth of the students (73.53%) has good to better perception towards online classes.

Table 2: Perception of students towards online classes (n=34)

Sl. No.	Perception categories	Students	
		Number	Percent
1.	Poor (<50.71 score)	9	26.47
2.	Good (50.71 to 58.93 score)	12	35.29
3.	Better (>58.93 score)	13	38.24
Total		34	100.00
Mean		54.82	
1 Standard deviation		8.22	

C) Perception of teachers towards online classes

The finding of Table 2 revels that as high as 37.49 percent of the teachers had good perception on online classes, whereas 34.38 and 28.13 percent of teachers had better and poor perception towards online classes, respectively. It could be concluded from the findings that three-fourth of the teachers (71.87%) had good to better perception towards online classes.

Table 3: Perception of teachers towards online classes (n = 32)

Sl. No.	Perception categories	Teachers	
		Number	Percent
1.	Poor (<48.08 score)	9	28.13
2.	Good (48.08 to 55.88 score)	12	37.49
3.	Better (>55.88 score)	11	34.38
Total		32	100.00
Mean		51.98	
1 Standard deviation		7.80	

The benefits of online classes includes: (1) provides an opportunity to the students and teachers to attend/classes for their comfort of their home, (2) students and teachers feel that online classes have more excitement and energy (3) students anywhere in the world could access to educational resources created and shared by the teachers, (4) teachers do find easy ways to incorporate guest speakers and experts in virtual lectures for the benefit of students, (5) use of online quizzes and polls enables teachers to easily assess student understanding during lectures, (6) it is easy for the teachers/students to use a variety of multimedia tools in online classes, and (7) students and teachers prefer online classes during pandemic and emergency situations. The above benefits of the online classes are well aware by both the students and teachers, hence a vast majority of the students (73.53%) and teachers (71.87%) have good to better perception towards online classes.

Table 4: Test of significance in respect of perception mean score between teachers and students towards online classes

Sl. No.	Particulars	Mean perception score	't' value
1.	Students (n_1=34)	54.82	0.792^{NS}
2.	Teachers (n_2=32)	51.98	

NS= Non-Significant

A perusal of Table 4 indicates that the mean perception score of the students was slightly higher than the mean perception score of the teachers towards online classes. The 't' value (0.792) reveals that there is a non-significant difference existed in the mean perception score between students and the teachers towards online classes.

Conclusion

The scale developed to analyse the perception of students and teachers towards online classes was found to be reliable and valid, hence the developed scale could be used to analyse the perception of the students and teachers towards online classes. The perception scale was administered to the teachers and students of the Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences Shivamogga. The results revealed that a vast majority of the students (73.53%) and teachers (71.87%) have good to better perception towards online classes, while less than one-fourth of the students (26.47%) and teachers (28.13%) had poor perception towards online classes.

References

1. Edwards AL. Techniques of attitude scale construction. VIkils, Feger and Dimons Pvt. Ltd., 9, Sport Road, Ballard Estate, Bombay; c1969. p. 34-37.
2. Likert RA. A technique for assessing attitudes. Archives of Psychology, New York; c1932. p. 140.
3. Jagadeesh V, Lakshminarayan MT, Jagadish KS. A scale to analyse the perception of farmer-bee keepers towards bee keeping. The Pharma Innovation Journal. 2022;SP-11(3):1471-1474.
4. Bhagat KK, Wu LY, Chang CY. The impact of personality on students' perceptions towards online learning. Australasian Journal of Educational Technology. 2019 Aug 24;35(4).
5. Dost S, Hossain A, Shehab M, Abdelwahed A, Al-Nusair L. Perceptions of medical students towards online teaching during the COVID-19 pandemic: a national cross-sectional survey of 2721 UK medical students. BMJ open. 2020 Nov 1;10(11):e042378.