Published every June and December ISSN 2088-1290
atikan
Jurnal Kajian Pendidikan

NILESH KUMAR PATEL & SUSHIL KUMAR TYAGI

Effect of Integrated Feedback on Teaching Competency of Secondary School Teachers

ABSTRACT: *The teachers are expected to teach for understanding rather than merely rote learning. Therefore, the concept of good teaching has been gradually shifted from behaviorist to a more constructivist view. This is why the efforts for improvement and advancement of teaching were made in earlier decades and in future, and more studies and efforts are needed. Integrated feedback based on student evaluation towards teachers and teachers' self-evaluation was taken independent variable in the present study. Teaching competency of secondary school teachers was dependent variable in the study. This study was experimental in nature and non-equivalent control group design, suggested by Donald T. Campbell & Julian C. Stanley (1963) and other scholars, were adopted for the study. Sample of the study comprised of 77 secondary school teachers and 220 students of four CBSE (Central Board of Secondary Education) affiliated English medium school of Indore city in India. It was sampled purposively. Null hypotheses were formulated. One-way ANCOVA (Analysis of Covariance) and 2X2 factorial design ANCOVA were used for data analysis. Hypotheses were tested at level of significance with α = 0.05. Interactional effect of treatment with Intelligence, Gender, Job Satisfaction, and Experience of Teachers were also studied. The treatment was found effective on teaching competency of secondary school teachers. Finally, the study has great uses for teachers, students, and school administrators.*
KEY WORD: *Student Evaluation on Teachers; Teachers' Self-Evaluation; Teaching Competency; Integrated Feedback.*

RINGKASAN: *"Pengaruh Umpan Balik Terpadu terhadap Kompetensi Mengajar Guru-guru Sekolah Menengah". Para guru diharapkan mengajar untuk memahami daripada sekadar belajar menghafal. Oleh karena itu, konsep pengajaran yang baik secara bertahap telah bergeser dari behavioris ke pandangan yang lebih konstruktivis. Inilah sebabnya mengapa upaya untuk peningkatan dan kemajuan pengajaran dilakukan pada dekade sebelumnya dan di masa depan, serta diperlukan lebih banyak studi dan upaya. Umpan balik terpadu berdasarkan evaluasi siswa terhadap guru dan evaluasi diri guru itu sendiri diambil sebagai variabel bebas dalam penelitian ini. Kompetensi mengajar guru-guru sekolah menengah adalah variabel terikat dalam penelitian ini. Penelitian bersifat eksperimental dan desain kelompok kontrol non-setara, yang disarankan oleh Donald T. Campbell & Julian C. Stanley (1963) dan sarjana lain, diadopsi untuk penelitian ini. Sampel penelitian terdiri dari 77 guru sekolah menengah dan 220 siswa dari empat sekolah menengah CBSE (Dewan Sekolah) yang berafiliasi dengan bahasa Inggris di kota Indore, India. Sampel diambil secara acak dan bersetujuan. Hipotesis nol dirumuskan. ANCOVA (Analisis Kovarian) satu arah dan desain faktorial 2X2 ANCOVA digunakan untuk analisis data. Hipotesis diuji pada tingkat signifikansi dengan α = 0.05. Pengaruh interaksional dari perlakuan terhadap Kecerdasan, Gender, Kepuasan Kerja, dan Pengalaman Guru juga dipelajari. Perlakuan ditemukan efektif pada kompetensi mengajar guru-guru sekolah menengah. Akhirnya, studi ini sangat bermanfaat bagi para guru, siswa, dan administrator sekolah.*
KATA KUNCI: *Evaluasi Siswa terhadap Guru; Evaluasi Diri Guru; Kompetensi Mengajar; Umpan Balik Terpadu.*

About the Authors: **Dr. Nilesh Kumar Patel** is a Principal at the Vidyasagar College, DA (Devi Ahilya) University, Indore, India. **Prof. Dr. Sushil Kumar Tyagi** is a Dean at the School of Education, DA (Devi Ahilya) University, Indore, India. For academic interest, the authors are able to be contacted via their e-mails address at: nktp12374@gmail.com and sktyagi.sk@gmail.com
Suggested Citation: Patel, Nilesh Kumar & Sushil Kumar Tyagi. (2018). "Effect of Integrated Feedback on Teaching Competency of Secondary School Teachers" in *ATIKAN: Jurnal Kajian Pendidikan*, Volume 8(2), December, pp.85-98. Bandung, Indonesia: Minda Masagi Press, ISSN 2088-1290.
Article Timeline: Accepted (October 28, 2018); Revised (November 29, 2018); and Published (December 30, 2018).

INTRODUCTION

Today, the teachers are expected to teach for understanding rather than merely rote learning. Therefore, the concept of good teaching has been gradually shifted from behaviorist to a more constructivist view. This is why the efforts for improvement and advancement of teaching were made in earlier decades and in future, more studies and efforts are needed (Westbrook *et al*., 2013; Allybokus, 2015; and Bada, 2015).

Assuming that no one is perfect and, therefore, everyone has room for improvement, teacher evaluation was considered the mean to identify the aspects of good teaching and to identify the aspects, which needed to be changed. The literature on teaching is crammed full of good researches, yet efforts made in the area of teacher evaluation are insufficient. After studying the theoretical contributions made earlier, the researchers felt the need of more studies in the context of teacher evaluation at secondary level in many directions (Jabbarifar, 2009; Han & Yin, 2016; and Blazar & Kraft, 2017).

B.L. Johnson (1997), and other scholars, conducted a study on student rating of teaching and found that teachers' personality as perceived by students was still very significantly related to rating of teaching quality. It was argued that there is a proper state of affairs, which does not undermine the validity of student ratings (*cf* Johnson, 1997; Clayson, 2009; and Tanabe & Mori, 2013).

In another studies, conducted by J. Centra (1993) and other scholars, it was found that teachers generally evaluated their teaching somewhat differently from the way their students evaluated it (Centra, 1993; Abrami, 1989; and Patel, 2017). B. Fresko, D. Kfir & F. Nasser (1997), and other scholars, also concluded the study with a suggestion of using student ratings and instructors predictions to motivate teaching improvement (*cf* Fresko, Kfir & Nasser, 1997; Marsh & Hattie, 2002; and Dehaloo, 2011).

An attempt made by B.K. Passi (1976), and other scholars, on the interaction effect of the different techniques of feedback and the effect was found not to be significant (Passi, 1976; Chawla & Thukral, 2011; and Sharma, 2011). P. Black & D. Wiliam (1998), and other scholars, also found that few items reflecting job satisfactions of teachers needed to be included in the tool of self-assessment of teachers (Black & Wiliam, 1998; Nyakundi, 2012; and Patel, 2017).

An effort made by E.S. Balachandran (1981), and other scholars, it was found that the evaluative feedback based on students' ratings of teachers helped teachers to improve their teaching effectiveness irrespective of sex or subjects of teachers (Balachandran, 1981; Abrami, Marilyn & Raiszadeh, 2001; and Jain, 2014). The same results were found by J. Centra (1993), and other scholars, pertaining to improve teaching effectiveness (Centra, 1993; Jain, 2014; and Alexander, 2016). Finding of N. Davidovitch & D. Soen (2006), and other scholars, also confirmed this result (Balachandran, 1981; Davidovitch & Soen, 2006; and Alexander, 2016).

P.K. Mishra (1983), and other scholars, found significant and positive behavioural changes in teachers, because of receiving feedback. P.K. Mishra (1983), and other scholars, also found that teaching behaviour of the teachers could be changed in a positive direction by giving feedback information in the way of self-rating and class rating (Carroll, 1981; Mishra, 1983; Airasian & Gullickson, 1994; Scheeler, Ruhl & McAfee, 2004; and Patel, 2018).

Nilesh Kumar Patel (2017 and 2018) found that after giving feedback, the teachers became more indirect and less direct in then-behaviour; and the students began to like them more (Patel, 2017 and 2018). In an attempt, S. Qureshi & R. Ullah (2014) and other scholars noted the change in both, directly observed measures as well as in the perceptions of the teaching assistants and their students (Scheeler, Ruhl & McAfee, 2004; Mansaray, 2012; Nicola, Thomsonb & Breslin, 2014; Qureshi & Ullah, 2014; and Patel, 2017 and 2018).

Results of the study conducted by A.A. Summers & B.L. Wolfe (1975), and other scholars, also support the use of student ratings as measures of teaching effectiveness (Summers & Wolfe, 1975; Abrami, D'Apollonia

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

& Cohen, 1990; and Darling-Hammond, 2000). J.J. Appleton *et al.* (2006) and other scholars, in their studies, found that the teachers who received feedback, there were significant changes in pupil ratings in their classes, indicating more satisfaction and friction. It also revealed that giving the teachers feedback as well as information may enhanced pupil engagement (*cf* Appleton *et al.,* 2006; Misra, 2006; and Ndisang & Benson, 2014).

Many studies also suggested that although teachers were initially ambivalent about using student feedback to inform their practice. After looking at comprehensive data that showed now their thinking compared with student thinking, all of the participants learned from and incorporated student suggestions into their practice (Abrami, D'Apollonia & Rosenfield, 1997; D'Apollonia & Abrami, 1997; and Wilson & Friedrich, 2015).

B.S. Chandel (1981) found that the relationship between self-rating and students' rating was not significant, but in another study, E.S. Balachandran (1981), found that student rating and self-rating of teaching were positively and significantly related. Moreover, the study revealed that the self-rating was significantly higher than the students' ratings (*cf* Balachandran, 1981; Chandel, 1981; Theal & Franklin eds., 1990; Buchanan & Jackson, 1997; and Cassidy, 2006).

P.K. Mishra (1983) found that the self-rating was most effective source of feedback, but student rating were also effective in changing/behaviour (Mishra, 1983). The studies conducted by many researchers found also that all the three strategies of giving feedback: college supervisor, self, and peers feedback were equally effective (Mishra, 1983; Aigner & Thum, 1986; Marsh & Roche, 1997; Lipnevich & Smith, 2008; and Patel, 2017 and 2018).

S.P. Mishra (1985), and other scholars, found the difference between feedback effect by self-rating and class rating was highest for language teachers. They concluded that female teacher were highly susceptible to behaviour change through feedback (Mishra, 1985; Kural, 2006; and Patel, 2017 and 2018). Significant differences were found between the sub-groups of male and female, arts and science in their teaching efficiency through self-evaluation in the studies conducted by S.A. Basow & N.T. Silberg (1987); Nurcan Kahraman (2014); and Nilesh Kumar Patel (2017).

Beatrice Avalos (2011), and other scholars, found that science teachers are moderately effective in self-examination about reflective teaching (Avalos, 2011; Mathew, 2017; and Patel, 2017). Nilesh Kumar Patel (2017 and 2018) found that students rate male teachers higher than they rated female teachers (Patel, 2017 and 2018). E.S. Balachandran (1981), and other scholars, also found that the evaluated feedback based on students' ratings helped teachers significantly to improve their teaching effectiveness (Balachandran, 1981; Cohen, 1981; Wilson, 1986; and Jain, 2014).

A study conducted by IIP (Indian Institutes of Psychometry), in 1982, it was found that some biographical factors and the socio-economic level of the subject etc. had some influence in changing the value of self-rating (cited in Patel, 2017 and 2018). Another result found, in the same study, was that the subjects who studied in villages thought themselves to be better than what they actually were. In the same study, it was also found that self-assessment was positively biased. Because of the changing trend of accountability and high stakes testing, schools are interested in investigating and adopting other "non-traditional" factors affecting achievement. Educational agencies are attempting to analyze all factors of educational environment in order to improve student achievement (*cf* Bailey, 1981; Blackwell, 1983; Kahraman, 2014; and Patel, 2017 and 2018).

D. Blazar & M.A. Kraft (2017), and other scholars, suggested that the teachers should maintain appropriate classroom behaviour (Rahimi & Karkami, 2015; Blazar & Kraft, 2017; and Patel, 2018). Accepting the importance of open climate, D. Prakasham (1988) and other scholars concluded that the open school organizational climates positively affect both teaching competence as well as teacher effectiveness (Prakasham, 1988; Singh, 2012; and Patel, 2017 and 2018).

After a detail study of these entire researches and findings, the researchers come to know that improvement of teaching

ISSN 2088-1290 (print)** and **www.journals.mindamas.com/index.php/atikan

is an important need of the educational systems; therefore, more works are needed to contribute in these perspectives. The researchers have selected feedback based on student evaluation of teachers and teachers' self-evaluation as treatment. The researchers found in the researches discussed earlier that teaching competency might have some influences on teaching-learning process, but enough studies were not found in the chosen area of study. Therefore, teaching competency was included in this effort of study (*cf* Aleamoni, 1976; Basow, 1995; Bada, 2015; Sung, Chang & Liu, 2016; and Patel, 2017 and 2018).

Research Objectives. Researchers formulated following objectives for the study: (1) to study the effect of Integrated feedback, Intelligence, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate; (2) to study the effect of Integrated feedback, Gender, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate; (3) to study the effect of Integrated feedback, Job Satisfaction, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate; and (4) to study the effect of Integrated feedback, Age, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate.

METHODS

Sample. The present study was experimental in nature. The sample of the study comprised of 77 secondary school teachers belonging to four different schools of Indore City in India. These schools were selected by purposive sampling technique and all the teachers teaching in secondary classes during 2014 – 15 were taken as sample. The treatment was assigned randomly. About 5 students of each secondary class taught by the teachers were also taken as sample in the present study. These students were selected randomly from each class taught by the secondary school teachers of experimental group and control group (Cook *et al*., 2001; Locke, Silverman & Waneen, 2004; and Dunning, 2012).

There were 220 students in the sample. The schools had comparable management and teacher recruitment policies respectively and comparable quality of education being imparted to their students. Students' clientele too were almost similar in their parental socio-economic and cultural backgrounds. There were thirty two male teachers and forty five female teachers taken in the sample of the study.

Experimental Design. The present study was Experimental in nature and Non Equivalent Control Group Design, suggested by Donald T. Campbell & Julian C. Stanley (1963) and other scholars, were adopted for study. There were two groups of schools: one of which was randomly designated as Experimental Group; and the other one as Control Group. Both the groups were pre-tested by administering Teaching Competency Test, Intelligence Test, and Job Satisfaction Scale on the Teachers (Campbell & Stanley, 1963; Kocakaya, 2011; and Dunning, 2012).

The treatment was provided to sampled secondary school teachers of Experimental Group in the form of Integrated Feedback based on Student Evaluation of Teachers and Teachers' Self Evaluation. The effect of treatment was analyzed by post-administered Teaching Competency Test (Locke, Silverman & Waneen, 2004; Kocakaya, 2011; and Dunning, 2012).

Tools. The variables to which the data were collected were Teaching Competency, Job Satisfaction, and Intelligence of Teachers. J. Raven (1986)'s Standard Progressive Matrices test was used to assess Intelligence and Job Satisfaction. Questionnaire was used to measure Job Satisfaction (*cf* Raven, 1986; Raven & Raven, 2003; and Abdalgadr, 2009). Teaching Competency was studied by General Teaching Competency Scale developed by B.K. Passi & M.S. Lalita (1994); M. Kaur & A. Talwar (2014); and P. Kartik & M. Ahuja (2016).

Procedure of Data Analysis. One way ANCOVA (Analysis of Covariance) was used to study the first objective and 2X2 Factorial Design ANCOVA is used to study the rest 4 objectives (Miller & Chapman, 2001; Huitema, 2011; and Tabachnick & Fidell, 2013).

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

Table 1:
Summary of 2X2 Factorial Design ANCOVA for Teaching Competency by Considering Intelligence as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Integrated Feedback	1	658.575	658.575	13.482	0.000
Intelligence	1	20.212	20.212	0.414	0.522
Integrated Feedback * Intelligence	1	123.898	123.898	2.536	0.116
Error	72	3517.208	48.850		
Total	**75**				

Table 2:
Adjusted Mean Scores of Teaching Competency of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	120.7
Control Group	114.8

RESULTS AND DISCUSSION

Firstly, ***Effect of Integrated Feedback, Intelligence, and Their Interaction on Teaching Competency by Considering Pre-Teaching Competency as Covariate.*** The second objective was to study the effect of Integrated Feedback, Intelligence, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate. There were two levels of Integrated Feedback, namely: Integrated Feedback and No-Feedback.

First level of Integrated 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 (Analysis of Covariance). The results are given in table 1.

About the Effect of Integrated Feedback on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 1, it can be seen that the adjusted F-value for Integrated Feedback is 13.482, 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 Teaching Competency of experimental group differ significantly from control group, when pre-Teaching Competency was taken as covariate. Thus, the null hypothesis that: "There is no significant effect of Integrated Feedback on Teaching Competency when pre-Teaching Competency was taken as covariate" was rejected at 0.01 level of significance. See table 2.

Further, from table 2, it can be seen that adjusted mean score of Teaching Competency of experimental group, i.e. 120.7, was found to be significantly higher than that of control group, i.e. 114.8. Hence, it can be concluded that Integrated Feedback provided to the secondary school teachers was found to be effective in terms of Teaching Competency of the teachers, when pre-Teaching Competency was taken as covariate.

About Effect of Intelligence on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 2, it can be seen that the adjusted F-value for Intelligence is 0.414, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that: "There is no significant effect of Intelligence on Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. It can, thus, be concluded that the Teaching Competency is independent of Intelligence of teachers when pre-Teaching Competency was taken as covariate.

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

Table 3:
Summary of 2X2 Factorial Design ANCOVA for Teaching Competency by Considering Pre-Teaching Competency as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Integrated Feedback	1	530.080	530.080	10.488	0.002
Gender	1	19.165	19.165	0.379	0.540
Integrated Feedback * Gender	1	9.326	9.326	0.185	0.669
Error	72	3638.836	50.539		
Total	**75**				

Table 4:
Adjusted Mean Scores of Teaching Competency of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	120.5
Control Group	115.1

About Effect of Interaction between Integrated Feedback and Intelligence on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 2, it can also be seen that the adjusted F-value for the interaction between the Integrated Feedback and Intelligence is 2.536, 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 Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Thus, it can be concluded that the Teaching Competency is independent of interaction between Integrated Feedback and Intelligence when pre-Teaching Competency was taken as covariate.

Secondly, ***Effect of Integrated Feedback, Gender, and Their Interaction on Teaching Competency by Considering Pre-Teaching Competency as Covariate.*** The third objective was to study the effect of Integrated Feedback, Gender, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate. There were two levels of Integrated Feedback, namely: Integrated Feedback and No-Feedback.

First level of Integrated 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 (Analysis of Covariance). The results are given in table 3.

About Effect of Integrated Feedback on Teaching Competency Considering Pre-Teaching Competency as Covariate. From table 3, it can be seen that the adjusted F-value for Integrated Feedback is 10.488, whose level of significance with df (1, 74) is 0.002; therefore, it is significant at 0.01 level of significance.

This shows that the adjusted mean score of Teaching Competency of experimental group differ significantly from control group, when pre Teaching Competency was taken as covariate. Thus, the null hypothesis that: "There is no significant effect of Integrated Feedback on Teaching Competency when pre-Teaching Competency was taken as covariate" was rejected at 0.01 level of significance. See table 4.

From table 4, it can be seen that adjusted mean score of Teaching Competency of experimental group i.e. 120.5 was found to be significantly higher than that of control group i.e. 115.5. Hence, it is concluded that Integrated Feedback provided to the secondary school teachers was found to be effective in terms of Teaching Competency of the secondary school teachers, when pre-Teaching Competency was taken as covariate.

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

Table 5:
Summary of 2X2 Factorial Design ANCOVA for Teaching Competency by Considering Pre-Teaching Competency as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Integrated Feedback	1	522.566	522.566	10.405	0.002
Job Satisfaction	1	1.150	1.150	0.023	0.880
Integrated Feedback *Job Satisfaction	1	48.267	48.267	0.961	0.330
Error	72	3615.913	50.221		
Total	**75**				

Table 6:
Adjusted Mean Scores of Teaching Competency of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	120.2
Control Group	114.9

About Effect of Gender on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 3, it can be seen that the adjusted F-value for Gender is 0.379, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that: "There is no significant effect of Gender on Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Thus, it is concluded that the Teaching Competency is independent of Gender of teachers when pre-Teaching Competency was taken as covariate.

About Effect of Interaction between Integrated Feedback and Gender on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 3, it can be seen that the adjusted F-value for the interaction between the Integrated Feedback and Gender is 0.185, 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 Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Thus, it is concluded that the Teaching Competency is independent of interaction between Integrated Feedback and Gender when pre-Teaching Competency was taken as covariate.

Thirdly, ***Effect of Integrated Feedback, Job Satisfaction, and Their Interaction on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate.*** The forth objective was to study the effect of Integrated Feedback, Job Satisfaction, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate. There were two levels of Integrated Feedback, namely: Integrated Feedback and No-Feedback.

First level of Integrated 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 (Analysis of Covariance). The results are given in table 5.

About Effect of Integrated Feedback on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 5, it can be seen that the adjusted F-value for Integrated Feedback is 10.405, whose level of significance with df (1, 74) is 0.002; therefore, it is significant at 0.01 level of significance.

This shows that the adjusted mean score of Teaching Competency of experimental group differ significantly from control group, when pre-Teaching Competency was taken

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

Table 7:
Summary of 2X2 Factorial Design ANCOVA for Teaching Competency by Considering Pre-Teaching Competency as Covariate

Source	df	SSy.x	MSSy.x	Fy.x	Sig.
Integrated Feedback	1	509.168	509.168	10.161	0.002
Age	1	50.332	50.332	1.004	0.320
Integrated Feedback * Age	1	5.160	5.160	0.103	0.749
Error	72	3607.992	50.111		
Total	**75**				

Table 8:
Adjusted Mean Scores of Teaching Competency of Experimental Group and Control Group

Group	Adjusted Mean
Experimental Group	120.3
Control Group	115.0

as covariate. Thus, the null hypothesis that: "There is no significant effect of Integrated Feedback on Teaching Competency when pre Teaching Competency was taken as covariate" was rejected at 0.01 level of significance. See table 6.

Further, from the table 6, it can be seen that the adjusted mean score of Teaching Competency of experimental group i.e. 120.2 was found to be significantly higher than that of control group i.e. 114.9. Hence, it is concluded that Integrated Feedback provided to the teachers was found to be effective in terms of Teaching Competency of the secondary school teachers, when pre-Teaching Competency was taken as covariate.

About Effect of Job Satisfaction on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 5, it can be seen that the adjusted F-value for Job Satisfaction is 0.023, 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 Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Hence, it is concluded that that the Teaching Competency is independent of Job Satisfaction of secondary school teachers when pre-Teaching Competency was taken as covariate.

About Effect of Interaction between Integrated Feedback and Job Satisfaction on Teaching Competency by Considering Pre-Teaching Competency as Covariate. From table 5, it can also be seen that the adjusted F-value for the interaction between the Integrated Feedback and Job Satisfaction is 0.961, 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 Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Thus, it is concluded that the Teaching Competency is independent of interaction between Integrated Feedback and Job Satisfaction when pre-Teaching Competency was taken as covariate.

Fourthly, ***Effect of Integrated Feedback, Age, and Their Interaction on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate.*** The last objective was to study the effect of Integrated Feedback, Age, and their interaction on Teaching Competency by considering pre-Teaching Competency as covariate. There were two levels of Integrated Feedback, namely: Integrated Feedback and No-Feedback.

First level of Integrated 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 Age, the subjects were divided in to two levels, namely: above average and below average.

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

There were 39 teachers in below average age and 38 teachers in above average age level. The data were analyzed with the help of 2X2 Factorial Design ANCOVA (Analysis of Covariance). The results are given in table 7.

About Effect of Integrated Feedback on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 7, it can be seen that the adjusted F-value for Integrated Feedback is 10.161 whose level of significance with df (1, 74) is 0.002; therefore, it is significant at 0.01 level of significance.

This shows that the adjusted mean score of Teaching Competency of experimental group differ significantly from control group when pre-Teaching Competency was taken as covariate. Thus, the null hypothesis that: "There is no significant effect of Integrated Feedback on Teaching Competency when pre Teaching Competency was taken as covariate" was rejected at 0.01 level of significance. See table 8.

Further, from table 8, it can be seen that the adjusted mean score of Teaching Competency of experimental group, i.e. 120.3, was found to be significantly higher than that of control group, i.e. 115.0. Hence, it is concluded that Integrated Feedback provided to the teachers was found to be effective in terms of Teaching Competency of the secondary school teachers, when pre-Teaching Competency was taken as covariate.

About Effect of Age on Teaching Competency of Secondary School Teachers by Considering Pre-Teaching Competency as Covariate. From table 7, it can be seen that the adjusted F-value for Age is 1.004, which is not significant even at 0.05 level of significance. Therefore, the null hypothesis that: "There is no significant effect of Age on Teaching Competency by considering pre-Teaching Competency as covariate" was not rejected. Thus, it is concluded that the Teaching Competency is independent of Age of teachers when pre-Teaching Competency was taken as covariate.

CONCLUSION

Integrated Feedback provided to the secondary school teachers was found effective in terms of Teaching Competency of the teachers, when pre-Teaching Competency was taken as covariate. Teaching Competency is independent of Intelligence of teachers and its interaction with Integrated Feedback when pre-Teaching Competency was taken as covariate. Teaching Competency is independent of Gender of teachers and its interaction with Integrated Feedback, when pre-Teaching Competency was taken as covariate.

Teaching Competency is also independent of Job Satisfaction of teachers and its interaction with Integrated Feedback, when pre-Teaching Competency was taken as covariate. Teaching Competency is independent of Age of teachers and its interaction with Integrated Feedback, when pre-Teaching Competency was taken as covariate.[1]

References

Abdalgadr, Alsedig A.A. (2009). "Standardization of Raven's Standard Progressive Matrices Test for a Libyan Sample". *Unpublished Ph.D. Thesis*. UK [United Kingdom]: School of Social Work, Psychology and Public Health UoS [University of Salford]. Available online also at: https://pdfs.semanticscholar.org/dd5f/f1561b1e921ca6ac1b9286dcaab43f2f4e1c.pdf [accessed in Indore City, India: September 16, 2018].

Abrami, P.C. (1989). "How Should We Use Student Ratings to Evaluate Teaching?" in *Research in Higher Education*, Volume 30(2), pp.221–227.

Abrami, P.C., H.M. Marilyn & F. Raiszadeh. (2001). "Business Students' Perceptions of Faculty Evaluations" in *The International Journal of Educational Management*, Volume 15(1), pp.12-22.

Abrami, P.C., S. D'Apollonia & P.A. Cohen. (1990). "Validity of Student Ratings of Instruction: What We Know and What We Do Not" in *Journal of Educational Psychology,* Volume 82(2), pp.219-231.

Abrami, P.C., S. D'Apollonia & S. Rosenfield. (1997). "The Dimensionality of Student Ratings of Instruction:

[1] ***Statement:*** This is to certify that the manuscript is an original work by us based on research. We have duly acknowledged the work(s) of others we used in writing this article/manuscript. We have duly cited all such work(s) in the text as well in the list of the References, and that we have presented within quotes all the original sentences and phrases, etc. taken from the sources, which we have consulted in writing this article/manuscript. We, further, declare that the paper has not been previously published, is not currently submitted for reviews to any other journal/magazine or periodicals, and will not be submitted elsewhere.

ISSN 2088-1290 (print) *and* ***www.journals.mindamas.com/index.php/atikan***

What We Know and What We Do Not" in R.P. Perry & J.C. Smart [eds]. *Effective Teaching in Higher Education: Research and Practice*. New York: Agathon Press, pp.321-367.

Aigner, D.J. & F.D. Thum. (1986). "On Student Evaluation of Teaching Ability" in *The Journal of Economic Education,* Volume 17, pp.243-265.

Airasian, P.W. & A. Gullickson. (1994). "Examination of Teacher Self-Assessment" in *Journal of Personnel Education in Education,* Volume 8(2), pp.195-203.

Aleamoni, L.M. (1976). "Typical Faculty Concerns about Student Evaluation of Instruction" in *National Association of Colleges and Teachers of Agriculture Journal,* Volume 20(1), pp.16-21.

Alexander, Erin E. (2016). "Teacher Evaluation: The Relationship between Performance Evaluation Ratings and Student Achievement". *Unpublished Ph.D. Dissertation.* Lynchburg: Liberty University. Available online also at: https://pdfs.semanticscholar.org/9a66/3846b61e18d19403ffcf763f570ee2c63b6a.pdf [accessed in Indore City, India: September 9, 2018].

Allybokus, Bibi Sabina. (2015). "The Implementation of Learner-Centred Teaching in Mauritian State Secondary Schools: Examining Teachers' Beliefs and Classroom Practice". *Unpublished Doctoral Thesis.* UK [United Kingdom]: Institute of Education, University College of London. Available online also at: http://discovery.ucl.ac.uk/10021912/1/27%204%2015-%20EdD%20Theisis%20FINAL%20.pdf [accessed in Indore City, India: September 2, 2018].

Appleton, J.J. *et al.* (2006). "Measuring Cognitive and Psychological Engagement: Validation of the Student Engagement Instrument" in *Journal of School Psychology*, Volume 44, pp.427-445.

Avalos, Beatrice. (2011). "Teacher Professional Development in Teaching and Teacher Education Over Ten Years" in *Teaching and Teacher Education*, Volume 27, pp.10-20. Available online also at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.466.6330&rep=rep1&type=pdf [accessed in Indore City, India: September 16, 2018].

Bada, Steve Olusegun. (2015). "Constructivism Learning Theory: A Paradigm for Teaching and Learning" in *IOSR Journal of Research & Method in Education (IOSR-JRME),* Volume 5, Issue 6 [November-December], pp.66-70. Available online also at: https://pdfs.semanticscholar.org/1c75/083a05630a663371136310a30060a2afe4b1.pdf [accessed in Indore City, India: September 2, 2018].

Bailey, G.D. (1981). *Teacher Self-Assessment: A Means for Improving Classroom Instruction*. Washington, D.C.: National Education Association.

Balachandran, E.S. (1981). "Teaching Effectiveness and Student Evaluation of Teaching". *Unpublished Doctoral Thesis*. Madras, India: Madras University.

Basow, S.A. (1995). "Student Evaluations of College Professors: When Gender Matters" in *Journal of Educational Psychology,* Volume 87(4), pp.656-665.

Basow, S.A. & N.T. Silberg. (1987). "Student Evaluations of College Professors: Are Female and Male Professors Rated Differently?" in *Journal of Educational Psychology,* Volume 79(3), pp.308-314.

Black, P. & D. Wiliam. (1998). "Assessment and Classroom Learning" in *Assessment in Education: Principles, Policy & Practice,* Volume 5, Issue 1 [March], pp.1-65.

Blackwell, J.L. (1983). "A Statistical Interpretation of Student Evaluation Feedback: A Comment" in *Journal of Economic Education,* Volume 14, pp.19-25.

Blazar, D. & M.A. Kraft. (2017). "Teacher and Teaching Effects on Students' Attitudes and Behaviors" in *Education, Evaluation, and Policy Analysis,* Volume 39(1), March, pp.146-170. Available online also at: https://www.ncbi.nlm.nih.gov/pubmed/28931959 [accessed in Indore City, India: September 2, 2018].

Buchanan, D. & S. Jackson. (1997). *Self-Evaluation for Teachers and Student Teachers: A Framework for Professional Development*. Great Britain: Kogan Page.

Campbell, Donald T. & Julian C. Stanley. (1963). *Experimental and Quasi-Experimental Designs for Research.* Boston and London: Houghton Mifflin Company. Available online also at: https://www.sfu.ca/~palys/Campbell&Stanley-1959-Exptl&QuasiExptlDesignsForResearch.pdf [accessed in Indore City, India: September 16, 2018].

Carroll, J.G. (1981). "Faculty Self-Evaluation" in J. Millman [ed]. *Handbook of Teacher Evaluation*. Beverly Hills, CA: Sage, pp.180-200.

Cassidy, S. (2006). "Learning Style and Student Self-Assessment Skill" in *Education + Training*, Volume 48(2), pp.170-177.

Centra, J. (1993). *Reflective Faculty Evaluation: Enhancing Teaching and Determining Faculty Effectiveness.* San Francisco: Jossey Bass.

Chandel, B.S. (1981). "Teacher Appraisal by Students and Self: A Case Study" in M.B. Buch [ed]. *Third Survey of Research in Education.* Delhi: NCERT [National Council of Educational Research and Training].

Chawla, Vibha & Praveen Thukral. (2011). "Effects of Student Feedback on Teaching Competence of Student Teachers: A Microteching Experiment" in *Contemporary Educational Technology,* Volume 2(1), pp.77-87. Available online also at: https://pdfs.semanticscholar.org/10b1/a61f9ef4e55004afac7ba592807f022d9725.pdf [accessed in Indore City, India: September 2, 2018].

Clayson, Dennis E. (2009). "Student Evaluations of Teaching: Are They Related to What Students Learn? A Meta-Analysis and Review of the Literature" in *Journal of Marketing Education,* Vol.31, No.1 [April], pp.16-30. Available online also at: https://pdfs.semanticscholar.org/0c3a/33c941eb9de31d56a86f674495011baca9c7.pdf [accessed in Indore City, India: September 2, 2018].

Cohen, P.A. (1981). "Student Ratings of Instruction and Student Achievement: A Meta-Analysis of Multi Section Validity Studies" in *Review of Educational Research,* Volume 51, pp.281-304.

Cook, T.D. *et al.* (2001). *Experimental and Quasi Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin.

D'Apollonia, S. & P.C. Abrami. (1997). "Navigating Student Ratings of Instruction" in *American*

ISSN 2088-1290 (print)** and **www.journals.mindamas.com/index.php/atikan

Psychologist, Volume 52(11), pp.1198-1208.
Darling-Hammond, Linda. (2000). "Teacher Quality and Student Achievement: A Review of State Policy Evidence" in *Education Policy Analysis Archives,* Volume 8(1), January, pp.1-44.
Davidovitch, N. & D. Soen. (2006). "Using Students' Assessments to Improve Instructors' Quality of Teaching" in *Journal of Further and Higher Education,* Volume 30(4), pp.351-376. Available online also at: https://doi.org/10.1080/03098770600965375 [accessed in Indore City, India: September 9, 2018].
Dehaloo, Gunram. (2011). "The Motivation and Job Satisfaction of Secondary School Teachers in Kwazulunatal: An Education Management Perspective". *Unpublished Ph.D. Thesis*. UK [United Kingdom]: University of South Africa. Available online also at: https://core.ac.uk/download/pdf/43168590.pdf [accessed in Indore City, India: September 2, 2018].
Dunning, Thad. (2012). *Natural Experiments in the Social Sciences: A Design-Based Approach.* London: Cambridge University Press.
Fresko, B., D. Kfir & F. Nasser. (1997). "Predicting Teacher Commitment" in *Teaching and Teacher Education*, Volume 13, pp.429-438.
Han, Jiying & Hongbiao Yin. (2016). "Teacher Motivation: Definition, Research Development, and Implications for Teachers" in *Cogent Education,* Volume 3, pp.1-18. Available online also at: https://www.tandfonline.com/doi/pdf/10.1080/2331186X.2016.1217819?needAccess=true [accessed in Indore City, India: September 2, 2018].
Huitema, B. (2011). *The Analysis of Covariance and Alternatives: Statistical Methods for Experiments, Quasi-Experiments, and Single-Case Studies*, Volume 608. New York: John Wiley & Sons.
Jabbarifar, Taghi. (2009). "The Importance of Classroom Assessment and Evaluation in Educational System" in *Proceedings* of the 2nd International Conference of Teaching and Learning (ICTL), INTI University College, Malaysia. Available online also at: https://pdfs.semanticscholar.org/db8c/4d3e5e56aa80c220e17eeac25183acaaa43d.pdf [accessed in Indore City, India: September 2, 2018].
Jain, Anupam. (2014). "Effect of Students' Feedback and Teaching Experience on Teacher Effectiveness of Secondary School Teachers" in *Learning Community,* Volume 5(1), April, pp.77-89. Available online also at: https://pdfs.semanticscholar.org/c195/6219de181772d460e741abfdbe31ca2632c2.pdf [accessed in Indore City, India: September 9, 2018].
Johnson, B.L. (1997). "An Organizational Analysis of Multiple Perspectives of Effective Teaching: Implications for Teacher Evaluation" in *Journal of Personnel Evaluation in Education,* Volume 11, pp.69-87.
Kahraman, Nurcan. (2014). "Investigating the Relationship between Self-Assessment and Self-Efficacy of Pre-Service Science Teachers" in *International Journal of Education and Research,* Vol.2, No.7 [July]. Available online also at: https://www.ijern.com/journal/July-2014/07.pdf [accessed in Indore City, India: September 9, 2018].
Kartik, P. & M. Ahuja. (2016). "Comparative Study of Teaching Competency of Male and Female Trainees of Govt and Self Financed Colleges" in *IRA International Journal of Education and Multidisciplinary Studies*, Volume 4(2), pp.278-288. Available online also at: http://dx.doi.org/10.21013/jems.v4.n2.p6 [accessed in Indore City, India: September 16, 2018].
Kaur, M. & A. Talwar. (2014). "Teaching Competency of Secondary School Teachers in Relation to Emotional Intelligence" in *International Journal of Learning, Teaching, and Educational Research*, Vol.3, No.1 [March], pp.83-90. Available online also at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.677.114&rep=rep1&type=pdf [accessed in Indore City, India: September 16, 2018].
Kocakaya, Serhat. (2011). "An Educational Dilemma: Are Educational Experiments Working?" in *Educational Research and Reviews,* Volume 6(1), January, pp.110-123. Available online also at: https://pdfs.semanticscholar.org/92c4/1001fe85034d07138b744dfbd308b7e2b5d0.pdf [accessed in Indore City, India: September 16, 2018].
Kural, Mehmet Hamdi. (2006). "Student Perceptions on Their Physics and Mathematics Teachers' Effectiveness". *Unpublished M.Sc. Thesis.* Turkey: The Graduate School of Natural and Applied Sciences, Middle East Technical University. Available online also at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.633.8116&rep=rep1&type=pdf [accessed in Indore City, India: September 9, 2018].
Lipnevich, Anastasiya A. & Jeffrey K. Smith. (2008). *Response to Assessment Feedback: The Effects of Grades, Praise, and Source of Information*. USA [United States of America]: ETS [Educational Testing Service]. Available online also at: https://www.ets.org/Media/Research/pdf/RR-08-30.pdf [accessed in Indore City, India: September 9, 2018].
Locke, L.F., S.J. Silverman & W.S. Waneen. (2004). *Reading and Understanding Research.* Thousand Oaks: Sage, 2nd edition.
Mansaray, Ayodele Abdul. (2012). "The Roles and Positions of Teaching Assistants in Two Urban Primary Schools: An Ethnographic Study of Educational Work and Urban Social Change". *Unpublished Ph.D. Thesis*. UK [United Kingdom]: The Institute of Education, University of London. Available online also at: https://core.ac.uk/download/pdf/33679190.pdf [accessed in Indore City, India: September 9, 2018].
Marsh, H.W. & J. Hattie. (2002). "The Relation between Research Productivity and Teaching Effectiveness: Complementary, Antagonistic, or Independent Constructs?" in *The Journal of Higher Education,* Vol.73, No.5 [September/October]. Available online also at: https://pdfs.semanticscholar.org/1214/720a24511232ed2e1f8aa4bf443280d3f201.pdf [accessed in Indore City, India: September 2, 2018].
Marsh, H.W. & L.A. Roche. (1997). "Making Students' Evaluations of Teaching Effectiveness Effective" in *American Psychologist*, Volume 52(11), pp.1187-1197.
Mathew, Priya. (2017). "Reflective Practices: A Means to Teacher Development" in *APJCECT: Asia*

ISSN 2088-1290 (print) and www.journals.mindamas.com/index.php/atikan

Pacific Journal of Contemporary Education and Communication Technology, Volume 3, Issue 1. Available online also at: https://apiar.org.au/wp-content/uploads/2017/02/13_APJCECT_Feb_BRR798_EDU-126-131.pdf [accessed in Indore City, India: September 16, 2018].

Miller, G.A. & J.P. Chapman. (2001). "Misunderstanding Analysis of Covariance" in *Journal of Abnormal Psychology*, Volume 110(1), pp.40-48.

Misra, G. (2006). *Psychology and Societal Development: Paradigmatic and Social Concerns.* New Delhi: Concept Publishing Company.

Mishra, P.K. (1983). "A Comparative Study of Different Feedback Methods for Changing Teacher Behaviour". *Unpublished Ph.D. Thesis*. India: Utkal University.

Mishra, S.P. (1985). "Correlates of Effective Teaching as Measured by Student Ratings" in *Journal of Experimental Education,* Volume 49(1), pp.59-62.

Ndisang, D. & A. Benson. (2014). "The Effect of Feedback from Pupil to Teacher on Assessment for Leaning and Visible Learning: An Ethnographic Case Study in a Community School in England and the Outcome in a State High School in Queensland, Australia" in *Education Research International.* Available online also at: https://www.hindawi.com/journals/edri/2014/526438/ [accessed in Indore City, India: September 9, 2018].

Nicola, D., A. Thomsonb & C. Breslin. (2014). "Rethinking Feedback Practices in Higher Education: A Peer Review Perspective" in *Assessment & Evaluation in Higher Education,* Vol.39, No.1, pp.102-122. Available online also at: http://dx.doi.org/10.1080/02602938.2013.795518 [accessed in Indore City, India: September 9, 2018].

Nyakundi, Teresa Kemunto. (2012). "Factors Affecting Teacher Motivation in Public Secondary Schools in Thika West District, Kiambu County". *Unpublished M.Ed. Thesis.* India: The School Of Education, Kenyatta University. Available online also at: https://pdfs.semanticscholar.org/563c/0e7163f6fb105c6804f7581d954f4b8be336.pdf [accessed in Indore City, India: September 2, 2018].

Passi, B.K. (1976). *Becoming Better Teacher: Microteaching Approach*. Ahmedabad: Sahitya Mundranalya.

Passi, B.K. & M.S. Lalita. (1994). *General Teaching Competence Scale*. Agra: National Psychological Corporation.

Patel, Nilesh Kumar. (2017). "Effect of Integrated Feedback on Teacher Morale of Secondary School Teachers" in *IJoNTE: International Journal on New Trends in Education and Their Implications,* Volume 8, Issue 4 [October]. Available online also at: http://www.ijonte.org/FileUpload/ks63207/File/01.nilesh_kumar_patel.pdf [accessed in Indore City, India: September 2, 2018].

Patel, Nilesh Kumar. (2018). "A Survey of Studies on Evaluation of Teachers in India and Abroad" in *IRJMSH: International Research Journal of Management Sociology & Humanity,* Volume 9, Issue 9, pp.67-74. Available online also at: https://www.academia.edu/38000579/A_SURVEY_OF_STUDIES_ON_EVALUATION_OF_TEACHERS_IN_INDIA_AND_ABROAD [accessed in Indore City, India: November 10, 2018].

Prakasham, D. (1988). "A Study of Teacher Effectiveness as a Function of School Organizational Climate and Teaching Competency" in *Fifth Survey of Educational Research*, Volume 11, pp.14-65.

Qureshi, S. & R. Ullah. (2014). "Learning Experiences of Higher Education Students: Approaches to Learning as Measures of Quality of Learning Outcomes" in *Bulletin of Education and Research,* Vol.36, No.1 [June], pp.79-100. Available online also at: https://pdfs.semanticscholar.org/901e/743718cd6193fe5c2fcde4b30c810fe6cedf.pdf [accessed in Indore City, India: September 9, 2018].

Rahimi, Mehrak & Fatemeh Hosseini Karkami. (2015). "The Role of Teachers' Classroom Discipline in Their Teaching Effectiveness and Students' Language Learning Motivation and Achievement: A Path Method" in *Iranian Journal of Language Teaching Research*, Volume 3(1), January, pp.57-82. Available online also at: https://files.eric.ed.gov/fulltext/EJ1127336.pdf [accessed in Indore City, India: September 16, 2018].

Raven, J. (1986). "A Nation Really at Risk: A Review of Goodlad's 'A Place Called School'" in *Higher Education Review*, Volume 18, pp.65-79.

Raven, J. & J.C. Raven. (2003). *Manual for Raven's Progressive Matrices and Vocabulary Scales, Section 3: The Standard Progressive Matrices*. San Antonio: Harcourt Assessment, Inc.

Scheeler, M.C., K.L. Ruhl & J.K. McAfee. (2004). "Providing Performance Feedback to Teachers: A Review" in *Teacher Education and Special Education,* Vol.27, No.3. Available online also at: https://pdfs.semanticscholar.org/08c2/330f58c3560e66acd9e6cd96385a09ba9f93.pdf [accessed in Indore City, India: September 9, 2018].

Sharma, N. (2011). "A Survey of Teachers' Opinion on the Students' Evaluation of Teachers" in *International Journal of Educational Research and Technology*, Volume 2(1), pp.57-61.

Singh, Sushma. (2012). "A study of Teachers Burnout at Secondary School Stage in relation to School Climate, Locus of Control, Role Commitment and Socio-Economic Status". *Unpublished Ph.D. Thesis*. Aligarh, India: Department of Education AMU [Aligarh Muslim University]. Available online also at: http://ir.amu.ac.in/9661/1/T%208287.pdf [accessed in Indore City, India: September 16, 2018].

Summers, A.A. & B.L. Wolfe. (1975). "Which School Resources Help Learning? Efficiency and Equality in Philadelphia Public Schools". *Unpublished Paper.* Philadelphia, PA: ED 102 716, on February, owned by Authors.

Sung, Y.T., K.E. Chang & T.C. Liu. (2016). "The Effects of Integrating Mobile Devices with Teaching and Learning on Students' Learning Performance: A Meta-Analysis and Research Synthesis" in *Computers & Education,* Volume 94 [March], pp.252-275. Available online also at: https://www.sciencedirect.com/science/article/pii/S0360131515300804 [accessed

ISSN 2088-1290 (print)** and **www.journals.mindamas.com/index.php/atikan

in Indore City, India: September 16, 2018].

Tabachnick, B.G. & L.S. Fidell. (2013). *Using Multivariate Statistics.* Boston: Pearson, 6th edition.

Tanabe, Yoshitaka & Setsuko Mori. (2013). "Effects of Perceived Teacher Personality on Student Class Evaluations: A Comparison between Japanese Instructors and Native English Speaking Instructors" in *International Journal of English Linguistics,* Vol.3, No.3, pp.53-65.

Theal, M. & J. Franklin [eds]. (1990). *Student Rating of Instruction Issues for Improving Practices*. San Francisco: Jossey Bass, Inc.

Westbrook, Jo *et al*. (2013). "Pedagogy, Curriculum, Teaching Practices, and Teacher Education in Developing Countries". *Final Report*. UK [United Kingdom]: Education Rigorous Literature Review, Department for International Development. Available online also at: https://eppi.ioe.ac.uk/cms/Portals/0/PDF [accessed in Indore City, India: September 2, 2018].

Wilson, Kathleen M. & Laurie A. Friedrich. (2015). "iContact: The Digital Feedback Process in a University Setting" in *Faculty Publications: Department of Teaching, Learning, and Teacher Education,* No.205. Available online also at: http://digitalcommons.unl.edu/teachlearnfacpub/205 [accessed in Indore City, India: September 9, 2018].

Wilson, R. (1986). "Improving Faculty Teaching: Effective Use of Student Evaluations and Consultants" in *The Journal of Higher Education*, Volume 57(2), pp.196-211.

ISSN 2088-1290 (print)** and **www.journals.mindamas.com/index.php/atikan

The Secondary School Teachers in Indore City, India
(Source: http://www.stnorbertschool.ac.in/, 16/9/2018)

Integrated Feedback provided to the secondary school teachers was found effective in terms of Teaching Competency of the teachers, when pre-Teaching Competency was taken as covariate. Teaching Competency is independent of Intelligence of teachers and its interaction with Integrated Feedback, when pre-Teaching Competency was taken as covariate. Teaching Competency is independent of Gender of teachers and its interaction with Integrated Feedback, when pre-Teaching Competency was taken as covariate.

ISSN 2088-1290 (print)** and **www.journals.mindamas.com/index.php/atikan