

Difference in Self-reported and Students-rated Teacher Effectiveness among Medical and Engineering Faculty Members: Need for Direct Informal Feedback

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Abstract The main objective of this research was to find the difference between self-reported and students-rated teacher effectiveness among the faculty members of medical and engineering colleges as these two courses are highly competitive and academically very demanding. Self-reported teacher effectiveness of 310 faculty members (Medical 137 and Engineering 173; Males 180 and Females 130) from 7 private colleges (3 medical and 4 engineering) from Uttar Pradesh, India was obtained using Teacher Effectiveness Scale (TES, 2010) and their teacher ratings from 350 students of the respective colleges were acquired using Teacher Rating Scale (TRS, 2003). A significant correlation was revealed between self-reported and students-rated teacher effectiveness but the self perception of teacher effectiveness by the faculty members was found to be much higher than what was perceived by their students. No significant gender differences were found in self-reported or students rated teacher effectiveness. Comparing medical and engineering faculty, self-reported teacher effectiveness among engineering faculty members was found to be higher than those of medical faculty, however, no significant difference was observed in students-rated teacher effectiveness among the two groups. Recommendation for direct informal feedback from the students by faculty members is discussed.

Keywords: *self-reported and students-rated teacher effectiveness, direct informal feedback, medical and engineering faculty members*

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1. Introduction

The literature on teaching effectiveness or teacher effectiveness uses a variety of concepts. It has been explained by some researchers as teacher characteristics, whereas, others are more concerned with the teaching processes or the teaching outcomes [16,26]. However, the results of several studies provide a general consensus about some apparent dimensions of teaching effectiveness [1,3,22]. These include the teacher's (1) knowledge of the subject matter, (2) preparation and organization of the course, (3) sensitivity to and concern for students, (4) fairness in grading, (5) helpfulness, (7) elocutionary skills, and (8) class management (9) the effectiveness of instructional aides (textbook, etc.), and (10) the clarity of course objectives. Reference [17] found that according to students' perception of teacher effectiveness personality traits outweighed teaching methods by roughly a 3-to-2 ratio, and that student-focused characteristics outweighed subject-focused characteristics by a similar ratio. The most frequently mentioned teaching category was 'approachable' with the next most common attributes being: presents material well, makes subject interesting, helpful, and knowledgeable.

Reference [11] examined the perceptions among students towards lecturers teaching quality determinants from three public universities in Malaysia. A field survey among students from different field of studies (Social Sciences and Pure Sciences) was conducted through a questionnaire. The data were factor-analyzed to determine the key dimensions of lecturers' teaching quality. The result revealed that seventeen dimensions, namely: clarity, practicality, exercises, attention, enthusiasm, creativity, feedback, syllabus, motivation, extra reading, availability, technology, punctuality, current issue, approachability, language use, and communication skills were the qualities perceived by the students which discriminate between lecturers in terms of their teaching performance. In the present study, teacher effectiveness has been defined as (1) having good academic and professional knowledge with a clear concept of the subject matter (2) good preparation of the lesson with clear objectives (3) organized and systematic presentation of the concepts with proper learning materials (4) ability to communicate his/her knowledge to the students successfully (5) classroom management (6) positive attitude towards students (7) result feedback accountability and (8) ability to understand and motivate students.

During the 1970 s many universities began using student evaluations of teaching performance for performance appraisal purposes. Although, their validity, the techniques used to administer them, and the purposes for which they are used remain controversial [14,20], student feedback is now an important component in the formal faculty performance appraisal systems in most of the universities [3]. However, faculty opinions on the use of student evaluations range widely. Many researchers have expressed reservations about their use in faculty performance appraisal systems. A common concern is the possibility that factors other than teaching effectiveness influence the evaluation scores [2,15]. These include the procedures used to administer the evaluations [8] whether the course is required or elective and whether or not the course requires quantitative reasoning [5] class meeting time, class size [9], the course workload and students motivation [14], expected grades and grading standards of faculty members with the possibility of instructors showing lenient grading standards receiving higher overall rating [4,27] and students' prior interest and pre-existing student perceptions about a particular instructor or course might also affect student evaluation scores [19]. Reference [15] reported that students sometimes even tend to view the evaluations as a chance to "let off steam" by collectively assigning low ratings.

According to reference [20] the actual use of student ratings for formative purposes falls far short of its potential because institutions sometimes place too much emphasis on the summative component of ratings. When student ratings are overemphasized for summative evaluation and underutilized for developmental purposes, faculty often lose trust in the process and see little or no benefit in collecting student feedback. Such misuse erodes the potential benefits of ratings and can create a negative climate for faculty evaluation. Moreover, faculty may become defensive on getting formal corrective feedback from the authorities or their super-ordinates. Reference [12] developed a four-category scheme for assessing quality of self-reflection among instructors. First, in non-reflection, an instructor simply looks through the ratings without giving them much thought. At the second level of understanding, the instructor attempts to grasp what the ratings mean but does not relate them to his or her own experiences. Third, it is not until the reflection that instructors relate the results to their own experience of teaching the specific course. Finally, in critical reflection the teacher undergoes a transformation in perspective, perhaps brought on by the disequilibrium or cognitive dissonance produced when the feedback from student ratings differs from the teacher's view of how things went.

Study by reference [13] on difference in students and faculty members' perception from various academic disciplines has revealed some very interesting facts. Faculty members are 2 to 3 times more likely than students to define an effective teacher as someone who does the following: 1) loves the subject and knows the subject material well, 2) uses a variety of teaching methods or formats, 3) uses language that students can understand or relate to, 4) motivates students to do well in the course, 5) outlines course expectations clearly and accurately, 6) relates the materials to the students' lives. The faculty members are 4 to 5 times more likely than students to define an effective teacher as one who: 1)

encourages questions and feedback from students, 2) learns alongside students and 3) is organized and well-prepared for class. Students, on the other hand, are 2 to 3 times more likely than faculty to define an effective teacher as someone who does the following: 1) understands the stress students are under, 2) interacts with students and takes a hands-on approach to the subject and 3) gets students interested in the subject. Significantly different from faculty members' definitions, students are 4 to 6 times more likely than faculty to define an effective teacher as someone who 1) is patient and flexible when dealing with students' problems, 2) gets to know students and relates to students' lives, 3) has a sense of humor and 4) clearly indicates what material will be on tests. Most impressive of all, students are 12.1 times more likely than faculty members to define an effective teacher as someone who keeps students interested for the whole class period and makes the class enjoyable. The findings of Layne's study support more of students-oriented descriptors of teacher effectiveness among student responses while the faculty members are more subject-oriented in their description of teaching effectiveness. This shows that instructors differ quite significantly from students in their perception of teacher effectiveness.

1.1. Rationale and Objectives of the Study

As there is mixed opinion about the use of student evaluations for faculty performance appraisal system and the usefulness of formal feedback from the students for improving teacher effectiveness, the primary objective of the present study was to find if there was any correlation or any difference between self-reported and students-rated teacher effectiveness among faculty members of medical and engineering colleges. The study was focused on faculty members of medical and engineering colleges as curriculum and competition wise these two courses are most demanding and stressful. Also, the earlier studies on student evaluations of teaching performance were conducted mostly on undergraduate students from humanities, management or pure sciences. Not much literature could be found on this issue in medical and engineering education. Moreover, in Indian context there were none. Researchers have also found difference in students rating of teacher effectiveness based on academic disciplines with mathematics and science courses tending to receive lower ratings [5,10]. The secondary objective of the study was to find if there was any difference in self-reported and students-rated teacher effectiveness across gender and the two majors.

2. Method

The present research is exploratory and empirical in nature. The investigation examined the difference in self-reported and students-rated teacher effectiveness among faculty members of private medical and engineering colleges in Uttar Pradesh, India.

2.1. Participants and Procedure

With cities like Noida, Gaziabad, Meerut, Kanpur, Lucknow and Bareilly having many private professional colleges, Uttar Pradesh becomes major representative state of professional education in North India. Population wise

also it is the largest state in India. Well established colleges of these cities were selected on the basis of their infrastructure and courses offered. Approachability factor was also taken into consideration as interaction of the researcher with students was necessary for faculty rating. Twelve colleges (6 each of medical and engineering) were shortlisted and contacted for seeking permission to conduct the study but only seven colleges (3 medical and 4 engineering) granted the permission. Approval for the investigation was acquired from the principal, director and the chairman of these colleges.

2nd and 3rd year students in the various departments of the colleges were selected randomly depending upon their availability schedule. After brief introduction about the study, Teacher Rating Scale (TRS) along with the Glossary (criteria for rating various dimensions of teacher effectiveness) were provided to the students with proper instructions about how to rate the faculty members. The researcher was available to the students for any query. It was an anonymous rating i.e. names of the raters were not required and it was also ensured that no faculty member was present during the rating process. *Each student had to rate five teachers, thus each faculty member was rated by at least five students.* The confidentiality of the information obtained from the respondents was guaranteed. After getting the data from the students, the faculty members whose students-rated teacher effectiveness was available were contacted through the HODs of the concerned departments. After a brief introduction and required instructions the Teacher Effectiveness Scale (TES) was handed over to them. The confidentiality of the information obtained from the respondents was assured. Completed questionnaires were collected after few days, depending upon the time taken by the faculty members. The final sample consisted of 310 faculty members (Medical 137 and Engineering 173; Males 180 and Females 310), rated by 350 students from the respective colleges.

2.2. Tools

This study is part of a larger study which required detailed self evaluation from the faculty members. Therefore, two measures (TES and TRS) of teacher effectiveness were used, as TES is a self report measure with items constructed for self evaluation of teachers whereas items in TRS are to be rated by the students according to their perception about the personal qualities, professional competence and class-room performance of their teachers. Also, it would have been very time consuming for the students to rate five teachers each for 68 items; therefore TRS was used as it accommodates the various items of TES under 17 dimensions of teacher effectiveness making it convenient for the students. Both the tools used in the study are constructed and standardized on the Indian population and are available at Psychological Corporation of India. Data analysis was done using statistical software SPSS 16.0 version. Pearson r correlation and t-test were used to determine the relationship and difference in the variables under study.

2.2.1. Teacher Effectiveness Scale (TES)

TES, developed by Puri and Gakhar (2010) was administered to measure self-reported teaching

effectiveness of the faculty members. The test-retest reliability coefficient of the scale is 0.76 and its content validity is .91. The scale consists of total 68 items with the response categories – strongly agree, agree, undecided, disagree and strongly disagree. The areas of teaching measured by the test items are – academic and professional knowledge, preparation and presentation of lesson, class management, attitude towards students, colleagues and head of the institution, use of motivation, reward and punishment, result, feedback accountability and personal qualities. An example item is: “I seek cooperation of students to pursue my topic”.

2.2.2. Teacher Rating Scale (TRS)

TRS, developed by Deva (2003) was used for students-rated teacher effectiveness of the faculty members. The scale consists of 17 dimensions, grouped under three categories - personal qualities, professional competence and class-room performance of the teachers. For each dimension the teacher has to be rated on the scale of 1 to 7. The inter-rater reliability coefficient of the scale is .91 and its content validity is .85. An example item is: “Teacher encourages students to discuss and present their views”.

3. Results

The mean age of the total participating faculty members (N=310) was 33.97 years (S.D=10.146). Gender ratio was male (58%) versus female (42%). There was a significant difference in the mean age of medical faculty (40.50 years) as compared to the mean age of engineering faculty (29.36 years) showing that engineering faculty members were comparatively much younger than the medical faculty. The mean age of female faculty members (31.47 years) was also found to be lower than the mean age of male faculty members (36.44 years). **Table 1** provides the descriptive statistics of self-reported Teacher Effectiveness (TES) and students rated Teacher Effectiveness (TRS). As the number of items in both the scales were different (TES=68 & TRS=17) the scores of the faculty members on both the scales were converted into percentage scores. Mean of TES score of the total sample (M=85.15) was much higher than the mean of TRS score (M=72.79).

Table 1. Descriptive Statistics and Category wise Difference in Self-Reported (TES) and Students-Rated (TRS) Teacher Effectiveness among Faculty Members

	Category	Min	Max	Mean	SD	T test
TES	Med	66.47	99.12	83.22	5.962	
	Engr.	66.18	98.24	86.68	5.892	5.111***
	Males	66.18	99.12	85.22	6.179	
	Females	70.29	98.24	85.05	6.154	.234 (ns)
	Total	66.18	99.12	85.15	6.159	
TRS	Med	47.06	94.96	71.52	12.862	
	Engr.	45.38	99.16	73.79	11.478	1.647 (ns)
	Males	45.38	99.16	73.82	11.800	
	Females	45.38	94.12	71.37	12.468	1.762 (ns)
	Total	45.38	99.16	72.79	12.125	

Note: Medical N=137; Engineering. N= 173; Males N =180; Females N=130; ***p < .001; ns= not significant

Category wise scores on TES and TRS (medical vs. engineering and females vs. males), presented in Table 1 reveal that engineering faculty members ($M = 86.68$) differed significantly from medical faculty members ($M = 83.22$) on self-reported teacher effectiveness ($t = 5.111$). Although the mean of TRS scores for engineering faculty ($M = 73.79$) was little higher than those of medical faculty members (71.52), the difference was not significant ($t = 1.647$). Comparing the TES mean for male faculty members ($M = 85.22$) with that of female faculty members ($M = 85.05$), the difference was not significant at all ($t = .234$). The TRS mean for male faculty ($M = 73.82$) was higher than those of female faculty ($M = 71.37$) the difference was not significant ($t = 1.762$).

Table 2. Percentage of Faculty Members showing Higher Self-reported Teacher Effectiveness than Students-rated Teacher Effectiveness

	TES > TRS			
	V. High %	High %	M. High %	Total %
Med	20	51	15	86
Engr.	22	50	17	89
Males	18	50	21	89
Females	25	47	14	86
Total	22	48	17	87

Note: V. High = Very High; M. High = Marginally High

Table 3. Difference in Self-reported and Students-rated Teacher Effectiveness

Category	Mean TES	Mean TRS	Paired <i>t</i> -test TES & TRS	<i>r</i> TES & TRS
Med	83.22	71.52	11.389***	.363**
Engr.	86.68	73.79	16.775***	.476**
Males	85.22	73.82	14.713***	.475**
Females	85.05	71.37	13.370***	.372**
Total	85.15	72.79	19.802***	.430**

Note: *** $p < 0.001$; ** $p < 0.01$

Table 2 indicates that 87% of total faculty members reported higher teacher effectiveness as compared to what students had perceived. If we ignore the percentage of teachers whose self-reported teacher effectiveness was only marginally high (17%), there were still 70% (22% very high + 48% high) faculty members reporting high to very high teaching effectiveness than that of students-rated. Category wise comparison revealed that engineering faculty members (89%) showed more tendencies for higher self evaluation than medical faculty (86%). Gender wise comparison indicated that male faculty members (89%) reported higher self perception about their teaching effectiveness than female faculty members (86%).

Table 3 indicates a moderate correlation ($r = .430$) between self-reported and students rated teacher effectiveness, but Paired *t* test value for TES and TRS scores ($t = 19.802$) of the total sample reveals a large difference between self-reported and students rated teacher effectiveness. This indicates that the faculty members need better understanding of what students actually think about their teacher effectiveness. They need to bridge the communication gap between the students and the teachers to identify the areas where they can improve upon.

4. Discussions

In the current research faculty members had shown a tendency of reporting their teaching effectiveness much

higher than what students had perceived. This could be because of social desirability or due to general human tendency of being unaware about their flaws. Quite often they are not able to understand their flaws unless they get a genuine feedback from others. Therefore, it is suggested that the faculty members must have direct interaction with their students and take informal feedback from them regarding their teaching effectiveness. Earlier researches have shown that formal official evaluations of teacher effectiveness by the students are not much helpful in making the faculty members understand the weak and strong areas of their teaching. Probably they become defensive on getting formal corrective feedback from the authorities or their super-ordinates. Direct informal feedback will be more effective because it is less threatening and faculty members will be more open to students' suggestions. Many a time students are hesitant in telling the instructors directly about their flaws, therefore, faculty members can even take anonymous written feedback from their students.

A teacher needs awareness of his/her feelings, values and attitudes as a teacher, awareness of his/her behavior and how others see them [21]. Consistent and constructive feedback from students facilitates a teacher in better self-evaluation of his/her abilities. A good teacher has no hesitation in taking feedback from the students and then working upon it to continuously to evolve his/her performance. Practice of taking direct personal feedback from students may help a teacher to become adaptable, collaborative, confident, authoritative, open, and approachable [18]. It may also help in developing better communication skills, better abilities for conflict resolution and problem solving. According to reference [24], if faculty members are truly committed to becoming more effective teachers, they should set learning goals, proximal goals, behavioural goals, or a combination thereof. Commitment to these goals and seeking behaviourally based feedback facilitates the realization of goals and effective self-management. Thus, combination of goal setting, information seeking and receiving feedback will enhance classroom performance.

Category wise comparison of self-reported teacher effectiveness reveals that engineering faculty showed more tendency of reporting higher teacher effectiveness than medical faculty. This could be probably because engineering faculty members were comparatively younger and would have shown more social desirability thinking that the results might be used for formal self appraisal. However, there was no significant difference in students-rated teacher effectiveness among the two groups. This shows that students evaluate their teachers not as doctors or engineers, but purely on their qualities as teachers. Gender stereotypes that males have a better understanding of science and mathematics based subjects whereas female are better at teaching languages, is generally prevalent in many societies. But most experts agree that while there is probably some genetic basis for small differences between the sexes in math and spatial ability, culture plays by far the bigger role in men and boys' higher interest and achievement in science and math related fields. However, with the changes in socio-cultural norms, this gender stereotype is gradually reducing [28]. The results of the present study are convergent with this view, as no significant difference was found in teacher effectiveness

(both self-reported and students-rated) among male and female faculty members.

4.1. Limitations and Future Directions

This study has certain limitations. Firstly, social desirability factor could have been there to some extent in self-reported teacher effectiveness. Secondly, as the functioning and selection process for students and faculty members of private medical and engineering colleges differs from that of government colleges, the sample was restricted only to private institutes. There were also geographical constraints in the study as it was limited to institutes situated within Uttar Pradesh, India. Therefore, it is suggested that future researchers could conduct this type of study with faculty members and students at government colleges as well, and also in other states, countries and cultures, to provide more evidence to generalize findings from this study. Thirdly, suggestion for direct informal feedback is given in this study on the basis of large difference found in self-reported and students-rated teacher effectiveness and informal interaction with students and faculty members. Experimental research is recommended in future to establish cause-effect relationship between direct informal feedback from the students and teacher effectiveness.

4.2. Implications and Recommendations

The findings of this study justify the need of direct personal feedback from the students by the faculty members for self improvement rather than depending upon formal performance appraisal which may or may not be an accurate evaluation as many factors are involved in it and also, it may not be taken in a positive stride by some of the faculty members. Direct informal feedback will be more genuine and based on mutual benefit between students and the teacher. Social belief that males are better than females in teaching science related subjects has not been supported in this study as the students had rated the female faculty members equally competent. Hence there should be no prejudice against the teaching efficiency of female staff. Another interesting fact revealed in the present study was that that even in professional colleges like medical and engineering, students consider their faculty member more as teachers and less as doctors or engineers. It is also suggested that these issues need to be incorporated in the faculty development programmes.

5. Conclusion

Interaction with medical and engineering students revealed that most of them generally have a feeling of communication gap between students and the faculty members. They want the faculty to be more interactive and understanding, while faculty members generally feel that students need to be more sincere and responsible. Studies have shown that there is difference in students and instructors' perception of different dimensions of teacher effectiveness [13,17]. The present study revealed that self-reported teacher effectiveness of faculty members was much higher than their students-rated teacher effectiveness. Quite often people are not able to know their flaws unless informed by others. Feedback from others is useful in

understanding others' perspectives. The best measure for effective teaching is the amount of learning taking place. Therefore, students are in a better position to tell what makes them learn. Students' evaluations of teaching quality and methods although widely used are intensely controversial in institutions of higher education [7,25] and are not very effective in improving teacher effectiveness [20]. Therefore, faculty members must take direct informal feedback from the students which would probably be more effective as it will be non-threatening and mutually beneficial. This will also build a rapport and better understanding between students and the faculty members.

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References

- [1] Arreola, R.A., Developing a comprehensive faculty evaluation system (2nd edition), Anker Publishing, Bolton, MA, 2006.
- [2] Benton, S.L. and Cashin, W.E., Student Ratings of Teaching: A Summary of Research and Literature. The IDEA Centre, Manhattan, Kansas, 2012. Available: www.theideacenter.org/sites/default/files/idea-paper_50.pdf [Accessed Dec. 21, 2013].
- [3] Burdsal, C. A., and Harrison, P. D., "Further evidence supporting the validity of both a multidimensional profile and an overall evaluation of teaching effectiveness", *Assessment and Evaluation in Higher Education*, 33 (5), 567-576. August, 2008.
- [4] Centra, J. A., "Will teachers receive higher student evaluations by giving higher grades and less course work?", *Research in Higher Education*, 44 (5), 495-518. October, 2003.
- [5] Centra, J. A., Differences in responses to the Student Instructional Report: Is it bias? Educational Testing Service, Princeton, NJ, 2009.
- [6] Deva, R.C., Teacher Rating Scale (TRS), National Psychological Corporation, Agra, India, 2003.
- [7] Driscoll, J. and Cadden, D., "Student evaluation instruments: The interactive impact of course requirement, student level, department and anticipated grade", *American Journal of Business Education*, 3 (5), 21-30, May 2010.
- [8] Feldman, K. A., "Identifying exemplary teachers and teaching: Evidence from student ratings", In R. P. Perry & J. C. Smart (Eds.), *The Scholarship of teaching and learning in higher*

- education: An evidence-based perspective (pp. 93-129), Springer, Dordrecht, The Netherlands, 2007.
- [9] Hoyt, D. P. and Lee, E., IDEA Technical Report No. 12: Basic data for the revised IDEA system, Manhattan, KS: The IDEA Center, 2002 a. Available: <http://www.facultyevaluation.org/resource-links/student-rating-reference.html> [Accessed Dec. 22, 2013].
- [10] Hoyt, D. P., and Lee, E. Technical Report No. 13: Disciplinary differences in student ratings, Manhattan, KS: The IDEA Center. December 2002b. Available: http://www.theideacenter.org/sites/default/files/techreport-13_0.pdf [Accessed Dec. 22, 2013].
- [11] Hussin, Z.H., Jusoff, K. and Omars, M.W., "Perception of Students Teaching Quality Determinants and Effectiveness", *Asian Social Science*, 4 (12), 113-117, December 2008.
- [12] Kember, D., McKay, J., Sinclair, K. and Wong, F. K. Y., "A four-category scheme for coding and assessing the level of reflection in written work", *Assessment & Evaluation in Higher Education*, 33 (4), 363-379, July 2008.
- [13] Layne, L., "Defining effective teaching", *Journal on Excellence in College Teaching*, 23 (1), 43-68, January 2012.
- [14] Marsh, H. W., "Students' evaluations of university teaching: Dimensionality, reliability, validity, potential biases and usefulness", In R. P. Perry & J. C. Smart (Eds.), *The Scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 319-383), Springer, Dordrecht, The Netherlands, 2007.
- [15] Mason, K.H., Edwards, R.R. and Roach, D.W. Student evaluation of instructors: a measure of teaching effectiveness or of something else? *Journal of business Administration Online*, 1(2), July 2002. Available: <http://www.atu.edu/jbao/> [Accessed Nov. 18, 2013].
- [16] McGowan, W. R., and Graham, C. R., "Factors contributing to improved teaching performance", *Innovative Higher Education*, 34 (3), 161-171, August 2009.
- [17] Moore, S., and Kuol, N., "Retrospective insights on teaching: Exploring teaching excellence through the eyes of alumni", *Journal of Further and Higher Education*, 31 (2), 133-143, April, 2007.
- [18] Moritiboys, A., *Teaching with Emotional Intelligence: A step-by-step guide for higher and further education professionals*, Routledge, New York, 2005.
- [19] Murray, H. G., "Low-inference teaching behaviors and college teaching effectiveness: Recent developments and controversies", In R. P. Perry & J. C. Smart (Eds.), *The Scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 145-200). Springer, Dordrecht, The Netherlands, 2007.
- [20] Pallett, W. H., "Uses and abuses of student ratings", In P. Seldin, *Evaluating faculty performance* (pp. 50-65), Anker Publishing Company, Inc., Bolton, MA, 2006.
- [21] Palmer, P. J., *The Courage to Teach*, Jossey Bass, San Francisco, 1998.
- [22] Perry, R. P. and Smart, J. C. (Eds.) *The Scholarship of teaching and learning in higher education: An evidence-based perspective*, Springer, Dordrecht, The Netherlands, (2007).
- [23] Puri, S. and Ghakar, S.C., *Teacher Effectiveness Scale (TES)*, Manasvi, National Psychological Corporation, Agra, India, 2010.
- [24] Seijts, G., Taylor, I., and Latham, G., "Enhancing Teaching Performance through Goal Setting, Implementation and Seeking Feedback", *International Journal for Academic Development*, 3 (2), 156-168, April 1998.
- [25] Smith, B., "Student ratings of teaching effectiveness for faculty groups based on race and gender", *Education*, 129 (4), 615-624, July 2009.
- [26] Strong, J.H., Tucker, P.D. & Ward, T.J., "Tennessee Value Added Assessment System (TVAAS) Database: Implications for Educational Evaluation and Research", *Journal of Personnel Evaluation in Education*, 12 (3), 247-256, April 2003.
- [27] Trout, P., "Teacher evaluations", *Commonweal*, 127 (8), 10-11, April 2000.
- [28] Else-Quest, N. M., Hyde, J. S., & Linn, M. C., "Cross-national patterns of gender differences in mathematics: A meta-analysis", *Psychological Bulletin*, 136 (1), 103-127, January 2010.