Global Educational Journal of Science and Technology

ISSN: xxxx-xxxx Vol. 1 (1), pp. 044-056, November, 2013. © Global Science Research Journals

Full Length Research Paper

Evaluating the Turkish Version of the Discipline Efficacy Scale (DES): Translation adequacy and factor structure

Hakan Kurt[1]* and Gülay Ekici[2]

[1]Department of Biology Education, Necmettin Erbakan University, Konya/Turkey.
[2]Department of Educational Sciences, Gazi University, Ankara/Turkey.

Accepted 1 July, 2013

The aim of this study is to adapt the discipline efficacy scale to Turkish language, and conduct the validity and reliability analysis of the adapted scale. The scale was applied to 157 teacher candidates. Exploratory and confirmatory factor analyses were conducted to reveal the construct validity of the scale. The results of the exploratory factor analysis indicated that the scale was composed of two dimensions, namely, Personal discipline efficacy and Teaching discipline efficacy. The results obtained through the confirmatory factor analysis appeared to confirm the factorial structure of the discipline efficacy scale. The scale includes 10 items. While the Cronbach's Alpha reliability coefficient was determined as 0.88 for the overall of the scale, for the Personal discipline efficacy on discipline, it was determined as 0.75 and for the Teaching discipline efficacy dimension as 0.78. The results of the adaptation of the scale to Turkish, validity and the reliability analyses indicated that the scale could be used in Turkish contexts.

Key words: Self-efficacy, discipline self-efficacy, scale adaptation, validity and reliability.

INTRODUCTION

In the studies conducted on "*Discipline*", many issues are often stressed such as discipline as one of the most important issues in school and the increasing discipline problems faced (Freiberg, 1999; Heaviside et al., 1998; Levin and Nolan, 2000; Macciomei, 1999; Psunder, 2005; Rose and Gallup, 2000), teachers' classroom management skills as the most important factor in effective in learning-teaching (Haertel and Walberg, 1994), teachers' classroom management skills placed on the top considering the factors that are effective in students' learning (Wang et al., 1993a; Wang et al., 1993b; Wang et al., 1994; Wragg, 1985), classroom management efficacy among the top issues in teacher efficacies (Stephens and Crawley, 1994), techniques used to change or reduce indiscipline faced by classrooms teachers (Hart et al., 1995; Lewis, 1997; Oswald et al., 1997) since reducing discipline problems will contribute to several issues such as conducting academic activities regularly, increase in students' success, maintaining order in classrooms and conducting learning-teaching activities (Aylonn and Roberts, 1974; Burden, 1995; Lueddeke, 2003; Lindblom-Ylänne et al., 2006; Trigwell, 2002).

The concept of discipline, in general terms, can be defined as the precautions taken and laws adopted to ensure that people that come together for a specific aim lead their lives in a certain manner, and enforcing these precautions and laws (Koktas and Koktas, 2007; Saritas, 2000). In other words, it can be stated that discipline ensures that individuals continue their work when they

*Corresponding author. **E-mail**: kurthakan1@gmail.com. **Tel:** +90-506- 8542647. Fax: +90-332-3238225.

face situations such as respecting authority, collaboration, the need for organization, respect for others, and discontent (Brown et al., 1982). On the other hand, when discipline in schools/classrooms is investigated, it is observed that similar issues are discussed and pointed out. While discipline in schools is composed of a range of rules that drive students' behavior and scales that indicates application level (Gunduz, 2011), discipline in classrooms reflects teachers' ways of controlling improper behavior in classrooms; in other words, it appears to be the major part of classroom management skills (Erden, 2005). However, exhibiting effective beha-vior in classroom management is a paramount problem for both experience teachers and novice teachers (Burden, 1995; Clement, 2000; Malmgren et al., 2005; Martin and Baldwin, 1992; Nelson, 2002; Pigge and Marso, 1997; Shen et al., 2009; Weinstein, 1996; Wesley and Vocke, 1992), and of vital importance as determining teacher candidates'/teachers' discipline efficacy can be considered as one of the signs that reflect their success in classroom management.

There are many factors that affect discipline in schools/classroom in any educational system. In this vein, many factors can be provided such as students' family issues, teachers, and the curriculum efficiency in application, principals, and physical conditions. However, no matter what these factors are, teachers play the greatest role in enforcing discipline in classroom. Therefore, it is very important for teachers to necessary efficacy in enforcing discipline. In this issue, the concept of "Self-efficacy" is frequently voiced in related literature. Albert Bandura is the very first researcher that used the concept of "Self-efficacy". Bandura (1986) defines "Social Learning Theory", in which the concept of self-efficacy is stressed, as “Self-efficacy is individuals' beliefs about their efficacies/capabilities to organize and conduct necessary activities to realize their performances in specific situations".

Teacher self-efficacy is one of the most important concepts that are related to self-efficacy. Teachers' self-efficacy beliefs, on the other hand, are defined as the beliefs about their capacity of affecting students' performances or exhibiting necessary behavior to conduct their responsibilities successfully (Aston, 1984; Brouwers and Tomic, 2003; Goddard et al., 2004; Guskey and Passaro, 1994; Tshannen -Moran et al., 1998; Tshannen-Moran and Hoy, 2001). When the studies conducted on self-efficacy for years in education literature are analyzed, teachers’ self-efficacy has been determined to be one of the most investigated issues and to affect many issues in addition to classroom management. In this regard, teachers' self-efficacy can affect their behavior in classrooms (Emmer and Hickmen, 1991; Henson, 2001; Milner and Woolfolk Hoy, 2003), efforts into teaching, planning goals, interest in learning and loyalty to profession (Coladarci, 1992; Evans and Tribble, 1986; Jordan et al., 1993; Milner and Woolfolk Hoy, 2003; Tshannen-Moran et al., 1998), being open to new ideas and more willing to try new methods to better meet students' needs (Ghaith and Yaghi, 1997; Gibson and Dembo 1984; Guskey, 1988; Stein and Wang, 1988; Tshannen-Moran et al., 1998), planning and organizing at higher levels (Allinder, 1994; Milner, 2001), students' success (Allinder, 1995; Ashton and Webb, 1986; Caprara et al., 2006; Moore and Esselman, 1992; Tshannen-Moran et al., 1998; Tshannen-Moran and Hoy, 2001), students' motivation (Midgley et al., 1989), improving students' own self-efficacy beliefs (Anderson et al., 1988) and helping students solve their problems through more humanistic approaches (Emmer and Hickmen, 1991; Soodak and Podel, 1998; Woolfolk et al., 1990).

Therefore, teachers need to enforce and maintain discipline in classrooms to conduct their responsibilities effectively in classrooms to the end that students grasp suitable behavior in terms of the goals determined in the curriculum. Teaching-learning cannot be conducted effec-tively in classrooms where discipline and a certain order are reinforced. In this vein, teacher self-efficacy appears as one of the important factors, and “*Discipline Efficacy*" does as a related factor and concept provided by Giles et al. (2000).

Discipline efficacy can be defined as teachers' beliefs about their capability of affecting students' in terms of encouraging them to exhibit suitable behavior in classrooms and about exhibiting necessary behavior to conduct their responsibilities successfully. Discipline efficacy is one of the specific competencies within the context of teacher competencies since there are meaningful relationships between teacher efficacy and skills of classroom management, ensuring classroom discipline, planning teaching, conducting in-class activities and ensuring in-class organization (Friedman and Kass, 2002; Pajares, 1992; Milner and Woolfolk Hoy, 2003). Teachers with high levels of self-efficacy beliefs tend to adopt more humanistic and less controlling approaches, and exhibit more democratic behavior while dealing with students' behavior (Enochs et al., 1995; Woolfolk et al., 1990). Therefore, it can be put forward that teachers with high levels of self-efficacy beliefs will face fewer problems in enforcing classroom discipline effectively.

When the related literature is reviewed, it is seen that there are few scales developed as discipline efficacy scales. In this context, the 5-item discipline efficacy scale, developed by Bailey and Kazelskis (1996), is available in the literature. This scale was based on the concept of self-efficacy that was first used by Bandura (1977). As another scale, the discipline efficacy scale that has been adapted to Turkish and whose validity and reliability analyses have been made in the current study was developed by Giles et al. (2000). This scale, in the same way, was based on Bandura's self-efficacy concept, and it is stated that it was developed using teachers' self-efficacy scale provided by Gibson and Dembo (1984) based on Bandura's theory. In this context, the scale has

two dimensions, namely, *Personal Efficacy and* Teaching *Efficacy. Personal Efficacy* is a teacher's beliefs about one's own abilities and skills to take responsibilities for a student's learning. *Teaching Efficacy* is on the other hand, a teacher's beliefs about one's own ability to incur changes in a student's learning except the factors such as family environment, family background, and family effect. Teacher efficacy is an issue that has been investigated in various perspectives for around 40 years. Efficacy is, in fact, a concept related to enforcing discipline since approaches of enforcing discipline are also included in the efficacy described as the ability to keep students under control to the end that teachers can carry out their responsibilities successfully. Therefore, it is stressed that the discipline efficacy scale was developed, considering the view that teacher efficacy was related to classroom discipline (Gibson and Dembo, 1984; Giles et al., 2000).

McCormic and Shi (1999) states that teachers' effective discipline practices are closely related with their efficacy beliefs at sufficient levels. Therefore, it is very crucial for teachers/teacher candidates to overcome discipline problems and conduct effective teaching-learning practices in the classroom. In line with the assessments, it could be expressed that disciplinary efficacy perception is included in the teacher self-efficacy perception. Some teacher self-efficacy scale perceptions include disciplinary self-efficacy on the dimension of classroom management (Brouwers and Tomic, 2003; Tshannen-Moran and Hoy, 2001). However, deter-mination of both the teachers' and the teacher candidates' disciplinary self-efficacy through a separate scale will reveal more qualified results. Since, not all teacher self-efficacy perception scales include questions to determine disciplinary efficacy perception. Never-the-less, when related literature is reviewed, it is remarkable that there are very few scales that aim to measure discipline efficacy. The dimension of disciplinary efficacy perception which most of the time is found in the teacher self-efficacy perception scale as a dimension should be evaluated separately through a scale. While studies day by day are conducted on specific small issues, it will be quite useful that the disciplinary efficacy perception is removed from inside the teacher self-efficacy perception, which is a comprehensive concept, and evaluated specially. In determining qualified teaching behaviors of a teacher, the mentality of discipline practiced by her / him in the classroom is very important. In the studies, it is stated that on top of the 228 variables which are effective on the success of the students is the teacher's efficacy for establishing the discipline in the classroom (Marzano and Marzano, 2003) and that accordingly it is accepted by the whole community of education that for the management of the classroom a lot of effort is made (Bushaw and Gallup, 2008; Johns et al., 1989; Long and Frye, 1989; Nelson, 2002). In many countries, instead of students' unwanted behaviors, the focus is on the development of teachers' classroom management skills (Wragg and Wragg, 1998). Because, teachers fails in classroom management, they also fail in controlling students, in prompting them to learn, in helping them gain appropriate behaviors defined in the curriculum, and in so many other similar subjects. At this point, by determining, before and after taking the course of classroom management which is one of the formation group courses, perception of disciplinary self-efficacy of teacher candidates, who study in the faculties of education, the effect of the course can be specified. In result, courses at the faculties of education can be rearranged according to need. It is considered crucial to adapt the discipline efficacy scale developed by Giles et al. (2000) to Turkish and conduct validity and reliability analyses. In this way, measuring teachers'/teacher candidates' discipline efficacy in Turkey as a different culture, it is believed that the scale will be of help to restructure both in-service training programs and faculties of education to better serve the needs through obtaining knowledge about teachers' beliefs in enforcing discipline for students.

The characteristics of the original English discipline efficacy scale

The discipline efficacy scale, theoretically based on self- and teaching efficacy beliefs, was developed to measure teachers'/teacher candidates' discipline efficacy. While the concept of self-efficacy as indicated in Bandura's (1977) Social Cognitive theory was used for the theoretical part of the scale, the dimensions were created using the dimensions of teacher efficacy as stressed in the efficacy scale developed by Gibson and Dembo (1984) and the dimensions of 5-item discipline efficacy scale developed by Bailey and Kazelskis (1996). In this context, the disciple efficacy scale is stated to be composed of two dimensions, namely Personal efficacy beliefs about discipline *(Personal discipline efficacy)* for the theoretical part and general teaching efficacy beliefs about discipline *(Teaching discipline efficacy)*. The scale includes 5 items (item 2, 3, 4, 6, 8) in the dimension of Personal discipline efficacy and 5 items in the dimension of Teaching discipline efficacy (item 1, 5, 7, 9, 10), in total 10 items. Items were prepared in 6-level Likert style (starting from 1= I strongly disagree to 6=I strongly agree). The scale was given to 206 teacher candidates in total teaching 4 and 5 grades (Giles et al., 2000).

Exploratory and confirmatory factor analyses were conducted to determine the factorial structure of the scale. The analyses were based on testing the view that in confirmatory factor analysis, certain variables would be heavily loaded on predetermined factors. The analyses conducted indicated that the model obtained through the confirmatory factor analysis was not found to fit well. In this context, it was determined as $X2_{(34)} = 181.62$ $p<0.001$. Moreover, $\chi 2/sd$ ratio was determined as 5.34;

root mean square error of approximation (RMSEA) as 0.14; goodness of fit index (GFI) as 0.835; adjusted goodness of fit (AGFI) as 0.732; comparative fit index (CFI) as 0.94.

Then, the confirmatory factor analysis was conducted on the data collected through discipline efficacy scale. As a result of the exploratory factor analysis, the two-dimension factorial structure based on the theoretical foundation of the scale could not be obtained. It is emphasized that the dimension of self- efficacy beliefs about discipline was preserved; however, the dimension of general teaching efficacy beliefs about discipline appeared as two-sub dimensions, and thus, two-dimensional factorial structure of the scale was determined. Herein, as a result of the validity analysis, the emphasis on the importance of home environment in students' discipline approaches (Item 1) and teachers' establishing discipline among students through effective teaching efficacy about discipline (Item 10) is stated to have been an important factor for the dimension of general teaching efficacy beliefs to appear as two-sub dimensions (Giles et al., 2000). On the other hand, while the Cronbach's Alpha internal consistency coefficient was determined as 0.78 for the first factor; it was determined as 0.46 for the second factor, and 0.48 for the third one. As a result of the validity analysis, the discipline efficacy scale was developed in the study as two-factor scale based on the fact that theoretical structure did not appear to have a two-factor structure. In this context, the researchers are of the opinion that in addition to re-analyzing the factorial structure of the scale, the validity and reliability analyses can be re-conducted through adding new items to the factorial structure emerged based on the theoretical foundation. At the end of the study, the scale was finalized with 10 items based on the theory (Giles et al., 2000).

Aim of this research

The aim of this study is to adapt the discipline efficacy scale developed by Giles et al. (2000) to Turkish language, and conduct the validity and reliability analysis of the adapted scale.

METHOD

The current study is based on survey model. The survey model is a research approach that aims to describe-picture-explain any current or situations, groups, objects and features as they are (Ekiz, 2003; Karasar, 2010).

Participants

The study was conducted in the fall semester of 2012 to 2013 academic year. The study aimed at adapting the discipline efficacy scale that determine teacher/teacher candidates' levels of discipline efficacy and conducting the validity and reliability analyses in Turkish context as a different culture included 157 teacher candidates as participants. The participants were 157 senior teacher candidates that are willing to participate in the study and enrolled in the departments of Biology education, Science education, English language education, Mathematics education, Classroom teacher education, Turkish language and literature education and at Gazi University, Faculty of Gazi Education. 81.3% of the participants were females, while 18.7% were males.

Procedures

The developers of the scale were sent e-mails to obtain permission for the adaptation of the discipline scales. Rebecca McMahon Giles was contacted through e-mail while other developers could not be contacted, and necessary permission to adapt the scale to Turkish was obtained. In line with the permission obtained from Giles, the adaptation of the scale from English to Turkish was started. Translating the scale from the target language to the source language was the most important part of the adaptation process (Beaton et al., 2000). It is stated that there were researchers in the past that considered adaptation as a simple process that included translating the scale from one language to another (Geisinger, 1994). However, it is emphasized that in current practices, translation plays an important role in adaptation of a scale that has psychological features among cultures, and that the items in the source language and the ones in the target language should reflect each other well (Deniz, 2007). The concept of self-efficacy, one of the key concepts of Albert Bandura's Social Learning Theory that many studies are based on, is one of the most important concepts that have affected the field of education. Since the end of the 1970s, the studies conducted on efficacy based on various scales have been widespread as it is possible to use these scales not just in their original languages but also in others. It is put forward that the use of scales in other languages help enrich the data collected and enables researchers to conduct comparative studies in culture-language and ethnic groups (Savasir, 1994). It is also stated that scale adaptation practices can be more meaningful and contribute to knowledge generation if these practices can be combined with other practices and included in local scientific research efficacy (Sahin, 1994). Therefore, the translation of the scale from English to Turkish was made by 4 specialists in their fields and English language, and the translations were compared by 5 specialists in language studies. Moreover, expert views were obtained from 3 experts in measurement and evaluation.

Following the translation, the equality of the scale in terms of language was investigated with the participation of 29 senior students enrolled at English language teaching through bilingual group research method (Deniz, 2007). In all these applications, the original scale developed in English was first translated to Turkish, and then Turkish version was translated to English, using translation-back-translation method (Brislin, 1980; Hambleton, 1993). The validity and reliability analyses were conducted after the equality of the scale in terms of language was ensured.

Statistical analyses

Exploratory and confirmatory factor analyses were conducted to measure the construct validity of the scale. There is not a consensus in the literature regarding whether to conduct exploratory factor analysis for structure validity in the process of translation of a scale into another language and its adaptation (Acat et al., 2010; Cramer, 2003; Tosun and Karadag, 2008). Therefore, it is considered appropriate to conduct in the study exploratory and confirmatory factor analysis together in order to avoid this dilemma. Total item correlations were investigated and 27% sub-top group comparisons were conducted to determine the total-item point

regression power and discrimination of the items included in the scale. In order to determine the reliability of the scale, Cronbach's Alpha internal consistency coefficient was calculated for each factor of the scale and the whole scale. Moreover, test/re-test method was also used. The correlation between factors was analyzed through Pearson Product-moment Correlation Coefficient. SPSS 20.0 and LISREL 8.71 were used to conduct the statistical analyses.

RESULTS

Language equivalence

Both the English and Turkish versions of the scale were applied to a total of 29 teacher candidates studying at the Department of English Education, for the calculation of linguistic equivalence of the scale. The result of the correlation analysis conducted to determine language equivalence indicated that there was a positive correlation ($r=.88$, $p<0.001$) between the original scale in English as the source language and the adapted version of the scale in Turkish as the target language. Moreover, the correlation between the English and Turkish form scores on the dimensions was determined as .90 for the self-efficacy beliefs about discipline and as .88 for the dimension of general teaching efficacy beliefs. Considering the analyses, it can be stated that there is language equivalence between the English and Turkish versions of the scale. The participants completed providing the responses to the items between 5 to 10 min.

Scope validity

Scope validity is the indication of whether the items constituting a scope are sufficient in terms of quality and quantity in measuring the desired behavior. One of the ways used to test the validity of the scope is to consult expert opinion. What is expected from expert is the evaluation of the items in the draft scale in terms of scope validity (Buyukozturk, 2011). In the study of scope validity the technique of Davis was applied with the aim of evaluating expert opinions. In this technique, scope validity index is obtained regarding the items and this value is expected to be above 0.80 (Davis, 1992).

Number of Davis was found as ≥ .86, in result of expert opinions.

Exploratory factor analysis

Exploratory factor analysis was used to construct validity of the scale, following the adaptation of the scale to Turkish and ensuring language equivalence between the two versions. In this context, the discipline efficacy scale was investigated through predetermined criteria, namely, the sufficient number of the participants, normal distribution and linear structure of the data. There are different views and suggestions as for determining the number of the participants required for the factor analyses to be conducted on scale development; however, it is observed that there is not any common view on these issues. While some researchers put forward the number of the participants is the key factor in determining sample size, some are of the opinion that the number of the participants should be based on the variable (item)/participant ratio. However, it can be stated that the common view shared by all the researchers is that the number of the participants should be more than the number of the items (Bryman and Cramer, 2005; Cohen et al., 2007). For instance, Gorsuch (1983) argues that there should be at least five participants for each item, and the number of the participants should not be fewer than 100. Tavsancil (2002) is of the opinion that sample size should be as at least five times as the number of the variables/items. The data collected for the adaptation of the discipline efficacy scale were found to meet this criterion (n=157). Moreover, the data were found to be normally distributed (Kolmogorov Smirnov value [$D_{(157)}=0.906$, $p>.05$]) and to be linear (Tabachnick and Fidel, 1996), and there was not any inconsistent value in each item of the scale or combination (Hair et al., 2006). In other words, the participants' scores calculated via the scale were determined to be normally distributed.

The fitness of the data collected through administrating the scale as the first stage to measure the validity of the discipline efficacy scale with the sample group was investigated at 0.001 level using Kaise-Meyer-Olkin (KMO) and Barlett Tests. According to Tavsancil (2002), the value obtained from KMO test is perfect if it approaches to 1, but unacceptable if it is below 0.50. The values over .70 are stated to be enough to conduct item analyses for items under each factor (Leech et al., 2005). As a result of the analysis conducted, Kaise-Meyer-Olkin (KMO) value was determined as 0.80, and Barlett Test value was determined as $\chi^2=689.73$ ($p<.000$). The results of these two tests indicate that the data collected are suitable for the exploratory factor analysis.

In order to test the construct validity of the 10-item discipline efficacy scale, exploratory factor analysis was conducted using the Varimax technique. Factor analysis is defined as a type of analysis that can be used to find out the number of the variables that the scale measures and the contribution of each variable to the overall score that can be obtained on the scale, how these variables are loaded and under which factors, and the construct(s) that the test aims to reveal (Atilgan et al., 2006; Ozdamar, 2004; Tabachnick and Fidel, 1996). As a result of the item analysis of the discipline efficacy scale and the rotation conducted through Varimax Factor analysis, two factors were found, with eigenvalue over 1. In order to visualize this situation better, conducting Cattel's "Scree Plot" test (Kline, 1994); the Figure 1 related to the maximum likelihood analysis was obtained. Kaiser normalization value was calculated to conduct Varimax rotation procedure. As a result of the rotation procedure,

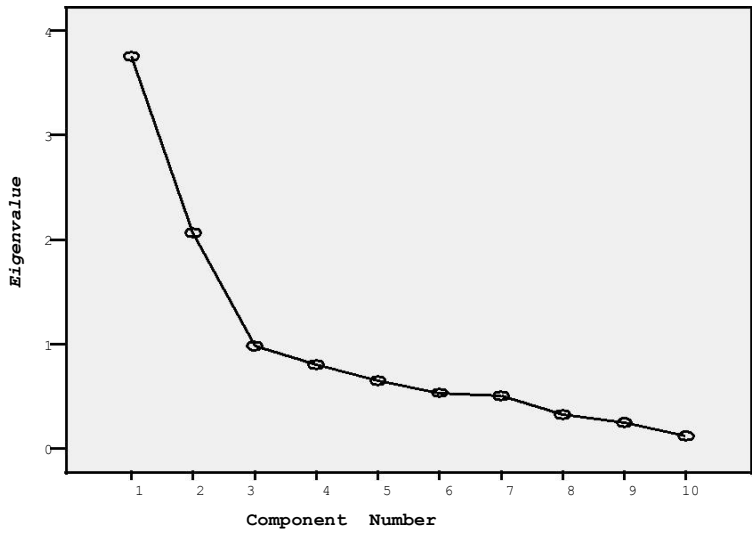

Figure 1. Scree plot.

two factors with 3.752 and 2.066 eigenvalues were determined for 10 items administered to 157 teacher candidates. The scree plot also seems to confirm that the scale includes two factors. Scree plot means indicating the calculated eigenvalues through a line graphic in which these values are ordered from highest to lowest (Ozdamar, 2004).

As a result of the analysis conducted, the scale obtained accounted for 58%. 18 of the total variance, and included 10 items and 2 sub dimensions (While the first factor accounts for 37.52% of the variance, the second one accounts for 20.66%). According to Tavsancil (2002), the higher the variance ratios obtained through factor analysis are, the more powerful the structure of the scale is. In the analyses conducted in social analysis, the variance ratios between 40% and 60% are considered acceptable. It was ensured that each item had at least .40 values of factor loadings. The findings related to the factors of the discipline efficacy scale, factor loadings, Cronbach's Alpha values, and the variance ratios that these findings account for are provided in Table 1.

In Table 1, the very first dimension of the sub dimensions obtained through the exploratory factor analysis is the dimension of general teaching efficacy beliefs about discipline. This dimension, composed of 5 items, accounts for 37.52% of the total variance, and its factor loadings varies between 0.61 and 0.87. The second dimension is the dimension of the self-efficacy beliefs about discipline. This dimension, composed of 5 items, accounts for 20.66% of the total variance, and its factor loadings varies between 0.51 and 0.66.

Confirmatory factor analysis

Confirmatory factor analysis is a procedure of determining validity in adaptations of the scales developed in particularly other cultures and samples to another language. Regarding the use of this analysis conducted, it is seen that it follows the classic factor analysis (Bollen and Long, 1993; Maruyama, 1998; Simsek, 2007). Kline (2005) argues that confirmatory factor analysis is a stricter statistical test procedure compared to exploratory factor analysis since confirmatory factor analysis aims to test the model itself and its suitability as provided by exploratory factor analysis in line with some criteria (Byrne, 1994; Tezbasaran, 1997). However, although the analysis conducted through exploratory analysis in the studies that are not based and a strong theoretical foundation reveal excellent results; confirmatory factor analysis may not produce similar positive results. Moreover, while in exploratory factor analysis it is aimed to reveal the factorial structure of the data based on factor loadings without a specific prediction or hypothesis, confirmatory analysis is based on testing the view that certain variables will be loaded heavily on predetermined factors in line with a theory. It is observed that both exploratory and confirmatory factor analysis are used, and in fact, confirmatory factor analysis is expected to be conducted following exploratory factor analysis (Jöreskog and Sörbom, 1993).

In this study, the construct validity of the scale modeled through exploratory factor analysis was investigated through confirmatory factor analysis, as well. A model was built between the factors obtained through exploratory factor analysis and the theoretical structure and the items related to these factors. The fit values and standard fit criteria obtained through confirmatory factor analysis are indicated Table 2.

In Table 2, according to the results obtained, likelihood ratio chi-square Likelihood Ratio was determined as $X^2_{(34)}=82.85$ $p<0.01$. In this context, $\chi 2/sd$ ratio was

Table 1. The factor loadings, Cronbach's Alpha values of the factors and the items in the factors in the Turkish version of the scale.

Items number	Factor loadings	Items
I. Factor (The dimension of the Teaching discipline efficacy) Cronbach's Alpha= 0.78,		
Total variance explained= 37.52%		
5	.87	Student behavior is strongly influenced by peers
7	.84	Student behavior in the classroom is related to instructional management in the classroom
9	.84	School discipline problems are minimal when the principal provides strong leadership
10	.79	It is impossible to discipline some children
1	.61	The home environment is the disruptive in the classroom back on task
II. Factor (The dimension of the Personal discipline efficacy) Cronbach's Alpha = 0.75,		
Total variance explained = 20.66%		
3	.66	I know how to use conflict resolution strategies to resolve conflicts among students
2	.61	I can get a student who is disruptive in the classroom back on task
6	.58	I can maintain discipline in the classroom
8	.57	I am confidents that I can break up a fight between two girls
4	.51	I am confidents that I can break up a fight between two boys

The whole scale Cronbach's Alpha = 0.88.

Kaise-Meyer-Olkin (KMO)test value = 0.80 and Barlett test value χ^2= 689.73 (p< .000).

Table 2. The fit values and standard fit criteria of the suggested model.

Fit criteria	Values of good fit	Acceptable fit values	Fit values obtained for the suggested scale
χ2/sd	0.00< χ2/sd < 2	2 < χ2/sd < 5	2.44
RMSEA	0.00<RMSEA<0.05	0.05<RMSEA<0.08	0.09
SRMR	0.00<SRMR<0.05	0.05<SRMR<0.08	0.07
GFI	0.95<GFI<1.00	0.90<GFI<0.95	0.90
AGFI	0.90<AGFI<1.00	0.85<AGFI<0.90	0.84
CFI	0.95<CFI<1.00	0.90<CFI<0.95	0.94

determined as 2.44; root mean square error of approxi-mation (RMSEA) as 0.07; goodness of fit index (GFI) as 0.90; adjusted goodness of fit (AGFI) as 0.84; comparative fit index (CFI) as 0.94. The results obtained suggest that although the suggested model does not have perfect fit values, these values are in acceptable ranges since Yilmaz and Celik (2009) argue that the RMSEA value that is lower than 0.05 indicates the good fit of the model; however, add that the values up to .10 are acceptable though they do not indicate a good fit. These findings obtained appear to confirm the factorial structure of the discipline efficacy scale. Figure 2 pro-vides the standardized values of the suggested model.

In the diagram provided in Figure 2, none of the values between latent and observable variables is higher than "1". Therefore, the correlation between observable varia-bles was found to be at appropriate levels. Figure 3 provides the t-values of the suggested model.

As indicated in Figure 3, there is not any notice in the form of red arrows determined on the "t" values of the suggested model, which reveals that the items of the scale are meaningful at 0.05 level (Simsek, 2007).

The results regarding the reliability of the scale

As can be seen from Table 1, the Cronbach's Alpha Internal Consistency Coefficient was determined as 0.88 for the whole scale, for the dimension of the Personal discipline efficacy, it was determined as 0.75, and for the dimension of Teaching discipline efficacy as 0.78. Moreover, in order to test the Turkish version of the scale in terms of both the quality it measured and the time consistency, test-retest method was used. In order to measure the test-retest reliability, the scale was admini-stered to 68 teacher candidates at two-week intervals. In both applications, in order to test the consistency of the scores obtained, Pearson's Product-Moment Correlation Coefficient was calculated. As a result of the two appli-cations, a high-level, positive and meaning corre-lation between these two applications was found [$r_{(68)}$=0.877, p>.05]. Tavsancil (2002) argues that the correlation coefficient calculated in order to test the time consistency of a scale should be high, positive and at least 0.70. In this vein, the test-retest reliability coefficient calculated for the discipline efficacy scale was found to be acceptable.

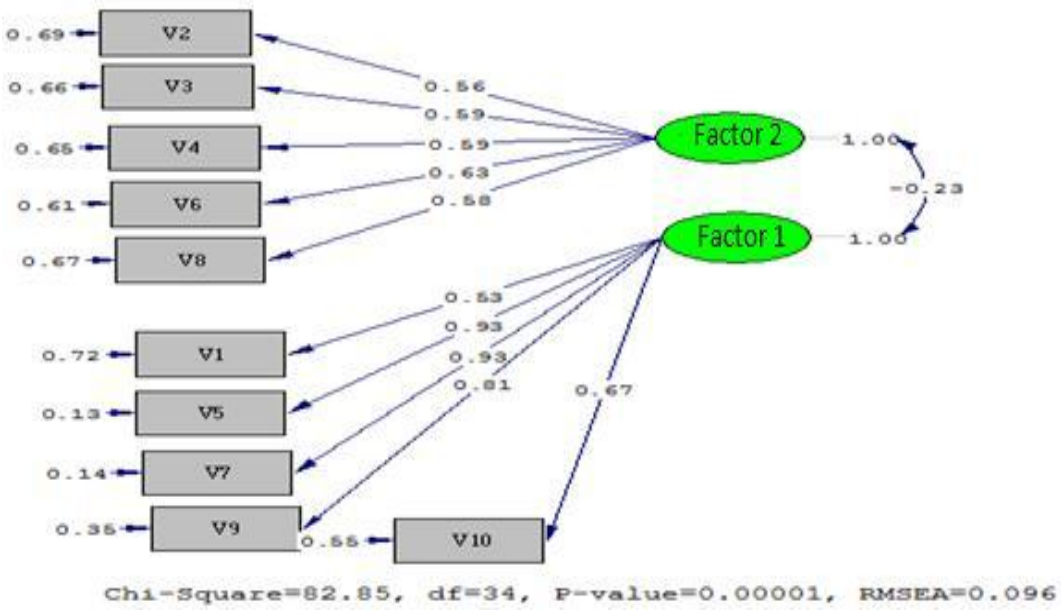

Figure 2. The standardized values of the suggested model.

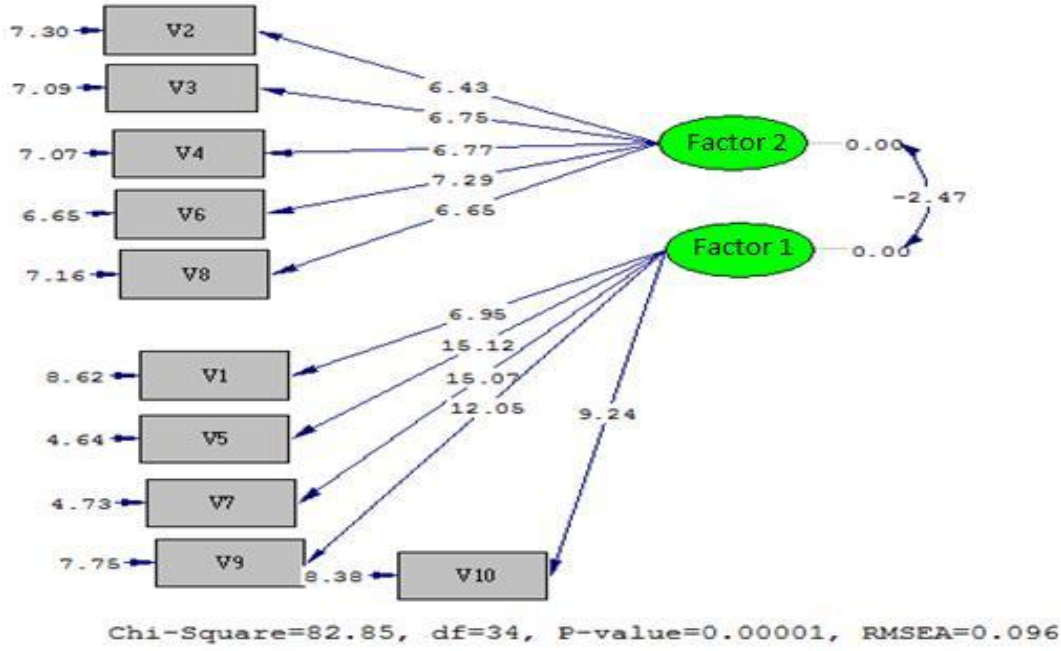

Figure 3. The t-values of the suggested model.

Item analysis

In order to determine the item-total regression power and the item discrimination, item analysis and the upper and lower 27% group comparisons were conducted. Item-total correlation indicates the relationship between the scores obtained from test items and the total item scores (Buyukozturk, 2011). In other words, it stresses that each item of a scale exemplifies similar behavior. Therefore, item-total correlation is expected to be positive and high. The results of the upper and lower 27% group comparison analyses conducted to test the item discrimination indicated that the differences between items mean scores were significant. This finding confirms that

Table 3. Item-total correlations and the t-test values regarding the upper and lower 27% group differences available in the discipline efficacy scale.

Item number	Total-item correlation	T-test values (The lower and the upper 27%)
1	0.62	17.23***
2	0.76	11.98***
3	0.88	10.43***
4	0.42	19.04***
5	0.69	12.45***
6	0.73	14.21***
7	0.81	19.14***
8	0.74	17.25***
9	0.81	15.42***
10	0.55	16.25***

*** p<.001

Table 4. Pearson Correlation Coefficients between the factors of the discipline efficacy scale.

Factors		Personal discipline efficacy	Teaching discipline efficacy
Personal discipline efficacy	r	1.000	.893
	p	.	.000*
Teaching discipline efficacy	r	.893	1.000
	p	.000*	.

*p< 0.001

the values of the item discrimination are sufficient. Table 1 provides item-total correlations and the t-test values regarding the upper and lower 27% group differences available in the discipline efficacy scale.

As indicated in Table 3, the corrected item-total correlations of the scale are between 0.62 and 0.88. The correlation coefficient calculated indicates the validity coefficient of the related item and its consistency with the whole test (Cakir, 2004). In scale adaptation and development practices, it is necessary for correlation coefficients to be at least 0.20 and not to be negative. The t-test values related to the difference between the means of the scores obtained in the discipline efficacy scale by the lower and the upper 27% groups of the sample were between 10.43 (p<.001) and 19.14 (p<.001). Moreover, in order to determine the relationship between the factors of the discipline efficacy scale, the correlation between the factors was investigated, the results obtained were provided in Table 4.

In Table 4, when the correlation between the two factors of the scale was investigated 4, it was found to be statistically significant and positive. The level of this correlation was determined as r=0.893, and statically significant at level p <0.001 and positive. The high and positive correlation indicates that the scale is composed of independent factors.

Table 5 provides the mean and standard deviation values related to the dimensions and the whole scale in the Turkish version.

As indicated in Table 5, while the mean was calculated as 37.71 for the whole scale, the mean was calculated as 22.91 for the dimension of the self- efficacy beliefs about discipline, and as 4.80 for the dimension of the general teaching efficacy beliefs about discipline As these figure suggest, while the teacher candidates' levels of discipline efficacy is found to be at intermediate level considering the whole scale and the dimension of general teaching efficacy beliefs about discipline, they are at advanced level considering the dimension of the self- efficacy beliefs about discipline.

DISCUSSION AND CONCLUSION

It is very important to use appropriate data collection instruments as it enables collecting quality data. Self-efficacy, which has been under investigation through various scales for around 40 years, contributes to collection of various data in various cultures as the scales that measure self-efficacy can also be used outside the

Table 5. D*escriptive* statistics of the Turkish discipline efficacy scale.

Factors	Mean	Standard Deviation
Personal discipline efficacy	22.91	4.00701
Teaching discipline efficacy	14.80	6.69332
The whole scale	37.71	7.05569

languages/cultures in which these scales are developed. However, there are very few, if not none, scales that can be used to determine teachers'/teacher candidates' discipline efficacy in the related literature (Giles et al., 2000). As there is not any discipline efficacy scale developed in Turkish, this study is aimed at adapting the discipline efficacy scale developed by Giles et al. (2000) to Turkish language within Turkish context, and conducting the validity and reliability analysis of the adapted scale.

The translation of the scale from English to Turkish was made by 4 specialists in their fields and English language, and the translations were compared by 5 specialists in language studies. Moreover, expert views were obtained from 3 experts in measurement and evaluation. The original scale developed in English was first translated to Turkish, and then Turkish version was translated back to English, using translation-back-translation method (Brislin, 1980; Hambleton, 1993). As language equivalence is very important in adaptations of the scales to other languages, a correlation analysis was conducted between the English and Turkish version scores, a high coherency was determined ($r=.88$, $p<0.001$). The adapted version of the scale was administered to 157 teacher candidates. The conformity of the data collected through administering the scale that was considered as the very first stage in the validity analysis of the discipline efficacy scale to the sample group was determined through Kaise-Meyer-Olkin (KMO) as 0.80, and Barlett Test value as $\chi^2=689.73$ ($p<.000$). In order to test the construct validity of the discipline efficacy scale that was composed of 10 items, exploratory factor analysis was conducted using the Varimax technique. As a result of the rotation procedure, two factors with 3.752 and 2.066 eigenvalues were determined. As a result of the analysis conducted, the scale obtained accounted for 58%.18 of the total variance and included 10 items and 2 sub dimensions (While the first factor accounts for 37.52% of the variance, the second one accounts for 20.66). These dimensions, as in the original scale, are the Teaching discipline efficacy and the Personal discipline efficacy.

The construct validity of the scale modeled through exploratory factor analysis was investigated through confirmatory factor analysis. A model was built between the factors obtained through exploratory factor analysis as well as theoretical structure and the items related to these factors. There is not a consensus in the literature regarding whether to conduct exploratory factor analysis for structure validity in the process of translation of a scale into another language and its adaptation (Acat et al., 2010; Cramer, 2003; Tosun and Karadag, 2008). Therefore, it is considered appropriate to conduct in the study exploratory and confirmatory factor analysis together in order to avoid this dilemma. The results obtained appeared to confirm the factorial structure of the discipline efficacy scale. On the other hand, in the teacher self-efficacy scales translated from English into Turkish successful results were obtained (Capa et al., 2005; Diken, 2004; Hazir-Bikmaz, 2002; Sahin-Taskin and Hacıomeroglu, 2010). This means that the items and dimensions found in English scales are compatible.

Based on the results of the analysis, 10 items in the scale developed in English was kept in the Turkish scale. A high-level, positive and meaningful correlation was found between two applications [$r_{(68)}=0.877$, $p>.05$] administered at two-week intervals. Item-total correlation and the results of the upper and lower 27% group comparisons confirmed that the power of the item discrimination of the scale was sufficient. When the correlation between the two factors of the scale was investigated, it was determined as significant and positive at the level $r=0.893$, $p<0.001$. The teacher candidates' levels of discipline efficacy was found to be at intermediate level considering the whole scale, which may suggest that special care be given to teacher candidates' training on discipline efficacy scale.

The results of the study also indicated that the Turkish version of the 10-item discipline efficacy scale was well suited to Turkish language, valid and reliable. The results obtained through the exploratory and confirmatory analyses confirmed that the factorial structure of the Turkish version was better than that of the scale originally developed in English. This can be attributed to the fact that the theoretical dimension of the original scale was formed through Bandura's (1977) Social Cognitive theory and the efficacy scale developed by Gibson and Dembo (1984); however, as stated, the theoretical dimensions could not be obtained through exploratory and confirmatory factor analyses. It was explained that the scale developed theoretically taking two factors into consideration; however, the exploratory and confirmatory factor analyses revealed that the scale was composed of three factors (Giles et al., 2000).

On the other hand, while the disciplinary efficacy levels of the teacher candidates, participating in the research, in the general of the scale and on the dimension of teaching efficacy on discipline were found to be at medium level, they were found to be at high level on the dimension of

personal efficacy on discipline. It is quite important that the disciplinary self-efficacy levels of teacher candidates were found to be high. Because, researches conducted emphasized that teacher efficacy is related to the approaches and abilities teachers used in the classroom management (Gibson and Dembo, 1984; Henson, 2001; Savran and Cakiroglu, 2003; Woolfolk and Hoy, 1990). Therefore, teacher candidates and teachers need to acquire disciplinary efficacy (Dilci and Kalkan, 2013; Lewis et al., 2005; Lewis et al., 2008).

The results obtained suggested that the discipline efficacy scale could be used in the studies in Turkey. Moreover, the scale can be used as is in different studies and through different variables, and/or through adding new items to the scale within a theoretical framework and extending the contents, the scale can be subject to validity and reliability analyses. In this study, the validity and the reliability analyses on the scale adapted to Turkish were based on the theoretical foundation of the scale. These results that have been obtained in a different culture are crucial. It is believed that the results obtained through this study will prove to be an example to the adaptation of the discipline efficacy scale to different languages.

REFERENCES

Acat MB, Tuken G, Karadag E (2010). The scale of scientific epistemological beliefs: adapting for Turkish culture, language validity and examination of factor structure. Turkish Sci. Educ. 7(4):67-89.

Allinder RM (1994). The relationship between efficacy and the instructional practices of special education teachers and consultants. Teach. Educ. Spec. Educ. 17:86-95.

Allinder RM (1995). An Examination of the relationship between teacher efficacy and curriculum based measurement and student achievement. Rem. Special Educ. 27:141-152.

Aston PT (1984). Teacher efficacy: A motivational paradigm for effective teacher education. J. Teach. Educ. 35(5):28-32.

Anderson R, Greene M, Loewen P (1988). Relationships among teachers' and students' thinking skills, sense of efficacy, and student achievement. Alberta J. Educ. Res. 34(2):148-165.

Ashton PT, Webb RB (1986). Making a difference: Teachers' sense of efficacy and student achievement, New York: Longman.

Atilgan H, Kan A, Dogan N (2006). Testing and evaluation in education. Ankara: Ani Publications.

Aylonn T, Roberts M (1974). Eliminating discipline problems by strengthening academic performance. J. Appl. Behav. Anal. 7:71-76.

Bandura A (1977). Self-efficacy: Towards a unifying theory of behavior change. Psychol Rev. 84:191-215.

Bandura A (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bailey G, Kazelskis R (1996). Managing classroom discipline: Preservice teachers' perceptions of their abilitic and those of in-service teachers. Profes. Educ. 19(1):23-25.

Beaton DE, Bombardier C, Guillemin F, Ferraz MB (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. Spine 25 (24):3186-3191.

Bollen KA, Long JS (1993). Testing structural equation models. Newbury Park, CA: Sage.

Brislin RW (1980). Translation and content analysis of oral and written material. In: Triandis HC & Berry JW (Eds.), Handbook of cross-cultural psychology, Methodology (pp.389-444). Boston: Allyn & Bacon.

Brouwers A, Tomic W (2003). A test of the factorial validity of the teacher efficacy scale. Res. Educ. 69:67-80.

Brown NR, Oke FE, Brown DP (1982). Curriculum and instruction. London: Mac Millan.

Bryman A, Cramer D (2005). Quantitative data analysis with SPSS 12 and 13: A guide for social scientists. New York, NY: Routledge.

Byrne MB (1994). Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming. California: Sage Publications, Inc.

Burden PR (1995). Classroom management and discipline. New York: Longman.

Bushaw WJ, Gallup AM (2008). Americans speak out – Are educators and policy makers listening? Phi Delta Kappan 90(1):9-20.

Buyukozturk S (2011). Handbook of data analysis. Ankara: PegemA Publications.

Capa Y, Cakiroglu J, Sarikaya H (2005). The development and validation of a Turkish version of the teachers' sense of efficacy scale. Educ. Sci. 30(137):74-81.

Caprara GV, Barbaranelli C, Steca P, Malone PS (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. J. Sch. Psychol. 44:473-490.

Clement MC (2000). Building the best faculty: Strategies for hiring and supporting new teachers. Lanham, MD: Scarecrow Press/Technomic Books.

Coladarci T (1992). Teachers' sense of efficacy and commitment to teaching. J. Exp. Educ. 60:323-337.

Cohen L, Manion L, Morrison K (2007). Research methods in education. (6th ed). New York: Routledge.

Cakir MA (2004).The development of career decision inventory. Ankara Uni. J. Faculty Educ. Sci. 37(2):1-14.

Cramer D (2003). Advanced quantitative data analysis. Berkshire: McGraw-Hill Education.

Davis LL (1992). Instrument review: Getting the most from a panel of experts. Applied Nurs. Res. 5:194-197.

Deniz KZ (2007). The adaptation of psychological scales. Ankara Univ. J. Faculty Educ. Sci. 40(1):1-16.

Diken İH (2004). A study of the validity and reliability of the Turkish version of the teacher efficacy scale. Educ. Res. J. 16:102-112.

Dilci T, Kalkan GD (2013).The problems that primary school teachers' encounter in the first five years in their professions. Cukurova Univ. Faculty Educ. J. 42 (1): 127-140.

Erden M (2005). Classroom management. Istanbul: Epsilon Publications.

Ekiz D (2003). Introduction to research methods in education. Ankara: Ani Publications.

Emmer E, Hickmen J (1991). Teacher efficacy in classroom management and discipline. Educ. Psychol. Meas. 51:755-765.

Enochs LG, Scharmann LC, Riggs IM (1995). The relationship of pupil control to preservice elementary science teacher self-efficacy and outcome expectancy. Sci. Educ. 79(1):63-75.

Evans ED, Tribble M (1986). Perceived teaching problems, self-efficacy and commitment to teaching among preservice teachers. J. Educ. Res. 80(2):81-85.

Freiberg HJ (1999). Beyond behaviorism. Boston: Allyn & Bacon.

Friedman IA, Kass E (2002). Teacher self-efficacy: a classroom-organization conceptualization. Teach. Teach. Educ. 18:675-686.

Geisinger KF (1994). Cross-cultural normative assessment: Translation and adaptation issues influencing the normative interpretation of assessment instrument. Psychol. Assess. 6(4):304-312.

Ghaith G, Yaghi M (1997). Relationships among experience, teacher efficacy and attitudes toward the implementation of instructional innovation. Teach. Teach. Educ. 13:451-458.

Giles RM, Kazalskis R, Reeves-Kazelskis C (2000). A factor analysis of the discipline efficacy scale. A paper presented at Thirtieth Annual conference of the Mid-South Educational Research Association. Bowling Green, Kentucky.

Gibson S, Dembo M (1984).Teacher efficacy: A construct validation. J. Educ. Psychol. 76:569-582.

Goddard RG, Hoy WK, Woolfolk Hoy A (2004). Collective efficacy: Theoretical development, empirical evidence, and future directions. Educ. Res. 33:2-13.

Gorsuch RL (1983). Factor analysis (2nd ed.). Hillsdale, NJ: Erlbaum.

Guskey TR (1988). Teacher efficacy, self, concept, and attitudes toward the implementation of instructional innovation. Teach. Teach. Educ. 4:63-69.

Guskey TR, Passaro PD (1994). Teacher efficacy: A study construct dimensions. Am. Educ. Res. J. 31:627-643.

Gunduz Y (2011). Create and apply discipline in the classroom. In: Inandi Y (Edit.), Classroom management. Adana: Karahan Publications.

Hair JF, Black B, Babin B, Anderson RE, Tahtam RL (2006). Multivariate data analysis. Upper Saddle River: Prentice Hall.

Hambleton RK (1993).Translating achievement tests for use in cross-national studies. Eur. J. Psychol. Assess. 9:57-68.

Hart PM, Wearing AJ, Conn M (1995). Conventional wisdom is a poor predictor of relationship between discipline policy, student misbehaviour and teacher stress. Br. J. Educ. Psychol. 65(1):27-48.

Hazir-Bikmaz F (2002). Self efficacy beliefs instrument in science teaching. Educ. Sci. Prac. 1(2):197-210.

Heaviside S, Rowand C, Williams C, Farris E (1998). Violence and discipline problems in U.S public schools: 1996-1997. (Report No.NCES-98-030).Washington, D.C.: National Center for Educational Statistics.

Henson RK (2001). Relationships between preservice teachers' self-efficacy, task analysis, and classroom management beliefs. Paper presented at the Annual Meeting of the Southwest Educational Research Association, New Orleans, LA.

Johns A, MacNaughton RH, Karabinus NG (1989). School discipline guidebook: Theory into practice. Boston: Allyn & Bacon.

Jordan A, Kircaali-Iftar G, Diamond CTP (1993). Who has a problem, the student or the teacher? Differences in teachers' beliefs about their work with at-risk and integrated exceptional students. Int. J. Disability, Dev.. Educ. 43:45-62.

Jöreskog GK, Sörbom D (1993). LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language. Lincolnwood: Scientific Software International, Inc.

Karasar N (2010). Scientific research methods. Ankara: Nobel Publisher.

Kline P (1994). An easy guide to factor analysis. London: Rutledge.

Kline T (2005). Psychological testing: A practical approach to design and evaluation. (1st Ed.) London: SAGE publications.

Koktas SK, Koktas V (2007). Effective classroom management. Adana: Cukurova University Printing.

Leech NL, Barr KC, Morgan GA (2005). SPSS for intermediate statistics: Use and interpretation (2nd Ed.). New Jersey: Lawrence Erlbaum ASS.

Levin J, Nolan JF (2000). Principles of classroom management: A professional decision making model (3rd Ed.). Boston: Allyn & Bacon.

Lewis R (1997). Discipline in schools. In: Saha LJ (Ed.). International encyclopedia of the sociology of education (pp.404-411). Oxford, UK: Pergamon.

Lewis R, Romi S, Qui X, Katz YJ (2005). Teachers' classroom discipline and student misbehavior in Australia, China and Israel. Teach. Teach. Educ. 21:729-741.

Lewis R, Romi S, Qui X, Katz YJ (2008). Students' reaction to classroom discipline in Australia, Israel, and China. Teach. Teach. Educ. 24:715-724.

Lindblom-Ylänne S, Trigwell K, Nevgi A, Ashwin P (2006).How approaches to teaching are affected by discipline and teaching context. Stud. Higher Educ. 31(3):285-298.

Long JD, Frye VH (1989). Making it till Friday (4th ed). Princeton, NJ: Princeton Book Company, Inc.

Lueddeke G (2003). Professionalizing teaching practice in higher education: A study of disciplinary variation and 'teaching-scholarship'. Stud. Higher Educ. 28:213-228.

Macciomei NR (1999). Behavioral problems in urban school children. In: Macciomei NR & Ruben DH (Eds.). Behavioral management in the public schools: An urban approach. Westport, CT: Praeger pp.3-18.

Malmgren KW, Trezek BJ, Paul PV (2005). Models of classroom management as applied to the secondary classroom. Clearing House 79(1):36-39.

Martin NK, Baldwin B (1992). Beliefs regarding classroom management style: The differences between preservice and experience teachers. Paper presented at the annual meeting of the Mid-South Educational Research Educational, (No: ED 355 213 ERIC document reproduction service), Knoxville, TN.

Maruyama GM (1998). Basics of structural equation modeling.SAGE Publications, Inc. Thousand Oaks, CA

Marzano RJ, Marzano JS (2003).The key to classroom management. Retrieved from http: //www.usd361.k12.ks.us/taffdevelopment/ The%20Key%to%20.

McCormic J, Shi G (1999). Teachers' attributions for responsibility for their occupational stress in the People's Republic of China and Australia. Br. J. Educ. Psychol. 69:393-407.

Midgley C, Feldlaufer H, Eccles J (1989). Change in teacher efficacy and student self- and task-related beliefs in mathematics during the transition to junior high school. J. Educ. Psychol. 81:247-258.

Milner HR (2001). A qualitative investigation of teachers' planning and efficacy for student engagement. Unpublished doctoral Dissertation. The Ohio State University, Columbus, OH.

Milner HR, Woolfolk Hoy A (2003). A case study of an African American Teacher's self-efficacy, stereotype threat, and persistence. Teach. Teach. Educ. 19 (2): 263-276.

Moore W, Esselman M (1992). Teacher efficacy, power, school climate and achievement: A desegregating district's experience. Paper Presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Nelson MF (2002). A qualitative study of effective school discipline practices: Perceptions of administrators, Tenured Teachers and parents in twenty schools. Unpublished doctorate dissertation. East Tennessee State University, Tennessee.

Oswald M, Johnson B, Whitington V (1997). Classroom problems and their management in South Australian government and independent schools: Is there a difference?, Res. Educ. 58:59-69.

Ozdamar K (2004). Analysis of the statistical data with the package programs-2 (Multivariate analysis). Eskişehir: Kaan Bookstore.

Pajares MF (1992). Teachers' beliefs and educational research: clearing up a messy construct. Rev. Educ. Res. 62 (3):307-332.

Pigge FL, Marso RN (1997). A seven year longitudinal multi-factor assessment of teaching concerns development through preparation an early year of training. Teach. Teach. Educ. 13(2):225-235.

Psunder M (2005). Identification of discipline violations and its role in planning corrective and preventive discipline in school. Educ. Stud. 31(3):335-345.

Rose LC, Gallup AM (2000). The 32nd annual Phi Delta Kappa/Gallup Poll of the public' attitude toward the public schools. Phi Delta Kapan 82(1):41-58.

Sahin-Taskin C, Haciomeroglu G (2010). Adaptation of the teachers' efficacy beliefs system-self form and primary teachers' self efficacy beliefs. Dokuz Eylul Uni. Buca Educ Faculty J. 27(2010):63-75.

Saritas M (2000). Classroom management and discipline rules development and implementation (Ed. Kucukahmet L). New approaches to the classroom management. Ankara: Nobel publishing pp.47-90.

Savasir I (1994). The scale adaptation problems and some solutions. Turk. J. Psychol. 9 (33):27-32.

Savran A, Cakiroglu J (2003). Differences between elementary and secondary preservice science teachers' perceived efficacy beliefs and their classroom management beliefs. TOJET 2(4), article: 3.

Shen J, Zhang N, Zhang C, Caldarella P, Richardson MJ, Shatzer RH (2009). Chinese elementary school problems' perceptions of students' classroom behaviour problems. Educ. Psychol. 29(2):187-201.

Soodak LC, Podell DM (1998). Teacher efficacy and the vulnerability of the difficult-to-teach student. Adv. Res. Teach. 7:75-109.

Stein MK, Wang MC (1988). Teacher development and school improvement: The process of teacher change. Teac. Teach. Educ. 4:171-187.

Stephens P, Crawley T (1994). Becoming an effective teacher. Cheltenham: Stanley Thornes Publishers Ltd.

Sahin N (1994). Psychology studies the use of the scale. Turk. J. Psychol. 9(33):19-26.

Simsek OF (2007). Introduction to the basic principles and applications of LISREL structural equation modeling. İstanbul: Ekinoks Publications.

Tabachnick BG, Fidell LS (1996). Using multivariate statistics. New

York: HarperCollins College.

Tavsancil E (2002). Attitudes measurement and data analysis with SPSS. Ankara: Nobel Publishing.

Tezbasaran A (1997). A Guide to Developing a Likert-type scale.Ankara: Turkish Psychological Association Press.

Tosun U, Karadag E (2008). The adaptation of constructive thinking inventory (CTI) to Turkish language, language validity & psychometric investigation. Educ. Sci. Prac. 8(1):225-264

Trigwell K (2002) Approaches to teaching design subjects: a quantitative analysis. Art Des. Commun. Higher Educ. 1:69-80.

Tshannen-Moran M, Hoy AW, Hoy WK (1998). Teacher efficacy: Its meaning and measure. Rev. Educ. Res. 68 (2):202-248.

Tshannen-Moran M, Hoy AW (2001). Teacher efficacy: Capturing an elusive construct. Teach. Teach. Educ. 17 (7):783-805.

Wang MC, Haertel GD, Walberg HJ (1993a). What influences learning? A content analysis of review literature. J. Educ. Res. 84:30-43.

Wang MC, Haertel GD, Walberg HJ (1993b). Toward a knowledge base for school learning. Rev. Educ. Res. 63(3):249-294.

Wang MC, Haertel GD, Walberg HJ (1994). What helps students learn? Educ. Leadersh. 51:74-79.

Weinstein CS (1996). Secondary classroom management: Lessons from research and practice. NY: McGraw-Hill.

Wesley D, Vocke D (1992). Classroom discipline and teacher education. Paper presented at the annual meeting of the Association of the Teacher Educators, Orlando, FL. (ERIC Document Reproduction Service No: ED341 690).

Woolfolk AE, Hoy WK (1990). Prospective teachers' sense of efficacy and beliefs about control. J. Educ. Psychol. 82 (1):81-91.

Woolfolk AE, Rosoff B, Hoy WK (1990). Teachers' sense of efficacy and their beliefs about managing students. Teach. Teach. Educ. 6(2):137-148.

Wragg CE (1985). Training skillful teachers. Teach. Teach. Educ. 1(3):199-208.

Wragg EC, Wragg CM (1998). Classroom management research in the United Kingdom (ERIC Document Reproduction Service No: ED 418 971).

Yilmaz V, Celik EH (2009). Structural equation with LISREL-I: Basic concepts, applications, programming Ankara: Pegem Publications.