
DYNAMICS OF VALUES ON TEACHING BEHAVIOR ON STUDENTS PERFORMANCE

Dr Manjusha Rani
Post Doctoral Fellow,
UGC New Delhi.

Dr.Haridutt Sharma
Post Doctoral Fellow
ICSSR, New Delhi

ABSTRACT

Although the search for teaching competencies has not been as fervent as the quest for Holy Grail, there is a long history of educators who sought a about teaching competence. The earlier emphasis on teacher attributes and teacher characteristics, to determinate of teacher efficiency and effectiveness, yielded to later theories advocating the ways and means adopted by him in an interactive situation with his pupils as a sole criterion of teacher-performance. The consensus, however, had been that teaching effectiveness must be considered in relation to a particular instructor, dealing with particular learners in a particular environment as he attempts to achieve a particular institutional goal. A blending of the means-referenced instructional model and a goal referenced instructional model, each bringing merits of its own, may help evolve teaching competence so fervently sought by all teacher educators. Teacher behavior must be significantly related to pupil achievement. As such, the system should not only assess what goes into a teaching act but also determine what it ends up in. If objectives are not achieved, revise.

KEY WORDS: Efficiency, Instructor, Determinants, effectiveness

INTRODUCTION

The terms teacher behaviour, teacher variables and teacher competence describe increasingly complex steps in the assessment of teachers. The term behaviour, for example, involves the most general level of description, whereas, the term observed and recorded. A variable specifies a behaviour by stating explicitly the way in which the behaviour is to be measured and, by redefining behaviours in terms of operations that are integral to this observation and measurement. Behaviours may be changed accordingly into variables by use of different operations.

Coming over to competence, it may be observed that while much of the literature deals with the nature of teacher competencies rarely if ever, a discussion focuses on the procedures needed to translate behavioural concepts and variable into competencies. Just as general behavioural concepts are used to derive variables are used to determine the next determining the next level of behavioural description. Management Technology, therefore, lays emphasis on determining competencies as integral to its general scheme of work.

TEACHING COMPETENCIES SCALE

Though competencies are characterized by a metric scale, they also suggest the specificity of a desired quantum of behaviour competencies. Therefore, identify a single level of proficiency or, a range of levels determined through theoretical or empirical process, at which a teacher must perform. Competencies and performance are, therefore, inversely related. Rosenshine and first had identified eleven such dimensions that showed relationship between teacher behaviour and pupil achievement as early as (1971), Borich (1977), however, found five of these dimensions having strong relationship to pupil achievement. Brophy and Evertson (1973), Soar (1973), Stallings (1975), Rosenshine (1975) and Good and Grouws (1975), conducted further research in refining the list of these dimensions of competence. Of the nature of process-product research, these studies were based on classroom observation and, related process-measure of teaching to product-measure of student-outcomes while determining such dimensions/variables that may spell competence.

Brophy and Evertson found classroom management or, control as the most important area in determining competence. Rober Soar also reached similar findings when his research supported the “idea that measurement of teacher behaviour which represents direction and control of pupil learning tasks, show

greatest pupil-gain.” Jane Stallings found pupil achievement and “classroom process. Significantly related” Barak Rosenshine reviewed these correlation studies (1972-76) and found direct instructional time, and content covered as positively related to achievement. Thomas Good and Douglas Grouws found that “more effective teacher..... spend more time teaching the whole class as a group, with more clarify, and appear to strike an interesting combination of engaging the entire class on similar tasks while maintaining a relaxed classroom climate.”, thus emphasizing the process-product relationship. Fredrick McDonald (1975) Found a positive correlations between teaching performance and gains in learning” and found that the “method of organizing instruction is a critical domain of teaching performance, by way of increased instructional time, use of effective interactive techniques and, task involvement.”

Factors affecting Teacher Performance

Mc Donald conducted specific studies to highlight factors affecting teacher performance. Although the major purpose of his work was to relate teaching performance to student learning, it was also designed to analysis the relation between a number of factors and teaching performance. These factor included measures of teacher aptitudes, attitudes, subject-mastery, and expertise in teaching. His instructional model represents a causal theory of relation among variables related to teaching-performance and student-learning. The largest number of relationship between his domains and teaching performance variables was found with the domain of teacher's aptitude which has four major aptitude factors.

Allen and Ryan (1960) are the fore-runners of the movement competencies which are defined as composite skills, behaviours or, knowledge. Precise learning objectives defined in operational terms, and accountability form the nexus of this approach which shifts the focus of evaluation to pupil achievement and is therefore, criteria-orient rather than norm-oriented.

Teacher education is the vehicle for preparing those who wish to practice in the teaching profession. As in all professions, this preparation involves, on the one hand, the acquisition of knowledge and the ability to apply it, and on the other, the development of needed repertoire of critical behaviour and skills, which when identified, become competency-objectives for a teacher. Competency based teacher education programme shifts the focus to highlight performance and consequence objectives and, as such, lays emphasis on exist rather than entrance requirement. Each of the ten teacher education institutions which were given the task of designing repeatable, accountable and systematically controlled programme that would focus on the development of effective teachers, made the following common suggestions:

- (1) Emphasis on specification of learner outcomes in terms of behavioural objectives;
- (2) Heavy emphasis on both clinical and field-based experience.
- (3) Use of interdisciplinary faculty resources; and
- (4) Heavy focused on the students during the after the training programme.

Education is an independent field of study, its theory is the philosophy and sociology. The practice of education depends on psychology, pedagogy and teaching technology. It is process of human, social and national development.

Teaching is a social task and activity. According to pedagogy, teaching is considered in the profession. Therefore teacher-education includes social, language and teaching skills, application of scientific rules and principles as well as professional ethics of teaching. The educational psychology, teaching technology and pedagogy are basic course content of teacher-education for practices aspects. The professional efficiency and ethics are developed by these courses.

Review of Literature

STUDIES RELATED TO ETHICS

The study of Ethics and their measurement, change in Ethics and their relationship with other variables has been a very important area of research in social and educational psychology. Ethics influence the psychological, social and political process in the mind of both layman and scientists. The perception of objects and choice of friends, selection of information and such other behaviours of human beings are also determined by the Ethics.

Importance of Ethics was formally recognized in the early period of social psychology. Thomas arid Znaniecki (1918) defined social psychology as "the scientific study of Ethics” Allport (1954) viewed the

Ethics as “the most distinctive and indispensable concept in contemporary American Social psychology”. Fishbein and Ajzen (1972) reported that over 750 articles related to Ethics were published during a two and a half years span of time. Many more must have been published since then. This shows that the study of Ethics is of interest to nearly all social psychologists and educationists. The history of the study of Ethics indicates that during the 1920s and up to the World War II research on Ethics was largely concerned with the definitions of the Ethics and its measurement. Some studies were conducted to establish relationship of Ethics to some social variables. Attempts during this period were also made to study the Ethics change. It was after this period that educationists also started taking keen interest in the study of Ethics of teachers towards teaching. Pupils, schools, administration etc.

Ethics, like other such concepts, can be defined in conceptual and operational terms. Both however, are intimately related to each other. The conceptual definition of a construct refers to its meaning within an abstract theoretical system. A theory is generally needed to link a concept to its various operations whereas in an operational definition, a concept is defined in terms of a sort of operations such as designing, administration and scoring of an opinion questionnaire.

The conceptual definition of the Ethics has been given in many ways by different authors. The term Ethics was first used to denote, “the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats and convictions about any specific topics” (Thurston & Chave, 1929). Later however, when motivational and effective characters of Ethics were emphasized, Thurston (1931) defined an Ethics as “the affect for or against a psychological object”. Allport (1954) defined Ethics as, “a mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related”. Krech and Crutchfield (1948) defined Ethics as an, “enduring organization of motivational, emotional, perceptual and cognitive processes with respect to some aspect of the individual's world (Himmelfarb and Eagly, 1974).

All these definitions point out to the underlying dimensions of ‘favourability’ an unfavourability’ towards an object which formed the cornerstone of Thurstone's Ethics scaling procedures. But some others like Fishbein and Ajzen (1972) have studied the problem of relationship between Ethics and behaviours. The Ethics are viewed by them as disposing the individual to think, feel and act in certain ways and are inferred from these three sources. It is evident, therefore, that Ethics consist of cognitive, affective and behavioural components. However, the affective component remains the central aspect of the Ethics.

In operational definition, “the term, ‘Ethics’ often is used in a generic sense to refer to any reports of what people think or feel or of the ways in which they intend to act” (Himmelfarb and Eagly, 1974).

The operational definitions mean use of some kind of tools for obtaining responses from the subjects. The most commonly used instrument in the studies on Ethics is some kind of questionnaire or scale. These questionnaires or scales assess Ethics through self-reports of opinions, beliefs, feelings, behaviour or intended actions. Statements are generally scaled to express ‘favourability or unfavourability’ toward the Ethics object.

The affective component of Ethics has however, been mostly emphasized. The latest comprehensive review of studies on various aspects of Ethics conducted outside India has been reported in the second Handbook of Research on Teaching by Khan & Weiss (Travers, 1973).

They have reported that self reporting, observational and projective techniques have been the measuring and data collection devices. The authors have said that the most frequently used procedure for measuring Ethics towards a stimulus object has been the administration of a collection of questions or statements to individuals. A variety of methods of scaling Ethics statements and scoring responses have been developed. These include methods of paired comparisons by Thurstone (1927), equal appearing intervals by Thurstone and Chave (1929), summated ratings by Likert (1932) and scalogram analysis by Guttman (1944). The scale discrimination method by Edwards and Kilpatrick (1948) combines Thurstone's and Likert's procedures (Khan and Weiss, 1973).

Edwards (1957) had reviewed the techniques of scale construction for Ethics measurement and discussed in detail the merits and demerits of these techniques on the basis of research done on them. Among other major publications on Ethics theory and its other aspects are by Fishbein (1967), Himmelfarb and

Eagly (1974), Wilson (1972), Green (1954), Allport (1954). Green has observed that, "the method of equal appearing intervals is the most widely used of the judgement methods".

Many self-reporting instruments have been developed to measure Ethics towards teaching, education, school and courses among teachers and students. The Minnesota Teacher Ethics Inventory (MTAI) (Cook et al., 1951) and the Survey of Study Habits and Ethics have been extensively used in research on teachers and students Ethics (Traverse, 1973). In fact, while reviewing research on teacher behaviour modification, it is found that MTAI has been widely used by researchers to study changes in Ethics. The MTAI was developed to distinguish between good and poor teachers in terms of their relationship with pupils. It is assumed that teachers who score high on this instrument should be able to maintain better relations with their pupils than teachers who score low. Several studies have been done using the MTAI. An Indian adoption has also been developed. However, this inventory is not meant to measure the Ethics of teacher educators towards the profession of teaching in a teacher education institution.

Khan and Weiss (1973) have reported, "the actual availability and documentation of psychometrically sound Ethics scales is, however, far from satisfactory". They have listed the available instruments to measure Ethics of teachers and students towards education, school, teacher, teaching and school courses and have classified them according to their categories like Thurston, Likert etc.

Several tools have been constructed in India to measure the Ethics of teachers and students. Wherever reliability coefficients are reported they are of a very high order indicating a general pattern of high reliability estimates of instruments on educational Ethics. A few other instruments developed in India are by Ahluwalia, Bhogle, Katti and Bannur, Deo, Mohan, Ponnambalam and Visvesaran (Pareek and Rao, 1974). Although all these scales are called as Ethics scales to measure Ethics toward's teaching, the content and orientations differ from scale to scale.

The Teacher Ethics Inventory by Ahluwalia (1974) was developed by taking up a research project financed by the National Council of Education Research and Training (NCERT). It is meant to measure student-teachers Ethics towards teaching professional, pupils, class-room teaching, teachers, educational process and child-centred practices. Another purpose of the project was to study the professional Ethics change among student teachers after their training was over. The inventory contains 90 statements, 15 in each of the six areas. The inventory was standardised on a group of 2169 student - teachers, about 5% of the total population of B.Ed. student - teachers in the Hindi speaking states. It is Likert type 5-point scale. It was tried out on 1402 Student - teachers sample from 15 colleges. Its split-half reliability is 0.88, test-retest (9 months) reliability is 0.78 and rational equivalence reliability is 0.70. The validity coefficient on MTAI is reported to be +0.23 only.

The Ethics scale by Katti and Bannur (1974) to measure Ethics of secondary school teachers towards the teaching profession consists of 40 statements. It is a 5 point Scales with likert type summated ratings. Its split half reliability coefficient is 0.76, and self correlation of the scale in full length was found to be +0.96. No Ethics test has been constructed at Ph.D. level during 1972-78, according to the second survey of Research in Education (Buch, 1979). However, some tests were constructed for M.Ed studies but these are not standardized.

Nevertheless, Ethics is considered an important factor in teaching learning process. The teacher Ethics is linked with student Ethics which, in turn, is associated with his achievement. Khan and Weiss (1873) have reported that several studies have been conducted at the high school level which used scores on the survey of study Habits and Ethics as predictors of academic performance. The studies by Holtzman and Brown (1968), Khan and Khan (1969, 1970) and Roberts (1969) found significant correlation between scores on Ethics and standardized achievement scores on some subjects (Travers, 1973). Similarly, there are studies which indicate relationship between teachers and students Ethics. For instance, Silberman (1969) obtained a significant relationship between student's predictions about teacher's Ethics towards them and actual class-room behaviour of teachers. Reed (1953) obtained a significant relationship between teachers effectiveness as perceived by students in the class-room and teacher's level of self-acceptance.

Loree (1971) has done a review of research on Ethics under four areas. These include the Ethics measurement and Ethics related to teacher effectiveness. He has classified the tools for assessing teachers

Ethics into four categories and has described the tools available in each category. Use of these tools by various researchers has also been discussed. Among self-reporting inventories the Minnesota Teacher Ethics Inventory (MTAI) by Cook, Leeds and Callis (1951) has been reported as the most widely used tool for measuring Ethics. Studies on relationship of teacher Ethics with effectiveness have also been reported by Loree. He reports that Sprinthall, Whiteley and Mosher (1966) found a relationship between the cognitive flexibility (an Ethics) and effective teaching.

Khan and Weiss (1973) have observed that, "it would appear that the relationship between teachers and student's Ethics has been regarded as axiomatic with no need for empirical research. It is likely that this premise has served as basis for the large number of studies conducted on students perceptions of teachers Ethics, teacher's value and beliefs, and the effects of demographic characteristics and teacher education on teachers Ethics". Brown (1975) has remarked about the association between teacher and student Ethics that "from an appraisal of other studies on student Ethics and' achievement, it is evident that teachers have an important influence on students Ethics".

Ryans (1960) concluded that increase in age and experience of teachers influence the teacher-characteristics in the negative direction.

The report of the Beginning Teacher Evaluation Study (Fisher et al., 1978) which is the culmination of a multi-year research programme on teaching effectiveness answered the question whether teaching processes, academic learning time and student achievement are related to student Ethics. The authors have reported that, "the general association of achievement and Ethics appeared to be basically orthogonal. Some factors contribute to increased achievement; other factors promote more positive Ethics".

A study was conducted by the NCERT (1969-70). The major hypothesis for this study was whether Ethics of teachers towards the profession are affected by the management of the school, location of the school, tenure of services, sex, marital status, age, and experience, academic and professional qualifications. The findings include that sex, age and experience do not affect significantly the Ethics of teachers.

Singh (1974) conducted a study to find out the relationship of teacher values with teacher Ethics. The sample consisted of 521 teachers from Higher Secondary Schools and University of Delhi. She found no difference in Ethics due to age, education and training of teachers, but reports that female teachers expressed a more favourable Ethics towards teaching as a profession than the male teachers.

Similarly Quraishi (1973) found that the Ethics of teachers towards teaching profession as independent variable did not show any significant result in predicating dependent variables.

Aggarwal (1966) conducted a study of the teacher educator's Ethics towards their profession and found that they had a favourable Ethics towards the profession and that the factors like age, sex and experience did not influence their Ethics.

Aaron (1969) however, found that there was significant correlation between the Ethics and achievement motives of teachers and pupils. Naidu (1975) in a study based on a sample of 360 teachers from Andhra Pradesh found that all teachers had favourable Ethics towards teaching, but the females had more favourable Ethics. Bhogle (1970) conducted a study on psychological and organisational correlates of acceptance of innovations by secondary schools. She found that head teachers with favourable Ethics towards teaching and older in age were more ready to adopt innovations.

Mehrotra (1973) He found that:

1. Ethics of those who completed the course was more favourable than that of those who did not,
2. Ethics of women students was more favourable than that of men,
3. the Ethics of some age groups towards the profession at the end of the course was less than at the beginning,
4. the Ethics was more favourable with higher age group and it increased as the age increased except a decrease in between the age group 32-36 years and
5. the Ethics became more positive with more teaching experience except for the group with 13-17 years of experience.

Parashar (1963) in a study of teacher Ethics towards teaching found that age and teaching experience had no effect on Ethics of teachers towards their profession. A study has been conducted by Samantroy

(1970) on teacher Ethics and its relationship with adjustment and efficiency of teachers. He found that a large majority of teachers (78%) have a favourable Ethics towards teaching, no significant difference was found between the Ethics of men and women teachers, and the teacher Ethics is related with adjustment efficiency to some degree.

Ethics towards teaching in relation to variables of personality, intelligence, adjustment, creativity and values (Kala, S. 1989), and impact of elementary teacher education programme on attitudinal change of elementary teacher trainees of Orissa (Sinha, 1991) followed the design of presage studies. The impact study here was. Directed to finding out attitudinal changes which acts, in fact, as an input variable.

More, R.T. (1988) examined the relationship between... Teaching effectiveness, teaching aptitude and personality traits. On the basis of research findings it was revealed that only 6 factors out of 16 factors of personality (R. B. Cattell) were found to be positively correlated with teaching effectiveness, of which intelligence was the most important. Teaching effectiveness and teaching ability have positive correlation and the total personality of the teacher is found to be influencing effective teaching and ineffective teaching.

Hypothesis Testing

H₀₁: There no significant impact of educational qualification of the faculty on ethics of students.
Effect of Educational Qualification of the faculty on the Moral Equity of the Students.

Table-1.1
ANOVA

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|-------------|-----------|---------------|----------------|----------------|------------------|
| Tedu | 4 | 21573 | 5393 | 856.5 | 0.000 |
| Residuals | 495 | 3117 | 6 | | |

Table-1.2

Multiple Comparisons of Means: Tukey Contrasts

| Groups | Estimate | Std. Error | t value | Pr(> t) |
|--------------------|-----------------|-------------------|----------------|--------------------|
| MBA –B. Tech. | 0.94699 | 0.35740 | 2.650 | 0.0632 . |
| M.Phil. - B. Tech. | 14.76389 | 0.36818 | 40.099 | <1e-04 *** |
| M.Tech. - B. Tech. | 11.22222 | 0.36818 | 30.480 | <1e-04 *** |
| phd - B. Tech. | 14.83690 | 0.35740 | 41.513 | <1e-04 *** |
| M.Phil. - MBA | 13.81690 | 0.35123 | 39.339 | <1e-04 *** |
| M.Tech. - MBA | 10.27523 | 0.35123 | 29.255 | <1e-04 *** |
| phd - MBA | 13.88991 | 0.33991 | 40.863 | <1e-04 *** |
| M.Tech. - M.Phil. | -3.54167 | 0.36219 | -9.778 | <1e-04 *** |
| phd - M.Phil. | 0.07301 | 0.35123 | 0.208 | 0.9996 |
| phd - M.Tech. | 3.61468 | 0.35123 | 10.292 | <1e-04 *** |

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
(Adjusted p values reported -- single-step method)

To test the hypothesis that education level of the teacher/instructor significantly affects the ethics of the students, an ANOVA was performed. The resultant F ratio obtained is $F(4,495) = 858.5$ with $p=.000$ (significant as $p<.05$ at 5% significance level). This indicates that the education level of the teacher/instructor significantly affects the Moral Equity of the students. Since, the results of the ANOVA are significant, so this was followed up by a Tukey Post Hoc analysis.

The results of the post-hoc analysis show in more detail how the different education levels of the teachers impact the moral equity of the students. If, the teachers having MBA education are compared to those have

B. Tech., no significant differences were observed as the mean difference is 0.946 with $t=2.650$ with $p=0.063$, as the p value is greater than 0.05 for 5% significance level, therefore, it can be concluded that students under teachers who possess MBA and B. Tech degree do not differ in moral equity. When the M. Phil. and B. Tech. teachers are compared, then there is a significant difference. Students under teachers who have M. Phil. seem to have higher moral equity than those with just B. Tech., this is evident as the mean difference (14.763) between (M. Phil. – B. Tech.) is positive and statistically significant with $t= 40.099$ with $p=.000$. Similarly, positive significant mean differences are also observed for the M. Tech. and B. Tech. group, PhD and B. Tech., M. Phil. and MBA, M. Tech. and MBA, PhD and MBA, M. Tech. and M. Phil. and PhD and M. Phil. groups. Therefore, the education level of the teacher/instructor significantly affects the Moral Equity of the students.

**Table-1.3
Moral Equity**

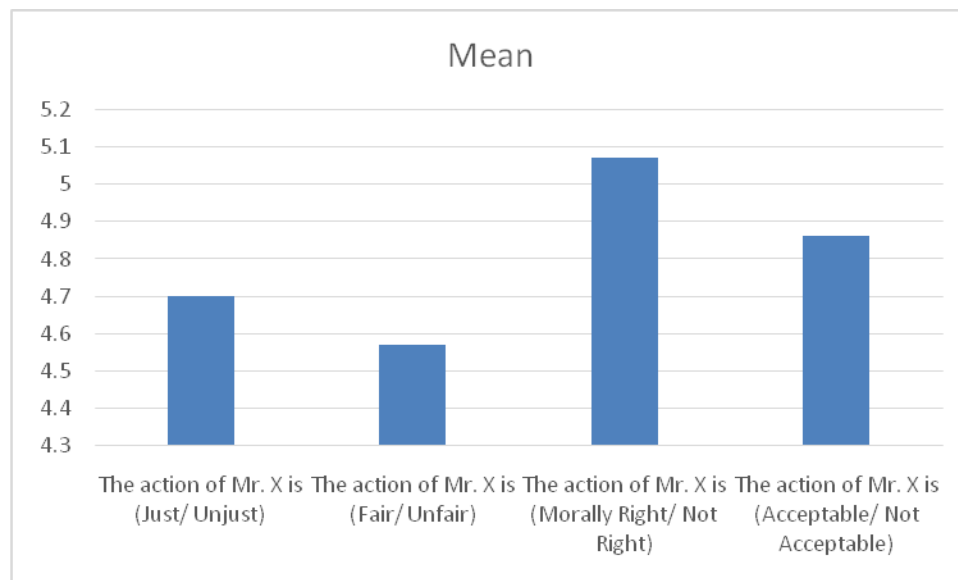
| Item Statistics | | | |
|---|------|----------------|-----|
| | Mean | Std. Deviation | N |
| The action of Mr. X is (Just/ Unjust) | 4.70 | 1.983 | 500 |
| The action of Mr. X is (Fair/ Unfair) | 4.57 | 1.918 | 500 |
| The action of Mr. X is (Morally Right/ Not Right) | 5.07 | 1.693 | 500 |
| The action of Mr. X is (Acceptable/ Not Acceptable) | 4.86 | 1.675 | 500 |

Table-1.4

| Scale Statistics for Moral Equity | | | |
|--|----------|----------------|------------|
| Mean | Variance | Std. Deviation | N of Items |
| 19.21 | 49.480 | 7.034 | 4 |

Table-1.5

| Reliability Statistics | | |
|-------------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .975 | .977 | 4 |



H₀₃: There is no significant difference of branch of study on student's ethical values towards environmental Education.

Table-1.6

| Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|-----------|--------|---------|---------|--------|
| branch | 7 | 77 | 10.97 | 0.793 |
| Residuals | 492 | 6809 | 13.84 | 0.594 |

Since, the results of the ANOVA analysis are insignificant ($F=0.793$, $p>.05$), therefore, the null hypothesis stands accepted.

The analysis of data has been done according to hypothesis and conclusions have been drawn accordingly. This chapter contains the discussion of the results hypothesis - wise also. Different conclusions have been discussed separately and similar conclusions have been dealt together.

Methodology

For the present study a random sample of 500 was collected from nearby colleges of Roorkee, Haridwar, Dehradun area. Since the number of teachers is less than the number of students, students were grouped with their teacher of their branch of study in a particular college.

The ethics of the students were measured using the multidimensional ethics scale developed by Cruz et al. (2000). The environmental concern of the students was measured using the environmental concern scale earlier used by Mostafa (2006).

Conclusion

The reason for such a conclusion might be because female teachers teach their students according to objective and content of the lesson. They attached with students emotionally and they maintained good relation with students as compare to male. These factor contribute to increase the ability of an individual. It is also observed that female teachers are seriously involved in innovative in-service training programme,

As viewed traditionally male teachers are taken to be more confident in teaching science as compare to his counterpart because the nature and competition of the subject that it required more mathematical ability which is more peculiar. to males but at the same time fact remains that earlier not a major portion of females opt science, because there are other academic attraction available to them. But in the present the decade due to the increasing horizon of competitive spirit as well as the offering new career for female students and teachers, got attracted to this field and made every efforts' to compete male teachers. This may be further, observed as, proved by the present study female teachers are going ahead making satisfactory contribution in the field of teaching science.

Apart from this the female teachers extend more warm and congenial learning environment. So, those learners easily estimate the subject. Personalised attraction dutyfulness and sincerity add more meaning to students learning. Thus, this context explains the conversion of those traits in female teachers' batter that are responsible for making effective concern teacher.

A large number of studies have tried to identify various psychosocial and environmental factors that affect student achievement. There are still many factors and conditions which have been related to student academic achievement, but empirical studies of these are not yet made. On the other hand, there are a few factors which have been related to student academic achievement, but such studies are not many with the result that the conclusions drawn from them cannot be considered stable. Teaching competency and ethical values of teachers towards teaching are such factors.

The reason for such a conclusion might be because the students achievement are affected from many other factors, than the teaching competency, self-study, study by tutors and parents at home, knowledge gained by mass media such as newspapers, radio, television, magazines etc. Although the assumption has been made in this study that the socio-economic factor is controlled by taking the sample of students from Government schools only, still there might be variations in the socio-economic status of the parents of these students which might be influenced the result. Similarly, there might be difference in the intelligence of

students which might have made the achievement higher or lower without being affected by the competency of teacher.

Reference

1. Corbett, TH. 1982. Ethics and environmental health. In *Legal and Ethical Dilemmas in Occupational Health*, edited by JS Lee and WN Rom. Ann Arbor, Mich.: Ann Arbor Science Publishers.
2. Dawson, NJ. 1987. Ensuring scientific integrity (Letter). *Nature* 327 (18 June):550.
3. Doll, R. 1985. Occupational cancer: A hazard for epidemiologists. *Int J Epidemiol* 14:22-31.
4. Feinstein, AR. 1988. Fraud, distortion, delusion, and consensus: the problems of human and natural deception in epidemiologic science. *Am J Med* 84:475-478.
5. Glazer, M. 1989. *The Whistleblowers: Exposing Corruption in Government and Industry*. New York: Basic Books.
6. Hammond, E and IJ Selikoff. 1979. Public control of environmental health hazards. *Ann NY Acad Sci* 329.
7. Lord, MW. 1982. Keynote address: corporate ethics and environmental pollution. In *Legal and Ethical Dilemmas in Occupational Health*, edited by JS Lee and WN Rom. Ann Arbor, Mich.: Ann Arbor Science Publishers.
8. Lowrance, WW. 1976. *Of Acceptable Risk*. Los Altos, Calif.: William Kaufmann.
9. Lowy, FH and EM Meslin. 1993. Fraud in medical research. Chap. 24 in *Textbook of Ethics in Pediatric Research*, edited by G Koren. Malabar, Florida: Kreiger.
10. Mason, JO. 1992. Opportunity for a hearing on Office of Research Integrity scientific misconduct findings. *Federal Reg* 57(216):53125-53126.
11. McCutchen, CW. 1991. Peer review: Treacherous servant, disastrous master. *Tech Rev* (October):28-40.
12. Pellegrino, ED. 1992. Character and the ethical conduct of research. *Account Res* 2(1):1-11.
13. Reece, RD and HA Siegel. 1986. *Studying People - A Primer in the Ethics of Social Research*. Macon, Ga: Mercer Univ. Press.
14. Royal College of Nursing. 1991. Professional practice and ethics for occupational health nurses. In *A Guide to an Occupational Health Service: A Handbook for Employers and Nurses*. London: Scutari Projects.
15. Royal College of Physicians. 1986. *Guidance on Ethics for Occupational Physicians*. London: Royal College of Physicians.
16. Shamoo, AE. 1991. Policies and quality assurance in the pharmaceutical industry. *Account Res* 1:273-284.
17. Shamoo, A and Z Annau. 1987. Ensuring scientific integrity (Letter). *Nature* 327 (18 June):550.
18. Shamoo, AE and Z Annau. 1989. Data audit-Historical perspective. Chap. 1 in *Principles of Research Data Audit*, edited by AE Shamoo. Newark, NJ: Gordon & Breach.
19. Shapiro, IM. 1992. Speaking out: Petition for a colleague. *Almanac* (17 March):3.
20. Social Sciences and Humanities Research Council of Canada. 1994. *Integrity in Research and Scholarship: A Tri-Council Policy Statement*. Ottawa: Medical Research Council of Canada.
21. Spice, B. 1991. Pitt to review charges against lead researcher. *Pittsburgh Post Gazette*, 30 December, 4.
22. Thilly, F. 1957. *A History of Philosophy*. Revised by L Wood. New York: Holt.
23. Twedt, S. 1991. Pitt expert on toxic lead has research challenged. *The Pittsburgh Press*, 29 December, A1.
24. Weiss, T. 1991. Too many scientists who 'blow the whistle' end up losing their jobs and careers. *Chron High Educ* (June):A36.
25. Westman, DP. 1991. *Whistle blowing: The Law of Retaliatory Discharge*. Rockville, MD: Bureau of National Affairs.
26. Wohleber, C. 1992. OSI asks for internal inquiry. Needleman challenged again on landmark 1979 study of low-lead exposure's effects. *Univ Times*, January, 4.
27. World Medical Association. 1983. *International Code of Medical Ethics*. Ferney-Voltaire, France: The World Medical Association.