

RELATIONSHIP OF TEACHERS' ACADEMIC DISCIPLINE, EXPERIENCE, AND GENDER WITH THEIR EFFICACY PERCEPTION[#]

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This study investigated teachers' efficacy perception as a characteristic of subject-discipline, gender, and experience on 227 secondary school teachers. Science teachers were found as having significantly higher scores on Teacher Efficacy Scale ($r_{pbi} = .15$, $t = 2.31$, $p < .05$) indicating more confidence in their knowledge and skills to bring about student learning. However, no gender differences were found on the efficacy scores. Similarly, teachers with 'little', 'some', and 'large' experience also displayed same or non-differentiated efficacy scores, that is, efficacy perception did not rise with the increasing experience. Implications of the findings are discussed for teaching and teacher education in Pakistan. Suggestion pointing ways and means to enhance sense of professionalism and efficacy in teachers follow at the end.

The public schools are under severe criticism in Pakistan due to low quality of education. Declining standards have led to high turnover in schools. The educational authorities had to thus shift their focus from the problem of 'insufficient schools' to 'inefficient schools'. No school reforms have come out by the state or by teachers' body so far. However, teachers are convinced that public schools suffer from some inherent problems but they have failed, as insiders, to spell out the problems. Outside the schools, analysts think of a variety of reasons and factors. Just one approach to investigate the problem could be a psychological one --- finding how well teachers perceive themselves as efficient or otherwise in handling classroom tasks and school children.

A sense of efficacy implies liking, involvement, and motivation in work and vice versa. In Jones and Nisbett's (1972) terminology, a teacher with a sense of efficacy about his/her job will act as an 'actor' rather than an 'observer' and will involve students in studies. Educational researchers and psychologists have found two aspects of teacher efficacy: Personal Efficacy (PE) --- the perception that one

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has the ability and skills to bring about learning in students e.g. "If I really try hard, I can get through even the most difficult student", and Outcome Efficacy (OE)---the perception that students' environmental and family limitations can be overcome, e.g., "A teacher is very limited in what he or she can achieve because students' home conditions have a large influence on them" (Gibson & Dembo, 1984). The two perceptions are complementary to each other. One may have a sense of PE a good deal and still believe that satisfactory student outcome (OE) may not be at hand for particular group of students. Thus 'Teacher Efficacy' as a construct can be comprehensively defined as a belief in one's ability to perform actions that influence conditions leading to student learning. Research studies indicate that perceived or psychological efficacy accounts for: individual differences in teaching outcome (Brophy & Avertson, 1977), staying longer with the difficult student (Goodnow, 1980), and predicting teaching practices (Hoy & Woolfolk, 1990). Efficacy perceptions or perspectives are acquired largely by means of knowledge and skills, work experiences and related socio-psychological conditions that guide teachers' actions in the classroom.

This inquiry disaggregates teachers into some well known dichotomies; e.g., experienced and novice teachers, men and women teachers, and science and arts teachers; to find whether these teacher characteristics are associated with the degree of 'sense of efficacy' or competence they perceive about themselves as school teachers.

In investigating teacher efficacy, the following hypotheses were framed and tested:

1. Teachers with longer experience possess a higher sense of efficacy than the less experienced and the novice.
2. Women teachers shall report a stronger sense of teacher efficacy than men teachers due to gender as a phenotypic characteristic.
3. Science teachers are likely to have a higher sense of efficacy than arts teachers due to different knowledge structure of these disciplines.

METHOD

Respondents

Respondents for this study comprised 156 men and 71 women preservice teachers enrolled in Master of Education (M.Ed.)

programme. Of these, 87 were enrolled in College of Education for Men, Lahore (CEML), and 140 in the Institute of Education and Research (IER). Half the respondents undergoing M.Ed. programme at CEML were, by requirement of admission policy, science, or mathematics teachers and the other half were language, social studies, or arts teachers and had studied these subjects at graduate level. IER had enrolled 95 students in arts as against only 45 in science and mathematics. Together there were only 46 respondents who had no formal teaching experience while the rest were in teaching service, mostly in government schools. All the respondents had obtained bachelors' degree in education (B.Ed.) which was a precondition for enrolling in M.Ed. programme. The details of the respondents are presented below:

Table 1*Characteristics of the Respondent Teachers (N = 227)*

Experience	IER				CEML	
	Science (n = 45)		Arts (n = 95)		Science (n = 43)	Arts (n = 44)
	Women	Men	Women	Men	Men	Men
i Nil or less than one year	9	8	17	12	-	-
ii 1-5 years M = 3 years	7	5	10	7	29	19
iii Above 5 years M = 9 years	6	10	22	27	14	25
Total	45	23	49	46	43	44

Note: Figures indicate number of respondents. Average experience is 5.3 years. M = Mean

Instruments

Teacher Efficacy Scale (Gibbson & Dembo, 1984, TES) is a widely used measure (See Annexure). A short version of TES was translated into Urdu for using it in this study through back-translation method. The short version comprising 18 items has been reported by several researchers to yield same reliability as the whole TES. The items state teacher behaviour or perception about instructional strategies and classroom tasks. Respondents rate how much each item is representative of their typical behaviour or thinking as a teacher.

TES yields scores on two aspects: Outcome Efficacy (OE) and Personal Efficacy (PE). PE is scored as strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4, whereas OE is scored in the reverse direction.

Personal Information Blank (PIB) was administered after TES. It called for biographical information pertaining to academic and professional/career achievements of the respondents.

Procedure

TES and PIB were administered to the respondent teachers in their respective institutions. They worked on their own pace to complete these forms. Analysis was carried out through correlational and cross-table techniques as the study involved mostly relational hypotheses.

RESULTS AND DISCUSSION

We expected the association of efficacy perception to vary between men and women teachers, and likewise between arts and science teachers. Since science/arts, and men/women are genuine dichotomies, point-biserial correlation (*rpbi*) statistic was used for analysis of data (Table 2).

Table 2

Association of Academic Discipline and Gender with Teacher Efficacy

Teacher Characteristics	N	M	TE		OE		<i>rpbi</i>
			SD	<i>rpbi</i>	M	SD	
Discipline							
Arts	136	17.14	3.45	.15*	33.48	3.23	.002
Science	91	18.09	3.09		33.80	3.42	
Gender							
Men	158	17.80	3.60		33.75	3.51	.02
Women	69	17.00	2.96	.11	33.50	3.32	

* $p < .05$, $t = 2.31$

Academic Discipline

The *rpbi* depends directly upon difference between two means. A sizeable departure from the mean difference of zero in the case of academic discipline rendered it a significant correlation coefficient ($rpbi = .151, t = 2.31, p < .05$). In other words, the association of scores of science teachers with outcome efficacy (OE) was significantly greater than the same for the arts teachers, supporting the hypothesis of difference. A different knowledge structure, distinct methods of teaching including lab-experimentation and different student evaluation techniques between science and arts subjects seem to account for difference in OE scores. Science subjects provide clearer feedback to the teacher that may inform and enhance the efficacy perception of science teachers. Their counterpart in arts have rather elusive disciplines, and subjective procedures of assessing understanding and knowledge in the subject. Further, since science and mathematics follow a well specified and logical set of knowledge-structure, distinct teaching techniques of science and mathematics that could be facilitating the efficacy scores of science teachers. On similar findings, Putman, Lambert, and Paterson (1990) held that teaching outcome were pretty predictable in the subjects of science and mathematics because teachers have ample feedback information about their performance in the classroom which guide their sense of efficacy.

Science students have relatively better achievement record than arts students in Pakistan. Therefore, teachers of the former may be having higher outcome expectations as well, inducing them to think highly of their own efficacy. Science as an academic discipline could have thus favourably influenced teachers' sense of efficacy. It did not, however, lead to a higher perception of their personal efficacy as well compared to arts teachers since scores of the two groups were similar on PE.

Gender

The efficacy scores of men teachers were not found to be significantly different from that of women teachers, contrary to our hypothesis. They were more of the same level. This finding is however discrepant with Greenwood, Olejnik, and Parkey's (1990) observation that women teachers are more confident and at ease in teaching than men. Marshall and Mitchell (1989) made a distinction between men and women principals. According to them women principals spent more time in improvement of educational programme

and school culture than men in being more attuned to curricular issues, teaching concerns, community building, and parental involvement. We believe that constancy in environmental conditions of boys' and girls' secondary schools overrode gender difference, if any, in our conditions.

Experience

Experience can be taken as a dichotomous variable e.g., experienced teachers and the novice teachers. However, considering a wide range of experience in our sample of teachers they were placed in three categories; 'little', 'some', and 'large' experience. They were sub-divided into two groups at the mid value of the PE and OE scores separately to identify high and low scorers. The differential effect of discipline (science versus arts), as found above, was moreover controlled by having science and arts teachers' data separately analyzed. A cross-table so constructed (see Table 3) shows (within parenthesis) number of teachers falling in each category.

Table 3

Relationship Between Teacher Efficacy (Y) and Experience (X), Controlling for Subject Discipline (Science, Arts).

Y	Score	Science			Arts		
		Little	Some	Large	Little	Some	Large
		Experience	Experience	Experience	Experience	Experience	Experience
		0-1 Year	2-5 Years	6-15 Years	0-1 Years	2-5 Years	6-15 Years
TE							
	18 & above	58%	54%	48%	65%	44%	55%
		(10)	(23)	(15)	(19)	(16)	(41)
	Below 18	42%	46%	52%	35%	56%	45%
		(7)	(20)	(16)	(10)	(20)	(33)
PE							
	32 & above	47%	51%	52%	45%	42%	49%
		(8)	(22)	(16)	(13)	(15)	(36)
	Below 32	53%	49%	48%	55%	58%	51%
		(9)	(21)	(15)	(16)	(21)	(38)

Note: values within parenthesis represent n.

percentages are proportionate to n within each category of experience.

The Table 3 indicates that neither for self motivation (PE) nor outcome motivation (OE) were the percentage of respondents

significantly different across 'little', 'some', and 'large' experience categories for the above average or the below average scorers. Interestingly, the novice had an edge over those having 'some' experience, on TE scores.

Non-differentiated scores among teachers of different degree of experience have been by several researchers (Guskey & Passaro, 1993; Korevaar, 1990; Midgely, Feldlaufer, & Eccles 1989) and interpreted as stability in efficacy after achievement in the initial pre-service period stabilized. Dembo and Gibson (1985) also observed that sense of efficacy generally declined after a preservice period of fancy and high morale as teachers faced, with the passage of time, the ground realities and difficulties in classroom. Newmann, Rutter, and Smith (1989), however, brought out the impact of 'context' in this regard in saying that poor locality or community of the school-site, bureaucratic style of school administration, collegial isolation among teachers and their low perception of teaching as a work under certain school settings could dampen teachers' morale and enthusiasm. It is our observation that school conditions in Pakistan suffer from similar context factors.

On a sample of elementary school teachers, Soodak and Podell (1993) however, found sense of efficacy to rise with experience, and posited a developmental concept of 'teacher efficacy'. Since data of the present study pertained to secondary school teachers, the discrepancy in results can be attributed to sample differences. Moreover, the criteria underlying 'experience' in individual studies may also be kept in view. For instance one may argue that the criterion of measuring 'experience' by sheer time value (i.e., years) may not be very meaningful as it is oblivious of the quality of work itself. In the case of teaching, in particular, the adage --- "nineteen years' experience may actually be only one year's experience repeated nineteen times" --- is popularly endorsed.

CONCLUSION AND SUGGESTIONS

This investigation reflects poorly on our public school teachers specially with regards to how well they feel about their experience. Experience was, presumably, taken by teachers as not having much value or worth otherwise it would have been reflected in higher efficacy scores in the case of teachers having greater experience. Social learning theorists posit that a sense of efficacy emerges from persons' interpretation of their experiences (Bandura, 1977). The fact

that a sense of professional development or mastery was lacking, even with large experience, among our teachers and their teaching practices. Lack of growing efficacy or a sense of being stuck-up stamps a layman's impression about our school teachers as poor professionals. This is equally true about men and women teachers save that science teachers were better off. The role of Head Teacher as supervisor and facilitator of teachers' growth also stands indirectly questioned. The findings bear important implications for school education as well as teacher-education at the school level in Pakistan.

We need to involve teachers in work by providing a supportive and collaborate team of teachers in schools duly supervised and guided by the senior professionals. Teachers who reflect on their problems may be encouraged in innovating and adopting new strategies to change and correct what ails them in the schools. This will provide them a sense of professional autonomy and efficacy to act, change, and improve; else apathy, indifference, stagnancy shall stay to keep undermining them and their output.

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TEACHER EFFICACY SCALE

1. When a student does better than usual, many times it is because I exerted a little extra effort.
2. The hours in my class have little influence on students compared to the influence of their home environment.
3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behaviour which they may lack.
4. The amount that a student can learn is primarily related to family background.
5. If a teacher has adequate skills and motivation, she/he can get through to the most difficult student.
6. If students aren't disciplined at home, they aren't likely to accept any discipline.
7. I have enough training to deal with almost any learning problem.
8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.
9. Many teachers are stymied in their attempts to help students by lack of support from the community.
10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectation.
11. Individual differences among teachers account for the wide variations in student achievement.
12. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.
13. If one of my new students can not remain on task for a particular assignment, there is little that I could do to increase his/her attention until he/she is ready.
14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.
15. When I really try, I can get through to most difficult students.
16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her

achievement.

17. Teachers are not a very powerful influence on student achievement when all factors are considered.
18. If students are particularly disruptive one day, I ask myself what I have been doing differently.
19. When the grades of my students improve it is usually because I found more effective teaching approaches.
20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum.
21. If a student masters a new math concept quickly, this might be because I know the necessary steps in teaching that concept.
22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents' values towards education, discipline, etc.
23. If parents would do more with their children. I could do more.
24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.
25. If a student in my class becomes disruptive and noisy. I feel assured that I know some techniques to redirect him quickly.
26. School rules and policies hinder my doing the job I was hired to do.
27. The influences of a student's home experiences can't be overcome by good teaching.
28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention.
29. If one of my student couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.
30. Even a teacher with good teaching abilities may not reach many students.

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