

Analysis of Learners' Attitude towards Teacher's Feedback on Errors in Written Work

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Abstract: *The paper is an attempt to study the attitudes of secondary school students towards feedback offered by teacher on errors in written work. It is assumed that remarks by teacher on notebook have significant potential to generate substance of attitude. Investigator constructed and standardized attitude measure using cluster analysis method and discovered five dimensions of the measure namely- 'Likes & Dislike about Feedback', 'Feelings and Feedback', 'Intentions and Feedback', 'Methods of Feedback' and 'Weightage of Feedback'. Percentage analysis revealed that dimensions of the measure do not differ significantly, overlap in terms of nature, but still maintain independent existence by virtue of reliability and validity parameters. Comparative analysis using t-test revealed that students do not differ significantly on attitudes variation of gender and locality, but significantly differ in respect of type of school and level of performance. Private school students supposedly from rich families and above average performers are more critical of teachers' remarks on note book. Study aimed at highlighting importance of method, quality, timing and means of feedback offered by teacher on students' notebooks.*

Keywords: Feedback, Attitude, Cluster analysis, Error, written work

1. Introduction

In any of the classroom Motivation, Reinforcement and Feedback are three basic tools used by the teacher to enhance the impact of the instruction. Motivation and reinforcement are psychological in nature which can't be given in exact amount and are adjusted according to the situation and ability of the student. Motivation is the 'why' offered by the teacher to the student, why s/he should come to the class and why should attend to the teacher and his/her teaching. This is very much needed, as at younger age child doesn't understand meaning and importance of education. It is the responsibility of the teacher to motivate the child for learning. Reinforcement again is given by the teacher as demanded by the situation. For instance for an average response an academically poor pupil, may receive much more appreciation from teacher, which an intelligent student may not, for even better effort. Feedback is a phenomenon which has its origin from the branch of physics, which necessitate needs to be an exact entity. When a teacher provides feedback on student's performance he objectively credits for true responses and deducts for wrong answers, irrespective of identity and behaviour of the student, this really is the nature of feedback. In a classroom teacher is bound to be dutiful for the assigned task of giving appropriate feedback. It does not mean that all the students receive the feedback in the same veins. They may like or dislike it depending on one's attitudinal orientation. The paper attempts to study attitudinal orientation of students towards feedback given by teacher on written work. Written work here means, when teacher gives remarks on the note book of learner, which can be identified as objective measure for analysis.

2. Research Design & Methodology

It is a survey type study in which data has been collected by using a self-constructed and standardized Likert type attitude scale. The data collected has been treated statistically to understand the weightage given by participants to different

dimensions of the attitude and variation of attitude across attribute variables.

3. Objectives of the Study

The study will be conducted to attain the following objectives:

- Construction and standardization of attitude measure for the subject under investigation.
- Comparing attitude of male and female students towards teacher provided feedback on errors in written work.
- Comparing attitude of urban and rural students towards teacher provided feedback on errors in written work.
- Comparing attitude of high and low achievers students towards teacher provided feedback on errors in written work.
- Comparing attitude of government and private school students towards teacher provided feedback on errors in written work.

3.1 Hypothesis

The study will be conducted to test the following hypotheses
H₁: There exists no significant difference in attitude of secondary school students towards teacher's offered feedback on errors in written work in respect of gender variation.

H₂: There exists no significant difference in attitude of secondary school students towards teacher offered feedback on errors in written work in respect of locality variation.

H₃: There exists no significant difference in attitude of secondary school students towards teacher offered feedback on errors in written work in respect of achievement variation.

H₄: There exists no significant difference in attitude of secondary school students towards teacher offered feedback on errors in written work in respect of nature of school variation.

3.2 Construction and Standardisation of Attitude Measure

3.2.1 Cluster Analysis

Cluster analysis was performed for discovering the underlying factors of the proposed attitude scale. Following steps has been under taken for factor analysis.

3.2.2 Preparation of inter-item Correlation Matrix

A 33x33 inter-item correlation matrix was generated from the reported responses of participants on 33 proposed items in preliminary phase

3.2.3 Preparation of inter-item Dissimilarity Matrix

As we know cluster analysis is based on the distance analysis rather than relatedness. The values 1-represents the dissimilarity as opposed to relatedness. By doing this resulted in formation of 33x33 dissimilarity matrix.

3.2.4 Preparation of clusters

Table 1: Final Five Clusters obtained showing inter-cluster Euclidian Single Linkage Distance

Clusters		C ₁	C ₂	C ₃	C ₄	C ₅
		2,26,5,25,9,22,14,28	3,21,6,20,7,30,12,31	4,11,23,12,31,15,19	8,24,18,27,16,32	10,13,17,29
C ₁	2,26,5,25,9,22,14,28	0.0000	1.4521	1.0285	0.3127	0.2489
C ₂	3,21,6,20,7,30,12,31	1.4521	0.0000	1.4988	0.4766	0.2823
C ₃	4,11,23,12,31,15,19	1.0285	1.4988	0.0000	0.7866	0.5331
C ₄	8,24,18,27,16,32	0.3127	0.4766	0.7866	0.0000	1.2165
C ₅	10,13,17,29	0.2489	0.2823	0.5331	1.2165	0.0000

3.2.5 Dubbing the Factors obtained using Cluster Analysis

The distinct factors obtained using cluster analysis is named on the basis of nature of items in particular factor. Due to paucity of space items corresponding to these dimensions could not be presented here. The items in these dimensions are of both positive and negative nature. These factors can be used as independent partial measure of a dimension of the concept under investigation. The name of these dimensions has been presented in table 2.

3.3 Validity of the Measure:

Construct validity is ensured by virtue of extraction of five factors as five constructs of the attitudinal measure. However, crude validity of the measure has been established by the method of expert judgment by employing criterion of three by four i.e. if three out of four judges approve the item that was selected in the preliminary phase.

3.4 Reliability of the Scale

Reliability of constituent scales as well as total scale has been presented in table 2 Split half method has been employed to find out reliability of the scale.

Clusters have been obtained by calculating Euclidian distance among the member items in the dissimilarity matrix. The formula used for calculating distance is as follows.

$$D(i, j) = \sqrt{A^2 + B^2} = \sqrt{(X_{1i} - X_{1j})^2 + (X_{2i} - X_{2j})^2}$$

An observation i is declared to be closer (more similar) to j than to observation k if $D(i, j) < D(i, k)$.

After doing this step results in formation of matrix of inter-item distance among items in place of dissimilarity measures. The process uses ab-initio method, where we assume all the items constitute independent cluster of one item each. Then each successive step combines the nearest neighbors using single linkage method to form bigger group which in turn makes even bigger groups by combining the smaller groups. In this way five groups of items have been discovered. Final clusters so obtained are shown in table 1.

Table 2: Reliability of Attitude Scale

Sr. No.	Factor Measure	Number of Items	Reliability of Attitude Measure	
			Half Length (r)	Full Length (R)
1.	Likes & Dislike about Feedback	8	.68	.81
2.	Feelings and Feedback	8	.71	.83
3.	Intentions and Feedback	7	.82	.90
4.	Methods of Feedback	6	.72	.82
5.	Weightage of Feedback	4	.78	.88
	Whole Attitude Scale		.74	.85

3.5 Distinctness of Constituent Measures

Percentages have been calculated from raw score which are then analyzed to obtain confidence ratio to ascertain independent existence of the constituent measures.

Table 3: Confidence Ratios for Different Cluster Comparisons

	C ₁	C ₂	C ₃	C ₄	C ₅
C ₁	0.00	0.84	0.18	0.69	0.87
C ₂		0.00	0.65	1.52	1.70
C ₃			0.00	0.87	1.05
C ₄				0.00	0.18
C ₅					0.00

All the C. R. values have been found to be insignificant i.e. lesser than table values ($C.R_{0.05}=1.97$; $C.R_{0.01}=2.60$; $df=226$). It implies all factors are overlapping with each other but still maintain separate identity as dimensions of the measure. But there are some factors (C₁ & C₃ and C₄ & C₅) which are quite similar to each other as their titles also suggest the same. Nevertheless all the constituent measures

are valid and reliable to maintain their independent existence.

3.6 Comparative analysis of Attitude Score across Attribute Variables (Hypotheses Testing)

3.6.1 Establishing normality of normality of the sample

K-S test has been used to ascertain normality of the whole sample. The statistics so obtained i.e. $|C_p - C_e|_{\max} = 0.0327$, is much below the table values, hence ensures the normality of the sample. Thus application of t-test is not a problem.

3.6.2 Student's t-test applied across Attribute Variables

Table 4 given below summarise calculations for t-test applied across attribute variables.

Table 4: Summary of the t-test applied across dichotomous attribute variables

Variable	Group	N	Mean	S.D	S Ed	t-ratio
Sex	Male	65	99.00	9.89	1.89	.85
	Female	49	100.58	10.05		
Locality	Urban	44	98.85	9.98	1.94	1.61
	Rural	70	101.98	10.21		
Institution	Government	42	101.54	10.14	1.94	3.02**
	Private	72	95.67	9.68		
Achievement Level	Above Average	25	118.32	12.95	3.04	8.51**
	Below Average	27	92.46	8.25		

** = significant at 0.01 level of significance.

Only two values have been found to be significant.

4. Findings

4.1 Percentage Analysis

- The whole sample when quantified in terms of percentage obtained in respect of five clusters. The average score for whole scale has been found to be 66.01%, whereas the five clusters appeared in percentage comparative ranks as follows.

$C_5 (70.75) > C_4 (69.65) > C_1 (65.39) > C_3 (64.24) > C_2 (60.04)$ implies secondary school students give weightage of attitudes in the order of

Weightage of Feedback > Methods of Feedback > Likes & Dislike about Feedback > Intentions and Feedback > Feelings and Feedback

- When clusters are compared for percentage scores it was found that C.R value has been found to range 1.18 to 1.70. Consequently, none of the C.R value has been found to be significant (C. $R_{0.05} = 1.97$; C. $R_{0.01} = 2.60$; $df = 226$), indicating that there is not really any preference for a factor over others as far as composition of attitude components structure is concerned.
- The percentage score itself for whole scale has been found to be insignificant, indicating overall students have significantly negative attitude towards the written feedback given by teachers on their note books.

4.2 Comparative analysis of Attitude Score across Attribute Variables (Hypothesis Testing)

T-test was used for comparing the means across dichotomous attribute variables after ascertaining the

normality of the sample, $|C_p - C_e|_{\max} = 0.0327$, which is much lesser than table values

- Students found to possess no significant difference in their attitude towards teacher offered feedback on errors in written work in respect of gender variation. The t-ratio has been found to be 0.84 which is far less than table value ($t_{0.05} = 1.98$; $t_{0.01} = 2.63$; $df = 112$) at 0.05 level of significance. The difference observed in favor of female is actually a chance factor and cannot be considered as a real one.
- Students found to possess no significant difference in their attitude towards teacher offered feedback on errors in written work in respect of locality variation. The t-ratio has been found to be 0.22 which is far less than table value ($t_{0.05} = 1.98$; $t_{0.01} = 2.63$; $df = 112$) at 0.05 level of significance. The difference observed in favor of rural students is actually a chance factor and cannot be taken as a real one.
- Students found to possess no significant difference in their attitude towards teacher offered feedback on errors in written work in respect of nature of school variation. The t-ratio has been found to be 3.54 which is greater than table value ($t_{0.05} = 1.98$; $t_{0.01} = 2.63$; $df = 112$) at 0.05 level of significance. The difference observed in favor of govt. secondary school students is actually expected one. Private school students are from comparatively well off families and are more critical of teacher provided feedback, hence express more negative attitude compare to students from government schools.
- Students found to possess no significant difference in their attitude towards teacher offered feedback on errors in written work in respect of student achievement level. The t-ratio has been found to be 8.51 which is far greater than table value ($t_{0.05} = 1.98$; $t_{0.01} = 2.63$; $df = 112$) at 0.01 level of significance. The difference observed in favor of below average secondary school students is a real one and cannot be attributed to chance factor. This result is an expected one, as most above average students are more possessive about their performance and sometime even egoist, and show negative attitude towards teacher offered feedback on errors in written work.

5. Educational Implications

Feedback by teacher on errors in written work is not simply evaluation rather it is registered documentation. It is much more than oral feedback. Feedback on note book stays for whole year and emotional impact on student's psycho as well. It may be positive or negative which is mostly the latter case. The result of the investigation states it affect strongly and negatively students who are above average and from non-government schools. System can't afford to allow students have their attitude and teacher will do what is written in rule book. The question is how teacher can avoid this negative effect, may it be by avoiding the remarks on note books altogether, or it be made softer or in positive vein. Changes various ways and means to award feedback to students so that they welcome it, is matter of another research work. But we understand feedback is to be given-what, how and when is the matter to be sort out with further research.

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