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A Study Of Teacher Effectiveness, General Intelligence And Creativity Of Secondary School Teachers

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The present study attempts to compare teacher effectiveness, general intelligence and creativity of secondary school teachers in relation to gender and type of school. The sample for the study consisted of 850 secondary school teachers of Punjab. The findings of the study revealed that there is no significant difference in teacher effectiveness of male and female secondary school teachers. The significant main effect of type of school is independent of gender groups, i.e. government school teachers are effective both in case of male and female groups of school teachers. There is significant difference in general intelligence of male and female secondary school teachers, female teachers being more intelligent as compared to male teachers, both in case of government and private schools. The results also show that male teachers of private secondary schools are more creative than female teachers of private secondary schools but not in case of government secondary schools. Government school teachers are significantly high on creativity than private school teachers only in case of female group and not in case of male teachers. Teacher effectiveness is positively and significantly related with general intelligence and creativity among secondary school teachers.

KEYWORDS: Teacher Effectiveness, General Intelligence, Creativity, Secondary School Teachers.

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INTRODUCTION

Teacher plays a pivotal role in educational administration; therefore a teacher must be philosophically, sociologically and psychologically sound so that students imbibe these qualities. Effectiveness of teacher stems from a combination of knowledge, skills and personal characteristics (Katz, 1993), the characteristics which are correlated with effectiveness are: good knowledge of subject matter, ability to organize learning materials, ability to communicate his knowledge to the students successfully and to deal with classroom situations (Gupta & Jain, 2007) and personal characteristics that is enthusiasm, effective communication, adaptable to change, a life long learner, competent, accepting of others, patient, willingness to take risks, flexibility, creativity, hardworking and sense of humour (Taylor & Wash, 2003; Colker 2008). An effective teacher helps the students in the development of basic skills, understanding, proper work habits and desirable attitude, value judgment and adequate personal adjustment (Ryan, 1969).

The origin of the concept of intelligence is in antiquity. In the implicit approach definitions or characteristics, attributes and conception of intelligence has been gathered from people asking them what they meant by intelligence; what people say intelligence is. Explicit approach of intelligence which is based or at least tested, on data collected from people performing tasks presumed to measure intelligent functioning and serve as the basis for scientific hypotheses. Spearman (1927) gave the earliest factor theory of intelligence which comprises two kinds of factors, general factor and specific factors. Thurstone (1938) accepted Spearman's theory and identified primary mental abilities. Guilford (1967) in his structure of intellect model proposed that intelligence comprises of 120 elementary abilities, each of which involves the action of some operation upon some content to produce some product. Under the Triarchic Theory of Intelligence of Sternberg (1985) the intelligent behaviour is the product of analytic, creative and practical abilities. Gardner (1983, 1993) has been foremost among theorists arguing that human cognitive abilities are best envisaged as several independent forms of intelligence i.e. (linguistic, logical/ mathematical, bodily/kinaesthetic, spatial/visual, musical, inter-personal/intrapersonal).

Creativity is multifaceted. Creativity research, rather than having one universal definition, has used a variety of definitions, theories and assessment approaches. Rhodes (1961) developed a framework for a unifying approach to creativity; forming four strands. These strands were the creative person (clustered around personality-related traits and the mental ability to the person to create something new), the creativity process (the function of the mind in creating ideas in the creative person like searching, combining and synthesizing), creative product (the outcome or product being original, unique, valuable and novel), and the creative press (or environment) which

influences the ecological press on the person and upon his mental processes and outcomes. Similarly, Mooney (1963) and Rhodes (1967) have referred to these kinds of definitions as the "Four P's" of creativity.

REVIEW OF RELATED LITERATURE

Teacher effectiveness was studied in terms of gender, professional knowledge training, nature of schooling, income level, locality of residence, management of schools, interpersonal relationships, marital status, designation, achievement motivation, self efficacy, job satisfaction, life satisfaction, locus of control, burnout, stress, educational qualification, caste, etc. (Krishnan & Singh, 1994; Biswas & Tinku, 1995; Raja & Thiagarajan, 1998; Kumar, 1999; George, 2002; Kagathala, 2002; Singh, 2002; Vijaylaksmi & Mythill 2004; Amandeep & Gurpreet, 2005; Arokidass, 2005; Cheung, 2006; Williamson, 2006; Gupta & Jain, 2007; Newa, 2007; Roul, 2007; Duckworth, 2009; Kalara, 2010; Goyal & Duggal, 2011; Kauts & Mittu, 2011). Intelligence and creativity are studied with teacher effectiveness and teaching competence. Creativity and intelligence taken jointly are better predictor of teacher effectiveness (McElvain et al. 1963; Nair, 1974; Singh, 1987; Gupta, 1988; Singh, 1991; Vesanthi & Anandi, 1997; Panda, 2004). Teacher effectiveness is related to personality, attitude, intelligence, adjustment, experience and educational qualification of teacher (Singh, 1987; Gupta, 1988). Effective teacher shows high emotional maturity and teachers with high I.Q. are found effective than low and average I.Q. teachers (Kaur, 1989; Phaewsakul, 1989; Dass, 1995). Intelligence and creativity are positively related with each other (Chadha & Sen, 1981; Sofaya, 1981; Gupta, 1988; McCabe, 1991; Goyal & Singh, 2010). I.Q. significantly predicts each component of creativity (Olatoye & Oyundoyin, 2007).

NEED OF THE STUDY

The usefulness and effectiveness of the education system largely depends upon active, resourceful, competent and effective teachers. Teacher's competence, capability and effectiveness make school good or bad, flourishing or deteriorating. So quality of teaching depends upon the efficiency of the teacher. One can say that teacher effectiveness is the capability of teachers to teach in such a manner that he gets success to bring the desirable change in the students' behaviour. It is assessed not only from the academic pursuits and classroom teaching of the teacher but from the sum total influences exerted by the teacher upon the students. It is well know that effective teaching results into positive outcomes. Unfortunately before a teacher is recruited no effort is made to judge how effective the teacher will be and how effectively he will convey his abilities. It has been recognised that the personality of the teacher and healthy attitude towards his work contributes to effective and efficient teaching. The

effectiveness of a teacher lies not only in the presentation of his subject matter in an effective way but to make the whole environment of the classroom conductive for learning ensuring the all round development of a child. In Punjab there are two types of educational institutions i.e. one, which are run by the government and the others by private trusts or societies. Recent years have seen that parents are sending their children in private schools and society at large feels that better and quality education is being provided to the students in private schools only. Private schools are also becoming more attractive and showing better results than government schools. There can be many reasons for better results but the quality of the teachers in the institution can be one of the major reasons for better results. Quality of teachers undoubtedly depends upon the academic potentialities and psychological abilities of the teachers. The selection of the teachers in government schools is strictly done as per merit and the selection in private schools is done by the managements depending upon the criterion laid down by them from time to time. Hence there is a need to see whether there is a difference in the psychological variables such as general intelligence, creativity and teacher effectiveness of private and government school teachers.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To study teacher effectiveness, general intelligence and creativity of secondary school teachers in relation to gender.
2. To study teacher effectiveness, general intelligence and creativity of secondary school teachers in relation to type of school.
3. To study the relationship between teacher effectiveness, general intelligence and creativity among secondary school teachers.

HYPOTHESES OF THE STUDY

The hypotheses formulated for the study are:

1. There will be significant difference between male and female secondary school teachers in teacher effectiveness, general intelligence and creativity.
2. There will be significant difference between government and private secondary school teachers in teacher effectiveness, general intelligence and creativity.
3. There will be significant relationship in teacher effectiveness, general intelligence and creativity among secondary school teachers.

RESEARCH METHODOLOGY

SAMPLE

A total of 172 secondary schools were selected for the purpose of the study. From these schools all the teachers who taught the 9th and 10th classes were selected for participation in the research. In all 850 secondary school teachers from 172 schools in 7 districts of Punjab were included in the sample.

TOOLS USED

Teacher Effectiveness Scale by Kumar and Mutha (1999), The Standard General Progressive Matrices (SPM) (1938) and Divergent Production Abilities by Sharma (2006) were administered individually for collection of data.

RESULTS OF THE STUDY

The means and standard deviations of teacher effectiveness, general intelligence and creativity scores in each cell of secondary school teachers in relation to gender and type of school are given in Table 1.

Table 1

Means and SD's for Teacher Effectiveness, General Intelligence and Creativity of Secondary School Teachers Belonging to Different Gender and Types of School.

Group	N	Teacher Effectiveness		General Intelligence		Creativity	
		Mean	SD	Mean	SD	Mean	SD
Govt. Male	250	310.12	27.37	44.60	6.98	401.45	53.19
Govt. Female	200	310.96	26.65	46.75	6.43	403.49	45.76
Private Male	200	305.54	30.20	43.76	7.34	402.65	59.61
Private Female	200	305.68	26.25	45.55	6.75	386.89	46.92
Govt. Total	450	310.56	26.16	45.57	6.81	402.36	49.94
Private Total	400	305.61	27.83	44.65	7.08	394.85	54.20
Male Total	450	308.07	28.73	44.23	7.15	401.99	56.10
Female Total	400	308.35	26.54	46.16	6.60	395.27	47.02

Data in Table 1 reveals that mean teacher effectiveness scores of male secondary school teachers is 308.07 and for female secondary school teachers is 308.35 whereas mean teacher effectiveness scores of private and government secondary school teachers is 305.61 and 310.56 respectively. Similarly the general intelligence means scores of male and female teachers are 44.23 and

46.16 respectively. This shows that mean general intelligence score of female secondary school teachers is higher than male teachers. Table 1 further shows that the mean general intelligence scores of private and government secondary school teachers stands at 44.65 and 45.57 respectively. It may be noted from Table 1 that mean creativity score was higher in male secondary school teachers (401.99) as compared to female secondary school teachers (395.27) and mean creativity scores among government secondary school teachers (402.36) is higher than private secondary school teachers (394.85).

In order to test the significance of difference in means in teacher effectiveness, general intelligence and creativity scores across gender and type of school among secondary school teachers and for their interaction effect two way analysis of variance was carried out and the results were provided in Table 2.

Table 2

Summary of Results of Analysis of Variance.

Source of Variance	df	Teacher Effectiveness			General Intelligence			Creativity		
		SS	MS	*F*	SS	MS	*F*	SS	MS	*F*
Gender (A)	1	55.48	55.48	0.07	822.64	822.64	17.32**	8609.28	8609.28	3.21
Type of School (B)	1	5063.16	5063.16	6.62*	179.67	179.67	3.78	11954.92	11954.92	4.46**
Interaction (A X B)	1	25.31	25.31	0.03	6.84	6.84	0.14	16676.20	16676.20	6.22**
Within	846	646930.65	764.69		40171.74	47.48		2267832.19	2680.65	
Total	849	652074.59			41180.89			2305072.59		

** *Significant at 0.01 level of Significance*

MAIN EFFECTS

1) Teacher Effectiveness, General Intelligence and Creativity in Relation to Gender

Results in Table 2 reveals that F-value for the main effect of gender on teacher effectiveness is 0.07, which is not significant. This is indicative of the fact that male and female secondary school teachers do not differ significantly in their teacher effectiveness. The F-value for the main effect of gender on general intelligence is 17.32, which is significant at 0.01 level of significance. This shows that male and female secondary school teachers differ significantly in their general intelligence, female teachers being more intelligent than male teachers. The F-value for main effect of gender on creativity came out to be 3.21, which is not significant at 0.05 level. This indicates that male and female secondary

school teachers do not differ significantly in creativity.

2) Teacher Effectiveness, General Intelligence and Creativity in Relation to Type of School

Data in Table 2 reveals that F-value for the main effect of type of school came out to be 6.62, which is significant at 0.05 level. This shows that there is a significant difference in the teacher effectiveness of private and government secondary school teachers. The perusal of Table 2 also reveals that F-value for the main effect of type of school on general intelligence is 3.78, which is not significant. This shows that private and government secondary school teachers do not differ significantly in their general intelligence. The F-value for main effect of type of school on creativity came out to be 4.46, which is significant at 0.01 level. This shows that secondary school teachers who teach in government schools may be more creative than those who teach in private secondary schools.

3) Interaction Effect

The table 2 also reveals that 'F' values, 0.03 and 0.14, for the interaction effect of gender and type of school on teacher effectiveness and general intelligence was not significant at 0.05 level. This means that there is no significant interaction effect of gender and type of school on teacher effectiveness and general intelligence. The F-value for the interaction effect of gender X type of school on creativity came out to be 6.22 which is significant at 0.01 level. This means that result of significant main effect of type of school is dependent upon gender to explain creativity among secondary school teachers. The t-values testing significance of mean differences in 2x2 interaction are given in the table 3.

Table 3

The t-Ratio for Testing Significance of Difference Between Means in Creativity (A x B) (Gender x Type of School) Interaction.

Group Comparison	Mean Difference	SD	*t*
Male (A1) Private>Government	1.20	5.36	0.22
Female (A2) Government>Private	16.59	4.96	3.58**
Private (A1) Male>Female	15.756	5.36	2.94**
Government (B2) Female>Male	2.036	4.66	0.44

*** Significant at 0.01 level of Significance*

It is noted from Table 3 and Figure 1 that the mean difference is significant in female group in which teachers of government school are more creative than those of private schools (403.49 vs. 386.89) as t-ratio came out to be 3.58 ($p<0.01$). However, difference in private and government secondary school teachers in the male group are not significant.

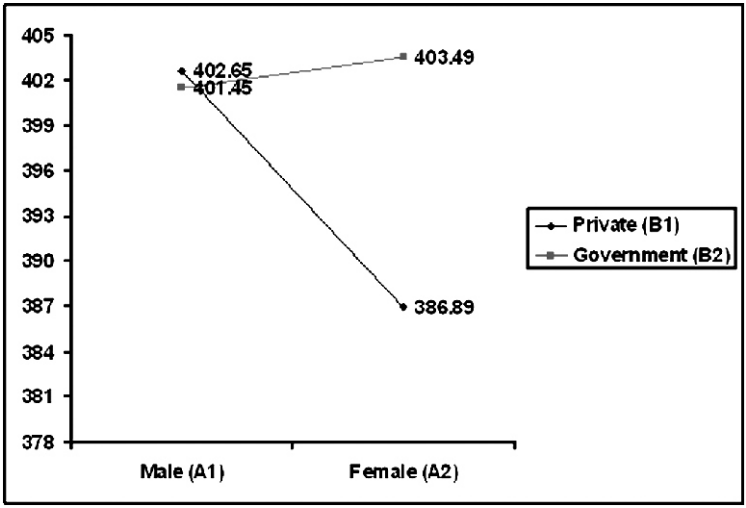

Figure 1. Interactive Effect of Gender and Type of School on Creativity in Government Schools.

Further Table 3 and Figure 2 depict that male teachers who teach in private schools are more creative than female teachers who teach in private school (402.65 vs 401.45) as the t-ratio came out to be 2.94 ($p<0.01$). While male and female secondary school teachers do not differ significantly in case of government schools.

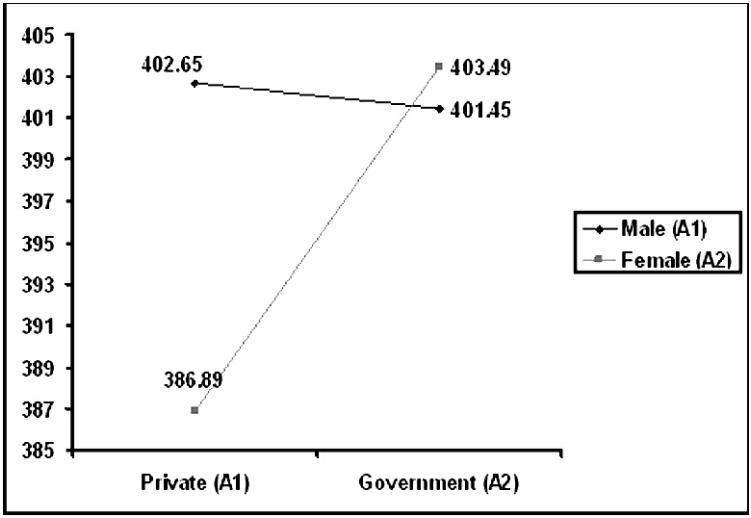

Figure 2. Interactive Effect of Gender and Type of School on Creativity.

The coefficient of correlation between teacher effectiveness and general

intelligence in total group is positive and significant ($r=0.072$, $p<0.05$). The coefficient of correlation between teacher effectiveness and creativity is positive and significant among secondary school teachers. The value of correlation between teacher effectiveness and creativity is 0.21 ($p<0.01$).

TESTING OF HYPOTHESES

On the basis of results of the study, as reported in the preceding section, testing of hypotheses is reported below:

1) From the findings of the study, it is concluded that there is no significant difference in teacher effectiveness of male and female secondary school teachers. There is significant difference in general intelligence of male and female secondary school teachers. Hence, the first hypothesis "There will be significant difference between male and female of secondary school teachers in teacher effectiveness, general intelligence and creativity" is accepted in case of general intelligence however rejected in case of teacher effectiveness and creativity in which male teachers of private secondary schools are more creative than female teachers of private secondary schools and not in case of government secondary schools.

2) From the findings of the study it is concluded that there is significant difference in the teacher effectiveness of government and private secondary school teachers. There is no significant difference in general intelligence of government and private secondary school teachers. Hence, the second hypothesis, "There will be significant difference between government and private secondary school teachers in teacher effectiveness, general intelligence, emotional intelligence, social intelligence and creativity" is rejected for general intelligence and accepted for teacher effectiveness and creativity in which government school teachers are significantly high on creativity than private school teachers only in case of female group and not in case of male group of secondary school teachers.

3) Teacher effectiveness is positively and significantly related with general intelligence and creativity among secondary school teachers. Hence, the third hypothesis, "There will be a significant relationship in teacher effectiveness, general intelligence and creativity among secondary school teachers" is accepted.

FINDINGS OF THE STUDY

Following are the important findings of the study:

1. There is a significant difference in the teacher effectiveness of government and private secondary school teachers. The government school teachers are

more effective than private school teachers.

2. There is no significant difference in teacher effectiveness of male and female secondary school teachers.
3. The main effect of type of school is independent of gender groups, i.e. government school teachers being effective both in case of male and female groups of school teachers.
4. There is no significant difference in general intelligence of government and private secondary school teachers.
5. There is significant difference in general intelligence of male and female secondary school teachers, female teachers being more generally intelligent as compared to male teachers, both in case of government and private schools.
6. There is no significant difference in creativity of male and female secondary school teachers.
7. There is significant difference in creativity among government and private secondary school teachers. Government secondary school teachers are more creative than private secondary school teachers.
8. Since the interactional effect was significant in terms of gender and type of schools it was found that:
   i. Male teachers of private secondary schools are more creative than female teachers of private secondary schools. However, this is not true in case of government secondary schools.
   ii. Government school teachers are significantly high on creativity than private school teachers only in case of female group and not in case of male group of secondary school teachers.

From the above discussion pertaining to correlational analysis with teacher effectiveness with general intelligence it may be concluded that teacher effectiveness is positively and significantly related with general intelligence. Creativity is positively and significantly related with teacher effectiveness among secondary school teachers.

DISCUSSION

The findings of the present study correspond to the studies conducted by Singh (1987) that there was no significant difference in male and female teachers in their teacher effectiveness. Further Krishnan and Singh (1994) concluded that main effect of the sex of the teacher on teacher effectiveness was not significant. There was no significant difference between male and female teachers in respect of dimensions of teacher efficacy (Sridhar and

Badiel, 2007). Kagathala (2002) has also reported that sex of the teacher does not affect the teacher effectiveness while type of management has significant impact on teacher effectiveness (Roul, 2007). Kalra (2010), Riti (2010) and Sodhi (2010) concluded that there was no significant difference between male and female teachers in their teacher effectiveness.

The results of the present investigation are substantiated by the results of the studies conducted by Sharma (1977) that there was significant difference in intelligence level of government and private secondary school teachers. Singh (1987) suggested that the differences in the mean intelligence score in male and female teachers was also not significant. The present results extend previous findings by Chan (2007) which indicated that gender had a significant effect on successful intelligence that is analytical, synthetic and practical abilities.

These findings are inconsistent to the findings Kaur (1998); Reddy and Geethanath (1999); Pal (2001) that male and female teacher do not differ in their creativity. Further these findings are in contradiction with findings of Kaur (2001) that private institutions teacher educators are more creative than those in government institutions, whereas a study done by Walker (1964) indicated that in the class room teachers exhibited more stimulating original behaviour; students exhibited more initiating behaviour and there was more evidence of activities of creative nature.

RECOMMENDATIONS

The results of the present study show that government secondary school teachers are more effective as compared to private school teachers. Government secondary school teachers are recruited on the basis of merit and now teacher eligibility test is being implemented with reference to Right to Education. Hence policies or characteristics that can contribute towards effective teaching among private schools should be mentioned as well as recognized by the private authorities also. Teacher effectiveness also depends upon monitory benefits. So private schools should enhance salaries of teachers and should be given on time. For increasing teacher effectiveness of private school teachers, there should be change in managerial ideology, a good level of personal relationships and democratic school environment should be provided. Government should take appropriate steps for securing, nurturing and retraining professional teachers, with ultimate goal of keeping their position in the education to deliver goods in effective manner. It is true that intelligence is inherited but still some part of it can be acquired also. In the schools, teachers should be engaged in higher order mental exercises, so that their intellect is further polished and enhanced. The results of the present study show that male teachers of private schools are more creative than female private school teachers. For nurturing creative ability among female private

school teachers, there should be no imposition of any authority on them. They should be free to express their views in all decision-making activities in schools. The school teachers should be encouraged to use the discovery method in their teaching.

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