Humanity & Social Sciences Journal 4 (2): 164-171, 2009
ISSN 1818-4960

Elementary School Teachers' Self-Efficacy Beliefs: A Turkish Case*

Nuray Senemoğlu, Melek Demirel,
Esed Yağci and Tülay Üstündağ

Department of Educational Sciences, Faculty of Education, Hacettepe University, Turkey

Abstract: This study aims at determining elementary school teachers' self-efficacy beliefs concerning teaching behaviours and whether or not self-efficacy beliefs differed on the basis of gender, teaching experience and the achievement level of schools where teachers work. In consequence, teachers' average of self-efficacy belief scores was found to be at a "good level" ($\overline{X}$ = 4.13). The fact that the teachers' self-efficacy belief was found to be high showed that they held a strong belief that they had knowledge and skills of effective teaching behaviours. No significant differences were found between self-efficacy belief score averages and gender and experience. However, on examining self-efficacy belief score averages on the basis of school achievement, a significant difference in favour of the upper group was found between the score averages of teachers working in the upper and the lower group schools.

Key words: Elementary school teacher · Self-efficacy · Teachers' self-efficacy beliefs

INTRODUCTION

Self-efficacy is one of the basic concepts of social cognitive theory suggested by Bandura. The individual is perceived as the product of his social environment and of social systems and is considered to be the creator of this system in this theory. The most important property giving the person that power is the beliefs held by the individual about his competence; and those beliefs are stated in the concept of self-efficacy. Bandura[1] defines the concept as an individual's judgements of his capacity to organise and fulfil activities necessary for demonstrating a certain level of performance. In other words, self-efficacy is the individual's judgement or belief concerning how successful he will be in handling difficult cases he is likely to face in the future [2].

Self-Efficacy Judgements Are Affected by Information Obtained from Four Basic Sources

Mastery Experiences: Information obtained by an individual directly through his successful or unsuccessful activities.

Vicarious Experiences: Successful or failed activities of others resembling the individual strengthen the individual's judgement as to he can succeed or fail in the identical activities.

Verbal Persuasion: Encouragement that the individual can succeed or fail, suggestions, recommendations affects self-efficacy in differing levels.

Corresponding Author: Dr. Melek Demirel, Department of Educational Sciences, Faculty of Education, Hacettepe University, Ankara, Turkey

*This is a part of the project directed by Prof. Dr. Nuray Senemoğlu and sponsored by Hacettepe University, unit of scientific research entitled "Defining Instructional Designs in the Primary Education".

Psychological Arousal: The individual's expectation of success or failure in a task influence self-efficacy perception. An individual with high level of perceived efficacy will make more efforts; will be more insistent and more resolute than one with lower level of perceived efficacy to cope with a task [3-5].

Self-efficacy belief is a significant predictor of achievement in various academic situations. This finding is also supported by various other research findings. Research conducted by Pajares and Miller (1994) also found that self-efficacy perception affected mathematics achievement in a positive way [6]. A close review of relevant literature showed that considerable amount of research was performed on teachers' as well as prospective teachers' self-efficacy beliefs [7-12]. On reviewing literature published abroad, it was found that teachers' self-efficacy perception was handled through such issues as teachers' self-efficacy beliefs and students' achievement [13-15] and classroom management and time management strategies [9]. Besides, publications on self-efficacy perception are observed to be on the increase in Turkey in recent years.

Purpose of the Research: An attempt is made in this research to determine elementary school teachers' levels of self-efficacy beliefs in teaching behaviours and to analyse it in terms of differing variables. Therefore, answers are sought to the questions of:

- What is the elementary school teachers' level of self-efficacy beliefs in teaching behaviours?
- Do the elementary school teachers' levels of self-efficacy beliefs in teaching behaviours vary on the basis of gender, experience and the level of achievement of the school they teach in?

MATERIALS AND METHODS

Research Design: This research uses a descriptive method since it aims to reveal the current situation.

Study Group: The study group is composed of 97 elementary school teachers. The results of High School Entrance Exam (LGS) administered in primary education schools by the Centre for Student Selection and Placement (ÖSYM) were used in determining the schools to be included in research. The average scores received by students of elementary schools located in the central districts of Ankara in the selection exam were ordered from the highest to the lowest. Then the arithmetic averages and standard deviations were found for schools. Schools 1 standard deviation above the arithmetic average were determined as upper level, the schools 1 standard deviation below the average as lower level and those between the two values as intermediate level schools; and two schools from each level were selected in random. This classification, which was made on the basis of score averages of the schools, was also appropriate to the socio-economic level of the region where the schools were located 66% of the research group teachers (f=64) were female whereas 34% (f=33) were male. Of them, 32% (f=31) taught in upper level schools, 37% (f=36) in intermediate level schools and 31% (f=30) in lower level schools. The distribution of teachers according to grade levels they taught was: 17.5% (f=17) 1st grade, 21.6% (f=21) 2nd grade, 18.5% (f=18) 3rd grade, 21.6% (f=21) 4th grade and 21.6% (f=21) 5th grade. As is clear from Table 2, 60% (f=58) of the teachers in the study group were graduates of elementary teaching departments of universities, 12% (f=12) were graduates of university colleges offering two- year education who later completed their education and got a university degree where as 28% (f=28) were graduates of various departments of universities (such as Economics, Business Administration, Sociology, History of Art, Veterinary Medicine and Public Relations) who took up teaching occupation. As to the teaching experience of the teachers; only 11% (f=11) had 1-5 year teaching experience. Those with 6-20 year experience comprised 32% (f=31) of the group. Teachers with 21 year or more (21-38 year) experience, on the other hand, were 57% (f=55) of the group.

Instrument: The research data were collected through "Teacher Self-efficacy Scale" and personal information form. Teacher Self-efficacy scale is a scale which was composed of 5-pointed Likert type 32 items. The alternatives presented in the scale were scored as "very good=5", "good= 4", "intermediate=3", "weak=2", "inadequate= 1".

Table 1: The Results of KMO and Barlett Sample Adequacy

Kaiser-Meyer-Olkin Measure of Sampling	,849	
Bartlett's Test of Sphericity	Approx. Chi-Square	1752,848
	df	496
	Sig.	,000

Table 2: The Explanatory Factor Analysis Results of "Teacher Self-efficay Scale"

Item No	Faktor Load
30	,780
22	,739
13	,737
21	,732
17	,729
25	,729
26	,728
32	,727
20	,713
27	,702
31	,682
11	,666
6	,660
29	,653
14	,644
1	,641
28	,618
5	,609
2	,605
23	,597
15	,595
4	,580
18	,576
10	,565
7	,557
19	,552
24	,544
3	,542
12	,533
16	,500
9	,393
8	,383

Firstly, relevant literature was reviewed in developing the scale, scales used in other studies were examined and thus the self-efficacy scale items were constructed. Having carried out modifications following expert opinion of the items, a 76-item pre-trial form was prepared. The pre-trial application of the scale was conducted with 139 elementary school teachers who were not included in the research group. Basic components analysis was employed for the factor analysis which was conducted for determining the construct validity of the scale. Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Test were used so as to find whether or not the data were appropriate for the factor analysis prior to the analyses. The KMO value was found as .84; a result showing that the data were quite appropriate for the factor analysis. The results of KMO and Barlett sample adequacy were shown in Table 1 whereas the result for factors analysis was shown in Table 2.

Following the factor analysis, those items with factor loads lower than. 38 were removed; and the scale, which was determined to be one dimensional and which contained 32 items, was administered to 97 elementary school teachers working in six schools of primary education. Cronbach alpha was found to be .94 for the final form of the scale.

Findings: The findings obtained are dealt with in the order of questions to be answered in the study.

Table 3: Descriptive Statistics of Teacher Self-efficacy Scale

Items	$\bar{x}$	S
1. I can organise very effective learning environments to make sure my students acquire thinking skills.	4,04	,554
2. I can assure all my students' concentration on and participation in the lesson.	4,04	,652
3. I monitor all my students' individual improvement in valid and reliable ways.	4,08	,658
4. My students understand why they learn in lesson and are enthusiastic about learning.	4,10	,707
5. I can organise activities to develop my students' all intelligence fields.	3,74	,742
6. I can specify the objectives and content to be facilitated in lesson in accordance with students and environmental properties.	4,09	,647
7. I give appropriate reinforcements so that my students sustain positive behaviours.	4,42	,605
8. I can prepare and use teaching aids and materials in effectively.	4,03	,680
9. I can teach in a manner so as to facilitate target behaviours.	4,38	,599
10. I can use the curriculum in teaching lessons effectively.	4,20	,669
11. I contribute significantly to the fact that my students come to school willingly.	4,44	,626
12. I can reflect the pleasure got from teaching to my students.	4,44	,607
13. I can use teaching strategies, methods and techniques effectively compatible with the students and related behaviours to be learnt.	3,78	,674
14. I can also communicate with my problematic students.	4,14	,847
15. I can make my students behave in line with classroom rules.	4,25	,709
16. I can communicate with parents effectively when necessary.	4,37	,755
17. I can lead my students to research and discovery.	4,02	,723
18. I can resolve the deranging behaviours that I face in the lesson positively.	4,16	,651
19. I can make sure determining whether or not the students have gained the critical behaviours at the end of the lesson.	4,14	,600
20. I can develop creative ideas to change inappropriate teaching environment in a positive way.	4,12	,668
21. I can motivate my students to the lessons and various activities effectively.	4,20	,669
22. I can get my students to produce original products.	3,89	,690
23. I can evaluate my students' achievement in a fair way.	4,45	,546
24. I can manage the class time effectively.	4,18	,747
25. I can organise my lesson in a way that my students like.	4,20	,632
26. I can organise teaching in a way that my students can use the learnt material in daily life effectively.	4,03	,625
27. I can develop my students' creativeness, critical thinking and problem solving skills.	4,09	,665
28. I can avoid the arousal of discipline problems in class.	4,17	,693
29. I guide my students effectively so that they can compensate their inadequacies and correct their mistakes.	4,21	,579
30. I can lead my students to be productive and creative through the activities I organise.	3,98	,747
31. I can provide each student with extra time and opportunities so that they are successful.	3,97	,739
32. I can provide my students to learn the fundamentals of knowledge in a tangible way.	4,14	,639

What Is the Elementary School Teachers' Level of Self-efficacy Beliefs in Teaching Behaviours?: The teachers' self-efficacy beliefs were examined and the findings were displayed in Table 3.

The overall average of scores teachers received from "Teacher Self-efficacy Scale" was found to be 4.13 (82.6 over 100); a value which corresponded to the alternative of at a "good level" in the scale. The score to be received from the 32-item scale ranged between 160 at the maximum and 32 at the minimum. The arithmetic average of the scores received from the scale was 132.43. The fact that the teachers' self-efficacy belief was found to be high showed that they held a strong belief that they had knowledge and accumulation of teaching behaviours available in the scale.

On examining the descriptive statistics concerning "Teacher Self-efficacy Scale", it was found that none of the 97 teachers included in the study group chose the "weak" alternative. Studying the findings on this sub-problem, it was found that teachers' self-efficacy beliefs in teaching behaviours were at a "good level". This case may be accounted for with the fact that 57% of the teachers had 21 year or more experience of teaching. In the same vein, Bandura (1977) also claims that self-efficacy perception increases with time and experience [4].

Table 4: The t Test Results for Teachers' Self-efficacy Scores According to Gender

Gender	N	$\bar{x}$	S	Sd	t	p
Female	64	132,75	14,02	95	O,61	,409
Male	33	131,00	12,28			

Table 5: Teachers' Self-efficacy Score Averages on the Basis of Experience

Distribution on the Basis of Experience	f	%	$\bar{x}$	S
1-5	11	11	130,00	15,99
6-10	18	19	136,33	8,08
11-15	4	4	136,00	11,40
16-20	9	9	139,33	13,28
21-25	10	10	133,60	15,48
26-30	26	27	131,69	12,02
31-38	19	20	125,10	15,24
Total	97	100	132,15	13,41

Teachers think that they are competent in evaluating students' achievement, making students like school, reflecting job satisfaction and pleasure to students, giving appropriate reinforcement and in teaching the classes in conformity with objectives. The major fields where teachers considered themselves adequate were using appropriate strategies, methods and techniques of teaching; organising activities to develop students' all intelligence fields and to make them produce original materials; and providing students in need with extra time and opportunities for learning. Findings concerning the first sub-problem of the research show that teachers believe they have effective behaviours of teaching at a "good level".

Do the Elementary School Teachers' Levels of Self-efficacy Beliefs in Teaching Behaviours Vary on the Basis of Gender, Experience and the Achievement Level of School They Teach?: The distribution of score averages received from the "Teacher Self-efficacy Scale" according to gender are shown in Table 4.

As is evident from Table 4, the difference between teachers' self-efficacy score averages on the basis of gender was not found significant at the level of 0.05. Consequently, teacher self-efficacy scores do not differ significantly on gender basis. A review of relevant literature demonstrated that in most of the research concerning teachers or prospective teachers across Turkey concluded that self-efficacy perception did not vary on the basis of gender [16-18].

The distribution of score averages received from the "Teacher Self-efficacy Scale" on the basis of experience are shown in Table 5.

The analyses demonstrated that average scores teachers received from the scale did not differ significantly according to experience. [X^2 (7) = 10,440, p>,05]. The distribution of teachers according to occupational experience showed that teachers of 1-5 year experience composed only 11% (f=11) of the group. On the other hand, the proportion of teachers with 16-38 year experience was 66% (f=64). Thus, it may be said that the group was homogeneous in experience and that their levels of self-efficacy belief did not vary accordingly.

The distribution of score averages received from the "Teacher Self-efficacy Scale" on the basis of school levels are shown in Table 7.

An examination of average scores that teachers received from "Teacher Self-efficiency Scale" according to the levels of schools showed that the highest averages were achieved by teachers working in upper level schools. Whether or not the difference between averages was significant was tested via variance analysis and the results were shown in Table 8.

Table 6: Kruskal Wallis Test Results Concerning the Significance of the Difference between Teachers' Self-efficacy Score Averages on the Basis of Experience

Experience	N	Order Average	Sd	X^2	P
1-5 years	11	37,50	6	10,440	,107
6-10 years	18	53,14			
11-15 years	4	18,00			
16-20 years	9	38,28			
21-25 years	10	56,85			
26-30 years	26	54,96			
31-38 years	19	51,05			
Total	97				

Table 7: Teachers' Self-efficacy Score Averages on the Basis of the Level of Schools Teachers Work in

Level	N	$\bar{x}$	S
Upper	30	137,73	12,60
Intermediate	35	131,71	12,72
Lower	32	127,41	13,32
Total	97	132,16	13,41

Table 8: The Variance Analysis Results for the Significance of Difference between Averages on the Basis of Level of Schools Teachers Work in

Source of Variance	Squares Total	df	Average of Squares	F	p	Significant Difference
Intergroups	1661,95	2	830,976	5,003	,009	
Intragroups	15612,728	95	166,093			Upper-lower
Total	17274,680	97				

An examination of Table 8 shows that F value is significant at the level of .009. Tukey test was done so as to find between which groups the difference was available. Consequently, a significant difference was found between the self-efficacy score averages of teachers working in upper level schools and of teachers working in lower level schools and the difference was in favour of those working in the upper level schools. The self-efficacy beliefs concerning teaching behaviours of teachers working in upper level schools were higher than those working in lower level schools. On the basis of those findings, it may be stated that teachers working in upper level schools display effective teaching behaviours more often and therefore they considered themselves more competent.

CONCLUSION

Self-efficacy refers to perceptions of self competence, a sense of autonomy and a belief in ones academic capabilities. It is a perceived ability to succeed at a specific task [19] and an integral component of motivation [20]. In its general sense, the extent to which an individual considers his capabilities sufficient to fulfil a task is stated as his self-efficacy perception. This belief is formed in consequence of a detailed analysis and judgement made by the individual for his capabilities. The individual analyses his abilities, skills, personal traits, knowledge and experiences, motivation- that is, his capabilities- to respond to the requirements of the situation he is in. If he believes that his capabilities are sufficient for the task, activity or the situation, he takes action. This belief of the individual concerning his capabilities is his perception of "self-efficacy " and is a very important motivator.

The aim of the study was to determine elementary school teachers' self-efficacy beliefs concerning teaching behaviours and whether or not self-efficacy beliefs differed on the basis of gender, teaching experience and the achievement level of schools where teachers work. In consequence, teachers' average of self-efficacy belief scores was found to be at a "good level" (X=4.13). The fact that the teachers' self-efficacy belief was found to be high showed that they held a strong belief that they had knowledge and skills of effective teaching behaviours. No significant differences were found between

self-efficacy belief score averages and gender and experience. However, on examining self-efficacy belief score averages on the basis of school achievement, a significant difference in favour of the upper group was found between the score averages of teachers working in the upper and the lower group schools.

A great amount of research has been done in relation to the self-efficacy perceptions of pre-service as well as working teachers [21,22]. The above mentioned research studies found that teachers' self –efficacy beliefs were influential in teachers' behaviours and that self-efficacy beliefs had high correlations with students' achievement and attitudes [23,12,24]. Furthermore, Ashton (1984) claims that no other teacher property is as influential in students' achievement as self-efficacy. [25] It is pointed out that there are significant differences between teachers with high self-efficacy belief and teachers with low self-efficacy belief in terms of in-class behaviours. It was found through research that teachers with high self-efficacy perception created a warm, classroom atmosphere which supported student needs, therefore, their students felt accepted and safe; and that they scored better in tests than those having teachers with low self-efficacy perception. Gibson and Dembo (1984) stated that such teachers spent more time to convince students demonstrating undesired behaviours [9]. Tschanen *et al*. (1988) point out that teachers with high self-efficacy belief are more open to criticism, are more questioning and employ student-centred teaching strategies whereas teachers with low self-efficacy belief prefer teacher-centred strategies more and are more dependent on course books [15]. In another study Tschanen, Moran and Hoy (2001) state that teachers' self-efficacy affect educationally very significant outputs such as the teacher's willingness and insistence, his adherence to the profession, determining the objectives, his efforts to conduct research and - to put it in other words- his resistance and achievement when things go wrong [26]. Pajares (1992) states that a close relation is available between teachers' self-efficacy beliefs and in-class applications in the process of teaching [27].

Evidently, self-efficacy belief is correlated both with the teacher's effectiveness in the teaching-learning process and with students' achievement, attitudes and self-efficacy perception- which are the consequence of this. Therefore, the teacher should possess high self-efficacy perception in conducting the learning-teaching process of various fields. The current research findings demonstrate that elementary school teachers' levels of self-efficacy are high. Research conducted by Savran and Çakiroğlu (2001), Özkan *et al.* (2002) and Karagöz (2005) also finds prospective teachers' levels of self-efficacy belief concerning science teaching quite high [28, 29, 17]. Research performed by Çapa (2005) also showed that first-year teachers had high efficacy scores on three measures of teachers' sense of efficacy [30].

Teachers' self-efficacy belief is one of the most emphasised concepts in instances of research. It is pointed out in studies that positive and high level of self-efficacy belief held by teachers is influential in students' achievement as well as in motivation. Therefore, it is believed that qualitative and/or quantitative studies which are concerned with self-efficacy beliefs of teachers in various stages of educational institutions and experienced as well as prospective teachers and the changes in the beliefs levels and factors affecting them may contribute to the field literature.

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