DOES GENERAL INTELLIGENCE INFLUENCE DIFFERENT DIMENSIONS OF TEACHING COMPETENCE OF STUDENT-TEACHERS?

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Abstract

The purpose of present study was to study Teaching Competence of Student-Teachers on the basis of their General Intelligence. The sample comprised of 428 Student-Teachers. Data were collected by using Teaching Competence developed by Passi and Lalitha (1978),and Standard Progressive Matrices (SPM) developed by J. Raven, J.C. Raven and J. H. Court (revised, 2000). Results by t test showed that Teaching Competence of student-teachers having high level of general intelligence is significantly higher than student-teachers with low level of general intelligence. Teaching Competence of student-teachers having average level of general intelligence was significantly higher than student-teachers with low level of general intelligence. Student-teachers with high level of general intelligence were significantly higher on planning, presentation, classroom control, and evaluation, management dimensions of teaching competence than student-teachers with average and low level of general intelligence. On same dimensions student-teachers with average level of general intelligence were significantly higher than student-teachers with low level of general intelligence.

Key Words: Teaching Competence, General Intelligence, Student-Teacher

Teaching is actions of teacher which helps in learning of students. Some educationists consider teaching to be a broad concept which includes all activities to be carried out for organizing learning experiences. The modern concept of teaching refers to cause the pupil to learn and acquire the desired knowledge, skills and also desirable ways of living in the society. Glossary of Education (2010) defines Teacher Competence as Explicit, demonstrable knowledge and skills necessary for performing the role of teacher. According to British Council (2010) teaching competence refers to knowledge of concept/skills/language system and the ability to communicate this and knowledge effectively and in ways appropriate to the learners and type of course being delivered. Intelligence is a kind of mental energy, in the form of cognitive abilities, available within the human being, which enables him to handle his environment in terms of adaptation to face novel situations as effectively as possible. According to Sears (1995) intelligence refers to one's ability to reason through situations and act in an effective and adaptive fashion. Baron (2006) stated that the term intelligence refers to individual's abilities to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by careful thought.

After viewing related literature it was found that many studies were conducted on teaching Competence, teaching Competency, teaching effectiveness, teaching efficiency and development of micro skills of teacher and student-teachers. Most of the researches were experimental in nature and conducted in two or three decades back.Out of these, large number of researchers studied effect of micro teaching on teaching competency at different levels of teacher education. A few researches were found who examined the relationship of teaching Competency with cognitive and affective variables by using the descriptive survey method. Most of the studies revealed that micro teaching was an effective technique to improve teaching competency of student-teachers. Previous

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researches could not answer Does General Intelligence influence different dimensions of Teaching Competence of Student-Teachers? The present efforts was in this direction.

OBJECTIVE

• To find out the significant difference in Teaching Competence (total and dimension wise) of student-teachers on the basis of their levels (high, average and low) of General Intelligence.

METHOD

SAMPLE

The present study was conducted on B.Ed. student-teachers of colleges of education affiliated to Guru Nanak Dev University, Amritsar. There were 48 colleges of education affiliated to Guru Nanak Dev University out of which 12 colleges were selected through Random sampling technique. Further the student-teachers were selected (through Stratified Random sampling technique) in accordance with stratification on the basis of stream i.e. teaching of sciences, social sciences and Languages; Gender and Residence. Hence, total 428 B.Ed. student-teachers were approached for examination.

PROCEDURE

On selected sample, Standard Progressive Matrices (2000) was administered. In order to assess their teaching competence, observation schedule was used during the discussion lesson in their respective institutions. Two observers rated the teaching competence of student teachers. The mean score of both observers on each student teacher was used for testing hypotheses. Collected data were analyzed with the help of SPSS.

MEASURES

▢ In order to assess the Teaching Competence of B.Ed student's observation schedule developed by B.K. Passi and J.K. Lalita (1978)was used during the discussion lesson in their respective institution. Observation schedule consists of five dimensions Planning, Presentation, Closing, Evaluation, and Managerial with 21 items. This schedule has nine point scale against each item that leads to Not at all- to very much.

▢ Standard Progressive Matrices (SPM) developed by J. Raven, J.C. Raven and J. H. Court (revised, 2000) was used to assess the non-verbal intelligence of the student-teachers. The SPM consists of 60 problems divided into five sets. There is no time limit for this test. Numerous reliability coefficient quoted by Raven vary from .80 to .90. Validity of the SPM has been studied in the usual ways. When the Stanford Binet Test of Intelligence was used as the criterion, correlation varied from .50 to .86.

ANALYSIS

Table 1: Difference in Mean Scores of Teaching Competence on different levels of General Intelligence

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	133.28	19.20	2.96	6.28**
Average	277	114.70	23.11		
High	72	133.28	19.20	3.12	11.35**
Low	79	97.89	19.07		
Average	277	114.70	23.11	2.84	5.92**
Low	79	97.89	19.07		

** Level of significance at .01 level = 2.58

Table 1 reveals difference in teaching competence of high, average and low levels on general intelligence. The t-value for teaching competence of high and average groups is 6.28, which is significant at .01 level. It means that mean score of teaching competence of student-teachers with high level of intelligence (M=133.28) is significantly higher than mean score of teaching competence of student-teachers with average level of general intelligence (M=114.70). The t-value for teaching competence of high and low groups is 11.35, which is significant at .01 level. It means that mean score of teaching competence of student-

teachers with high level of general intelligence (M=133.28) is significantly higher than mean score of teaching competence of student-teachers with low level of general intelligence (M=97.89). The t-value for teaching competence of average and low groups is 5.92, which is significant at .01 level. It means that mean score of teaching competence of student-teachers with average level of general intelligence (M=114.70) is significantly higher than mean score of teaching competence of student-teachers with low level of general intelligence (M=97.89).

Table 2: Difference in Mean Scores of Planning dimension of Teaching Competence on different levels of General Intelligence

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	25.32	4.95	0.66	4.46**
Average	277	22.38	4.99		
High	72	25.32	4.95	0.70	9.77**
Low	79	18.44	3.66		
Average	277	22.38	4.99	0.60	6.53**
Low	79	18.44	3.66		

* Level of significance at .05 level = 1.96
** Level of significance at .01 level = 2.58

Table 2 shows difference in planning dimension of teaching competence of high, average and low levels on general intelligence. The t-value for planning dimension of teaching competence of high and average groups is 4.46, which is significant at .01 level. It means that mean score of planning of student-teachers with high level of intelligence (M=25.32) is significantly higher than mean score of planning of student-teachers with average level of general intelligence (M=22.38). The t-value for planning dimension of teaching competence of high and low groups is 9.77, which is significant at .01 level. It means that mean score of planning of student-teachers with high level of general intelligence (M=25.32) is significantly higher than mean score of planning of student-teachers with low level of general intelligence (M=18.44). The t-value for planning dimension of teaching competence of average and low groups is 6.53, which is significant at .01 level. It means that mean score of planning of student-teachers with average level of general intelligence (M=22.38) is significantly higher than mean score of planning of student-teachers with low level of general intelligence (M=18.44).

Table 3: Difference in Mean Scores of Presentation dimension of Teaching Competence on different levels of General Intelligence

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	69.72	10.57	1.66	6.42**
Average	277	59.08	13.00		
High	72	69.72	10.57	1.76	11.67**
Low	79	49.23	10.96		
Average	277	59.08	13.00	1.60	6.14**
Low	79	49.23	10.96		

** Level of significance at .01 level = 2.58

Table 3 indicates difference in presentation dimension of teaching competence of high, average and low levels on general intelligence. The t-value for presentation dimension of teaching competence of high and average groups is 6.42, which is significant at .01 level. It means that mean score of presentation of student-teachers with high level of

intelligence (M=69.72) is significantly higher than mean score of presentation of student-teachers with average level of general intelligence (M=59.08). The t-value for presentation dimension of teaching competence of high and low groups is 11.67, which is significant at .01 level. It means that mean score of presentation of student-teachers with high level of general intelligence (M=69.72) is significantly higher than mean score of presentation of student-

teachers with low level of general intelligence (M=49.23). The t-value for presentation dimension of teaching competence of average and low groups is 6.14, which is significant at .01 level. It means that mean score of presentation of student-teachers with average level of general intelligence (M=59.08) is significantly higher than mean score of presentation of student-teachers with low level of general intelligence (M=49.23).

Table 4: *Difference in Mean Scores of Classroom Control dimension of Teaching Competence on different levels of General Intelligence*

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	12.89	2.22	0.32	5.22**
Average	277	11.20	2.50		
High	72	12.89	2.22	0.38	7.77**
Low	79	9.96	2.39		
Average	277	11.20	2.50	0.32	3.91**
Low	79	9.96	2.39		

** Level of significance at .01 level = 2.58

Table 4 shows difference in classroom control dimension of teaching competence of high, average and low levels on general intelligence. The t-value for classroom control dimension of teaching competence of high and average groups is 5.22, which is significant at .01 level. It means that mean score of classroom control of student-teachers with high level of intelligence (M=12.89) is significantly higher than mean score of classroom control of student-teachers with average level of general intelligence (M=11.20). The t-value for classroom control dimension of teaching competence of high and low groups is 7.77, which is significant at .01 level. It means that mean score of classroom control of student-teachers with high level of general intelligence (M=12.89) is significantly higher than mean score of classroom control of student-teachers with low level of general intelligence (M=9.96). The t-value for classroom control dimension of teaching competence of average and low groups is 3.91, which is significant at .01 level. It means that mean score of classroom control of student-teachers with average level of general intelligence (M=11.20) is significantly higher than mean score of classroom control of student-teachers with low level of general intelligence (M=9.96).

Table 5: *Difference in Mean Scores of Evaluation dimension of Teaching Competence on different levels of General Intelligence*

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	12.58	2.66	0.39	4.14**
Average	277	10.99	2.98		
High	72	12.58	2.66	0.44	5.41**
Low	79	10.22	2.72		
Average	277	10.99	2.98	0.37	2.07*
Low	79	10.22	2.72		

** Level of significance at .01 level = 2.58

Table 5 demonstrates difference in evaluation dimension of teaching competence of high, average and low levels on general intelligence. The t-value for evaluation dimension of teaching competence of high and average groups is 4.14, which is significant at .01 level. It means that mean score of evaluation of student-teachers with high level of intelligence (M=12.58) is significantly higher than mean score of evaluation of student-teachers with average level of general intelligence (M=10.99). The t-value for evaluation dimension of teaching competence of high and low groups is 5.41, which is significant at .01 level. It means that mean score of evaluation of student-teachers with high level of general intelligence (M=12.58) is significantly higher than mean score of evaluation of student-teachers with low level of general intelligence (M=10.22). The t-value for evaluation dimension of teaching competence of average and low groups is 2.07, which is significant at .05 level. It means that mean score of evaluation of student-teachers with average level of general intelligence (M=10.99) is significantly higher than mean score of evaluation of student-teachers with low level of general intelligence (M=10.22).

Table 6: Difference in Mean Scores of Management dimension of Teaching Competence on different levels of General Intelligence

General Intelligence Level	N	Mean	Std. Deviation	Sed	t
High	72	12.76	2.48	0.37	4.56**
Average	277	11.06	2.90		
High	72	12.76	2.48	0.38	7.24**
Low	79	10.04	2.14		
Average	277	11.06	2.90	0.35	2.91**
Low	79	10.04	2.14		

** Level of significance at .01 level = 2.58

Table 6 shows difference in management dimension of teaching competence of high, average and low levels on general intelligence. The t-value for management dimension of teaching competence of high and average groups is 4.56, which is significant at .01 level. It means that mean score of management of student-teachers with high level of intelligence (M=12.76) is significantly higher than mean score of management of student-teachers with average level of general intelligence (M=11.06). The t-value for management dimension of teaching competence of high and low groups is 7.24, which is significant at .01 level. It means that mean score of management of student-teachers with high level of general intelligence (M=12.76) is significantly higher than mean score of management of student-teachers with low level of general intelligence (M=10.04). The t-value for management dimension of teaching competence of average and low groups is 2.91, which is significant at .01 level. It means that mean score of management of student-teachers with average level of general intelligence (M=11.06) is significantly higher than mean score of management of student-teachers with low level of general intelligence (M=10.04).

FINDINGS

- Teaching competence of student-teachers with high level of general intelligence was significantly higher than student-teachers with average and low level of general intelligence. Teaching competence of student-teachers with average level of general intelligence was significantly higher than student-teachers with low level of general intelligence.

- Student-teachers with high level of general intelligence were significantly higher on planning, presentation, classroom control, evaluation, management dimensions of teaching competence than student-teachers with average and low level of general intelligence. On same dimensions student-teachers with average level of general intelligence were significantly higher than student-teachers with low level of general intelligence.

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DISCUSSION

From findings it is clear that this general intelligence contribute for Teaching Competence of Student teachers. Hence the reason of this finding is obvious. First reason is 'g' contribute in all activities hence it contribute Teaching and it's all components i.e. Planning, Presentation, Closing, Evaluation, and Managerial aspects of teaching of student-teachers. It indicates the need cognitive abilities. Without good reasoning abilities Student teacher cannot perform better on dimensions of teaching competence that is why general mental ability was/is remained primary part of B.Ed entrance test. In this test through verbal and non-verbal measures almost 'g' factor is measured. Simply teaching means 'communicating knowledge to learners in class room'. This knowledge involve concepts, principles, and theories of specific content. Teacher First Understand content and then communicate to students. Previous findings of Mertens (1989), Heller and Clay (1993), Perry et al. (2005), Kelly (2008), and Grigorenko et al. (2006) also support directly or in directly the present findings. Even Goalman while explaining importance of EQ could not deny the role of general intelligence. He stated the IQ contribute 20% and rest EQ. He did not explain contribution of general intelligence as Zero. Previous findings of Perry et al. (2005), Grigorenko et al. (2006) and Kelly (2008), also support directly or in directly the present findings. Due to this, student-teachers with high general intelligence show higher score on teaching competence. Previous researches such as Varma (2003), Panigrahi (2005), Paltasingh (2008) and Dhall et al. (2009). Suresh et al. (1998), Verma et al. (1999) and Sood (2005). Jahan (2004) have clearly shown that getting knowledge or academic/achievement is positively related with General intelligence. Hence, in this way higher General intelligence contribute for better teaching in classroom.

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