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## **TEACHER EFFECTIVENESS AND ATTITUDE TOWARDS TEACHING OF SCIENCE TEACHERS WORKING IN COLLEGES OF EDUCATION IN RELATION TO THEIR TEACHING COMPETENCE**

**Deepak Saini**

Principal, B.R. College of Education, Kurukshetra  
(Haryana)

### **ABSTRACT**

*Teacher is the pivot of educational system and an essential requirement for a progressive nation. If teacher is not well adjusted then his intellect, imagination and creative power may tend deteriorate. So, good adjustment of the teacher is necessary for his better performance. Only well-adjusted teachers and positive thinking teachers having work to their best. Such studies will naturally highlight very fruitful and important suggestions. The teaching profession is universal regarded not only as one of the most important profession of civilized life, but also the noblest of all. It is therefore, important that those individuals who adopt the teaching profession must have right kind of attitude towards the work. Only teachers with favorable dynamic attitude towards their work can play the real role of nation builders. To make the teaching, goal oriented and to improve the function and environment of any institution; it is essential to measure the attitude of students towards teaching profession with the co-relation of moderation variables. The researcher in the present paper investigates the general teaching competencies and components affecting teaching competence of science teachers in colleges of education in Haryana. Primarily, the researcher studied the teaching aptitude, intelligence, attitude towards teaching and teacher effectiveness in correlation to general teaching competency of science teachers.*

## **Introduction**

The place and importance of a teacher in a society can never be underestimated as he is regarded as the backbone of educational system, maker of mankind and architect of the society. From the Hindu stand point, a child receives second birth in the hands of the teacher who sharpens his habits, tasks and character. He has to modify, reshape and smoothen. Book may teach a child, but a teacher educates him. Teacher is the pivot of educational system and an essential requirement for a progressive nation. If teacher is not well adjusted then his intellect, imagination and creative power may tend deteriorate. So, good adjustment of the teacher is necessary for his better performance. Only well-adjusted teachers and positive thinking teachers having work to their best. Such studies will naturally highlight very fruitful and important suggestions.

Teaching is a skill. A skilled teacher generally should have higher teaching aptitude. He can create the interest of the students in the classroom. With the development and expansion of education in the country, teaching aptitude has become an important factory and point in the context of the present era. Today there is a great dearth of 'Real Teachers'. Deterioration in the great standard of education is the great problem. The present study examines teaching competence, teaching aptitude towards teaching profession of the teacher. A nation cannot be above the level teacher. The status of teachers in society tells us about the culture and social environment. Teachers, who make the curriculum lively, give life to the whole system of education and such teachers' teaching competency, teaching interest, teacher attitude affect the future of students.

In a developing country like India where even the target of full literacy is not achieved and where country has to continue steady progress of school children if the teachers are not competent then there is little hope in the bright future of coming generation. With incompetent teachers, it will be a difficult task to continue the progress of whole nation. Teachers must be efficient in teaching and must have ability to live on with comfort and at the same time interested in the job best owed upon them.

## **TEACHING COMPETENCE**

Teaching constitutes one of the major tasks of a teacher. Competency over this task of teaching is the essence of a successful educational system. The development of teaching competency

among teachers necessitates a clear understanding of the term as well as the method for its assessment. With more than half a century of research in this area, there has been no consensus regarding the meanings of the terms 'teaching', 'competency' and hence 'teaching competency' itself. A competent teacher should have not only mastery over his or her subject matter, but his or her competency should be measured by students learning. It is true that effective learning is the result of successful teaching, but successful teaching does not depend only upon the methods used, because methods and procedures of teaching are means but not ends. The lack of consensus of the term 'teaching competency' highlights the difficulty of its measurement. If measurement of teaching competency has to be valid, objective and reliable one has to delimit to such variables that can be subjected to scientific study. Based on the micro-criteria approach to study 'teaching' (Gage, 1963), teaching is perceived as a set of teaching skill where in a teaching skill is a set of teaching behaviours that facilitate or bring about a specific instructional objective. In other words, teaching competence involves effective use of these various teaching skills.

The effective teaching of a teacher plays an important role in making him or her a competent teacher. The schools having good and effective teachers can succeed in reshaping the country.

## **TEACHER EFFECTIVENESS**

Teacher effectiveness plays a pivotal role in teaching learning process. It being the hub of programmed needs, close observation and critical analysis as the enrichment in effectiveness may have direct bearing on the learning outcomes of the pupils. Teacher effectiveness refers to the effect that the teacher's performance has on pupils. Like teacher performance, teacher effectiveness depends in large on the context in which the teacher performs.

Effective teacher are crucial to any nation's progress and success of a system of education depends upon teacher's involvement. Hence the identification of effective and competent teaching personnel constitutes one of the most important aspects of all the educational system. Effective teachers are those who achieve the goals which they set for themselves or which others set for them (e.g. Commissions on Education Ministry of Education, Legislators, Govt. officials and /or School Administration). As a consequence, those who study and attempt to improve teacher effectiveness must be cognizant of the goals imposed on the teachers that teachers establish for themselves or both. That effective teacher must possess the knowledge and skills

needed to attain the goal, and must be able to use that knowledge and those skills appropriately if these goals are to be achieved. In contrast, the use of knowledge and skills in the classroom is referred to as 'teacher performance'. Thus that who investigate and attempt to understand teacher's performance with the accomplishment of teacher goals is teacher effectiveness. Effective teacher tends to be aware of and actively pursues goals. A quality teacher and competent teacher is the one who captivates the learner. Therefore, a teacher should be a perfect wellbeing who lives his life to the maximum and sets the same trend for his learner. He must be an epitome of wholesomeness of cognitive, connative and affective domains, well behaved, well informed, well enlightened, and self-motivated, self-evaluated, having scientific attitude, real thirst for knowledge and moving towards the apex. Such a teacher will be labeled as qualitative, skilled and competent, which every civilized and progressive society aspires to incorporate as a vital part of its ethos.

In the literal sense, the teacher effectiveness is defined in terms of what the teacher pupils do; the assessment of teacher effectiveness through effects on students, in terms of gains growth, changes all of which involve measurement of changes in behaviors and some of which can be attributed to the impact of individual teacher.

The **Indian Education Commission (1964-66)** observed all the different factors which influence the quality of education and its contribution in national development; the quality, competency and character of teachers are undoubtedly the most significant. Nothing is more important than securing a sufficient supply of high quality result to the teaching profession, providing them with the best possible professional preparation and creating satisfactory condition of work facilities, especially in view of urgent need to raise standards of the highest level.

**Flanders and Siman (1965)** define teacher effectiveness is an area of research which is concerned with relationship between characteristics of teacher, teaching acts and their effects on the educational outcomes of classroom teaching. An effective teacher may be understood as one who helps development of basic skills, understanding, proper work habit, desirable attitude, value judgment and adequate personal adjustment of students.

**Gupta (1984)** defined teacher effectiveness as the capacity of a teacher to bring about the agreed change in his/her students. Effective teacher have always promoted understanding and tolerance by adopting new responsibilities and cope up with the changing career expectations.

**National Policy on Education (1986)** has stated, among many other things that of all the factors which determine the quality of education and its contribution to the national development, the teacher is undoubtedly the most important. It is on his personal qualities and character, his educational qualifications and professional competence that the success of all educational endeavour must ultimately depend.

### **Importance of Teacher Effectiveness**

Teacher effectiveness plays a pivotal role in teaching learning process. It being the hub of program needs, close observation and critical analysis as the enrichment and effectiveness may have direct bearing on the learning outcomes of the pupils. Only effective teacher are able to realize the real goal of education to their students. An effective teacher is indispensable even in the most equipped system of education who teaches effectively may have the way for progressive and productive society. Teacher effectiveness refers to the effect that the teacher's performance has on pupils. Like teacher performance, teacher effectiveness depends in large on the context in which the teacher performs.

### **JUSTIFICATION OF THE STUDY**

After reviewing the related studies on general teaching competence in correlation with different psycho-demographical variables, the trend of research emerges out that ample number of researches have been conducted by many researchers. But the researcher has found few studies in correlation to the teaching competence, teaching aptitude, intelligence, attitude towards teaching and teacher effectiveness. Therefore, the researcher intends to study the general teaching competencies and components affecting teaching competence of science teachers in colleges of education in Haryana. Primarily, the researcher studied the teaching aptitude, intelligence, attitude towards teaching and teacher effectiveness in correlation to general teaching competency of science teachers. Further, the researcher also find out if there is any difference between the general teaching competence and different components of teaching competence of male and female science teachers. No doubt the study will be beneficial to the teachers.

## **OPERATIONAL DEFINITION OF THE KEY TERMS USED**

### ***Teaching competence***

Teaching competence is the ability of a teacher manifested through a set of overt teacher classroom behaviours which is a resultant of the interaction between the presage and the product variable of teaching within social setting (Rama, 1979).

In the present study teaching competence refers to total scores obtained by science teachers teaching in colleges of education on General Teaching Competency Scale (Passi and Lalitha).

### ***Attitude towards Teaching***

In the present study attitude towards teaching refers to scores obtained on Teaching Attitude Inventory by Ahluwalia (1978).

### ***Teacher effectiveness***

Flanders & Simon (1969) Teachers effectiveness is an area of research which is concerned with relationship between the characteristics of teachers teaching acts and their effects on the educational outcomes of classroom teaching. In the present study teacher effectiveness refers to total score obtained on Teacher Effectiveness Scale by Kumar and Mutha (1974).

### ***Science Teachers***

In the present study science teachers refers to the teachers working in Colleges of Education in Haryana Teaching Physical Sciences and Life Sciences subjects.

### ***Colleges of Education***

In the present study, Colleges of Education are the Secondary Level Teacher

## **OBJECTIVES OF THE STUDY**

The study was carried out with the following objectives:

- To study the relationship between components of planning teaching competence and teaching aptitude of science teachers in colleges of education.
- To study the relationship between presentation teaching competence and teaching aptitude of science teachers in colleges of education.

- To study the relationship between closing teaching competence and teaching aptitude of science teachers in colleges of education.
- To study the relationship between evaluation teaching competence and teaching aptitude of science teachers in colleges of education.

### **HYPOTHESES OF THE STUDY**

The study was being carried out with the following hypotheses:

- There exists significant relationship between planning teaching competence and teaching aptitude of science teachers in colleges of education.
- There exists significant relationship between presentation teaching competence and teaching aptitude of science teachers in colleges of education.
- There exists significant relationship between closing teaching competence and teaching aptitude of science teachers in colleges of education.
- There exists significant relationship between evaluation teaching competence and teaching aptitude of science teachers in colleges of education.

### **DELIMITATIONS OF THE STUDY**

The study has to be investigated within certain well-defined boundaries which were the following:

- The study was conducted in Haryana state only;
- The study was restricted on the science teachers teaching in colleges of education;
- The study of variables-teaching competence and components affecting teaching competence viz.

### **RESEARCH METHOD**

In the present investigation, descriptive survey method was employed. The descriptive investigations are of immense value in solving problems about children, school organization, supervision and administration, curriculum, teaching methods and evaluation. In this investigation, descriptive survey method was used. The present investigator tries to find out the

general teaching competencies and components affecting teaching competence of science teachers in colleges of education in Haryana.

## **POPULATION**

The target population in the present study covers the all Science Teachers working in Colleges of Education in Haryana.

## **SAMPLE OF THE STUDY**

The representative item of the entire population is called a sample. A good sample must be as near tentative of the entire population as possible and ideally it must provide whole of the information about the population from which the sample has been drawn. Owing to obvious constraints of field situation, it was not possible to encompass the entire population. Thus, 200 science teachers were selected by the random sampling method from the Colleges of Education.

## **TOOLS USED**

After determining the sample of the study, the next step is to select suitable tool for the collection of the data. The success of the research depends upon how objectively and adequately the required and relevant data are collected. The selection of the tool for a particular study depends upon various considerations such as the objectives of the study, personal competence of the investigator, scoring and interpretation of the results and reliability and validity of the scale. Taking all these factors into consideration the investigator used the following tools-

- General Teaching Competency Scale (GTCS) by Passi and Lalitha (1979).
- Teacher Attitude Inventory by S.P. Ahluwalia.
- Teacher Effectiveness Scale by Kumar and Mutha, 1974.

## **DATA COLLECTION**

After the selection of the suitable tools, it was necessary to obtain the information on every items included in the questionnaire. The investigator visited the selected Colleges of the Ambala Commissionrate. At first, he took the permission from the heads of the institutions and then collected data from the pupil-teachers. The scoring procedure of the different tools used in the



present study is presented in the following sub-heads. Scoring was done as per the directions given in the manual of the tools used.

## **STATISTICAL TECHNIQUES EMPLOYED**

In the present study the following statistic techniques are employed-

- Mean;
- Standard Deviation;
- Pearson's product moment coefficient of correlation;
- t-test.

## **RESULT AND DISCUSSION**

### **ANALYSIS AND INTERPRETATION OF DATA PERTAINING TO FIND OUT RELATIONSHIP AMONG COMPONENTS AFFECTING TEACHING COMPETENCE OF SCIENCE TEACHERS IN COLLEGES OF EDUCATION**

This section of the study dealt with data pertaining to find out the relationship between teaching competence and components affecting teaching competence (i.e. aptitude, intelligence, attitude and teacher effectiveness) of science teachers in colleges of education. For this purpose, data were collected from 200 science teachers teaching in different colleges of education of Haryana through General Teaching Competence Scale, Teaching Aptitude Test, General Mental Ability Test, Teacher Attitude towards Teaching Inventory and Teacher Effectiveness Scale. After that, the collected data were tabulated and analyzed through appropriate statistical techniques i.e. Product moment coefficient of correlation ('r'). The details have been presented in following headings;

### **RELATIONSHIP AMONG TEACHING COMPETENCE AND ATTITUDE TOWARDS TEACHING OF SCIENCE TEACHERS IN COLLEGES OF EDUCATION**

In order to find out the relationship among teaching competence and attitude towards teaching of science teachers in colleges of education, the Product moment co-efficient of correlation (r) was applied. The details have been presented in following table 4.3:

**TABLE-1.1**  
**COEFFICIENT OF CORRELATION AMONG TEACHING COMPETENCE AND**  
**ATTITUDE TOWARDS TEACHING OF SCIENCE TEACHERS IN COLLEGES OF**  
**EDUCATION**

Variables	df	Coefficient of correlation 'r'	Level of significance
Planning Teaching Competence Vs attitude towards teaching	198	0.397**	P>.01
Presentation Teaching Competence Vs attitude towards teaching	198	0.302**	P>.01
Closing Teaching Competence Vs attitude towards teaching	198	0.299**	P>.01
Evaluation Teaching Competence Vs attitude towards teaching	198	0.338**	P>.01
Managerial Teaching competence Vs attitude towards teaching	198	0.008*	P<.05
Teaching competence Vs attitude towards teaching	198	0.330**	P>.01

NS= Not Significant at 0.05 level of T.V=0.138

\*\*= Significant at 0.01 level of T.V=0.181

### INTERPRETATION

From table 1.1 it can be interpreted that the obtained coefficient of correlation (0.179) of planning component of teaching competence is positive and significantly related to attitude towards teaching of science teachers in colleges of education at 0.05 level of significance with df 198. It can be concluded that attitude towards teaching of science teachers in colleges of education have significant relationship between planning component of teaching competence. Further, attitude towards teaching of science teachers was positively correlated to the planning competence in teaching.

It is revealed from table 1.1 that the obtained coefficient of correlation (0.302) of presentation component of teaching competence is positive and significantly related to attitude towards teaching of science teachers in colleges of education at 0.01 level of significance with df 198. It can be concluded that attitude towards teaching of science teachers in colleges of education have significant relationship between presentation component of teaching competence. Further, attitude towards teaching of science teachers was positively high correlation with presentation component of teaching competence.

Hence, **hypothesis no-3(b)** which is stated earlier that there exists a significant relationship between presentation component of teaching competence and attitude towards teaching of science teachers in colleges of education stands accepted.

It is indicated from table 4.3 that the obtained coefficient of correlation (0.299) of closing component of teaching competence is positive and significantly related to attitude towards teaching of science teachers in colleges of education at 0.01 level of significance with df 198. It can be concluded that attitude towards teaching of science teachers in colleges of education have significant relationship between closing component of teaching competence. Further, attitude towards teaching of science teachers was positively high correlation with closing component of teaching competence.

Hence, **hypothesis no-3(c)** which is stated earlier that there exists a significant relationship between closing component of teaching competence and attitude towards teaching of science teachers in colleges of education stands accepted.

It is clear from table 4.3 that the obtained coefficient of correlation (0.338) of evaluation component of teaching competence is positive and significantly related to attitude towards teaching of science teachers in colleges of education at 0.01 level of significance with df 198. It can be concluded that attitude towards teaching of science teachers in colleges of education have significant relationship between evaluation component of teaching competence. Further, attitude towards teaching of science teachers was positively high correlation with evaluation component of teaching competence.

Hence, **hypothesis** which is stated earlier that there exists a significant relationship between evaluation component of teaching competence and attitude towards teaching of science teachers in colleges of education stands accepted.

## **RELATIONSHIP AMONG TEACHING COMPETENCE AND TEACHER EFFECTIVENESS OF SCIENCE TEACHERS IN COLLEGES OF EDUCATION**

In order to find out the relationship among teaching competence and teacher effectiveness of science teachers in colleges of education, the Product moment co-efficient of correlation (r) was applied. The details have been presented in following table 1.2

**TABLE-1.2**  
**COEFFICIENT OF CORRELATION AMONG TEACHING COMPETENCE AND**  
**TEACHER EFFECTIVENESS OF SCIENCE TEACHERS IN COLLEGES OF**  
**EDUCATION**

Variables	df	Coefficient of correlation 'r'	Level of significance
Planning Teaching Competence Vs teacher effectiveness	198	0.002**	P<.05
Presentation Teaching Competence Vs teacher effectiveness	198	0.047**	P<.01
Closing Teaching Competence Vs teacher effectiveness	198	0.016**	P<.01
Evaluation Teaching Competence Vs teacher effectiveness	198	0.031**	P<.01

\*= Not Significant at 0.05 level of T.V=0.138

\*\*= Significant at 0.01 level of T.V=0.181

### INTERPRETATION

Table 1.1 explains that the obtained coefficient of correlation (0.002) of planning component of teaching competence is positive and does not significantly related to teacher effectiveness of science teachers in colleges of education at 0.05 level of significance with df 198. It can be concluded that teacher effectiveness of science teachers in colleges of education does not significantly related to planning component of teaching competence.

Hence, the **hypothesis** which is stated earlier that there exists a significant relationship between planning component of teaching competence and teacher effectiveness of science teachers in colleges of education stands rejected.

It is delineated from table 1.1 that the obtained coefficient of correlation (0.047) of presentation component of teaching competence is positive and does not significantly related to teacher effectiveness of science teachers in colleges of education at 0.05 level of significance with df 198. It can be concluded that teacher effectiveness of science teachers in colleges of education did not significantly relate to presentation component of teaching competence. Further, teacher effectiveness of science teachers was not related to presentation competency in teaching.

Hence, the hypothesis which is stated earlier that there exists a significant relationship between presentation component of teaching competence and teacher effectiveness of science teachers in colleges of education stands rejected.

It is clear from table 1.2 that the obtained coefficient of correlation (0.016) of closing component of teaching competence is positive and does not significantly relate to teacher effectiveness of science teachers in colleges of education at 0.05 level of significance with df 198. It can be concluded that teacher effectiveness of science teachers in colleges of education did not significantly relate to closing component of teaching competence. Further, teacher effectiveness of science teachers was not related to closing competency in teaching.

Hence, the hypothesis which is stated earlier that there exists a significant relationship between closing component of teaching competence and teacher effectiveness of science teachers in colleges of education got rejected.

It is indicated from table 1.2 that the obtained coefficient of correlation (0.031) of evaluation component of teaching competence is positive and does not significantly relate to teacher effectiveness of science teachers in colleges of education at 0.05 level of significance with df 198. It can be concluded that teacher effectiveness of science teachers in colleges of education did not significantly relate to evaluation component of teaching competence. Further, teacher effectiveness of science teachers was not related to evaluation competency in teaching.

Hence, **hypothesis** which is stated earlier that there exists a significant relationship between evaluation component of teaching competence and teacher effectiveness of science teachers in colleges of education gets rejected.

## **EDUCATIONAL IMPLICATIONS**

The present study is supposed to add to the existing stock of knowledge in the field of education. The aim of education is to humanize the humanity and to make life progressive, cultured and civilized. It is through education that man develops his thinking and reasoning, problem solving and creativity, intelligence and aptitude positive sentiment and skills, good values and attitudes, etc. A teacher holds a key position in the whole of infrastructure of education.

The most outstanding character of any research is that it must contribute something new to the development of the area concerned. The contents of the study are of much importance and vital concern to educators. The present study has established that to increase the student achievement the general teaching competency of teachers is one of the most important factor. It was also found that be higher which will be possible only if the teacher is competent and has favorable attitude towards teaching profession. So, the investigator has drawn the following educational implications of his study. The present study has its implications for both the teachers, students and policy makers. A number of significant implications emanate from the foregoing findings. They may be listed as follows:

1. It has found that teaching aptitude is positively moderate correlation with teaching competence of science teachers in colleges of Education. Therefore there is a need to raise the level of teaching competency of science teachers. To improve the teaching competency of teachers following steps need to be taken:
  - Teacher with better qualification in science subjects should be appointed.
  - Faculty development programme should be made more affective. Therefore, it should be compulsory for them.
  - Regular in-service training should be organized for teachers. Training during vacations or regular seminars should be organized regularly to make the teacher conversant with the latest methods of subject teaching and solve their subject problems also.
2. In the present study it was found that the teaching competency and attitude of teachers towards teaching profession are associated with each other. Generally it is expected that the teaching competency of teachers will be higher or lower according to their favourableness or unfavourableness of attitude towards teaching.
3. On the other hand, the teaching competency is related to intelligence which can be observe or measured by the behavior of teacher in the class-room. It calls for hard works and preparation for teaching that is why there is almost negligible relationship between these two variables.
4. In the present study it was found that teacher effectiveness was not significantly related with the planning, presenting, closing, and evaluation compentance of science teachers in

colleges of education. In other words, the teaching competency and teacher effectiveness are not associated with each other. It is neither an expected nor a desirable finding. Generally it is expected that the teaching competency of teachers will be higher or lower according to their effective or ineffective of teaching. The present finding thus may be due to small sample of teachers taken for the study or there are different factors which affect the attitude and competency of science teachers in colleges of Education. The present finding thus may be due to small sample of teachers taken for the study or there are different factors which affect the teacher effectiveness and competency of science teachers in colleges of Education in Haryana.

Among other programmes to shape out quality teachers and their teaching procedures, the first and foremost need is to identify factors that enhance teaching effectiveness by administering teacher effectiveness scale. If definite predictors of teaching effectiveness are known precisely. It may be possible to help school administrators in their work. The study of teacher effectiveness give valuable information for recruiting teachers for employment, administration and management of schools and arranging and organizing programmers for professional growth of teachers.

The study has its implication for the organizers of educational institutions, administrations and planners of educational policies. Role of effective science teachers explicitly expressed the role of effective teachers and their teaching strategies for proper growth of future generations. There is a pressing need that the work of the teachers should be objectively assessed. Basically, some adequate criteria must be specified.

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