

Asian Resonance

Feed Back Based Peer Assessment with Reference to Self-Concept



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Abstract

The present Research paper entitled “**Feed Back Based Peer Assessment With Reference to Self-Concept**” is related to Measurement & Evaluation in Education. It was an attempt to find whether the accuracy of peer assessment of achievement can be improved by the use of various feedback strategies. This study was experimental in nature which concentrated on studying the effectiveness of feedback strategies in terms of accuracy of peer assessment of achievement and factors influencing it.

The achievement scores of peer assessment were obtained with the help of Achievement tests developed by the investigator. The tests used for measuring Intelligence were J.C. Raven’s Standard Progressive Matrices and Raven’s Advanced Progressive Matrices. Self-concept of student-teachers was assessed with the help of Self-Concept Inventory developed by Deo, It is known as Self Concept List (SCL). Two types of treatment were given. For Experimental group-I Teacher Feedback and for Experimental group-II Peer Feedback was used as treatment. No treatment was provided to the Control group.

The absolute difference of these two scores, first Peer assessed score and second teacher assessed score were computed to get the ACCURACY OF PEER ASSESSMENT.

Accuracy of Peer Assessment of Achievement of student-teachers was found to be significantly affected by Feedback strategy. Self-concept and Interaction between Treatment & Self-concept did not significantly influence the Accuracy of Peer Assessment of Achievement of student-teachers respectively when groups were made equivalent on Intelligence.

Keywords: Feed Back Strategy, Accuracy, Peer Assessment of Achievement.

Introduction

When assessment of one’s performance is carried out by his or her fellow beings, it is known as peer-assessment. It may be carried out by an individual or by a group of individuals. Falchikov (1995) defines Peer Assessment as the process through which groups of individuals rate their peer. Somerve (1993) contend that at one end of the spectrum peer assessment may involve feedback of a qualitative nature or may involve students in making decisions. According to Donaldson and Topping (1996) the assessment may be formative or summative, it can be considered part of peer tutoring. In Peer Assessment students are taking responsibility of monitoring and making judgment about aspect of their own or peer’s learning. Students can develop life-long evaluation skills both about their own work and thinking as well as others using peer assessment. They learn directly by constructively criticizing their own and other’s work in parallel.

Theoretically peer assessment is grounded in the constructivist’s perspective and assumptions of active learning. Active learning refers to a situation where learners construct their own reality or at least interpret it based upon their perceptions of experiences. Teachers may use reflection to facilitate their own learning as well for facilitation of student’s learning. According to Schon (1987) two type of reflection facilitate learning: (1) Reflection in Action (2) Reflection on Action. . Reflection on action occurs either following an activity or when an activity is interrupted, a retrospective thinking about experience. According to Kottkamp (1990), reflection on action takes place after an activity and an analysis with the potential assistance of others. It brings about an understanding of practice and is a way practitioners may learn from their experiences.

It is well known fact that learning is improved by detailed, positive and timely feedback on students work. In traditional and authoritative classroom environment teacher has been considered to be the sole source of feedback, while more permissive classroom ethos recognize the peer as well as the self as important source of feedback. Use of peer assessment by teachers, in part or full however, depends upon the way peer assessment is actually perceived by the teachers and how is it implemented in the classroom. Peer Assessment can encourage a greater sense of involvement and responsibility and promote excellence, direct attention to skills and learning and provide increased feedback. Peer Assessment allows the students to gain experience with giving and receiving feedback and give them an opportunity to improve performance before it counts against their grades. In large part students Peer Assessment works best when students share a comprehensive understanding of the assessment criteria and the characteristics of work illustrative of different levels of performance.

Majority of researches on peer assessment were conducted in foreign countries. These were mainly related to validity, reliability and acceptability of peer assessment. Stefani (1992), Warkentin, et al. (1995), Yamashiro and Johnson (1997), Topping (1998), Keeshum (2006), Ballantyne, et al. (2002), Johnson (2004), Struyen, et al. (2005), Nigel and Pope (2005), Black and William (2006), Ozogul G., et al. (2006), Behrihum, A., et al. (2006), Stiggins (2007), Vu and Alba (2007), Bastruk (2008) conducted studies related to impact of peer assessment on learning. In this study effect of achievement on peer assessment has been investigated.

Passi (1976), Esquivel (1978), Desai, S. (1992), Patrick, Franciana, C.J.(1995) conducted studies related to different feedback sources and strategies in micro-teaching.

Clariana (1992), Park and Gittleman (1992), Mory (1994), Morison, et al. (1995), Whyte, et al. (1995), Pridemore and Klein (1995) conducted studies related to effect of Elaboration of Feedback on learning. Clariana (1990), Clark (1993) investigated effect of student achievement level on ability to receive different forms of feedback. Weddick (1994), Morrison (1995) studied attitude towards different forms and strategies of Feedback. Race, et al. (2005), Papinczak, et al. (2007), Tseng and Tsai (2008) conducted studies related to effect of peer assessment in feedback, comparison of teacher assessment and peer assessment and effect of different forms of feedback in peer assessment.

Therefore researches related to the finding out of effective Peer Assessment procedure with affecting psychological factor self-concept are very important and needs to be conducted to evolve the most suitable Peer Assessment procedure according to the changing educational needs.

Operational Definitions of Key Words Feed Back Strategy

In this study feedback strategy means the process where information regarding correct response

and assessment criteria has been given to the student- teachers. Three Feedback strategies have been considered viz. Teacher Feedback, Peer Feedback and No Feedback.

Accuracy

The absolute difference between the Achievement scores awarded by the peer and by the Teacher.

Peer Assessment of Achievement

Assessment of achievement of student by other student or their peer.

The **objective** of the study was:

To study the effect of Treatment, Self concept and their Interaction on Accuracy of Peer Assessment of Achievement of student-teachers by considering Intelligence as covariate.

The **hypotheses** of the study were as follows:

1. There is no significant effect of Treatment on APAA of student-teachers by considering Intelligence as covariate.
2. There is no significant effect of Self-concept on APAA when Intelligence was considered as covariate.
3. There is no significant effect of interaction between Treatment and Self-concept on APAA of student-teachers when Intelligence was taken as covariate.

Methodology

The present study was experimental in nature. **Sample** comprised of 148 student-teachers, both male and female.

Tools

The achievement scores of peer assessment were obtained with the help of **Achievement tests** developed by the investigator. All these tests were Criterion Referenced Written tests. Each test was subjective type of one hour's duration. For each achievement test Blue Print was prepared. Each test had five short Answer type and one Essay type item.

For this study, the **Instruments** used for measuring Intelligence were J.C. Raven's Standard Progressive Matrices and Raven's Advanced Progressive Matrices. Self-concept of student-teachers was assessed with the help of Self-Concept Inventory developed by Deo, It is known as Self Concept List (SCL).

Data Collection

Two types of treatment were given. For Experimental group-I Teacher Feedback and for Experimental group-II Peer Feedback was used as treatment. No treatment was provided to the Control group.

At first, achievement test was administered in Experimental group-I, Experimental group-II and control group. After that in experimental group-I Teacher Feedback (X_1), in Experimental group-II Peer Feedback (X_2) was performed about the right and wrong responses to the questions in Achievement test. In Control group no Feedback was performed. Following this each answer book was checked by one of the peer of the same group in all three groups. At last all answer books were scored by the teacher. The

absolute difference of these two scores, first Peer assessed score and second teacher assessed score were computed to get the ACCURACY OF PEER ASSESSMENT. The same procedure was followed for all four achievement tests.

Objective-Wise Results and Interpretation

The **objective** of the study was to study the effect of Treatment, Self-concept and their interaction on APAA of student-teachers by considering Intelligence as covariate. The data were analyzed with the help of 3X2 Factorial Design (ANCOVA) by considering Intelligence as Covariate. The results are given in Table 1.

Table -1

Summary of 3x2 Factorial Design Ancova for Accuracy of Peer Assessment of Achievement (Apa) by Considering Intelligence as Covariate

Source of Variation	df	SSy.x	MSSy.x	Fy.x
Treatment	2	938.99	469.49	24.55**
Self-concept	1	61.48	61.48	3.21
Treatment X Self-concept	2	50.33	25.17	1.31
Error	142	2695.25	19.12	
Total	147			

**Significant at 0.01 level of significance

Effect of Treatment on APAA by Considering Intelligence as Covariate

From Table 1, it can be observed that adjusted F value for Treatment is 24.55, which is significant at 0.01 level of significance with $df=2/142$ when Intelligence was considered as covariate. It indicates that the adjusted mean scores of APAA of student-teachers with Teacher Feedback, Peer Feedback and No Feedback differ significantly when Intelligence was taken as covariate. In the light of this the null hypothesis that there is no significant effect of Treatment on APAA of student-teachers by considering Intelligence as covariate, is rejected.

To find out the differences in adjusted mean scores, comparison of the three Treatment groups were undertaken, the results of which are given in Table 2 below.

Table 2

Pair-Wise Comparison of Accuracy of Peer Assessment of Achievement of Student-Teachers by Considering Intelligence as Covariate

Treatment Pairs		Mean Difference (I-J)	Standard Error
(I)	(J)		
Peer Feedback	Teacher Feedback	3.42**	0.83
No Feedback	Teacher Feedback	6.57**	0.95
No Feedback	Peer Feedback	3.14**	0.96

**significant at 0.01 level of significance

It can be observed in Table 2 that all three pairs of Treatment groups the differences in mean scores of APAA are respectively significant at 0.01 level of significance. The difference in mean scores of APAA between the Peer Feedback and Teacher Feedback groups is 3.42 (The mean score of APAA of Peer Feedback being the higher one) which is significant at 0.01 level of significance. This means that the Accuracy of Peer Assessment of Achievement of student-teachers in Teacher

Feedback Group was found to be significantly superior than Peer Feedback Group. Thus, Teacher Feedback was found to be more effective in terms of APAA. The difference between mean scores of APAA of the No Feedback Group and Teacher Feedback Group was found to be 6.57 which is significant at 0.01 level of significance. It means that Teacher Feedback Group was found superior to the No Feedback/control Group in terms of APAA. Likewise, the difference in mean scores of APAA of No Feedback Group and Peer Feedback Group was found to be 3.14, which is significant at 0.01 level of significance. It means that Peer Feedback Group was found superior to the No Feedback/control Group in terms of APAA. This means all three groups are different from each other as far as APAA of student-teachers is concerned provided Intelligence is considered as covariate.

Effect of Self-Concept on Accuracy of Peer Assessment of Achievement of Student-Teachers by Considering Intelligence as Covariate

The adjusted F value for Self-concept (vide Table 1) is 3.21, which is not significant at 0.05 level of significance with $df = 1/142$. It shows that adjusted mean scores of APAA of student-teachers of two self-concept groups did not differ significantly. Thus there was no significant effect of self-concept on APAA when Intelligence was taken as covariate. In the light of this the null hypothesis that there is no significant effect of Self-concept on APAA when Intelligence was considered as covariate, is not rejected.

Effect of Interaction between Treatment and Self-Concept on APAA by Considering Intelligence as Covariate

The adjusted F value for the interaction between Treatment and Self-concept was found to be 1.31, which is not significant at 0.05 level of significance with $df = 2/142$. It indicates that there was no significant effect of the resultant of interaction between Treatment and Self-concept on APAA of student-teachers when Intelligence was taken as covariate. In the light of this the null hypothesis that there is no significant effect of interaction between Treatment and Self-concept on APAA of student-teachers when Intelligence was taken as covariate, is not rejected. It may therefore be concluded that APAA of student-teachers was found to be independent of the interaction between Treatment and Self-concept when Intelligence was taken as covariate.

Conclusion and Educational Implication

The study leads to the following conclusions:

1. Accuracy of Peer Assessment of Achievement of student-teachers was found to be significantly affected by Feedback strategy when the groups were equated on Intelligence. Student-teachers were most accurate in peer assessment of achievement when given Teacher feedback as compared to the Peer feedback or No Feedback
2. The Accuracy of Peer Assessment of Achievement of student-teachers was found to be independent of Self-concept when Intelligence was taken as covariate.

3. The Accuracy of Peer Assessment of Achievement of student-teachers was found to be independent of Interaction between Treatment & Self-concept when Intelligence was taken as covariate.

The present study have **Implications** for Teacher-Educators & Teachers, Students and Administrators.

The results of this study will provide a perspective on how Peer Assessment can be implemented in Teacher-Training institutions. In classroom teachers need help to develop the peer assessment skills for using peer assessment strategies with students. Boston(2002), Rolheiser and Ross (2000) have emphasized the importance of training and professional development for teachers to help them better understand and implement effective practices that are important element of formative peer assessment practices. This study can help teacher-educators and teachers in this context.

The present study revealed that the Accuracy of Peer Assessment of Achievement was found to be affected by Feedback strategies irrespective of their self-concept. Use of Feedback strategies in peer assessment can be considered as key formative practices, in which teacher-educators and teachers can encourage to students to take peer assessment more seriously and more carefully. They can give wider range of feedback during peer assessment. They can promote learning about course content and learning by assessing.

Results of this study shows that Peer assessment can play a vital role in formative assessment by involving students in judging the work of their peers. Students can increase interaction with other students during peer assessment in classroom environment with the help of feedback strategies, which can make teaching-learning process interesting and reflective. They can receive information about their performance and remove their weakness. They can develop skills of conversation and tolerance about peer criticism during practice of peer assessment.

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