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CONSTRUCTION OF TEACHERS BELIEFS SCALE#

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Teachers' performance is affected by their beliefs in their abilities rather than only having those abilities, such research findings have invigorated researchers' interest in teacher thinking and cognition. A Likert type Teachers Beliefs Scale was constructed in Urdu in this regard, to measure teachers beliefs about teacher efficacy, motivation, and pupil centeredness among school teachers. Factor analysis indicated confirmatory evidence showing a three factor loading on the scale. The 25 item scale has alpha reliability value of .82. ANOVA statistic and subsequent Tukey's Honest significance difference test found teacher efficacy and pupil centeredness dimensions of the scale as more differentiating among subjects than the dimension of motivation. The teacher beliefs scale, at this stage of development is recommended for use as a research instrument in educational research and validity data for various external criterions, to be of interest to the researchers, is solicited.

Doyle (1984) suggested that two major tasks of teaching are: (a) to establish and maintain order in the classroom, (b) to motivate the students to learn. The issue of class management i.e., orientation towards discipline, order, and pupil control, and the issue of motivating students to learning have been widely researched (Fuller, & Brown, 1975; Hoy & Woolfolk, 1989) and found to be related to sense of efficacy in teachers. Teachers' efficacy has been defined as "their belief in their abilities to have a positive effect on students' learning" (Ashton, 1986). As a psychological construct, Bandura (1986) has conceptualized the construct of teacher efficacy as efficacy expectation on the part of the teacher, i.e., a belief that one is capable of achieving certain level of performance in certain situation that counts towards success rather than what they are actually capable of accomplishing. Efficacy beliefs have been found

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to discriminate teachers in less effective schools from those in more effective schools (Brookover & Lezotte, 1979).

Recent interest in teacher thinking and cognition (Cark & Paterson, 1986; Munby, 1982; Nesper, 1987) have emphasized the importance of teacher belief as a potent variable influencing educational process and outcome. Beliefs are cognitive dimension of our overt behaviour. As cognitive entities, beliefs involve thinking processes and are learned and based on experiences of individuals in defined situations or context. Teachers' success depends on their efficacy beliefs as much as on their cognitive skills. Teachers lacking in self beliefs to be effective in a teaching situation are unlikely to manifest the behaviour necessary to promote student learning. Teacher cognition and beliefs reflect on teaching conditions and practices operative in a school set up. Consistly observed, these lead to enduring thinking process i.e., belief, system. In other words, school practices and conditions mediate teachers' beliefs (Chester & Baudin, 1996).

Considering the importance of beliefs in teachers thinking and behaviour, the task set up for this research is to conceive and construct an indigenous device on teachers', beliefs relevant to our school setting, that can be used as a psychological tool besides the traditional tests and indices of academics, in teacher development programs. Drawing on literature on educational research, three dimensions of teacher's work are selected to build up a teacher belief repertoire: Pupil Centredness, Motivation, and Teacher Efficacy. These constructs are defined as under:

Pupil Centredness (PC): Tendency of the teacher to give personal attention to the pupil, promote interaction, and keep one's self free from conventional ethos of "pupil control", "class order", and "pupil custody".

Motivation (M): Having an interest and perceiving a stake in school work. Here teacher's job/activity is an active volitational pursuit, and an enabling task not a routine drill.

Teacher Efficacy (TE): Having beliefs as a teacher that he/she can help the child improve and overcome his/her limitations, taking pupils' qualities as malleable which can be fostered and developed with the assistance of teacher and not as fixed entity determined as such by circumstances, poverty, and luck, etc. It is entertain in good 'outcome - expectation', from the pupils.

METHOD

Sample

The sample was 38 male teachers of elementary government schools of Gujranwala city. The instrument was administered in groups, with 4-6 teachers per school, who were available and agreed to act as respondents. Their average service as school teacher was eight years. Most of them (69.5 percent) had higher secondary school certificate (HSSC) comprising 12 years of education and a certificate in teaching (CT), the rest were graduates (B.A/B.Sc.), and C.T).

Instrument

Teachers Practices and Beliefs Scale

An indigenous instrument was constructed in Urdu, comprising three variables under study on the basis of the theoretical formulations of these constructs defined earlier. A 60 item pool i.e., 20 items each for the three variables, was administered to a group of 38 teachers on a Likert type 5-point scale: Always, usually, sometimes, rarely, never. Items with very high or low social desirability value were dropped, leaving a 40 item scale, roughly equal in number among the three dimensions with half the items being pro and the other half as anti or negatively worded to avert any tendency of response set in subjects. The scale was named as Teachers Practices and Beliefs Scale (TPBS), the items refered to statements about teaching practices, academics, and related behavioral situations or to the notions, bare ideas or beliefs teachers held and entertained about various educational and school matters, and about themselves, their skills and perception, and expectation regarding their pupils, e.g., 'as teachers, we exchange ideas regarding courses of study, teaching methods and students in our spare time' (practice); 'it is not as necessary to check home assignments daily, as it is to give them to pupils' (belief); "I know many pupils in my class by name' (practice); Teachers who stress greatly on discipline teach more effectively' (belief), etc. Primarily as a belief scale, items refer to teachers beliefs but some of the items refer to teaching as practices that represent underlying beliefs e.g., Pupils question the teacher in my class (pupil centredness). We assumed teacher would feel convenient to endorse practices as

concrete facts of school life and may feel somewhat defensive in committing on bare ideas and beliefs.

Procedure

The following instructions were given to the sample alongwith the instrument:

"Below are a number of statements about which teachers may have different opinions or beliefs. As you read through each statement, put a tick-mark (✓) in one of the five boxes for each statement to show your response. If you think a view expressed in a statement very frequently happens i.e., its occurance is between 100-90 per cent of the times, mark at 'always'; the other response categories are' 'usually' which stands for 85-65 per cent of the times, 'sometimes' 60-40 per cent of the times 'rarely' 35-15 per cent of the times, and 'never' stands for 10 per cent or lesser occurrence. Answer all the questions. Work rapidly but carefully. Do not spend too much time on any one statement. This is purely a private research work in teaching and has nothing to do with the department of education or any government organization. Feel free to reply and give your honest opinion.

Scoring

Scoring key is explained in Table 1. Each item score range between 5 - 1. Subscale scores for PC, M, and TE as well as overall TPBS score, can be known for each subject.

RESULTS AND DISCUSSION

Scoring and analysis of data was undertaken through SPSS Computer Program. Firstly, item-total correlation was computed on the basis of which the TPBS was reduced to 25 items. Table 1 identifies these items with the full contents, subscale name, item statistics and alpha values. The mean item response rate is indicative of social desirability value of the items. The TPBS scale so framed comprises 13 positive or pro items and 12 negative items. Further, nine of these items belong to TE subscale, whereas, eight items each belong to PC, and M subscales. The mean scores and standard deviation are comparable across subscales, with TE as more discriminating than the other two scales.

Table 1

Items (Scale) and Statistics

Item #	Description	*M*	*SD*	r^1	r^2
1.	As teachers, we exchange idea regarding course of studies, teaching methods and students in our spare time (TE)	2.92	.91	.422**	.424**
2.	I teach strictly according to the book and do not quote examples from other sources (PC).	3.33	1.35	.668**	.510**
3.	While teaching, I emphasize activity based learning than merely book reading (M).	3.64	1.17	.462**	.479**
4.	Teachers who stress greatly on discipline teach more effectively (PC).	2.33	1.26	.406**	.399*
5.	Pupils usually take interest in studies. (PC).	3.06	1.07	.555**	.427**
6.	Sometimes, I do visit my classroom even when it is not necessary to do so. (PC).	3.22	1.07	.367*	.357*
7.	If teachers' demands are lenient, they can influence students more than otherwise (PC)	2.92	1.36	.532**	.344*
8.	The status of government schools has declined in the view of general public (TE).	3.25	1.48	.636**	.612**
9.	Teachers are getting fed-up with their job every day (M).	3.06	1.35	.616**	.539**
10.	It is hared for pupils to understand the class lessons (TE).	3.47	1.21	.386*	.375*
11.	Pupils ask questions to the teachers in my class (PC).	3.42	1.05	.675**	.568**
12.	It is not as necessary to check home assignments daily, as it is to give them to the pupils (M).	3.31	1.01	.625**	.497**
13.	The standard of teachers has itself been poor (TE).	3.08	1.38	.745**	.593**
*14.	Most of the teachers work with responsibility (M).	3.86	1.22	.585**	.559**
*15.	Schools and teachers there in must be graded according to the standards of the pupils (M)	3.53	1.30	.520**	.467*
16.	Teachers have been over-worked; they must be relieved of some of it (M).	3.19	1.47	.365*	.354*
*17.	Teachers have been satisfied in their profession (TE).	2.86	1.57	.780**	.660**
18.	Intelligent children join private schools, others get into government schools (TE)	3.33	1.37	.631**	.624**
19.	Teachers are helpless in the present system of education (M)	2.50	1.21	.609**	.471**
*20.	I know many pupils in my class by name (PC)	3.97	1.30	.539**	.424**
*21.	I give special attention to some pupils (PC).	3.53	1.11	.455**	.351**

Table 1 continued.

Table 1 from previous page.

*22.	I think I can bring a substantial change in my pupils (TE).	3.92	1.25	.497**	.471**
23.	People in the teaching profession have remained disappointed (TE).	2.67	1.17	.588**	.529**
24.	I do not know how to help my pupils improve their performance (TE).	3.50	1.11	.500**	.482**
*25.	Teacher should be the first to contact parents not the other way round (M).	2.50	1.07	.332*	.315*

N= 36; Items 25; *= .05 level of significance; **= .01 or beyond level of significance.

γ^1 = Item total correlation within subscale, PC, M, or TE.

γ^2 = Item total correlation of all the 25 items or TPBS

Key Item numbers with * on the left follow "always"= 5 → "Never"= 1 Scoring system where as others (without*)→follow Always 1→ Never= 5 score.

Reliability

Cronbach's alpha value of TE, PC, and M subscales is .766, .601, and .520, respectively (Table 2). The overall alpha of .817 is fairly satisfactory for a medium size scale as TPBS. The corrected split-half reliability of TPBS is .693.

Table 2

Mean, standard deviation, alpha coefficient, and correlation matrix for TPBS

Variables		*M*	*SD*	*Alpha*	I	II	III	IV
I	Pupil Centredness (PC)	29.25	5.28	.601	-	.436*	.642*	.814**
II	Motivation (M)	26.08	4.21	.520	-	-	.502**	.689**
III	Teacher Efficacy (TE)	25.33	6.31	.766	-	-	-	.911**
IV	Teacher Practices & Beliefs Scale (TPBS)	80.86	12.95	.817	-	-	-	-

significance *p < .05; ** p < .01.

Validity

Consistent with research literature, all the subscales are positively and significantly correlated. The dimensions of teacher efficacy bears heavily on TPBS, followed by pupil centredness and motivation (Table 2). A principal component analysis of data was

run. Examining the factor loading led to the retention of three factor that had eigen values of more than 2.

Table 3

Principal component analysis: Summary data

Factor	SignValue	Per cent of Va2.	Cum Per cent
1	5.540	23.1	23.1
2	2.662	11.1	34.2
3	2.107	8.9	43.1

This findings empirically verified our earlier three factor theoretical construction of the scale (Table 3). Together, the three factors accounted for 43.1 per cent of variance. This confirmatory factor analysis validated the three scales.

Analysis of variance among the three subscales was also run to determine significance of difference between the mean scores on the three subscales.

Table 4

ANOVA summary data

Source	*df*	*SS*	*MS*	*F*
Between scales	2	290.16	145	5.00
Within scales	105	3042.60	29	
Total	107	3332.76		

F(2, 105)= 5.00; p< .01

The obtained value of *F* is significant at .01 level which indicates that the mean response of the subject on three scales is different from each other and valid as discriminating measures among the respondent teachers. The next step was to find which scale(s) is more different than others. Tukey's HSD test (Gravetler, 1984) was used as a *posteriori* test for this *post-hoc* enquiry. The paired comparison and their significance thus obtained is as follows: *PC vs. M* (3.17 *point mean difference*) *significant*; *M vs. TE* (.55

point mean difference) *insignificant*; and *PC vs. TE* (3.72 *point mean difference*) *significant*. With K (scales) = 3 and *df* within variance= 105, Tukey's HSD value is 2.67 to be *significant* at .05 level.

It appears from the results that pupil centredness and teacher efficacy yields significantly different mean score just as pupil control and motivation but between teacher efficacy and motivation the difference is not enough to be significant. In other words, teacher efficacy and child centeredness emerge as different and independent measure as this scale constructs these dimensions, whereas the construct of motivation does not stand significantly independently from teacher efficacy.

CONCLUSION

TPBS was designed to tap and measure teachers' beliefs. The device was purported to be used as an affective scale besides the conventional academic tests being used for teacher appraisal research and development. The statistical analysis reveals it to be loaded significantly on teacher efficacy and pupil centeredness as two independent and distinguished dimensions. The dimension of motivation, however appeared to overlap with teacher efficacy. Lest this is a characteristics of only this sample, it is recommended that the scale may well be tried on another independent and bigger sample of both male and female teachers. The author recommends TPBS as a research instrument at this point, considering its general psychometric characteristics and welcome data on its validity against various external criterions that other researchers may find of their interest.

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