"Self-efficacy scale for teachers"-Preliminary study-

Pınar Kıvılcım[1]
Turhan Toros[2]
Mehmet Miman[3]
Fikret Soyer[4]

Abstract

The purpose of this study is to introduce "Self-efficacy scale for teachers" into scientific field in order to evaluate teachers' opinions on their self-efficacy. This study which is conducted to develop "Self-efficacy scale for teachers" aims at making clear the contribution of teacher behaviour to psychological measuring as well as providing support for psychometric studies which have recently become popular. In order to determine the self-efficacy of teachers, 3 experts who have a good command on the field and work in education sector put forward 20 items after having discussed on them and later they reduced them to 13 items. Then, 5 point likert scale comprising of 13 items was prepared. 3 experts who have a good command on the field removed 5 items of the scale which are not suitable for self-efficacy, which cannot define self-efficacy and whose scale set up could not be formed properly. Finally, 8 items remained in the scale, which is also the final state of it. Upon reducing the scale to 8 items, 50 teachers were applied the 8-item scale. It was investigated that whether the questions are comprehensible and whether there are general problems regarding the questions. Second application started after proving the comprehensibility of the 8 items. 670 teachers from each branch were applied the scale in the second application. 170 teachers were removed from the study as they lacked several questions in the scale. Statistical analyses were carried out on the forms filled out by 500 teachers from each branch. Descriptive Statistics, Pearson's Correlation Technique, Principal Components Factor Analysis and Cronbach's Alpha were used for the analyses of the statistics. According to the findings obtained from the analyses, it was found out that there were no inoperative items and all 8 items could be utilized. It was determined that Cronbach's Alpha, which is an internal consistency coefficient, was .87 and the scale had high reliability coefficient. The scale was under only one factor. Results showed that "Self-efficacy scale for teachers" could be more beneficial when it is applied on a broader group of teachers.

Keywords: Teacher; self-efficacy; scale development; validity; reliability

[1] Bc.S., Department of Psychology, Toros University, Mersin, Turkey, pinar.kivilcim@toros.edu.tr
[2] Ph.D., Youth Services and Sports Directorate of Mersin, Turkey, turhantoros@yahoo.com
[3] Ph.D., Engineer Faculty, Toros University, Mersin, Turkey, mehmet.miman@toros.edu.tr
[4] Ph.D., School of Physical Education and Sport, Sakarya University, Turkey, fikretsoyer@sakarya.edu.tr

Introduction

Training and education are two of the most important concepts in one's life. Those who realize training and education are called teachers. There are a lot of definitions regarding the profession of teachers (Rimm-Kaufman and Sawyer, 2004; Caprara et al., 2006). Teaching is one of the hardest professions. For this reason, teaching means instructing or coaching in the first place. However, it is not limited to teaching specific knowledge in one single field. Because, teaching is intertwined with education and involves training. Teacher is also defined as the one who gained the authorization to teach after having obtained a diploma from higher education which introduces to his/her the qualifications of the profession.

Teacher who is one of the indispensables of training and education process is also defined as one part of the learning environment as well as its organizer (Taşdemir, 2007). The qualifications of teachers are based on not only their good education but also their self-confidence in fulfilling their duties and responsibilities (Gerçek, Köseoğlu, Soran ve Yılmaz, 2005; Aslan ve Uluçınar Sağır, 2008). For this reason, self-efficacy is very important in teaching.

Self-efficacy can be defined as someone's personal self-confidence in whether or not he/she will be successful against a situation or a problem or how he/she will tackle with it. Self-efficacy is a prominent concept in Bandura's Social Learning Theory (Social Cognitive Theory). According to Schunk (1991), self-efficacy is the most important predictor of individual behaviour. If individuals believe that they have the ability and managing power to fulfil a duty, they become more willing to opt for this duty, they express their determination and behave accordingly (Zimmerman, 2000).

Studies which have been carried out in this field demonstrate that self-efficacy of teachers is effective in class management, students' in-class and extracurricular activities and increasing students' motivation. The relationship between the self-efficacy of teachers and their behavior has been investigated by many researchers (Ashton, 1984; Allinder, 1995; Cömert, Demirtaş, Özer and Üstüner, 2009). It was found out that the self-efficacy of teachers has a direct positive impact on students' success and attitude as well as promoting them to be open to new ideas, developing positive attitudes for learning (Cömert ve ark.,2009). There are behavioral differences between teachers with high self-efficacy and low self-efficacy and this results in the differentiation in students' behaviour (Çakıroğlu, Özkan ve Tekkaya, 2002).

There have been a lot of studies recently in Turkey trying to determine teachers' or candidate teachers' self-efficacy levels concerning teaching a specific field or teaching profession (Yılmaz et al., 2007). Many of these studies dealt with the self-efficacy of teachers or candidate teachers giving lessons in basic fields such as science, mathematics, chemistry and computer whereas studies conducted about general teacher self-efficacy were not sufficient (Özdemir, 2008).

It has been witnessed that knowledge is dominant in every field in today's society (Leader, 2003). Teaching is defined as one of the main professions of today's world as it takes over the responsibility of training human-beings as required by information society. The self-efficacy in teaching and how it is measured is important for those who study in the field of psychometrics. This study which is conducted to develop "Self-efficacy scale for teachers" aims at making clear contribution to psychological measuring as well as providing support for psychometric studies which have recently become popular. In addition, when scales regarding the measuring of self-efficacy are taken into consideration, it is clear that there are a few valid and reliable scales which have been developed for measuring self-efficacy of teachers or which have been adapted to Turkey. For this reason, the purpose of this study is to introduce "Self-efficacy scale for teachers" into scientific field in order to evaluate teachers' opinions on their self-efficacy.

Method

Preliminary preparation and writing down the scale models

First application

In order to determine the self-efficacy of teachers, 3 experts who have a good command on the field and work in education sector put forward 20 items after having discussed on them and later they reduced it to 13 items. Then 5 point Likert scale comprising of 13 questions was prepared. There are positive and negative expressions in gradation sums developed by Likert scale and in scaling approach. Participants answer like the following for each expression: "I completely disagree, I disagree, I am uncertain, I agree, I completely agree". Thus, each participant expresses his/her way of agreement to items.

3 experts who have a good command on the field removed 5 items of the scale which are not suitable for self-efficacy, which cannot define self-efficacy and whose scale setup could not be formed properly. Finally, 8 items remained in the scale, which is also the final state of it.

Upon reducing the scale to 8 items, 50 teachers were applied the 8-item scale. It was investigated that whether the questions are comprehensible and whether there are general problems regarding the questions. Second application started after proving the comprehensibility of the 8 items.

Second application

The scale was applied on 670 teachers from each branch. Teachers were classified into two groups as teaching verbal lessons and teaching numeric lessons. Verbal lessons (Turkish, English, History, Geography, Social Sciences), Numeric lessons (Mathematics, Physics, Chemistry, Biology, Science). 170 teachers were removed from the study as they lacked several questions in the scale. Statistical analyses were carried out on the forms filled out by 500 teachers from each branch.

Table 1 shows the descriptive analyses of male and female teachers taking part in the study.

Table 1. Descriptive Statistics of Teachers Taking Part in the Study Accoding to Gender and teaching field

	Teaching Verbal Lessons	Teaching Numeric Lessons	Total
	n	n	
Female	178	63	241
Male	176	83	259
Total	354	146	500
General Total	500		

Table 1 shows that female teachers are (n=241) and male teachers are (n=259) according to their field of teaching.

Table 2 shows the descriptive analyses of male and female teachers taking part in the study according to their age.

Table 2. Descriptive Statistics of Teachers Taking Part in the Study According to Age

Age	n
Between 20-29	77
Between 30-39	216
Between 40-49	121
Over 50	86
Total	500

Table 2 shows that age ranges are like the following: Between 20-29 (n=77), between 30-39 (n=216) , between 40-49 (n=121) , over 50 (n=86)

Table 3 shows the descriptive analyses of male and female teachers taking part in the study according to their experience.

Table 3. Descriptive Statistics of Teachers Taking Part in the Study According to Experience

Experience-Year	n
Between 0-9	155
Between 10-19	215
Between 20-29	88
Over 30	42
Total	500

Table 3 shows that experience results are like the following: Between 0-9 (n=155), between 10-19 (n=215), between 20-29 (n=88), over 30 (n=42)

Table 4 shows the descriptive analyses of male and female teachers taking part in the study according to verbal and numeric lessons.

Table 4. Descriptive Statistics of Teachers Taking Part in the Study According to Their Field

FIELD	n
Numeric lessons	146
Verbal lessons	354
Total	500

Table 4 shows that teachers who teach numeric lessons are (n=146), teachers who teach verbal lessons are (n=354).

It was decided that the responses to scale items would be in 5 categories (1-5) thus aiming at high self-efficacy of teachers when total number is obtained from the scale.

Results

Item-Total Test Correlations

Item-total test correlations were referred to in order to understand whether or not the items were significant in the study applied on sample data. Correlation coefficients will tell which items will be statistically significant. According to the item-total test correlations carried out in accordance with Pearson's product-moment correlation technique, significance level was over (0,35).

Table 5. Scale Development Correlation Values of the Teacher Taking Part in the Study

Item	Correlation values
1	.774*
2	.771*
3	.740*
4	.792*
5	.684*
6	.797*
7	.605*
8	.680*

*p< .01

Correlation values (item-total correlations) are examined in Table 5 and statistically significant values are shown. All items have high correlation values and statistically significant (p <.01).

Reliability of the Scale

The scale measures self-efficacy of teachers and reliability coefficient was calculated on the basis of Cronbach Alpha, which is an internal consistency coefficient.

Table 6 Croncbach's Alpha Value of the Teachers taking part in the study

Self-Efficacy Scale of Teachers	
Internal Consistency of the Scale (Cranbach Alpha)	0,87

As can be seen in Table 6, internal consistency coefficient of the scale is acceptable (Cronbach's Alpha = 0,87).

Discussion and Conclusion

Self-efficacy Scale for Teachers has been developed in order to evaluate their opinions on their abilities. Thus, it would be easier to obtain rich information in education psychology and teachers will have invaluable knowledge.

As a result of the factor analysis carried out to determine the factor structure of the scale regarding validity and reliability, the scale was under only one factor. When the correlations of the scale items were examined, correlations of items with each other were found to be very high.

When internal consistency values of the scale are taken into consideration, it is seen that the scale has high reliability coefficients. Accordingly obtained reliability coefficients prove that the scale is a reliable scale.

Upon the evaluation of all these results, the scale is understood to be utilizable in education psychology.

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