International Journal of Evaluation and Research in Education (IJERE)
Vol.7, No.1, March 2018, pp. 65~71
ISSN: 2252-8822

Effect of Integrated Feedback on Classroom Climate of Secondary School Teachers

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Article Info

Article history:

Received Dec 30, 2017
Revised Jan 31, 2018
Accepted Feb 25, 2018

Keyword:

Assessment of instruction
Assessment of teaching
Classroom climate
Student evaluation of teachers
Teachers' self evaluation

ABSTRACT

This study aimed at finding out the effect of Integrated feedback on Classroom climate of secondary school teachers. This research is experimental in nature. Non-equivalent control group design suggested by Stanley and Campbell (1963) was used for the experiment. Integrated feedback was treatment and independent variable, Classroom climate was dependent variable and pre- Classroom climate, and Intelligence were considered as covariates. The sample of the study comprised of 77 secondary school teachers and 220 students studying in secondary classes from purposively selected four schools of Indore city. The data for Classroom climate, Job satisfaction and Intelligence were collected through standardized tools. One-way *ANCOVA* and *2X2 factorial design ANCOVA* were used for data analysis. Hypotheses were tasted at level of significance with $\alpha = 0.05$. It was found that the treatment has significant effect over Classroom climate when pre- Classroom climate was taken as covariate. The results also shown that Classroom climate was independent of the treatment when Intelligence and pre- Classroom climate were separately considered as covariates. In addition, classroom climate was also found independent of interaction between feedback and intelligence when pre – Classroom climate was taken as covariate.

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1. INTRODUCTION

The term classroom refers to a social place where the students could benefit from peer interaction and from a teacher who focused on a collaborative relationship with students [1]-[3]. It means a positive teacher-student relationship is essential in classroom setting [4]. At present, all students spent their most of the school hours in classroom. In classroom, students interact with each other and with their teachers. They learn and they understand the interaction pattern. It is the classroom climate, which support them to understand each other. Classroom climate refers to a learning environment developed by teachers in the classroom. If classroom climate is healthy then the students learn well and achieve their goals of education. A supportive classroom climate motivates the students to communicate with their teachers [5]. If classroom climate is not healthy then students will not get the desired outcomes. This is why classroom climate is also known as learning environment. The term Classroom climate comprise of all the physical, operational, material, organizational, psychological and social variable. Classroom engages all the students in different activities and forms a leaning environment. It is the classroom climate, which may inculcate the creative or destructive ideas in children's mind. Kozol (1967) studied and described that how school environment had a destructive impact on black children [6]. Moos (1974) also supported that climate has influence on one's social, personal and intellectual development [7]. A healthy student-teacher relationship and teacher support

produces greater satisfaction and security to students [8]. The future academic success of the students may be predicted by the quality of interaction that students have with their teachers [9]. Hamre and Pianta (2001) revealed that student react to their relationship with their teachers [10]. The classroom climate focused primarily on 'psychosocial environment' [11]. To create positive climate in the classroom, teacher had to be aware of changes and had to be flexible in dealing with students [12]. It means the teachers as well as the students are responsible for healthy or unhealthy classroom climate. For creating constructive atmosphere in the classroom, students and teachers should convey their expectations to each other. There are various techniques to know about the classroom behaviour of the teachers. C. Gould (1991) suggested that Peer Evaluation, Student Evaluation and Self Evaluation are all valid forms of evaluating teaching. Soderberg (1986) stated that when evaluating teachers at the delivery phase of instructions, students are the most qualified to accomplish this task [13]. Accepting the importance of student evaluation of teachers The Universities of British Columbia (Vancouver) has approved "A Policy of Student Evaluation of Teaching" (May 16th, 2007). Student evaluation of teacher is the technique to understand how student feel in the classroom and what they expect and what they do not expect from teachers. Student evaluation of teachers has been shown to be positively correlated with student learning and achievement, i.e. students rate most highly those teaches from whom they have learned the most [14]-[16]. The most important student characteristic affecting student evaluation of teachers is student expectations, i.e. students who expect an instructor to be good usually find this to be so [17]. Therefore, student evaluation of teachers may provide the basis for improvement in classroom climate. Question arises that whether personality or other characteristics of students or teachers may have some influence on student evaluation of teachers. Abrami et al. (1982) stated that there is no consistent relationship between student personality characteristics and evaluation of teaching [18]. Klann and Hoff (1976) found that student evaluation of teacher is free from age of students [19]. Feldman (1983) assured that there is no significant relationship between academic ranks of teachers and student evaluation of teaching [20]. As classroom climate is product of students and teachers classroom behaviour, the researcher has selected integrated feedback as treatment for studying its effect on classroom climate.

2. RESEARCH METHOD

Sample of present study comprised of 77 secondary school teachers and 220 students taught by the sampled teachers. These sampled teachers were selected from four Secondary schools of Indore city. Purposive sampling technique was used for sampling. The present study was experimental in nature. The non-equivalent control group design suggested by Stanley and Campbell was used for the experiment [21]. There were two groups in this study, one out of which is experimental and another one is control group. Integrated feedback is independent variable and Classroom climate is dependent variable. Raven's Standard Progressive Matrices Test by Raven was used for intelligence of teachers. It is a non-verbal cultural fair test, free from any effect of languages. The tool Classroom climate scale developed by researcher was used to study Classroom climate. The data collection procedure was completed in three phases, namely, pretreatment phase, during treatment phase and post treatment phase. in the first phase in which after receiving permission of the school administration or school management the researcher took introduction of the faculties and gave them information about the details of the advantages of proposed work in improvement of teaching and betterment of achievements, in this way the researcher tried to convince them in satisfactory manner. After this, the researcher was introduced with the classes in which the faculties teach. The researcher tried to arouse interest among the students for active participation in proposed work. The researcher ensured the faculty members and the students about confidentiality of results and data, which will be gathered in phase II. After convincing successfully to the students and teachers the researcher administered the tool related to, student evaluation of teachers to randomly selected four students of each class taught by the selected teachers and Teacher's self evaluation tool to the sampled teachers of experimental group. The students and teachers were given 30 minutes to complete after 30 minutes the researcher collected the filled tools. After that, tools related to Intelligence, Classroom climate and Job satisfaction were administered on the faculty members, in alternate day as convenient for the school management & faculty members. In the second phase, the researcher integrated and analyzed the collected data with respect to each teacher and prepared a list of desired and undesired behavior of classroom teaching as the respondents responded. With the help of this prepared list the researcher advised each teacher separately (in alone) about their classroom performances. In this process of providing feedback, the researcher mixed the positive and negative behavior of the teacher. The main aim of the research was to help the teacher without hurting them. In this overall procedure, the researcher tried to maintain the dignity of teachers. In this phase the researcher administered the student evaluation of teacher's tool and teacher's self evaluation tool two times each after 20 days of the previous one and given feedback to the teacher two times again. The repetition strengthens the feedback procedure. So

that the actual effect of feedback would be evaluated. This overall procedure took 70 days. This phase was only for experimental group. In the last phase the procedure done in the phase I was repeated again for the experimental group only. The intelligence test was not administered in this phase. This phase took 10 days. ANCOVA was used for data analysis.

3. RESULTS AND ANALYSIS

In this section, it is explained the results of research and at the same time is given the comprehensive discussion. Results can be presented in figures, graphs, tables and others that make the reader understand easily [22],[23]. The discussion can be made in several sub-chapters.

3.1. Effect of Integrated feedback on Classroom climate by considering Intelligence of teachers as covariate

The first objective was to study the effect of integrated feedback on Classroom climate by considering Intelligence of teachers as covariate. There were two levels of integrated feedback namely feedback and no Feedback. First level of feedback was taken as experimental group and second level was taken as control group. There were 40 teachers in experimental group and 37 teachers in control group. The data were analyzed with the help of ANCOVA. The results are given in Table 1.

Table 1. Summary of ANCOVA for Classroom Climate by Considering Intelligence as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Feedback	1	267.737	267.737	18.812	0.000
Error	74	1053.197	14.232		
Total	75				

From Table 1, it can be seen that the adjusted F-value for Feedback is 18.812 whose level of significance with df (1, 74) is 0.000, therefore it is significant at 0.01 level of significance. This shows that the adjusted mean score of Classroom climate of Experimental group significantly differ from Control group when Intelligence was taken as covariate. Thus, the null hypothesis that there is no significant effect of integrated feedback on Classroom climate by considering Intelligence of teachers as covariate' was rejected at 0.01 level of significance.

Further from Table 2, it can be seen that the adjusted mean score of Classroom climate of experimental group i.e. 96.14 was found to be significantly higher than that of control group i.e. 92.41. Hence, it can be concluded that feedback provided to the teachers was found to be effective in terms of Classroom climate of the secondary school teachers when Intelligence of teachers was taken as covariate.

Table 2. Adjusted Mean Scores of Classroom Climate of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	96.14
Control Group	92.41

3.2. Effect of Integrated feedback, Intelligence and their interaction on Classroom climate of secondary school teachers, by considering pre-Classroom climate as covariate

The second objective was to study the effect of integrated feedback, Intelligence and their interaction on Classroom climate by considering pre-Classroom climate as covariate. There were two levels of integrated feedback namely Feedback and no Feedback. First level of Feedback was taken as experimental group and second level was taken as control group. There were 40 teachers in experimental group and 37 teachers in control group. On the basis of Intelligence the subjects were divided in to two levels namely above average and below average. There were 42 teachers are in above average and 35 were in below average level. The data were analyzed with the help of 2X2 Factorial Design ANCOVA. The results are given in Table 3.

Table 3. Summary of 2X2 Factorial Design ANCOVA for Classroom Climate by Considering Pre-Classroom Climate as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Feedback	1	270.396	270.396	56.886	0.000
Intelligence	1	15.533	15.533	3.268	0.075
Feedback * Intelligence	1	0.324	0.324	0.068	0.795
Error	72	342.236	4.753		
Total	75				

3.3. Effect of Integrated Feedback on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 3, it can be seen that the adjusted F-value for Feedback is 56.886, whose level of significance with df (1, 74) is 0.000, therefore it is significant at 0.01 level of significance. This shows that the adjusted mean score of Classroom climate of experimental group differ significantly from control group when pre Classroom climate was taken as covariate. Thus, the null hypothesis that 'There is no significant effect of integrated feedback on Classroom climate when pre- Classroom climate was taken as covariate' was rejected at 0.01 level of significance.

Further from Table 4, it can be seen that the adjusted mean score of Classroom climate of experimental group i.e. 96.04 was found to be significantly higher than that of control group i.e. 92.27. Hence, it can be concluded that feedback provided to the teachers was found to be effective in terms of Classroom climate of the teachers when pre-Classroom climate was taken as covariate.

Table 4. Adjusted Mean Scores of Classroom Climate of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	96.04
Control Group	92.27

3.4. Effect of Intelligence on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate.

From Table 3, it can be seen that the adjusted F- value for Intelligence is 3.268, which is not significant even it is at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of Intelligence on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. It can thus be concluded that the Classroom climate is independent of Intelligence of teachers when pre-Classroom climate was taken as covariate.

3.5. Effect of interaction between Integrated Feedback and Intelligence on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 3, it can be seen that the adjusted F-value for the interaction between the Feedback and Intelligence is 0.068, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of interaction between integrated feedback and Intelligence on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. Thus, it can be concluded that the Classroom climate is independent of interaction between Feedback and Intelligence when pre-Classroom climate was taken as covariate.

3.6. Effect of Integrated feedback, Gender and their interaction on Classroom climate of secondary school teachers, by considering pre-Classroom climate as covariate

The third objective was to study the effect of integrated feedback, Gender and their interaction on Classroom climate by considering pre-Classroom climate as covariate. There were two levels of feedback namely Feedback and no Feedback. First level of Feedback was taken as experimental group and second level was taken as control group. There were 40 teachers in experimental group and 37 teachers in control group. On the basis of Gender the subjects were divided in to two levels namely male and female. There were 32 male and 45 female teachers. The data were analyzed with the help of 2X2 Factorial Design ANCOVA. The results are given in Table 5.

Table 5. Summary of 2X2 Factorial Design ANCOVA for Classroom Climate by Considering Pre-Classroom Climate as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Feedback	1	260.714	260.714	52.991	0.000
Gender	1	2.272	2.272	0.462	0.499
Feedback * Gender	1	1.377	1.377	0.280	0.598
Error	72	354.237	4.920		
Total	75				

3.7. Effect of Integrated feedback on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 5, it can be seen that the adjusted F-value for Feedback is 52.991, whose level of significance with df (1, 74) is 0.000, therefore it is significant at 0.01 level of significance. This shows that the adjusted mean score of Classroom climate of experimental group differ significantly from control group when pre- Classroom climate was taken as covariate. Thus, the null hypothesis that 'There is no significant effect of integrated feedback on Classroom climate when pre-Classroom climate was taken as covariate' was rejected at 0.01 level of significance.

Further from Table 6, it can be seen that the adjusted mean score of Classroom climate of experimental group i.e. 96.07 was found to be significantly higher than that of control group i.e. 92.29. Hence, it can be concluded that Feedback provided to the teachers was found to be effective in terms of Classroom climate of the teachers when pre-Classroom climate was taken as covariate.

Table 6. Adjusted Mean Scores of Classroom Climate of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	96.07
Control Group	92.29

3.8. Effect of Gender on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 5, it can be seen that the adjusted F- value for Gender is 0.462, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of Gender on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. It can thus be concluded that the Classroom climate is independent of Gender of teachers when pre-Classroom climate was taken as covariate.

3.9. Effect of interaction between Integrated feedback and Gender on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 5, it can be seen that the adjusted F-value for the interaction between the integrated feedback and Gender is 0.280, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of interaction between integrated feedback and Gender on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. Thus, it can be concluded that the Classroom climate is independent of interaction between Integrated feedback and Gender when pre-Classroom climate was taken as covariate.

3.10. Effect of Integrated feedback, Job satisfaction and their interaction on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

The fourth objective was to study the effect of integrated feedback, Job satisfaction and their interaction on Classroom climate by considering pre-Classroom climate as covariate. There were two levels of Feedback namely Feedback and no Feedback. First level of Feedback was taken as experimental group and second level was taken as control group. There were 40 teachers in experimental group and 37 teachers in control group. On the basis of Job satisfaction, the subjects were divided in to two levels namely high and low. There were 45 teachers in high Job satisfaction level and 32 teachers in low Job satisfaction level. The data were analyzed with the help of 2X2 Factorial Design ANCOVA. The results are given in Table 7.

Table 7. Summary of 2X2 Factorial Design ANCOVA for Classroom Climate by Considering Pre-Classroom Climate as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Feedback	1	254.002	254.002	51.425	0.000
Job satisfaction	1	0.010	0.010	0.002	0.964
Feedback * Job satisfaction	1	2.591	2.591	0.525	0.471
Error	72	355.624	4.939		
Total	75				

3.11. Effect of Integrated feedback on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 7, it can be seen that the adjusted F-value for Feedback is 51.425, whose level of significance with df (1, 74) is 0.000, therefore it is significant at 0.01 level of significance. This shows that the adjusted mean score of Classroom climate of experimental group differ significantly from control group when pre Classroom climate was taken as covariate. Thus, the null hypothesis that 'There is no significant effect of integrated feedback on Classroom climate when pre-Classroom climate was taken as covariate' was rejected at 0.01 level of significance.

Further from Table 8, the adjusted mean score of Classroom climate of experimental group i.e. 96.03 was found to be significantly higher than that of control group i.e. 92.31. Hence, it can be concluded that integrated feedback provided to the teachers was found to be effective in terms of Classroom climate of the teachers when pre-Classroom climate was taken as covariate.

Table 8. Adjusted Mean Scores of Classroom Climate of experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	96.03
Control Group	92.31

3.12. Effect of Job satisfaction on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 7, it can be seen that the adjusted F- value for Job satisfaction is 0.002, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of Job satisfaction on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. Thus, it can be concluded that the Classroom climate is independent of Job satisfaction of teachers when pre-Classroom climate was taken as covariate.

3.13. Effect of interaction between Integrated feedback and Job satisfaction on Classroom climate of secondary school teachers by considering pre-Classroom climate as covariate

From Table 7, it can be seen that the adjusted F-value for the interaction between the integrated feedback and Job satisfaction is 0.525, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that 'There is no significant effect of interaction between integrated feedback and Job satisfaction on Classroom climate by considering pre-Classroom climate as covariate' was not rejected. Thus, it can be concluded that the Classroom climate is independent of interaction between integrated feedback and Job satisfaction when pre-Classroom climate was taken as covariate.

4. CONCLUSION

The present study reveals that integrated feedback is effective on Classroom climate of secondary school teachers. Although classroom climate is independent of Intelligence of teachers and classroom climate is also independent from interaction of Intelengence with Integrated feedback. Classroom climate is independent of teacher's Gender and its interaction with Feedback. Classroom climate is also independent of teachers' job satisfaction and its interaction with feedback. Erlier it was expected that job satisfaction may have positive effect on classroom climate but results did not favour the expectation. The results has implications for management and administration of secondary schools, teachers' working in secondary schools, and policy makers as it is helpfull in creating healthy classroom climate.

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