IN-CLASS SOCIAL PROBLEM SOLVING ABILITIES OF CLASSROOM TEACHERS: A SELF-DETERMINATION THEORY BASED STUDY

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Approval of the Graduate School of Social Sciences

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ABSTRACT

IN-CLASS SOCIAL PROBLEM SOLVING ABILITIES OF CLASSROOM TEACHERS:
A SELF-DETERMINATION THEORY BASED STUDY

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The purpose of the current study was to investigate how well perceived teacher autonomy, teacher self-efficacy, and vocational social support predict in-class social problem solving ability of classroom teachers. In order for this investigation, a structural model was constructed based on Self-Determination Theory (SDT) and tested throughout the study. Data were collected via In-Class Social Problem Solving Inventory Scale (ICSPSI), Teacher Autonomy Scale-Turkish Teachers (TAST), Vocational Social Support Scale: Teacher (VSSST), and Turkish Version of Teachers' Sense of Efficacy Scale (TTSES) from 728 classroom teachers working in state elementary schools located in three main districts of Adana, Turkey. Structural Equation Modeling (SEM) was employed to analyze the data.

The results of the study revealed that all of the independent variables, teacher autonomy, teacher self-efficacy, and vocational social support, significantly predicted the in-class social problem solving abilities of classroom teachers. Among all of the independent variables, teacher self-efficacy was found to be the best predictor.

Based on the results of the study, it was concluded that the higher the teachers' perceived autonomy, self-efficacy, and vocational social support received were, the better their performance in solving the problems that they encounter in their classrooms was. The conclusion implicate that educators should take the necessary actions to increase teachers'

perceived autonomy, self-efficacy, and vocational social support received so that the teachers can solve the problems that they encounter in their classrooms more effectively.

Key words: In-class social problem solving, self-determination theory, teacher autonomy, teacher self-efficacy, vocational social support

ÖZ

SINIF ÖĞRETMENLERİNİN SINIF-İÇİ SOSYAL SORUN ÇÖZME BECERİLERİ: BENLİK-BELİRLEME KURAMI TEMELLİ BİR ÇALIŞMA

ULAŞ MARBOUTİ, Jale
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Bu çalışmanın amacı sınıf öğretmenlerinin algıladıkları özerklik, öz-yeterlik ve mesleki sosyal destek düzeylerinin onların sınıf-içi sorun çözme becerilerini ne kadar iyi yordadığını araştırmaktır. Bu araştırma kapsamında Benlik-Belirleme Kuramına (BBK) dayalı yapısal bir model oluşturulmuş ve test edilmiştir. Veriler Sınıf-İçi Sosyal Sorun Çözme Ölçeği (SİSSÇE), Öğretmen Özerklik Ölçeği-Türkçe (ÖÖÖT), Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ) ve Öğretmen Öz-yeterlik Algısı Ölçeği (ÖÖAÖ) kullanılarak Adana ilinin üç merkez ilçesinde bulunan devlet okullarında görev yapan 728 sınıf öğretmeninden toplanmıştır. Toplanan veriler Yapısal Eşitlik Modellemesi (YEM) tekniği ile analiz edilmiştir.

Çalışmanın sonuçları bütün bağımsız değişkenlerin (öğretmen özerkliği, öğretmen öz-yeterliği ve mesleki sosyal destek) öğretmenlerin sınıf-içi sosyal sorun çözme becerilerini anlamlı bir şekilde yordadığını göstermiştir. Bu bağımsız değişkenler arasında, öğretmen öz-yeterliği değişkeninin sınıf-içi sorun çözme becerisini diğerlerinden daha iyi yordadığı bulunmuştur.

Çalışma sonuçlarına bağlı olarak, öğretmenlerin algıladıkları özerklik, öz-yeterlik ve sosyal destek düzeyleri arttıkça sınıf içinde karşılaştıkları sorunları çözme konusundaki performanslarının da artacağı sonucuna ulaşılmıştır. Bunun için de eğitim ile ilgili taraflara öğretmenlerin algıladıkları özerklik, öz-yeterlik ve mesleki sosyal destek düzeylerinin artırılması için gerekli adımların atılması yönünde önerilerde bulunulmuştur.

Anahtar Kelimeler: Sınıf-içi sosyal sorun çözme, benlik-belirleme kuramı, öğretmen özerkliği, öğretmen öz-yeterliği, mesleki sosyal destek

to my family

and

to my supervisor Prof. Dr. Meral AKSU

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AS	Avoidance Style
BPNT	Basic Psychological Needs Theory
CET	Cognitive Evaluation Theory
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COT	Causality Orientations Theory
EFA	Exploratory Factor Analysis
GCT	Goal Content Theory
ICS	Impulsivity/Carelessness Style
ICSPSI	In-Class Social Problem Solving Inventory
KMO	Kaiser-Mayer Olkin
MoNE	Ministry of National Education
NPO	Negative Problem Orientation
OIT	Organismic Integration Theory
PPO	Positive Problem Orientation
RMSEA	Root Mean Square Error of Approximation
RPS	Rational Problem Solving
SEM	Structural Equation Modelling
SDT	Self-Determination Theory
SPS	Social Problem Solving
SRMR	Standardized Root Mean Square Residual
TAST	Teacher Autonomy Scale - Turkish
TSE	Teacher Self-Efficacy
TTSES	Teacher Sense of Efficacy Scale
VSSST	Vocational Social Support Scale: Teacher

CHAPTER I

INTRODUCTION

A good teacher is like a candle - it consumes itself to light the way for others.
Mustafa Kemal Atatürk

This chapter introduces the main problem of the study. It starts with the problem statement, and continues with purpose, significance, and definition of terms.

1.1 Background of the Study

The world is changing and becoming challenging day by day. In such a world, individuals need to be able to deal with many issues around them. This situation requires them to have some higher order thinking skills such as problem solving. Temizyürek (2003) states that problem solving might be considered as the most crucial skill that a person should have in order to continue existing in the world since no one can know what kinds of difficulties s/he will face in life. Therefore, problem solving is always stated as very important all over the world not only in everyday life but also in professional contexts (Jonassen, 2000) in various fields such as engineering, arts, architecture, health related occupations, etc. and education for certain. As the world is continuously and speedily changing, the field of education is always having countless problems that should be solved. Education professionals such as academicians, school managers, curriculum developers, educational psychologists, subject matter experts, and so on always work for solving those problems with the aim of increasing the quality of education. Also, teachers are one of those professionals who need to solve some of those problems to increase learning of their students since they are the practitioners of the curricula.

Indeed, teaching involves constant problem solving activities (Castro, Kelly, & Shih, 2010). Teachers perpetually make decisions and take actions about what to teach, how to teach, how to reach a student, how to communicate with parents (Castro et al., 2010), how to manage a class and deal with disruptive behaviors (Lee & Choi, 2008; McDonald, 2001; Pannels, 2010; Lee & Powell, 2005), and so on. They are required to make many pedagogical decisions even in the midst of instruction (Sherin & Van Es, 2005). In the classrooms in which the disruptive behaviors occurs frequently, the students are engaged in academic activities for short time and their academic achievements are tend to be poor (Shinn, Ramsey, Walker, Stieber, & O'Neill, 1987). In order for a maintaining an effective learning environment for their students, teachers need to solve problems that they daily encounter in their classrooms.

Several national and international studies were conducted to identify the problems that teachers face in their classrooms and/or schools. They brought out that there are a variety of problems such as students' being unmotivated and/or undisciplined, not listening to lesson or teacher or each other, breaking the rules and routines in the classroom, making noise during the class, talking out of turn, wandering around the classroom during the class, complaining about others, not fulfilling the responsibilities related to lessons, non-participation in the activities, low academic success, disturbing each other even fighting in the classroom, verbal disrespect, parents' not being interested in their children's education, parents' low level of education, lack of materials in the school, overcrowded classrooms, lack of infrastructure, ineffective time management, ineffective classroom environment and so on (Al-amarat, 2011; Atcı, 2004; Atıcı & Merry, 2001; Clunies-Ross, Little, & Kienhuis, 2008; Çapri, Balcı, & Çelikkaleli, 2010; Çetin, 2002; Erdoğan et al., 2010; Erol, Özaydın, & Koç, 2010; Geiger, 2000; Gökduman, 2007; Jones, Charlton, & Wilkin, 1995; Keskin, 2002; Kocabey, 2008; Leung & Ho, 2001; McDonald, 2001; Sadık, 2002; Sayın, 2001; Siyez, 2009; Stephenson, Linfoot, & Martin, 2000; Sun & Shek, 2012; Tulley & Chiu, 1995; Türnüklü & Galton, 2001; Wheldall & Merrett, 1988; Yapıcı & Yapıcı, 2003). Also, several studies brought out the teachers' perceived reasons of those problems, some of which are the classroom environment, size of the classroom, lack of educational equipment, lack of rules, parents' attitudes, student's family characteristics, socio-economic conditions of the country, students' personal characteristics, ineffective

management skills of teachers, students' attitudes, migration, and physical conditions of the classroom (Çelikkaleli, Balcı, Çapri, & Büte, 2009; Dağlı & Baysal, 2012; Eleser, 2007; Erdoğan et al., 2010, Sayın, 2001).

Al-Alga (as cited in Al-amarat, 2011) classified the sources of classroom management, discipline and behavior problems under four categories: school administration, teacher, family, student mental abilities. Ergün and Yüksel (2005) classified the sources of those problems under two categories: in class factors and out of class factors. Accordingly, out-of-class factors are classified as (1) school problems including physical characteristics and conditions, number of students in school, structure of administration, and deficiency of educational equipment, (2) the school environment problems involving physical, cultural, and social environment, and (3) family characteristics including the number of members of the family, parents' attitudes, income, and education level are out-of-class factors; and in-class sources of management and behavioral problems are classified as (1) teacher related factors including inefficiency, teacher-centeredness, attitudes towards children, communication skills, personal characteristics, self-efficacy level, (2) student related factors involving having emotional problems, low level of communication with other students and teacher, loneliness, and attitude toward school, and (3) physical environment involving physical environment of the classroom, level of noise, heating, lightening, seating design of students. Çelikkaleli et al. (2009) has classified the sources as in-class/school (school characteristics, teacher related factors, and physical characteristics), out-of-class/school (students' family characteristics, and mass communication tools) and students' characteristics. Dağlı and Baysal (2012) did a classification and beside the sources stated above, they emphasized the curriculum and teaching methods (since if the curriculum or teaching methods are not suitable or meaningful for students, it is more likely that students show undesired behaviors) and information and communication technologies (since the not only the communication with other people around has an effect on student behavior but also what they learn via media tools) as another possible sources of the those problems.

Teachers reported or observed to apply a variety of ways in order to deal with these problems, some of which are commanding, using signals such as hand signals, ignoring

misbehavior, calling students' name, making eye contact, asking questions, criticizing, threatening, positive and negative reward systems, talking to the child either in class or out of class in private, yelling, warning verbally, giving advice, sending the child to the principal's room, meeting parents, isolating child from others, getting student stand on one foot looking at the waste paper basket and/or blackboard, slapping on the face, ear pinching, hair pulling, and kicking as intervention strategies (Atcı, 2004; Aydın, 2010; Boyacı, 2009; Çalışkan Maya, 2004; Erol et al., 2010; Eleser, 2008; Gömleksiz et al., 2008; Sayın, 2001; McDonald, 2001). However, teachers have reported that their actions with respect to those problems do not work very well; therefore, they are not very effective in solving those problems (McDonald, 2001). While some research studies that were conducted with in-service or pre-service teachers revealed that teachers have sufficient problem solving abilities (e.g., Saracaloğlu, Yenice, & Karasakaloğlu, 2009), some of them indicated that they have insufficient problem solving abilities (e.g., Üstündağ & Beşoluk, 2012; Yıldız, Zırhlıoğlu, Yalçınkaya, & Güven, 2011).

At this point it might be useful to talk about what are "problem" and "problem solving", and what is important in this process. According to D'Zurilla, Nezu, and Maydeu-Olivares (2004), a problem or problem situation can be defined as "any life situation or task (present or anticipated) that demands a response for adaptive functioning but no effective response is immediately apparent or available to the person or people confronted with the situation because of the presence of one or more obstacles" (p. 12); and problem solving, in general terms, is defined as "any goal-directed sequence of cognitive operation" (Anderson, as cited in Jonassen, 2000, p. 65). D'Zurilla et al. (2004) emphasized the real life problems encountered in daily life and named problem solving as *social problem solving*. They identified it as "self-directed cognitive-behavioral process by which an individual, couple, or group attempts to identify or discover effective solutions for specific problem encountered in everyday living" (D'Zurilla et al., 2004, p. 12).

D'Zurilla, Nezu, and Maydeu-Olivares (2002) proposed that social problem solving process consists of two major components: (a) *problem orientation*, and (b) *problem solving styles*. *Problem orientation* reflects the problem solver's general beliefs and feelings about the problems and his/her general problem solving ability based on the operation of a set of

cognitive and emotional schemas. This component has two orientations which are contrary to each other: Positive problem orientation and Negative problem orientation. *Problem solving style*s include the problem solving skills and problem solver's approach. This component reflects the problem solver's cognitive and behavioral actions during the process of understanding the problem situation and trying to come up with an effective solution for dealing with the problem. This component involves three problem solving styles: (1) rational problem solving consisting of four major skills used throughout the problem solving process: (a) problem definition and formulation, (b) generation of alternative solutions, (c) decision making, and (d) solution implementation and verification; (2) impulsivity/carelessness style; (3) avoidance style (D'Zurilla et al., 2004). Problem orientation is described as the motivational part of problem solving process. D'Zurilla et al. (2002) propose that the positive problem orientation leads to rational problem solving style, and negative problem orientation leads to either impulsivity/carelessness style or avoidance style. Positive problem orientation and rational problem solving style are the constructive, in other words, effective part of the problem solving process whereas negative problem orientation, impulsivity/carelessness and avoidance style are dysfunctional part of the social problem solving process (D'Zurilla et al., 2004). Clearly, problem orientation -the motivational part of problem solving- leads the problem solver to either constructive or dysfunctional problem solving process. The importance of motivation in problem solving process comes on the scene herein.

Psychologists describe the motivation as something that makes people do, keep them going on, and help them finish the job (Pintrich & Shunk, 2002). In general terms, motivation is defined as "the process whereby goal-directed activity is instigated and sustained" (Pintrich & Shunk, 2002, p. 5). There are a variety of motivational theories trying to find out what makes an individual move (energization) and toward which activities (direction); and their motivation definitions differ due to their nature and assumptions (Pintrich, 2003; Pintrich & Shunk, 2002). While "behavioral (conditioning) theories view motivation as an increased or continual level of responding to stimuli brought about by reinforcement (reward)" (Pintrich & Shunk, 2002, p. 5), "contemporary cognitive views postulate that individuals' thoughts, beliefs, and emotions influence motivation" (Pintrich & Shunk, 2002, p. 5). However, the main focus of all motivation theories is to uncover what

individuals want and if there are basic needs that explain what they want (Pintrich, 2003). A very comprehensive, contemporary, and empirically supported theory of motivation is Self Determination Theory (SDT) which was developed by Deci and Ryan in 1985. SDT defines the basic psychological needs and integrates them with social–cognitive constructs (Pintrich, 2003). According to this theory, there are three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2002). The need for autonomy refers to the desire of having control of one's own behaviors, doing the tasks with their free choice (Deci & Ryan, 2000; Guay, Vallerand, & Blanchard, 2000). The need for competence refers to the desire of feeling affectance and competent in the interactions with the social environment (Deci & Vansteenkiste, 2004; Guay et al., 2000). Finally, the need for relatedness reflects inherent desire of feeling belongingness to a group (Pintrich, 2003). SDT assumes that these needs are inherent for all livings. If these needs are not satisfied, individuals cannot function optimally. Although these needs are basic needs for optimal human functioning, SDT asserts that the effect of these needs on human actions is under the mediation of social–cognitive constructs like perceived competence, and beliefs (Pintrich, 2003).

When research studies on problem solving are considered, it is seen that problem solving is influenced by a variety of variables such as epistemological beliefs (Aksan, 2006), perceived social support (Arslan, 2009; Ünüvar, 2003), education/grade level (Katkat & Mızrak, 2003), major (Çam, 1997; Otacıoğlu, 2007), gender (Altunçekiç, Yaman, & Koray, 2005; Arslan, 2001; Çam & Tümkaya, 2006; Katkat, 2001; Nacar, 2010), socioeconomic status (Terzi, 2003), and age/experience (Çam & Tümkaya, 2006; D'Zurilla, Maydeu-Olivares, & Kant, 1998; Demirtaş & Dönmez, 2008). The research studies conducted with in-service or pre-service teachers have brought out that their problem solving abilities correlate with their communication skills (Bozkurt, Serin, & Emran, 2004; Nacar, 2010), negative thoughts (Tümkaya & İflazoğlu, 2000), and influenced by self-confidence level (Otacıoğlu, 2008), major (Çam, 1997; Otacıoğlu, 2007), gender (Arslan, 2001; Bozkurt et al., 2004; Katkat, 2001; Nacar, 2010), epistemological beliefs (Aksan, 2006), education/grade level (Arslan, 2001; Katkat & Mızrak, 2003), age/experience (Nacar, 2010), socioeconomic level of the school that they work for (Nacar, 2010), and the type of school that they graduated from (Nacar, 2010).

When the research studies on problem solving that were conducted with in-service or pre-service teachers were reviewed, it was seen that there were research studies exhibiting the problems that teachers encounter in their classrooms and/or schools, and research studies that investigate their problem solving skills. However, those research studies that investigate their problem solving abilities mostly measure their problem solving abilities in daily life (e.g., Aksan, 2006; Altunçekiç et al., 2005; Otacıoğlu, 2008), instead of focusing on how they solve their job-related problems. This was considered as an important gap in the literature.

Another important gap is, to the knowledge of the researcher, that while the importance of motivation in problem solving is known, there is no research study focusing on what motivates the teachers to solve problems more efficiently. Therefore, it is needed to investigate what are the basic necessities for teachers to be good problem solvers in order to cope with the problems that they encounter in their classrooms.

1.2 Purpose of the Study

The main purpose of this study is to investigate classroom teachers' in-class problem solving ability based on constructive aspect of Social Problem Solving, and explain it from the point of self-determination theory (SDT). Within this context, the relationships between classroom teachers' in-class social problem solving ability and basic psychological needs (autonomy, competence, and relatedness as measured by teacher autonomy, teacher self-efficacy, and perceived vocational social support) were investigated. More specifically, the question of whether teacher autonomy, teacher self-efficacy, and perceived vocational social support predict in-class social problem solving abilities of classroom teachers was the focus of the study. All of the variables were measured by self-report instruments. Teacher autonomy, self-efficacy, and vocational social support were used in place of need for autonomy, competence and relatedness of SDT respectively. The conceptual structure of the hypothesized model is represented in Figure 1.1.

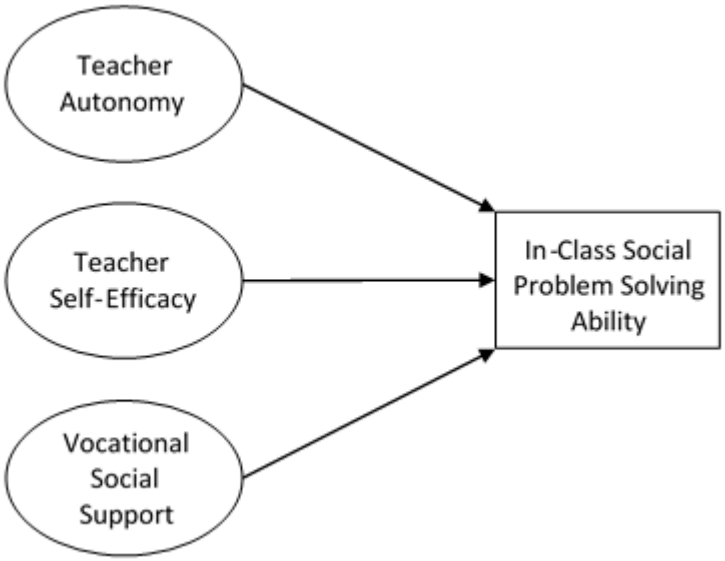

Figure 1.1 The conceptual structure of the hypothesized model.

1.3 Significance of the Study

This study aimed to investigate whether teacher autonomy, teacher self-efficacy, and vocational social support predict the classroom teachers' in-class problem solving abilities. The current study is expected to make significant contribution to the related literature, theory, research, practice, and policy.

Teachers are the professionals that continuously need to solve problems. The literature presents a variety of problems that teachers encounter in their professional lives, the ways they use to solve those problems, and how successful they are in coping with them. Also, the relationship between problem solving and many other variables such as self-efficacy, experience, level of education, gender and so on had been investigated. Therefore, it is worthwhile to investigate the problem solving among teachers from a different perspective that has not been uncovered before by explaining problem solving from the point of Self-Determination Theory (SDT). Investigating the relationships among problem solving, teacher autonomy (as autonomy need of SDT), self-efficacy (as competence need of SDT), and vocational social support (as relatedness need of SDT) is considered as broadening the problem solving literature. The current study contributes to the literature especially with

the investigation of relationship between teacher autonomy and problem solving; because, although there are studies in literature covering the relationship between self-efficacy, social support and problem solving (e.g., Kruger, 2001), no study was found investigating the relationship between teacher autonomy and problem solving.

The current study is believed to contribute to SDT literature. SDT is a contemporary Theory (Edmunds, Ntoumanis, & Duda, 2008) which is used in several contexts, some of which are sports, exercise, physical education, health care, environment (sustainability), virtual environments and video games, psychotherapy and counseling, politics, and education (Self-Determination Theory, 2013). This study is expected to contribute to the STD research in educational context. The research in educational context cover basically students' learning, behaviors of teachers, parents, school principals, teacher motivation in teaching, and teacher burnout (Self-Determination Theory, 2013). Considering the developing history of SDT, it can be said that it is important to apply SDT in different areas of research. This study is important to contribute to SDT literature by investigating the relationship between SDT's basic psychological needs (as measured by teacher autonomy, teacher self-efficacy, and vocational social support) and teachers' in-class social problem solving abilities.

The problem solving abilities of pre-service or in-service teachers were investigated in a variety of studies in literature (e.g., Arslan, 2001; Bozkurt et al., 2004; Çam, 1997). When these studies were examined, the instruments that were used to measure problem solving abilities were measuring their performance in solving the problems that they encounter in their life. The current study is important to focus on how classroom teachers solve especially the problems that they encounter in their classrooms. Within the scope of this study, a valid and reliable in-class problem solving inventory was developed, which is another significant aspect of the study.

Social support is asserted as a "psychological sense of support" (Brannan & Bleistein, 2012, p. 521) and the level of feeling that one is supported by others have an influence on his/her morale, psychological and physiological health, and functioning in life (Sarros, 1989). The stronger feeling of social support, the better morale, health, and functioning, not only in everyday life but also in professional settings. Teaching in a classroom is known as a very

stressful task since the teachers need to deal with various factors in order to maintain an appropriate classroom environment for effective teaching and learning (Cheuk & Wong, 1995). Therefore, it is worthwhile to examine the extent classroom teachers receive social support from others when they need on their job related issues. In order to investigate the extent of perceived social support, the scope of current study included development of a valid and reliable vocational social support scale for Turkish teachers.

Teacher autonomy has taken more attention of the researchers in the last few decades since it has been gaining more credit in teaching professionalism. It is emphasized as an important component of teacher professionalism (Demirkasımoğlu, 2010) since it helps to understand and identify the role and jurisdiction of the teachers in education system (Öztürk, 2011). Although there are more studies in international literature, there are only few studies conducted to investigate Turkish teachers' autonomy perceptions. This study is significant by contributing to both international and especially national teacher autonomy literature. Besides, when teacher autonomy literature in Turkey was reviewed with regard to the research designs, it was seen that the studies are qualitative in nature (e.g., Öztürk, 2012), and there was no instrument to measure autonomy perceptions of Turkish teachers. Although there were teacher autonomy instruments in foreign languages, it was not possible to adapt them in Turkish and use in the study due to cultural and system differences between Turkey and other countries. Therefore, it is important to develop a valid and reliable autonomy scale for Turkish teachers. By development of such a scale, the study serves to the researchers who is interested in teacher autonomy.

In problem solving literature, most of the studies were conducted with pre-service teachers (e.g., Aksan, 2006; Çam & Tümkaya, 2006). However, Arslan (2001) found that in-service teachers reported better problem solving abilities than pre-service teachers as a result of his study in which he worked with both pre-service and in-service teachers. Considering that the study results might differ for in-service and pre-service teachers, the current study was conducted with in-service teachers.

Problem solving is considered as very important abilities for teachers. When the literature of problem solving reviewed, it was seen that there are many researchers working on

improving the problem solving skills of teachers (e.g., Bronack, 1998; Kale & Whitehouse, 2012; Westcott, 2002). By investigating the relationship between SDT's basic psychological needs (as measured by teacher autonomy, teacher self-efficacy, and vocational social support) and in-class social problem solving abilities of classroom teachers, the results of the current study is expected to shed light on a way of improving the classroom teachers' in-class social problem solving abilities. The study is expected to serve to teachers themselves, school administrators, parents, teacher educators, and policy makers. The teachers, school administrators, and parents may utilize the results of the current study in their daily educational practices whereas policy makers might benefit from them in order to make decisions on curriculum development, teacher education, teacher professional development, and roles and responsibilities of teachers, school administrators, parents etc. in the education system.

1.4 Definitions of Terms

Classroom teacher refers to the teacher who teaches the children at grades from 1 to 4.

In-class social problem solving ability refers to teachers' belief on their own abilities of dealing with the problems that occur in their classrooms. It covers how teachers feel, think and behave when there is a problem in their classrooms.

Vocational social support refers to the self-report views of classroom teachers on the extent that they are cared for, valued, praised, and helped by other people in their social environment when they are in need for their job related issues, and felt belong to school community.

Teacher self-efficacy beliefs refer to classroom teachers' belief in their capability to take the appropriate actions especially with regard to student engagement, instructional strategies, and classroom management for effective teaching.

Teacher autonomy refers to the freedom given to the classroom teachers to make their own decisions while doing their job where they design their courses, organize their

classrooms, take responsibilities of their own decisions (Friedman, 1999; Little, 1995), and develop themselves in terms of professional skills (Friedman, 1999; Little, 1995).

CHAPTER II

LITERATURE REVIEW

In this chapter, theoretical background based on social problem solving, self-determination theory, teacher autonomy, teacher self-efficacy, and social support is presented. Following the theoretical background, research studies on problem solving, teacher self-efficacy, teacher autonomy, and social support is presented.

2.1 Theoretical Background

2.1.1 Social Problem Solving

Social problem solving (SPS) studies started with the study of D'Zurilla and Goldfried (1971). The aim of their study was to review the problem solving literature related to solving the real life problems, to show what kinds of difficulties may occur during problem solving, and to propose a possible problem-solving training as a clinical intervention and prevention approach. D'Zurilla and Goldfried (1971) argued that the proposed problem solving training will teach the people problem solving skills and help them in dealing with their future problems. Most importantly they proposed the early model of problem solving which created a new research area for the researchers. After D'Zurilla and Goldfried (1971), many research studies started to be conducted in relation to SPS.

SPS points out to the problem solving process within the natural social environment, in other words, real world. Although the process is described as social, it is not meant that SPS is related to specific kinds of problems. The adjective "social" is used to emphasize solving the problem situations that influences one's functioning and adjustment in his/her social environment. Therefore, SPS covers all kinds of problems that might be effective in

one's functioning in life. For example, *impersonal problems* such as bad financial situations, stolen property; *personal or intrapersonal/nonsocial problems* such as emotional, behavioral, cognitive, or health problems; *interpersonal problems* such as conflicts in marriage, family arguments; and *broader community and societal problems* such as crime, race discrimination (D'Zurilla et al., 1998; D'Zurilla et al., 2004).

2.1.1.1 Major concepts of SPS

Within SPS theory, there are three major concepts: (a) problem, (b) problem solving, and (c) solution. Moreover, to distinguish the problem solving and solution implementation is stated as important for SPS theory, research, and practice (D'Zurilla et al., 2004).

a. Problem. In general terms, problem is defined as any situation in which a person has a goal but it is not immediately apparent how to reach that goal (Duncker, 1945; D'Zurilla et al. 2004; Holyoak, 1995), or the difference between the current situation and the desired situation (Jonassen, 2004; Treffinger, Selby, & Isaksen, 2008). D'Zurilla et al. (2004), the developers of the social problem solving theory, took attention to the real life problems in everyday living and defined the problem or problem situation as "any life situation or task (present or anticipated) that demands a response for adaptive functioning but no effective response is immediately apparent or available to the person or people confronted with the situation because of the presence of one or more obstacles" (p. 12). The problem situation in real life might be originating from either the social environment such as objective task demands or the person himself/herself such as a personal goal, need, or commitment. According to Jonassen (2004), a problem should have some social, cultural, or intellectual value, which means that someone should perceive the situation as a problem and have the desire to solve it. Otherwise, it can be said that there is not a perceived problem. A solution for a problem situation might be unapparent because of the presence of one or more obstacles such as "novelty, ambiguity, unpredictability, conflicting stimulus demands, performance skill deficits, or lack of resources" (D'Zurilla et al., 2004, p. 13).

Problems in real life might be a single time-limited event such as missing a train to work; a series of similar or related events such as repeated unreasonable demands from a boss; or

chronic, ongoing situations such as continuous pain or feeling of loneliness (D'Zurilla et al., 2004).

A general problem with the definition of problem is that problems are generally associated with negative situations, which is not always correct. There are some more positive terms that can be used to define problem such as goals, aspirations, opportunities, challenges, or visions (Treffinger, Selby, & Isaksen, 2008). For example, D'Zurilla and Goldfried (1971) used "situation" to identify the problem, emphasizing that "situation" does not mean a specific time and place. Instead, they define a situation as a problem situation if there is "*no effective response alternative is immediately available to the individual confronted with the situation*" (D'Zurilla & Goldfried, 1971, p. 108). Accordingly, how to pay for a car, which school the kids should attend, how to design a new marketing campaign to address a target market, how to make peace with the enemies, how to create new procedures for classroom behavior in the first session, how to decide between the two great jobs offered are some examples of problems within this view (Jonassen, 2004; Pannels, 2010).

b. Problem Solving. Problem solving, in general terms, is "any goal-directed sequence of cognitive operation" (Anderson, as cited in Jonassen, 2000, p. 65). A more detailed definition of problem solving is "using basic thinking process to resolve a known or defined difficulty; assemble facts about the difficulty and determine the additional information needed; infer or suggest alternate solutions and test them for appropriateness; potentially reduce to simpler levels of explanation and eliminate discrepancies; provide solution checks for generalizable values" (Presseisen, 1985, p. 36). Emphasizing the real life problems, D'Zurilla et al. (2004) identified *social problem solving* as "self-directed cognitive-behavioral process by which an individual, couple, or group attempts to identify or discover effective solutions for specific problem encountered in everyday living" (p. 12). As can be concluded from the definition SPS refers to conscious, rational, effortful, and purposeful activity that aim changing the problem situation toward the better, decreasing the emotional disturbance that it produces, or both (D'Zurilla et al., 2004). Jonassen (2004) suggested that problem solving requires the problem solver to have (1) the knowledge and cognitive ability to be able to represent the problem and problem space, and (2) to be able to generate and evaluate the solutions in their minds before trying them out.

c. Solution. D'Zurilla and Goldfried (1971) defined the solution as "*a response or pattern of responses which alters the situation so that it is no longer problematic to the individual, and at the same time maximizes other positive consequences and minimizes other negative ones.*" (p. 108-109). D'Zurilla et al. (2004) specified the solution "as a product or outcome of the problem solving process when it is applied to a specific problematic situation" (p. 13). As understood from the definition, an effective solution is the one that provides the problem solver to reach his/her goal (D'Zurilla et al., 2004). The "other positive and negative consequences" in the definition represents the possible effects of the response to the problem situation in short-term, long-term, personal, and social (D'Zurilla & Goldfried, 1971). Within this context, it is important to notice that effectiveness of a solution might be different for different individuals in different contexts due to the norms, values, and goals of the problem solver, or other people in the environment who are parts of the problem solving process by evaluating solutions or coping responses (Nezu, Nezu, & D'Zurilla, 2013).

d. Problem Solving and Solution Implementation. Within SPS theory, problem solving and solution implementation are conceptually different terms and they require the problem solver to use different sets of skills. While problem solving involves developing solutions to the specific problem situation, solution implementation involves implementation of the chosen solution in the real problem situation. Also, the required skills for problem solving are assumed to be general in every situation, whereas those for solution implementation are assumed to be specific to the problem situations based on the problem type and the solution. Since these two concepts require different sets of skills, they are not always correlated, and accordingly, a person good at problem solving might not be good at solution implementation or vice versa (D'Zurilla et al., 2004).

2.1.1.2 Social problem solving model

SPS is a general cognitive-behavioral problem solving approach to solve the problems influencing one's functioning and adjustment in living, and encountered in the natural social environment or, in other words, real life (D'Zurilla & Goldfried, 1971; D'Zurilla et al.,

2004). Accordingly, SPS is assumed to be composed of a general response set, which can be applied in all kinds of problem situations in everyday life (Wang, 2007).

As stated earlier, SPS studies started with D'Zurilla and Goldfried (1971). Based on the comprehensive literature review, they proposed an intervention model in order to enhance the people's functioning and adjustment, and a five-stage model of problem solving: (a) general orientation or (b) problem definition and formulation, (c) generation of alternatives, (d) decision making, and (e) verification (D'Zurilla & Goldfried, 1971). They defined the *general orientation* as a metacognitive process representing the motivational aspect of the SPS model. They believed that the higher positive general orientation yields the problem solver the more likely to attempt to solve the problem in his/her life. Furthermore, they described the general orientation as involving a set of cognitive-emotional schemas representing the problem solver's general awareness, appraisals of problems, and his/her own problem solving ability (Nezu et al., 2013).

The rest of the stages in the model were called as *problem solving skills* which were consisted of a general set of cognitive-behavioral activities that the problem solver follows while developing efficient solutions to the problems in their real life. The problem solving skills included (a) problem definition and formulation, (b) generation of alternatives, (c) decision making, and (d) verification (Nezu et al., 2013).

Based on their research, D'Zurilla and Nezu (1990) proposed the model has two main albeit related processes of social problem solving: problem-orientation -which was called as "general orientation" in D'Zurilla and Goldfried (1971)- and problem solving skills. *Problem orientation* was defined as the motivational aspect involving the problem solver's cognitive, emotional, and behavioral set in relation to the problems that they encounter in their real life and their own problem solving abilities. Similar to D'Zurilla and Goldfried (1971), *problem solving skills* were describes as involving four major skills and activities that is applied during problem solving: (a) problem definition and formulation, (b) the generation of alternative solutions, (c) the decision making, and (d) the solution implementation and verification.

The main revision of the model was done by D'Zurilla, Maydeu-Olivares, and Nezu in 2002. According to contemporary social problem-solving theory, the success in coping with the problems in real life is mainly determined by two general albeit-related dimensions: (a) problem orientation and (b) problem-solving style (D'Zurilla et al., 2004; Nezu et al., 2013). This revised model has been tested and a variety of different populations, cultures, and age groups, and validated through those tests (Nezu et al., 2013). The revised model of SPS is presented in Figure 2.1.

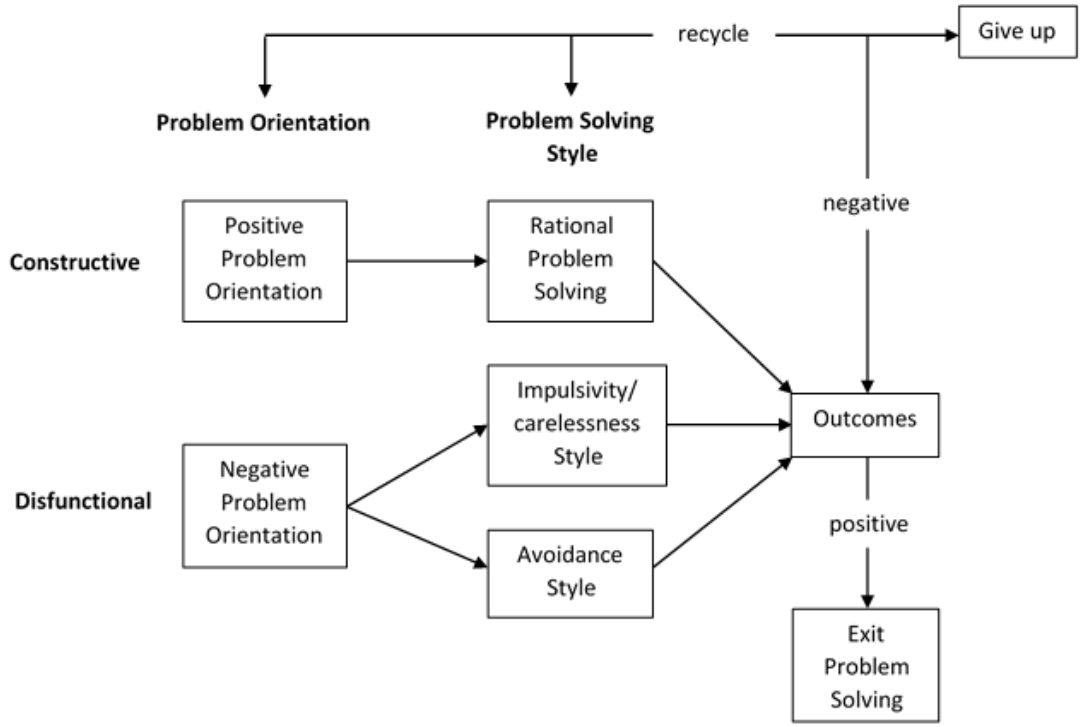

Figure 2.1 Schematic representation of the social problem-solving process based on the five-dimensional model. Reprinted from Social problem solving: Theory and assessment (p. 17) by T. J. D'Zurilla, A. M. Nezu, and A. Maydeu-Olivares, 2004. In Social problem solving: theory, research and training, edited by E. C. Chang, T. J. D'Zurilla, & L. J. Sanna, Washington, DC: American Psychological Association. Reprinted with permission.

2.1.1.2.1 Problem orientation

Problem orientation is defined as a metacognitive process consisted of a set of relatively stable cognitive-emotional schemas that reveal an individual's general beliefs, attitudes, appraisals, and emotions about problems in real life, and also about his/her own problem solving ability to successfully cope with those problems. This dimension was described as

the motivational part of the SPS. (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013). Problem orientation of a problem solver can be positive or negative.

Positive problem orientation. Positive problem orientation refers to the predisposition of problem solvers toward (a) appraising the problems as challenges, (b) thinking optimistically about the problems are solvable or unsolvable, in other words, believing that the problems are solvable, (c) perceiving themselves highly capable of coping with their problems, (d) conceiving that the efficient problem solving requires time and effort, (e) committing himself/herself to solving the problems instead of avoiding them, and (f) viewing negative feelings as a supplementary part of SPS process that might be helpful in solving problems (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013). Positive orientation is believed to be the potential to lead the problem solver to have positive affect and high motivation, and facilitate problem solving efforts (Nezu, 2004).

Negative problem orientation. Negative problem orientation refers to the predisposition of problem solvers toward (a) viewing the encountered problems as threats, (b) thinking pessimistically about problems are solvable or unsolvable, in other words, believing that the problems are unsolvable (c) having doubts about their own capability of solving problems successfully, (d) getting frustrated and upset when encountered with problems or negative emotions (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013). Negative orientation is believed to have the potential to lead the problem solver to have negative affect and low motivation, and inhibit or disrupt following problem-solving attempts (Nezu, 2004).

Problem orientation involves neither the skills and abilities to solve a particular problem nor the particular perceptions and appraisals toward a specific problem situation (D'Zurilla & Nezu, 1990). Instead, problem orientation involves general beliefs, attitudes, appraisals and feelings about the problems and own problem solving abilities (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013). However, it doesn't mean that individuals can be characterized by having either type of problem orientation toward all kinds of problems in their life. They can only be characterized by having either type of problem orientation toward a certain type of problems. For example, it is highly possible to characterize an

individual as having a positive orientation toward achievement related problems such as work, career etc., having a negative problem orientation toward affiliation or interpersonal problems such as dating, parenting etc. (Nezu, 2004).

Since the problem orientation has a strong impact on the individual's motivation and problem solving efforts, the importance of assessing this component have always been emphasized in the social problem solving studies. The studies have shown that if SPS training studies were found as less effective across various populations when there is no specific focus on problem orientation dimension (Nezu, 2004).

2.1.1.2.2 Problem solving styles

The second major components of SPS model, problem-solving style, represents the core cognitive-behavioral activities that engage in while trying to solve problems in life (Nezu, 2004; Nezu et al., 2013). This dimension involves three different styles, one of which is adaptive or constructive, other two are maladaptive or dysfunctional (D'Zurilla et al., 2004; Nezu, 2004): (a) rational problem solving, (b) impulsivity-carelessness style, and (c) avoidance style, (D'Zurilla et al., 2004).

Rational problem solving. Rational problem solving style is the constructive or adaptive approach to cope with problems in life (Nezu, 2004; Nezu et al., 2013). It is defined as the application of the problem solving skills rationally, deliberately, and systematically (D'Zurilla et al, 2004). Nezu (2004) and Nezu et al. (2013) called this style as *planful problem solving* since it refers to "the systematic and planful application of certain skills, each of which makes a distinct contribution toward the discovery of an adaptive solution or coping response in a problem-solving situation" (Nezu, 2004, p. 4).

Rational or planful problem solving style involves four major problem solving skills which were proposed by D'Zurilla and his associates (D'Zurilla & Goldfried, 1971; D'Zurilla and Nezu, 1990): (a) problem definition and formulation, (b) generation of alternative solutions, (c) decision making, and (d) solution implementation and verification.

(a) **Problem definition and formulation:** The goal of *problem definition and formulation* is to clarify the nature of a the problem by considering all the facts and information that are already available or by collecting as much facts and information about the problem as possible which are not immediately available, to delineate the reasons of why the situation is a problem situation, to identify demands and obstacles, to specify a realistic goal or a set of goals and objectives to guide the subsequent problem solving efforts (D'Zurilla et al., 2004; D'Zurilla & Goldfried, 1971; Nezu, 2004; Nezu et al., 2013).

(b) **Generation of alternative solutions:** The aim of the *generation of alternative solutions* is to develop as many possible solutions as possible in order to increase the possibility of finding the most efficient solution for the problem situation based on the predefined goals. (D'Zurilla et al., 2004; D'Zurilla & Goldfried, 1971; Nezu, 2004; Nezu et al., 2013). Also, it is important to describe the possible solutions clearly and concretely (D'Zurilla & Goldfried, 1971).

(c) **Decision making:** The main purpose of *decision making* is to choose the most effective solution among alternatives. The problem solver should choose the best solution by anticipating the possible positive and negative consequences of each alternative solution if implemented, conducting a systematic cost-benefit analysis of each alternative, and develop a solution plan to achieve the predefined goals (D'Zurilla et al., 2004; D'Zurilla & Goldfried, 1971; Nezu, 2004; Nezu et al., 2013).

(d) **Solution implementation and verification:** The goal of *solution implementation and verification* is to carry out the solution plan, carefully monitor and evaluate the consequences and effectiveness of the plan, accordingly, the success of the problem solver's own problem solving efforts, and troubleshoot if the results if not as desired (D'Zurilla et al., 2004; D'Zurilla & Goldfried, 1971; Nezu, 2004; Nezu et al., 2013). In this phase, if the result of the solution is not satisfactory, the problem solver needs to recycle the problem solving process so as to find which part needs correction. For instance, it is possible that the problem solver might have

developed insufficient solution alternatives or carried out the solution plan improperly (Nezu, 2004).

Impulsivity/carelessness style. This style is one of the maladaptive or dysfunctional problem-solving pattern in which the problem solver exhibits active but impulsive, careless, narrow, hurried, and incomplete attempts to solve the problems encountered in life. Generally, a person who is frequently embracing impulsive/careless problem solving style typically takes into consideration insufficient number of solution alternatives, often impulsively goes with the first potential solution that comes to his/her mind, scans different solutions and its positive and negative consequences quickly, carelessly, and unsystematically, and finally, monitors and evaluates solution plan outcomes carelessly and inadequately. (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013).

Avoidance style. Avoidance style is the other maladaptive or dysfunctional problem solving pattern in which the problem solver typically procrastinate, displays passivity, inactivity, and dependency on other people. Generally, a problem solver who frequently embraces the avoidant problem solving style prefers to avoid problems instead of confronting and trying to solving them, procrastinates the problem solving as long as they can, waits for the problems to be resolved on their own, and tries to get rid of solving his/her own problems by attempting to shift it to others (D'Zurilla et al., 2004; Nezu, 2004; Nezu et al., 2013).

The impulsivity/carelessness style and avoidance style are associated with ineffective problem solving, and applying these styles in solving problems have the possibility of worsening the current problem, and maybe even create new problems (Nezu, 2004).

2.1.2 Self Determination Theory

Self Determination Theory (SDT) is an empirically derived, macro-theory of human motivation, personality, social development, health, and psychological well-being within social contexts (Deci & Ryan, 2008a; Deci & Ryan, 2008b, Deci & Ryan, 2012). SDT scrutinizes "such basic issues as personality development, self-regulation, universal psychological needs, life goals and aspirations, energy and vitality, nonconscious processes,

the relations of culture to motivation, and the impact of social environments on motivation, affect, behavior, and wellbeing" (Deci & Ryan, 2008b, p. 182).

SDT posits that human is an innately active, intrinsically motivated, and inherently desired organism to develop himself through challenges in their environment, and by engaging and integrating the new experiences into their sense of self. The human organism naturally has these qualities; thus, s/he does not need to learn them but can improve them in time under the influence of social environment in which they live (Deci & Ryan, 2002; Deci & Ryan, 2012). Namely, the human organism can improve those qualities if they are supported by the social environment or s/he can inhibit them if they are thwarted by the social environment (Deci & Ryan, 2013). Within this context, SDT is presented to identify the social-contextual factors that contribute to human motivation and what extent the human behaviors are volitional or self-determined (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000b; Deci & Ryan, 2008b), and also to differentiate the types of motivation (intrinsic, extrinsic, and amotivation) (Deci & Ryan, 2008b). According the SDT, human behaviors or actions are self-determined if they performed completely volitionally and with an entire sense of choice. The regulatory process of a self-determined action is choice (Deci & Ryan, 1990).

SDT as an inductive, organismic-dialectical, meta-theory (Deci & Ryan, 2002) is comprised of interrelated five mini-theories: cognitive evaluation theory, causality orientations theory, organismic integration theory, basic needs theory, and goal contents theory (Deci & Ryan, 2012; Deci & Ryan, 2013). Each of these theories was developed to explain a different aspect of motivation and personality functioning based on different sets of motivational variables that brought out by the empirical research. On the other hand, these are all organismic-dialectical theories that support the fulfillment of basic psychological needs. Also, all these theories embrace all types of human actions in all domains (Deci & Ryan, 2012; Deci & Ryan, 2013). These theories will be referred in the following sections.

2.1.2.1 Basic psychological needs of self-determination theory

A need, in general terms, is defined as "a discrepancy or gap between 'what is', or the present state of affairs in regard to the group and situation of interest, and 'what should be', or a desired state of affairs" (Witkin & Altschuld, 1995, p. 4). In psychological terms, need has different definitions. As Ryan (1995) cited, need has two different definitions. More commonly, need is considered as any motivating factor including desires, aims, wants, or values. The second definition of need considers it as the factor that is crucially important for any entity to go on existing and develop. For example, a plant as an entity needs water and sunlight to be able to grow, or a person as a biological entity needs food, water, and a place (a shelter in Rochester, NY) to live in. SDT identifies the needs as "*innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being*" (Deci & Ryan, 2000, p. 229). The most important factor for a motivating issue to be need in SDT is that it must be directly related to well-being (Deci & Ryan, 2002).

Basic Psychological Needs Theory (BPNT) was developed under the umbrella of SDT to identify a set of universal basic psychological needs, and the relationships between those universal needs and human motivation, development, mental and physical health, and psychological well-being at between-person and within-person level through ages, genders, and cultures (Deci & Ryan, 2002; Deci & Ryan, 2012; Deci & Ryan, 2013). This theory proposes three universal basic psychological needs, which are need for autonomy, need for competence, and need for relatedness, asserting that these needs were identified based on research indicating the crucial effect of those needs on human motivation, development, psychological well-being, and optimal functioning (Deci & Ryan, 2002; Deci & Ryan, 2012; Deci & Ryan, 2013). SDT proposes that human will be intrinsically motivated, function effectively, and feel wellness to the extent that these needs are met and constantly supported, or the human will experience ill-being and bad functioning to the extent that these needs are thwarted by the social environment (Deci & Ryan, 2013). In other words, the general satisfaction of these basic needs explains the general well-being, and the daily satisfaction of them explains the daily rise or fall of well-being (Deci & Ryan, 2002). Since the satisfaction of these needs is quite essential for people, they are more likely to be

engaged in situations that increase the degree of satisfaction, and avoid from situations that thwart their satisfaction level (Deci & Vansteenkiste, 2004). Deci and Ryan (2000) state that these needs are considerably important to be able to understand the "what" and "why" of human behavior. The three basic psychological needs are identified and explained under the following titles.

2.1.2.1.1 Autonomy

Autonomy best matches with volition which means "the organismic desire to self-organize experience and behavior and to have activity be concordant with one's integrated sense of self" (Deci & Ryan, 2000, p. 231). Its main concern is engaging in the activities in line with their integrated sense of self, freedom to make choices among a number of possible actions, and feeling away from supression (Deci & Ryan, 2000; Guay et al., 2000). However, having autonomy does not mean that being independent of others, or not influenced by external sources; instead, it just means doing the tasks willingly (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004).

2.1.2.1.2 Competence

"Competence refers to feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to exercise and express one's capacity" (Deci & Ryan, 2002, p. 7). It is an innate desire to feel effective in interactions with the environment (Guay et al., 2000; Deci & Vansteenkiste, 2004). Throughout their life, people desire to engage in challenging activities, which are optimum for their abilities and capacities, to accomplish it and feel that they are effective in that when they do (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004). Therefore, competence is not a mastered skill or capability; instead, it is the feeling of confidence and affectance (Deci & Ryan, 2000).

2.1.2.1.3 Relatedness

Relatedness alludes to the innate desire to feel a connection between the one and other people in the social environment. The connection includes loving, caring for, to be loved and cared for (Deci & Ryan, 2000; Deci & Ryan, 2002). Relatedness is considered as a

homonomous characteristic of human being, which reflects the need to be in connection with others, integrate with them and accepted by them. Therefore, relatedness concerns with the psychological need of being with others in a secure community having unity (Deci & Ryan, 2002). In line with this, many activities in life involve the others in the environment and the aim of them is feeling the belongingness (Deci & Vansteenkiste, 2004).

2.1.2.2 The nature of motivation

In SDT, "to be motivated means *to be* moved to do something" (Ryan & Deci, 2000a, p. 54). SDT proposes three types of motivation based on the different reasons or goals that triggers people to act (Ryan & Deci, 2000a): intrinsic motivation, extrinsic motivation, and amotivation.

2.1.2.1.1 Intrinsic motivation

Intrinsic motivation refers to "doing something because it is inherently interesting or enjoyable" (Ryan & Deci, 2000a, p. 55). It is the state of having "inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (Ryan & Deci, 2000b, p. 70). Intrinsically motivated behaviors are carried out for pleasure and satisfaction coming from the performance in the action. When intrinsically motivated, people engage in the activities for challenge, pleasure and/or satisfaction rather than an external force such as pressure, reward or praise (Deci & Ryan, 1985; Ryan & Deci, 2000a). However, these external forces have an effect (positive or negative) on intrinsic motivation and that is the main focus of Cognitive Evaluation Theory (CET). CET was developed within SDT in order to explain the effect of extrinsic variables (feedback and rewards) in the social context on intrinsically motivational behaviors based on two of the basic psychological needs: competence and autonomy (Deci & Ryan, 2002; Deci & Ryan, 2012). The propositions of CET are presented as follow.

- A change in perceived locus of causality, which is related to need for autonomy, causes a change in intrinsic motivation. Any event that causes a change in person toward a more external locus of causality and thwarts the autonomy will

undermine the intrinsic motivation; whilst, any event that causes a change in person toward a more internal locus of causality and prompts autonomy will enhance intrinsic motivation (Deci & Ryan, 2002; Deci & Ryan, 2012). Within this context, tangible rewards -no matter concrete like money, or symbolic like good player awards- were found to undermine intrinsic motivation since they change the locus of causality toward external forces for the rewarded activity (Deci & Ryan, 2002).

- A change in perceived competence, which is related to need for competence, causes a change in intrinsic motivation. Any event such as positive feedback causing an increase in perceived competence will increase intrinsic motivation; whilst any event such as negative feedback causing a decrease in perceived motivation will undermine intrinsic motivation. The important point here is that the positive feedback enhances the intrinsic motivation only if it is given to the one who has a sense of autonomy about the related activity, or it is given in an autonomy supportive context (Deci & Ryan, 2002; Deci & Ryan, 2012).

- Social-environmental factors are related to intrinsic motivation with two aspects: controlling and informational. The controlling aspect pushes the person to think and have an action in a particular way leading to an increase in external locus of causality, diminishing autonomy, undermining intrinsic motivation, and causing controlling the behavior instead of behaving autonomously. The informational aspect gives information about the person's competence in an autonomy supportive context. It increases the intrinsic motivation, and supports the competence and autonomy need when it approves that the person is competent in the related activity in an autonomy supportive context. On the contrary, it decreases the intrinsic motivation when it leads to an increase in perceived incompetence and thwarts the competence need. If the informational aspect is too negative, namely if it confirms that the person is not competent at all to achieve the desired goal, it is tend to decrease both intrinsic and extrinsic motivation, which makes the person amotivated to the related activity. Within this context, CET proposes that while tangible rewards leads to a decrease in intrinsic motivation,

verbal rewards such as positive feedback leads to an increase in intrinsic motivation. With these two aspects of the social-environmental factors, CET explained the difference between the effects of performance based rewards and task based rewards. The informational aspect of performance based rewards is more explicit than that of task based rewards while controlling aspect of both types of rewards is similar. The task based rewards are more deleterious than performance based rewards for intrinsic motivation (Deci & Ryan, 2012).

In summary, CET posits that the social environmental factors can either facilitate or undermine intrinsic motivation by increasing versus thwarting the basic psychological needs of a person, particularly autonomy and competence (Ryan & Deci, 2000b). Intrinsic motivation takes place at one end (referring to the most self-determined acts) of self-determination continuum presented in Figure 2.2.

2.1.2.1.2 Extrinsic motivation

Extrinsic motivation refers to "the performance of an activity in order to attain some separable outcomes" (Ryan & Deci, 2000b, p. 71). In other words, external motivation triggers a person to do something for an external reason such as a prize rather than the pleasure or satisfaction that the activity provides itself (Ryan & Deci, 2000b). Extrinsic motivation varies based on the extent of autonomy (Ryan & Deci, 2000a). Organismic Integration Theory (OIT) was developed to explain levels of extrinsic motivation based on the concept of internalization and the social-environmental factors that foster or prevent internalization (Deci & Ryan, 2000; Deci & Ryan, 2013; Ryan & Deci, 2000a). *Internalization* refers to the shift of regulation from external to internal (Deci et al., 1991). OIT assumes that human is inherently oriented to integrate their experiences into their lives with the innate desire for development (Deci & Ryan, 2002; Deci & Ryan, 2012). With this assumption, OIT proposes that people can internalize the extrinsically regulated behavior which is not interesting (in other words, the behavior that people do not have intrinsic motivation to carry out) if the external driving force is used by significant other or other important people for them. The internalization of external regulations is highly affected by the satisfaction of basic psychological needs (Deci & Ryan, 2002; Deci & Ryan, 2012).

OIT identifies four types of extrinsic motivation: external regulation, introjected regulation, regulation through identification, and integrated regulation (Deci & Ryan, 2002). The last three of the regulation types are internalized external regulations, and comprises the one of the most important aspects of OIT (Deci & Ryan, 2012). External regulation refers to having the lowest level of autonomy and desire (Deci & Ryan, 2002). The externally regulated person is motivated to do the task by an external factor such as tangible reward, or to avoid from any form of punishment (Deci & Ryan, 2000). Introjected regulation is the lowest level of internalization of external regulation. It means that the person has internalized the task only partially not fully (Deci & Ryan, 2002). Regulation through identification refers to the more self-determined form of extrinsic motivation (Deci & Ryan, 2002). A person with this kind of regulation toward a task has a personal identification of the value of the related task (Deci & Ryan, 2012). The last regulation type of extrinsic motivation, integrated regulation, is the most internalized and autonomous among four extrinsic motivation regulations (Deci & Ryan, 2000; Deci & Ryan, 2002). A person with integrated regulation for a task identifies the importance of a task for himself/herself by integrating it with his/her core values, and goals (Deci & Ryan, 2002). Furthermore, OIT proposes that amotivation, the types of extrinsic motivation and intrinsic motivation takes place on a continuum in which from first to last motivation types, the self-determination and intrinsic motivation increases (Deci & Ryan, 2002). Extrinsic motivations appears in the middle of STD continuum between intrinsic motivation and amotivation.

2.1.2.1.3 Amotivation

Amotivation is the state of having no intention to act, and it results from not giving any value to an activity, perceiving themselves as incompetent to do it, not expecting that the action will result in a desired way, lack of environmental support, or perception of lack of contingency between their action and the outcomes (Ryan & Deci, 2000b; Vallerand & Bissonnette, 1992). When a person is amotivated, s/he either does not take any action at all or takes an action but without any intention for it (Ryan & Deci, 2000b) due to the feeling either incompetent or nonautonomous over that action. Amotivated people have neither intrinsic nor extrinsic motivation; they have no motivation at all (Vallerand &

Bissonnette, 1992). Amotivation represents noninternalization of regulation (Ryan, 1995). On the Self-determination continuum, it take place at one end that states no self-determination at all.

Based on three of the sub theories within SDT theory, which are BPNT, CET, and OIT, Ryan and Deci (2007) proposed the following schematic representation of the SDT continuum.

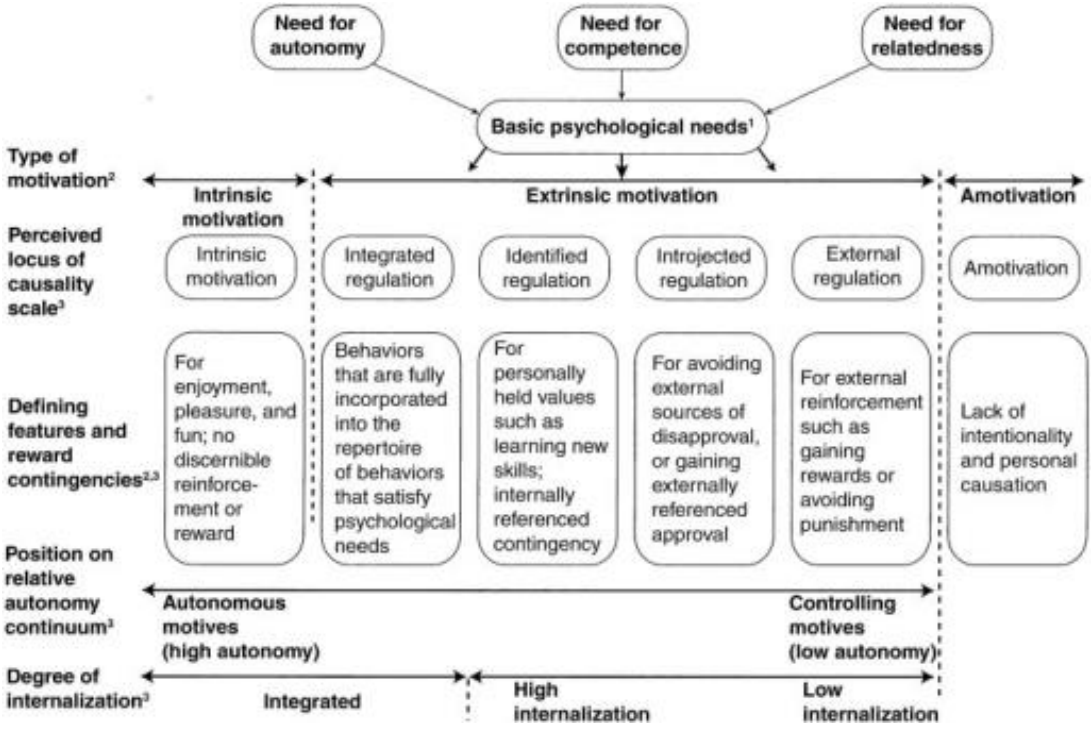

Figure 2.2 Schematic representation of self-determination theory illustrating the features of three of the component subtheories: basic psychological needs theory, cognitive evaluation theory, and organismic integration theory. Reprinted from Active human nature: Self-determination theory and the promotion and maintenance of sport, exercise, and health (p. 8) by R. M. Ryan and E. L. Deci, 2007. In Intrinsic motivation and self-determination in exercise and sport, edited by M. S. Hagger and N. L. D. Chatzisarantis, Champaign, IL: Human Kinetics. Reprinted with permission.

Other than CET, OIT, and BPNT, it is important to explain Causality Orientations Theory (COT), and Goal Content Theory (GCT) which help to explain self-determined behaviors and the three types of motivation from different perspectives.

SDT acknowledges that motivation for an action depends on the social context and the individual differences originating from prior interactions with the social environment. COT was developed to explain the individual differences aspect of SDT. Therefore, the focuses of COT are three causality orientations that are parts of regulations of behaviors: autonomous, controlled, and impersonal orientations. COT posits that each person has these orientations to some degree, and all of them have an effect on the self-determined behavior to some extent (Deci & Ryan 1985; Deci & Ryan, 2002; Deci & Ryan, 2012). The *autonomy orientation* alludes to behaving based on choice, self-endorsement, interest, and self-determination (Deci & Ryan 1985; Deci & Ryan, 2002). Autonomy oriented people are tend to have an internal locus of causality, and their intrinsic motivation is less likely to be undermined by extrinsic rewards. These people are more likely to consider the extrinsic rewards as the conformation of their competence (Deci & Ryan, 1985). The *controlled orientation* points out the controls, external regulators of behaviors. A control oriented person behaves in specific ways not because they have a choice or interest for that but because they think they should. Extrinsic rewards have an important effect on these people (Deci & Ryan, 1985: Deci & Ryan, 2002). The *impersonal orientation* refers to orienting toward being amotivated, behaving unintentionally, and focusing on the affirmations of incompetence (Deci & Ryan, 1985; Deci & Ryan 2002; Deci & Ryan, 2012). Highly impersonal oriented people believe that either they do not have competence to deal with the situations or the situations are too difficult to deal with (Deci & Ryan, 1985).

Initial studies of Goal Content Theory (GCT) were conducted under the BPNT research. However, after it was concluded that this research area is very extensive and complex to have its own theory (Deci & Ryan, 2012), GCT was developed to explain the effect of intrinsic and extrinsic life goals on motivation and well-being (Deci & Ryan, 2013). Intrinsic goals refer to the ones that are in compliance with growth and actualizing pursuits of a person and, therefore, providing satisfaction of basic psychological needs; extrinsic goals, in the contrary, refer to the ones that focus on receiving external rewards or praise from others, which are external indicators of worth rather than internal satisfaction of basic psychological needs (Kasser & Ryan, 1996; Vansteenkiste, Lens, & Ryan, 2006). Kasser and Ryan (1996), based on empirical research, brought out that intrinsic life goals including self-acceptance, affiliation, community, and physical health leaded to well-being and greater

intrinsic motivation while extrinsic life goals including financial power, popularity, and attractive appearance leaded to more ill-being, depression and anxiety. Moreover, extrinsic life goals were found as less vital than intrinsic life goals.

2.1.3 Teacher Autonomy, Self-Efficacy, and Social Support as Basic Psychological Needs

According to SDT, the satisfaction of three basic psychological needs (autonomy, competence, and relatedness) has a significant impact on human motivation, development and functioning (Deci & Ryan, 2002; Deci & Ryan, 2012; Deci & Ryan, 2013). Applying this proposition to education setting, in the current study, it was hypothesized that the satisfaction of these needs have an impact on teachers' in-class problem solving abilities. In this study, teacher autonomy, teacher self-efficacy, and vocational social support were used to measure the three basic psychological needs (autonomy, competence, and relatedness) of SDT. The logic behind choosing these constructs are explained as follow along with the detailed descriptions of teacher autonomy, teacher self-efficacy, and social support.

2.1.3.1 Teacher Autonomy

Teacher autonomy is the freedom given to the teachers to make their own decisions while doing their job, where they choose their own methodologies, select or design their own tasks and/or materials, evaluate outcomes, cooperate with others to solve problems, take responsibilities of their own decisions (Tehrani & Mansor, 2012; Anderson, 1987), involve in organizational decision making (Friedman, 1999; Ingersoll, 1994; Ingersoll, 1996), improve themselves regarding professional skills (Friedman, 1999; Little, 1995). On the other hand, teachers are not given unlimited freedom to do their job. They are semi-professionals who are under the bureaucratic controls on their work related behaviors (Lortie, as cited in Leiter, 1981).

One of the earlier teacher autonomy researchers, Anderson (1987), explained the scope of teacher autonomy as "restricted to their activities in their classrooms. As teachers move

outside their classrooms, their autonomy decreases" (p. 359). DeVries and Kohlberg (1987) focused on the activities or teaching processes of autonomous constructivist teachers. They state that those teachers know what they are doing and why they are doing. They do not accept to practice the curriculum as it is presented to them. Instead, they prefer to think critically about the curriculum in terms of how beneficial the program is for the students, and if there is better way to do it. Pearson and Hall (1993) considered the teacher autonomy from a broader perspective, and focused on teacher autonomy in pedagogy, curriculum, and classroom discipline and environment. Later, Ingersoll (1994, 1996) introduced the teacher autonomy as having control and holding decision making power over core educational activities in schools in two areas: (1) school policy making, (2) planning and teaching in the classroom. Ingersoll (1996) defined the first autonomy area as collective autonomy since the teacher is working with other responsible faculties in making decisions about the school, and second autonomy area as individual autonomy since the teacher is the main person who is responsible in the classroom. Supporting Ingersol's collective autonomy, Friedman (1999) argued that since schools are the teachers' work environment, they should be considered as members, who are contributing to the decision making processes, of the organizations (schools). Based on that, he identified the boundaries of teacher autonomy as both inside and outside of the classroom and school. Contingently, he focused on two aspects of teacher autonomy: (a) pedagogical and (b) organizational. Recently, Öztürk (2011) reviewed the concept of teacher autonomy and derived the broadest definition of teacher autonomy, based on Ingersoll (2007), Webb (2002), Pearson and Hall (1993), and Friedman (1999): "scope of authority and freedom includes that the teachers can make some important decisions related to their job as 'professionals', have a right to say about the organization of their work place, and participating into the educational planning, improvement and management processes" (p. 83).

The concept of teacher autonomy was used to measure the teachers' autonomy needs in their work setting. The first reason to use teacher autonomy was the necessity to specify the varying areas of autonomy for teachers such as classroom activities or curriculum studies, and involve them in the current study. The concept of teacher autonomy covers the differing areas of autonomy for teachers within their professional environment. The

second reason is the similarity between the concepts of need for autonomy and teacher autonomy. The need for autonomy refers to taking actions with the free choices, determining what to do with the sense of self, not feeling any suppression for any action (Deci & Ryan, 2000; Guay et al., 2000). However, it does not mean that being independent of all others around us, or not to be influenced by them (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004). The teacher autonomy refers to the freedom given to the teachers to decide and take work related actions; however, they need to that considering the bureaucratic rules. Both teacher autonomy and need for autonomy measures if individuals decide what to do themselves freely, but there might be some factors that they need to take into consideration while deciding and doing.

2.1.3.2 Teacher Self-Efficacy Beliefs

Self-efficacy arose from Bandura's social cognitive theory and is basically defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). Efficacy judgments are made based not on the skills that one have, instead, on the beliefs one have about what s/he can do with what s/he has under varying circumstances (Bandura, 1997). People's feelings, thoughts, motivations, and behaviors are influenced by their self-efficacy beliefs (Bandura, 1994).

Bandura's theory of self-efficacy posits that human behavior is determined by efficacy expectations and outcome expectations (Bandura, 1977). Efficacy expectation is defined as "conviction that one can successfully execute the behavior required to produce the outcome", and outcome expectation is defined as "a person's estimate that a given behavior will lead to a certain outcome" (Bandura, 1977, p. 193).

Self-efficacy beliefs have four sources: (1) performance accomplishments, (2) vicarious experiences, (3) verbal persuasion, and (4) psychological state (Bandura, 1977). Performance accomplishments refer to the personal mastery experiences and they are the most and significantly influential source among others. Vicarious experiences refer to the influence of observation of others' experiences. Observing other people's high

performance in any kind of situation, particularly difficult situations, may influence a person's belief about his/her own performance in similar situations. Verbal persuasion includes other people's statements, suggestions and support about the one's performance in a specific task. If a person is made to believe that s/he can master the task successfully, s/he is tend to cope with the difficulties easier with a high level of persistence. Psychological state involves emotional situations such as fear, anxiety, and stress and so on. If a person can deal with their own fear, anxiety, and stress, which are the negative influences on one's performance, it more likely that the person have higher belief in himself/herself in carrying out the related task (Bandura, 1977; 1997).

Development of the concept of teacher self-efficacy started has two bases: Rotter's locus of control theory and Bandura's theory of self-efficacy, which is a facet of social cognitive theory (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Almost three decades ego, the concept of teacher self-efficacy was started to be worked on by the RAND researchers (Tschannen-Moran et al., 1998). They defined teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (Guskey, 1987, p. 41). They focused on student outcomes and measured the effect of teachers' behaviors (internal) and students' home environments (external) on student outcomes (Guskey & Passaro, 1994). Similarly, Guskey (1987) defined teacher efficacy as "a teacher's belief or conviction that he or she can influence how well students learn, even those who may be difficult or unmotivated" (p. 41). These two definitions are based on Rotter's theory of locus of control. Locus of control is defined as an individual's generalized beliefs about influential forces determining reinforcements (rewards and punishments) in life. Individuals with an internal locus of control perceive the outcomes as a result of their own behaviors or characteristics whereas individuals with external locus of control perceive the outcomes as a result of external sources such as luck, fate, and chance (Rotter, 1966).

Bandura (1977) made a distinction between the locus of control and self-efficacy by identifying locus of control as an outcome expectancy. After this distinction, some other researchers based their teacher self-efficacy studies on Bandura's theory of self-efficacy. Gibson and Dembo (1984) defined teacher self-efficacy as "teacher's evaluation of their abilities to bring about positive student change" (p. 570). A more recent and widely

accepted definition of teacher self-efficacy was given by Tschannen-Moran et al. (1998) as "teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplishing a specific teaching task in a particular context" (p. 233). Tschannen-Moran and Woolfolk Hoy (2001) identified three areas of self-efficacy for teachers: student engagement, instructional strategies, and classroom management. The latter definition embraces the idea of teacher self-efficacy as a result of "the interaction between teachers' personal evaluations of the teaching task and its context (personal appraisals of the relative importance of the issues that make teaching difficult) and the self-perceptions of own teaching competence (judgments over the personal capabilities such as knowledge, teaching skills and strategies etc.) (Tschannen-Moran et al., 1998).

When reviewed in detail, it is seen that the earlier definitions of teacher self-efficacy focus on the teachers' belief of having the capability to have an impact on student performance (e.g., Gibson & Dembo, 1984; Guskey, 1987). Later, the focus was broadened to include carrying out the specific teaching task appropriately under different circumstances (e.g., Tschannen-Moran, 1998).

The concept of teacher self-efficacy was used to measure the need for competence for teachers. For the study, it was important to explore and take account of the varying areas that teachers are supposed to be competent. Teacher self-efficacy concept which is used in this study provides three areas of competency for teachers: student engagement, instructional strategies, and classroom management. Furthermore, the concepts of need for competence and self-efficacy were considered as coherent with each other. Competence, which is an innate desire for human beings, refers to feel confident and affectant in the interaction with the social environment (Guay et al., 2000; Deci & Vansteenkiste, 2004; Deci & Ryan, 2000). When satisfied, competence is one the needs that foster the intrinsic motivation toward an activity (Deci & Ryan, 2000). Self-efficacy refers to the belief in one's capability to successfully carry out the required behaviors to attain the desired outcomes (Bandura, 1977); particularly teacher self-efficacy refers to the teachers' beliefs in their capability to successfully carry out the required teaching behaviors for effective teaching (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). The level of self-efficacy is a leading factor to success in specific tasks. If one believes that s/he has no

power to carry out a specific task -which is the situation in which s/he has low level of self-efficacy- s/he will not make a trial for getting it done (Bandura, 1997). Correspondingly, the teacher self-efficacy is "a future-oriented motivational construct that reflects teachers' competence beliefs for teaching tasks" (Fives, 2003, p. 2). When examined, the concepts of teacher self-efficacy and competence were considered as similar in the way that they both refer to individual's belief about his/her own capability to carry out required activities for a specific task, and they are both in relation to motivation that triggers the individual to act. Therefore, teacher self-efficacy was conceived as well serving to measure competence of teachers in professional context.

2.1.3.3 Social Support

The literature showed that social support is a widely researched area of study, and there is not a unique definition of social support. Whereas some researchers focused on the support from close people to the individual (e.g., Procidano & Heller, 1983), some researchers give a place to other people and the larger community (e.g., Cobb, 1976; Zimet et al., 1988), and also different researchers focused on different types of social support such as emotional, instrumental, tangible, or appraisal etc. For example; Cobb (1976) defined the concept of social support as the information that belongs to at least one of the three classes: "1. Information leading the subject to believe that he is cared for and loved; 2. Information leading the subject to believe that he is esteemed and valued, 3. Information leading the subject to believe that he belongs to a network of communication and mutual obligation" (p. 300). Based on this definition, Cobb (1976) identified three types of social support: (1) emotional support, (2) esteem support, and (3) network support.

Pinneau's (as cited in Sarros, 1989) definition of social support focused on three different types: (1) tangible support, which means "assistance through an intervention in the person's objective environment or circumstances, for example: providing a loan of money or other resources" (Sarros, 1989, p. 70); (2) appraisal or informational support which refers to "a psychological form of help which contributes to the individual's body of knowledge or cognitive system, for example informing the person about a new job opportunity" (Sarros, 1989, p. 70); and (3) emotional support which is defined as "the

communication of information which directly meets basic social-emotional needs, for example: a statement of esteem for the person, attentive listening to the person" (Sarros, 1989, p. 70).

House (as cited in Sarros 1989) defined the social support as "an interpersonal transaction involving one or more of the following: (1) emotional concern (liking, love, empathy), (2) instrumental aid (goods or services), (3) information (about the environment), or (4) appraisal (information relevant to self-evaluation)" (Sarros, 1989, p. 76). Among all types of social support, emotional support is emphasized as the most important one, and it refers to the actions providing love, concern, empathy, sympathy, and trust (Sarros, 1989; Wei & Wang, 2009). Instrumental support, which can also be called as tangible aid (House, 1987), refers to the behaviors that provide help to the people when they are in need such as offering help for work, help to pay the bills and so on (Sarros, 1989; Wei & Wang, 2009). Information support refers to providing someone with advice or information that s/he can employ in order to deal with his/her personal or impersonal problems (Sarros, 1989; Wei & Wang, 2009). Appraisal support is provided by flow of information, and it is used to self-evaluation (Sarros, 1989; Wei & Wang, 2009).

Sarason et al. (1983) defined social support as "the existence or availability of people on whom we can rely, people who let us know that they care about, value and love us" (p. 127). Kaplan, Cassel and Gore (1977) emphasized that social support is explained by perception of existence or absence of resources for receiving social support from others who are important to the person when s/he needs. Based on the social support literature, a more recent and comprehensive definition of social support was provided by Thoits (2010): "Social support refers to emotional, informational, or practical assistance from significant others, such as family members, friends, or coworkers; support actually may be received from others or simply perceived to be available when needed. All three of these resources augment individuals' abilities to cope with stressful demands." (p. 46).

As can be seen from the definitions, there are different but related types of social support and there are resources whom an individual receives social support. Types and resources of social support are two measures of social support. Cohen and Wills (1985) named two

different measures of social support as structural support and functional support. Structural support refers to the existence of resources whom an individual may receive support from whereas functional support refers to the extent to received support provides particular functions in a specific situation; in other words, function of received social support in the support receiver's situation.

The concept of social support, particularly vocational social support, was used to measure need for relatedness for teachers. While measuring the satisfaction of teachers' job related need for relatedness, it was important to take into consideration all possible parts that teachers interact with about their profession such as colleagues, parents, and principals. Vocational social support provided the researcher with the opportunity to include different parties that might be related to teachers' need for relatedness. Moreover, the concept social support was considered as congruent with the concept of need for relatedness. Relatedness refers for an individual to being connected -which involves loving, to be loved, caring for and to be cared for- with others in his/her social environment (Deci & Ryan, 2000; Deci & Ryan, 2002). Social support for an individual refers to having someone who cares for, values, and loves him/her, and who is relied on and who can give emotional, informational, or practical assistance when the individual needs (Sarason, Levine, Basham, & Sarason 1983; Thoits, 2010). Sarros (1989) asserts that receiving social support provides one's needs for belonging, safety, and recognition to be met; and the individuals whose social support needs are met can deal with the difficult situations easier (Bowlby, 1982). When applied to teachers, it is thought that receiving support for their job related needs, the teachers overcome the difficulties more effectively. Although the conceptions of social support and need for relatedness are not exactly the same, they were considered as similar in the way that they both measure the satisfaction of individuals' need for connectedness with others, especially vocational social support for teachers measures their need for connectedness with all other parties that might be related to their profession. Therefore, the construct of vocational social support was used as a proxy for need for relatedness.

2.2 Research Studies on Problem Solving and Independent Variables

In this study, autonomy, competence, and relatedness were measured by perceived teacher autonomy, teacher self-efficacy, and vocational social support. Therefore, the aim of this section is to review and present research studies on problem solving and teacher autonomy, teacher self-efficacy, and vocational social support. However, since it is not always possible to find research studies focusing exactly on these concepts with the target group of the current study, the scope of the review was broadened and the related studies are presented in the following sections.

2.2.1 Research Studies on Teacher Autonomy and Problem Solving

The purpose of this section is to present the research studies conducted on problem solving and teacher autonomy. However, to the knowledge of researcher, there is no published study investigating the relationship between teacher autonomy and problem solving. However, there are limited number of studies examining the link between autonomy and problem solving. This situation was considered as stemming from the fact that teacher autonomy is a comparatively new research area for researchers. Therefore, other than the found studies seeking a relationship between autonomy and problem solving, the research studies which examine the relationships between a common variable (e.g., burnout, stress) and teacher autonomy and problem solving are presented in combination in order to provide a base of a possible association between teacher autonomy and problem solving.

To the knowledge of the researcher, the only study bringing about a relationship between general autonomy perception and problem solving was conducted by Chang, D'Zurilla, and Sanna (2009). The aims of their study were to twofold: (1) to examine the relationship between social problem solving, stress, and psychological well-being, and (2) to examine the role of social problem solving on the relationship between stress and psychological well-being among middle-aged adults. Social problem solving had five components: positive problem orientation (PPO), rational problem solving (RPS), negative problem orientation (NPO), avoidance style (AS), and impulsivity/carelessness style (ICS); and

psychological well-being had six dimensions: self-acceptance (SA), positive relations with others (PRO), autonomy, environmental mastery (EM), purpose in life (PL), and psychological growth (PG). The participants of their study were 214 parents of university students studying in a mid-western university. Correlational analyses indicated that the variables, other than the pairs of ICS-stress, ICS-PPO, AS-stress, and autonomy-RPS, significantly correlated with each other. Furthermore, the path analysis results revealed that social problem solving partially mediated the relation between stress and psychological well-being. This study is important for the current study in two ways: (1) it investigated and revealed a relationship between autonomy and social problem solving, and (2) it provided a relationship between social problem solving and stress, since stress is considered as a potential common variable between autonomy and problem solving. Another study examining the link between stress and problem solving was carried out by Bell and D'Zurilla (2009). In their study, Bell and D'Zurilla (2009) investigated the role of social problem solving (PPO, NPO, RPS, ICS, and AS) on the relationship between daily stressful events and adjustment (internalizing symptoms and externalizing symptoms), they collected data from 259 college students. As a result of the correlational analyses, for women, the total score of social problem solving and four dimensions of it (PPO, NPO, ICS, and AS) significantly and negatively correlated with stress and two dimensions of adjustment. However, the total score of social problem solving did not correlated with other variables among men. For men, the only dimension of social problem solving that correlated with daily stress was NPO. Furthermore, NPO, ICS, and AS were found to be mediators of the link between daily stress and two dimensions of adjustment, and PPO was found to be mediator of the relationship between daily stress and internal symptoms among women. Among men, only NPO was found to be a mediator for internalizing symptoms and a moderator for externalizing symptoms.

When searched for the studies investigating relationship between stress and autonomy, it was seen that Pearson and Moomaw (2005) uncovered this relationship. They investigated the relationship between teacher autonomy (curriculum autonomy and general teaching autonomy) and on-the-job stress, work satisfaction, empowerment and professionalism. They hypothesized that autonomous teacher would report less job-related stress, higher work satisfaction, higher empowerment, and higher professionalism. They gathered data

from 171 teachers working in elementary, middle, and high schools in Florida. The results of the correlational analysis indicated that all of the variables significantly correlated with each other. The analyses confirmed their hypothesis and the teachers with higher autonomy reported less on-the-job stress.

The extensive literature review pointed the researcher that another common variable between autonomy and problem solving might be burnout. Javadi (2014) investigated the relationship between teacher burnout and teacher autonomy. The researcher collected data from 143 English as foreign language teachers working in private language teaching institutes. The correlation analysis indicated that teacher burnout and teacher autonomy is significantly and negatively correlated to each other. This finding was interpreted as having higher sense of autonomy means lower levels of burnout. Furthermore, the regression analysis resulted in significant prediction of teacher autonomy by the components of teacher burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment). This finding was interpreted as the teachers who enjoy teaching the most and feel highest level of satisfaction with their teaching strive most for their teaching; therefore, they feel less burnout in their job. Another study investigating the relationship between teacher autonomy and burnout was conducted by Gavrilyuk, Loginova, and Buzovkina (2013). This study was conducted with 91 faculty members working in Krasnoyarsk State Medical University in Russia. The results of the study indicated a significant relationship between professional autonomy and burnout syndrome. This relationship was considered as the low level of teacher autonomy correlates with the development of burnout syndrome among university teachers.

As for the association between burnout and problem solving, the following research studies were considered although conducted with different groups of participants in different contexts. Tavlı (2009) investigated the relationship between teacher burnout and problem solving skills of high school teacher. In order to examine this association, he collected data from 258 high school teachers in İstanbul. The correlational analysis among problem solving and three components of burnout (emotional exhaustion, depersonalization, and personal accomplishment) indicated a significant correlation between problem solving and personal accomplishment. This finding was interpreted as

increasing problem solving skills for high school teachers decreases the burnout at personal accomplishment aspect. Another study was conducted with school administrators (principals and vice principals) by Akın Köstereliođlu (2007). She collected data from 138 school principals and vice principals in Bolu in order to examine the relationships between problem solving (impulsive style, reflective style, problem solving confidence, avoidant style, monitoring, planfulness) and burnout (emotional exhaustion, depersonalization, and personal accomplishment). The results of the Pearson Moments correlation analysis revealed significant association between the monitoring and emotional exhaustion subcomponents of problem solving and burnout respectively. Another study examining the relationship between problem solving and burnout was conducted by Yıldız (2009). This study investigated the relationships between burnout (emotional exhaustion, depersonalization, and personal accomplishment) and problem solving skills of 327 nurses working in the city of Manisa. The results of correlational analysis indicated significant relationships between problem solving and all components of burnout, which means the nurses who have higher levels of problem solving skills have lover levels of burnout.

2.2.2 Research Studies on Self-efficacy and Problem Solving

This section presents the research studies conducted on problem solving and self-efficacy. In order to provide a general perspective on the relationship between problem solving and self-efficacy, the studies conducted with differing groups such as pre-service teachers and in-service teachers, and the studies focusing on related concepts with self-efficacy and problem solving were selected and presented here.

To start with, Otacıoğlu (2008) investigated the relationship between the problem solving skills and self-confidence levels of pre-service teachers. She collected data from 162 teacher education students who were studying in music education, and psychological counseling and guidance. According to the results of the study, the problem solving ability and self-confidence levels of the participants found as significantly changing due to gender, department, communication, and belief in becoming a good teacher. Also, a negative relationship was found between problem solving and self-confidence because of the different scoring of the scales used in the study -higher scores in problem solving

instrument means lower problem solving skills, and higher scores in self-confidence instrument means higher self-confidence-. Therefore, it can be stated as they found a positive relationship between the two variables; however, they found out that none of the variables is predictor or cause of other variable.

Yenice (2012) investigated the relationship between self-efficacy beliefs and problem solving skills of pre-service teachers, and how these two variables change by gender, department, graduated high school, and seniority. She collected data from 429 teacher education students studying in science education, social science education, and classroom teaching. The results of the study revealed that self-efficacy beliefs of the teacher education students did not change by the gender, department, graduated high school, and seniority whereas their total score of problem solving significantly changed by seniority but did not change by gender, graduated high school, and major. More importantly, it was found out that the self-efficacy beliefs and problem solving skills of pre-service teachers significantly correlated with each other.

Altunçekiç et al. (2005) examined the effect of major, seniority, graduated high school, and gender on their self-efficacy beliefs in science teaching and problem solving skills of pre-service teachers studying at science education, mathematics education, and classroom teaching. The results of the study indicated that the pre-service teachers' self-efficacy beliefs significantly influenced by major and seniority but not by gender graduated high school. Their problem solving skills significantly changed by gender but not by seniority, graduated high school or major. Furthermore, self-efficacy beliefs in science teaching and problem solving skills were positively correlated with each other. They concluded that increase in self-efficacy beliefs leads to increase in problem solving skills.

Erözkan (2013) investigated the relationships among communication skills, interpersonal problem solving skills, and social self-efficacy perception of adolescents, and the role of communication skills and interpersonal problem solving skills in predicting social self-efficacy. He collected data from 494 (226 female, 268 male) high school students. The results of the study indicated that the communication skills and interpersonal problem

solving skills significantly correlated to social self-efficacy. Also, they were found as significant predictors of social self-efficacy for high school students.

Aştı, Şendir, Acaroğlu, Öztürk, Büyükyılmaz (2009) investigated the relationship between the problem solving skills and self-efficacy beliefs of first year Nursery students. They collected data from 137 first year students enrolled in a Nursing school. They found a statistically significant correlation between self-efficacy beliefs and problem solving.

Aylar and Aksin (2011) examined whether the social studies pre-service teachers' problem solving skills and self-efficacy beliefs toward teaching social studies differ by seniority, type of graduated high school, and gender. They collected data from 170 undergraduate students studying in social studies teaching, and analyzed the data through analysis of variance, t-test, and correlational analyses. The results of the study indicated that the pre-service teachers' self-efficacy beliefs and problem solving skills did not change by seniority, type of graduated high school, and gender. Furthermore, the results showed that self-efficacy beliefs and problem solving skills significantly correlated.

Akama (2006) investigated the relationships between self-efficacy, goal setting, metacognitive experiences (feeling of difficulty, estimate of correctness, control-related estimates), and performance in math problem solving task. The data was collected from 260 (129 male, 131 female) undergraduate students. The results of the study revealed the problem solving performance was influenced by the goal setting and self-efficacy. Self-efficacy had a direct and indirect effect on problem solving performance through metacognitive experiences and goal setting. Also, metacognitive experiences mediated the effect of self-efficacy on goal setting.

Based on the social cognitive theory, Aurah (2013) investigated the influence of self-efficacy beliefs and metacognitive prompting on problem solving abilities in genetics. She conducted a mixed method study, and collected data from 2138 high school students in Kenya. Results of the study indicated that there was a significant and positive effect of metacognitive prompts on the problem-solving ability of high school students independent of gender, and self-efficacy and metacognitive prompting significantly predicted the

problem solving ability in genetics. Self-efficacy beliefs found to be the moderator of the relationship between metacognitive prompting and problem solving ability in genetics. Also, the researcher found out gender differences in problem solving abilities; girls outperformed boys on the genetics problem-solving test.

Al-Darmaki (2005) investigated the relationships among counseling self-efficacy and problem solving, and state-trait anxiety. She collected data from 113 undergrad students enrolled in Psychology department at United Arab Emirates University. The results of the study showed that counseling self-efficacy, problem solving and state and trait anxiety moderately correlated with each other.

2.2.3 Research Studies on Social Support and Problem Solving

This section presents the research studies that indicate a relationship between social support and problem solving. Although the focus of the current study is perceived vocational social support and in-class problem solving of classroom teachers, this section presents the studies conducted on different kinds of social support and problem solving in varying groups of people such as high school students, college student, and so on.

Varying studies on social support and problem solving indicates a significant relationship between them. For instance, Arslan (2009) investigated the relationship between perceived social support and social problem solving skills, and the effect of gender, mothers' and fathers' education level on social problem solving skills of the high school students. The data were collected from 521 (292 of which were female and 229 of which were male) high school students in Ankara. The results of the study showed that the gender and mothers' and fathers' education level had significant effect on high school students' social problem solving skills. Female students were found as better problem solvers than male students both in total social problem solving and in some dimensions of it. Students whose mothers have higher education level were found as better problems solvers than those whose mothers have lower education level. However, the students whose fathers have higher education level were found as better problem solvers than those whose fathers have lower education level. Furthermore, according to the results, positive correlations were found

between the perceived social support from parents, friends, and teachers, and the students' positive problem orientation, rational problem solving, and the total social problem solving scores. Also, negative correlations were found between the perceived social support from parents, friends, and teachers, and the students' negative problem orientation, avoidance style, and impulsivity/carelessness style.

Similarly, Ünüvar (2003) examined the impact of perceived social support on self-esteem and problem solving skills of high school students who were at the age of 15 to 18. She conducted the study with 710 (401 male, 309 female) high schools students. The results of the study revealed that all the subscales' scores of Problem Solving Inventory (impulsive style, reflective style, problem solving confidence, avoidant style, monitoring, planfulness) significantly differed by gender, mother' working condition, mother's education level, the area of study, school, perceived social support from parents and friends, and self-esteem. It was found that the ones with higher perceived social support from family and friends had higher problem solving skills. Also, the students who have higher self-esteem were found to have higher problem solving abilities.

Okanlı, Tortumluoğlu and Kırpınar (2003) examined the relationship between pregnant women's problem solving skills and perceived social support from their families. The results of the analysis indicated a significant correlation between social support from family and problem solving skills for pregnant women.

Sivrikaya, Kaya, and Özmutlu (2013) investigated the relationship between social support (from family and friends) and problem solving skills of Physical Education and Sports School students. They collected data from 190 undergraduate students (freshman, sophomore, junior, and senior) studying in those two departments. The results of the correlation analysis, the social support from both family and friends significantly and negatively correlated with problem solving. However, since higher scores in Problem solving Inventory means lower problem solving ability, actual relationship between social support and problem solving was considered as positive.

Heppner, Walther, and Good (1995) investigated whether instrumentality, expressivity, social support, and size of the social network predict problem solving appraisal (problem solving confidence, approach avoidance, and personal control) of college students. Instrumentality was found as related to personal control component of problem solving. They collected data from 215 (137 female, 78 male) freshmen and sophomores enrolled in Psychology courses at a university. As a results of simultaneous regression analyses, expressivity was found as contributing to problem solving appraisal overall. Instrumentality was found as related to all three aspects of Problem Solving Inventory (problem solving confidence, approach avoidant style, and personal control). Satisfaction with social support was seen as related to different dimensions of problem solving for men and women. For women, satisfaction with social support was weakly associated with woman's total problem solving appraisal and the aspects of approaching problems and personal control. For men, the satisfaction with social support was associated more with problem solving confidence. However, the size of social network was not seen as related to any component of problem solving appraisal.

Kimbler, Margrett and Johnson (2012) investigated the role of experimentally provided supportive messages (practical, emotional, and standard/control) in everyday problem solving task and distracting thoughts of middle-aged and older adults. They conducted the study with 102 (54 of which were middle-aged, 48 of which were older) participants. The results of the analysis indicated emotional support leaded to an increase in everyday problem solving performance and a decrease in the level of distracting thoughts. Also, middle-aged adults performed better in everyday problem solving task and reported less task-related distracting thoughts than older adults. Furthermore, it was found that distracting thoughts mediated both the relationship between receiving emotionally supportive messages and everyday problem solving performance; and the relationship between age and everyday problem solving performance. That means emotionally supportive messages might increase the everyday problem solving performance by decreasing the task-related distracting thoughts.

Lakey and Heller (1988) examined that effect of social support on social problem solving and perceived stress. They worked with 44 volunteer undergraduate students from a

university. In the study, the participants were asked to solve problems in 10 minutes; 27 of them solved those problems in accompany of a friend while 17 of them did that alone. After the problem solving task the participants filled the problem solving and perceived stress instruments alone. The results of the study revealed that there was no significant different between the problem solving of participant who had a companion and those who were alone. However, the ones with a companion reported significantly less stress than those who were alone. Also, for the participants with a companion, it was found that receiving advice-free support significantly predicted the problem solving effectiveness, while advice support did not.

Kruger (2001) examined the relationship between social support (guidance, reliable alliance, and reassurance of worth) and self-efficacy (self-efficacy in overall problem-solving skills and self-efficacy in planning and evaluating interventions for students with behavior problems) in problem solving among 125 teacher assistance team members (TAT) and 129 staff (TAT consumers) receiving their services. The results of the study indicated a significant relationship between the social support and self-efficacy in problem solving. Particularly, reassurance of worth significantly related to overall problem solving skills and planning and evaluating interventions for student with behavior problems.

2.3 Summary of the Literature Review

In summary, social problem solving identifies the problem any situation that an individual has a purpose but doesn't know how to accomplish, and covers all kinds of problems that an individual encounters in his/her daily life. SPS proposed a problem solving model comprising of two main components: problem orientation and problem solving styles. Problem orientation is considered as the motivational aspect of problem solving process, and consists of two different orientation types: positive problem orientation and negative problem solving styles refers to the problem solver's actions to solve the problem, and consists of three different approaches: rational problem solving, avoidance style, and impulsive/careless style. Among these problem orientations and problem solving styles, positive problem orientation and rational problem solving constitute functional problem

solving whereas negative problem solving, avoidance style, and impulsive/careless style constitute dysfunctional problem solving (D'Zurilla et al., 2004).

Self-determination theory (SDT) is a very contemporary empirically developed theory of motivation claiming that human motivation, functioning, and well-being depend on the satisfaction level of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2013). This means, as people have more volition, feel competent, and feel belongingness, they function better. Since the satisfaction of these needs is essential for any individual, people are inherently tend to be engaged in situations that increase the degree of satisfaction, and avoid from situations that thwart their satisfaction level (Deci & Vansteenkiste, 2004). The current study uses teacher autonomy, teacher self-efficacy and vocational social support in lieu of autonomy, competence, and relatedness of SDT.

In the literature, there are a number of studies investigating teachers' problem solving abilities. However, to the knowledge of the researcher there is no study focusing on the teachers' performance in solving the problem that they encounter in their classrooms. Also, while there are some studies investigating the relationship between problem solving and self-efficacy (e.g., Aştı et al., 2009; Yenice, 2012), the relationship between problem solving and social support (e.g., Kruger, 2001; Okanlı, 2003), there is limited number of studies investigating the relationship between autonomy and problem solving.

CHAPTER III

METHOD

The previous chapters presented the problem, purpose, significance of the present study and the review of the related literature. This chapter provides detailed information on the overall research design, research questions, description of the variables, participants, data collection instruments, data collection procedure, analysis of the data, and limitations of the study.

3.1 Overall Research Design

The present study used a survey research design. A survey is used in order to collect self-report and primarily quantitative data from populations or a sample of population about the selected variables' prevalence, distribution, and interrelations, also, people's knowledge, opinions, attitudes, and values within those groups of people (Polit & Hungler, 1995). In the present study, the relationships among autonomy, sense of self-efficacy, perceived vocational social support, and in-class problem solving abilities of classroom teachers were investigated based on Self Determination Theory (SDT). The study embraces quantitative research method which relies on self-report data collected from the classroom teachers at one point in time.

Initially in this study, a comprehensive review of literature was conducted and the research question was constructed. Based on the research question the conceptual structure of the hypothesized model was developed. After that, In-Class Problem Solving Inventory (ICPSI), Teacher Autonomy Scale for Turkish Teachers (TAST), Vocational Social Support Scale: Teacher (VSSST) were developed and tested. Also, short form of Turkish version of the

Teacher Sense of Efficacy Scale (TTSES) developed by Tschannen-Moran and Woolfolk Hoy (2001), adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005), and tested by Çapa-Aydın, Sungur, and Uzuntiryaki (2009) was decided to be used in the study. The target population of the study was the classroom teachers working in the state elementary schools in Adana, Turkey; the sample of the study consisted of 743 classroom teachers working in state elementary schools in Adana. The data were exposed to Structural Equation Modelling (SEM) analysis in order to test the hypothesized model and answer the research question. The visual summary of overall research design of the current study is presented in Figure 3.1.

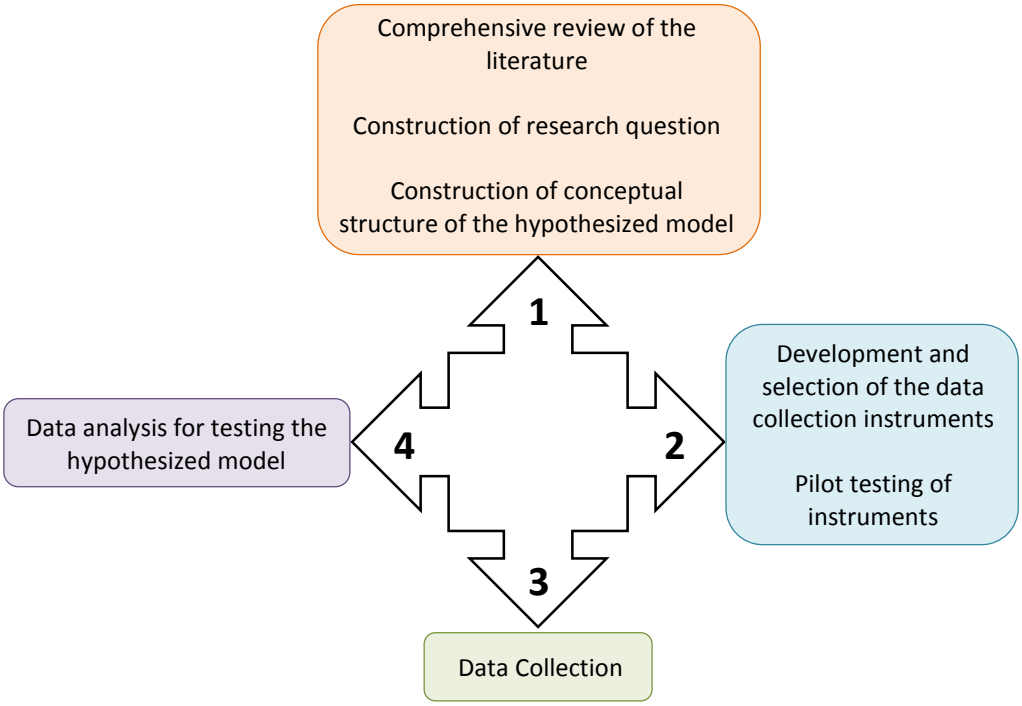

Figure 3.1 Visual summary of overall research design of the current study

3.2 Research Question

The main research question that was addressed through the current investigation:

How well do perceived teacher autonomy, teacher sense of self-efficacy, and vocational social support predict perceived in-class social problem solving abilities of classroom teachers?

3.3 Description of Variables

In-class social problem solving ability (ICSPSA) is the endogenous (dependent/outcome) variable of the study since it is proposed to be predicted by three other variables in the study, which are teacher autonomy, teacher self-efficacy, and vocational social support. ICPSA was measured by In-Class Problem Solving Inventory (ICPSI) which is a 13-item 5-point (ranging from 1=never to 5=always) Likert type scale and which was developed throughout the study by the researcher. It is an observed (manifest) variable since it is proposed to be measured by calculating the mean score of the 13 items in the scale.

Vocational social support (VSS) is an exogenous (independent) variable since it is one of variables that is expected to have a contribution in the prediction of the dependent variable. It is measured by Vocational Social Support Scale: Teacher (VSSST) which is developed by the researcher throughout the current study. VSSST is 43-item 5-point (ranging from 1=never to 5=always) Likert type scale consisting of five subscales: administration support, colleague support, school counselor support, parent support, and family support. Since VSS is inferred from these five subscales it is a latent variable.

Teacher autonomy (TA) is an exogenous (independent) variable since it is proposed to be a predictor of dependent variable. It is measured by Teacher Autonomy Scale for Turkish Teachers (TAST) which is an 18-item 5-point (ranging from 1=not at all to 5=extremely) Likert type scale, which was developed throughout the current study by the researcher. The scale is composed of three subscales: (1) autonomy in making decisions over the framework of curriculum that they practice, (2) autonomy in instructional planning and implementation, and (3) autonomy in professional development. Since TA is inferred by these three subscales, it is a latent variable.

Teacher's self-efficacy (TSE) is an exogenous (independent) variable since it is hypothesized to predict the dependent variable of the study. It was measured by the short form of Turkish Version of the Teachers' Sense of Efficacy Scale (TTSES) which was developed by Tschannen-Moran and Woolfolk Hoy (2001) and adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005) and tested by Çapa-Aydın, Sungur, and Uzuntiryaki (2009). It is a 12-

item 9-point (1=nothing, 3=very little, 5=some influence, 7=quite a bit, 9=a great deal) Likert type scale which comprised of three subscales: (1) efficacy for instructional strategies, (2) efficacy for classroom management, and (3) efficacy for student engagement. TSES is a latent variable because it is proposed to be inferred by these three subscales.

3.4 Participants of the Study

The target population of the study was defined as all classroom teachers working in state elementary schools in Adana, Turkey. Adana is the 5th biggest city of the country in terms of city population (TÜİK, 2012). Also, Doygun (2005) states that Adana is an important city with being a socio-cultural transition point between less developed regions in east and more developed regions in west of the country.

Stratified cluster random sampling method (Fraenkel, Wallen, & Hyun, 2012) was employed to identify the schools that would be visited for data collection, and 60 state elementary schools were randomly selected from three main districts of Adana (Çukurova, Seyhan, and Yüreğir). The number of selected schools were kept high taking into account that the schools without a school counselor would be excluded from the sample since Vocational Social Support Scale: Teachers (VSSST) required the researcher to collect data from the schools in which there is at least one school counselor. After selection of the schools, 15 of them were excluded from the sample due to absence of a school counselor. Of the 45 schools in which at least one school counselor was working, 34 of them were visited for data collection, and 743 classroom teachers working in these schools participated in the study. However, 15 of them had to be excluded due to chunks of missing data. Ultimately, the sample of the study consisted of 728 cases. Kline (2011) states that the sample for the studies testing a structural equation model should be at least 200. Based on this criterion, the sample size of the current study was considered as sufficient. Since the number of participants was considered as satisfactory for the study, the data collection was stopped after visiting 34 schools.

Among the 728 classroom teachers, 61.3% (*n*=446) were female and 37.1% (*n*=270) were male. In terms of age classification, 40.5% (*n*=295) of the teachers were in the age range of 35-44, 36% (*n*=262) were in the age range of 45-54, 16.3% were (*n*=119) in the age range of 23-34, and 5.4% (*n*=39) were in the age range of 55 and higher. Regarding the years spent in teaching, 37.5% (*n*=273) -which is the highest percentage- of the teachers had 20 years or higher, 35.7% (*n*=260) had 15 to 19 years, 14% (*n*=102) had 10 to 14 years, 8.9% (*n*=65) had 5 to 9 years, and 2.5% (*n*=18) had 1 to 4 years of teaching experience. While majority of the teachers (*n*=576, 79.1%) were holding a bachelor's degree, 12.9% (*n*=94) of them were holding an associate degree, and 5.9% (*n*=43) of them were holding a master's degree. Finally, 29.5% (*n*=215) of the teachers were teaching in third grade, while 25.3% (*n*=184) of them were teaching at second grade, 21.7% (*n*=158) of them were teaching at first grade, and 21.6% (*n*=157) of them were teaching at fourth grade. The frequency distribution of the teachers regarding gender, age range, teaching experience, and teaching grade is presented in Table 3.1.

Table 3.1

Frequency Distribution of the Participants Regarding Gender, Age Range, Teaching Experience, Education Level, and Teaching Grade

Variables	*f*	%
Gender		
Female	446	61.3
Male	270	37.1
Missing	12	1.6
Age Range		
23-34	119	16.3
35-44	295	40.5
45-54	262	36.0
55 or higher	39	5.4
Missing	13	1.8
Teaching Experience		
1-4 years	18	2.5
5-9 years	65	8.9

Table 3.1 (cont'd)

Variables	*f*	%
10-14 years	102	14.0
15-19 years	260	35.7
20 years or higher	273	37.5
Missing	10	1.4
Education Level		
Associate degree	94	12.9
Bachelor's degree	576	79.1
Master's Degree	43	5.9
Missing	15	2.1
Teaching grade		
1st grade	158	21.7
2nd grade	184	25.3
3rd grade	215	29.5
4th grade	157	21.6
Missing	14	1.9

3.5 Data Collection Instruments

In this study, In-Class Social Problem Solving Inventory (ICSPSI), Teacher Autonomy Scale for Turkish teachers (TAST), Vocational Social Support Scale: Teacher (VSSST), short form of Turkish Version of Teachers' Sense of Efficacy Scale (TTSES) were used in order to gather data on in-class problem solving ability, teacher autonomy, perceived vocational social support, and teacher self-efficacy respectively. ICPSI, VSSST and TAS were developed by the researcher.

During the development of the instruments some steps were taken. First of all, comprehensive literature review was conducted for each instrument in order to clarify the conceptual background and find out the instruments in literature that were developed to measure the related concept. Then, taking into account the literature review and teachers' environments in Turkish education system the constructs were identified and items were

generated. Right after that, expert opinion was taken, and revisions were done based on the feedback from experts. After the revisions pilot study was conducted.

3.5.1 Piloting of Instruments

In the pilot study, for the instruments that were developed by the researcher, the factor structures of instruments were identified and then, confirmatory factor analyses were conducted for the confirmation of these factor structures, and reliability coefficients were calculated. For the previously developed instrument, which was TTSES, only confirmatory factor analysis was conducted at the pilot phase.

The participants were selected via stratified cluster random sampling and consisted of 294 classroom teachers (teaching at grades 1 to 4) working in 22 state elementary schools located in five main districts of Ankara. At the beginning 30 schools were selected to be visited for data collected. However, VSSST required to visit the schools in which at least one school counselor was working. Therefore, 8 schools that there is no school counselor were not visited for data collection. Although the researcher collected data from 294 classroom teachers, the number of people filling out each instrument was different. Thus, the analysis in the pilot study sections of each instrument in the following parts was conducted with data sets including differing number of cases. For instance, while the analysis in the pilot study of ICSPSI was conducted with the data set with 263 cases, the analysis in pilot study for VSSST was conducted with the data set including 281 cases.

For the instruments that were developed by the researcher, following the pilot study, analyses were conducted in order for the confirmation of factor structures of the instruments. It is important to note that pilot study and confirmation of the factor structures involved different data sets. The analysis, which was conducted for the confirmation of the factor structures of the instruments, was conducted on the data which was collected from Adana. Although as stated earlier in the participants section (see 3.4 Participants of the Study) the total number of the participants were 743. However, similar to pilot study, different number of people filled each instruments. Thus, the data set for

each instrument had different number of cases. While it was 728 for ICSPSI, it was 743 for TAST.

3.5.2 In-Class Social Problem Solving Inventory (ICSPSI)

In-Class Social Problem Solving Inventory (ICSPSI) is a 13-item 5-point Likert type (ranging from 1=never to 5=always) scale. It was developed based the two aspects of Social Problem Solving Inventory-Revised (SPSI-R) which was developed by D'Zurilla, Nezu, and Maydeu-Olivares (2002). The instrument was developed through the following steps.

3.5.2.1 Literature review on problem solving

As an initial step of instrument development, literature review was carried out. The literature review on the concept of problem solving is presented in the literature review section of the current study. However, the purpose of this section is to present the measures of problem solving in the literature.

When reviewed, two of the problem solving instruments were found as the most frequently used ones: Problem Solving Inventory (PSI) developed by Heppner and Peterson (1982), and Social Problem Solving Inventory–Revised (SPSI-R) and its short form developed by D'Zurilla, Nezu, and Maydeu-Olivares (2002). PSI is a 35-item 6-point (ranging from strongly agree to strongly disagree) Likert type scale consisting of three constructs: problem solving confidence, approach-avoidance style, and personal control. The Cronbach alpha coefficient of internal consistency of the whole instrument was calculated as .90 whereas the reliability values of the subscales were calculated as .85, .84, and .72 for problem solving confidence, approach-avoidance style and personal control respectively. Also, test-retest reliability value for the total scale was calculated as .89, and those of subscales were calculated as .85, .88, and .83 for problem solving confidence, approach-avoidance style and personal control respectively (Heppner & Peterson, 1982). SPSI-R is a 52-item multidimensional instrument consisting of two main components and 5 subscales, and its short form consists of 25 items with the same factor structure. SPSI-R is revised version of Social problem solving Inventory (SPSI) consisting of 70 items developed by

D'Zurilla and Nezu (1990) based on D'Zurilla and Goldfried's (1971) social problem solving approach. The revision was conducted by Maydeu-Olivares and D'Zurilla in 1996. Later it was shortened by D'Zurilla, Nezu, and Maydeu-Olivares (2002). The two main components of SPSI-R are Problem Orientation (PO) and Problem Solving Styles (PSS). Problem Orientation (PO) includes two of the subscales: Positive Problem Orientation (PPO) and Negative Problem Orientation (NPO). Problem Solving Styles (PSS) involves three subscales of the instrument: Rational Problem Solving (RPS), Impulsivity/Carelessness Style (ICS), and Avoidance Style (AS). Among these subscales, PPO and RPS are together named as constructive problem solving, whereas NPO, ICS, and AS are together named as dysfunctional problem solving. For SPSI-R the internal consistency coefficients for the subscales ranged between .76 and .92 among young, .79 and .95 among middle-aged, and .69 and .93 among elderly people. Also, test-retest reliability coefficients ranged between .68 and .91 (D'Zurilla et al., 1998). For the reliability of the SPSI-R short form, internal consistency coefficients ranged from .69 to .95, and test-retest reliability have ranged from 0.72 to 0.91 (D'Zurilla et al., 2002).

Also, the Turkish versions of these instruments were reviewed. PSI was adapted into Turkish first by Taylan (1990) and then by Şahin, Şahin, and Heppner (1993). The adaptation of Şahin et al. (1993) resulted in 6 factor structure which is different from the original version. They named these six factors as (1) impulsive style, (2) reflective style, (3) problem solving confidence, (4) avoidant style, (5) monitoring, and (6) planfulness. The reliability coefficients were ranged between .78 and .59 for the six subscales whereas it was calculated as .88 for the whole scale (Şahin et al., 1993). SPSI-R was adapted into Turkish by Eskin and Aycan (2009). They tested both SPSI-R and its short form and found five factor structure in them, consistent with the original version. While Cronbach Alpha internal consistency coefficients ranged from .67 to .92 for the subscales of SPSI-R, they ranged from .62 to .78 for the subscales of SPSI-R short form. Another adaptation of SPSI-R short form was conducted by Çekici (2009) and this adaptation resulted in four factors due to the combination of PPO and RPS. The reliability coefficients were ranged between .61 and .81 for the subscales.

3.5.2.2 Identification of constructs and item generation

ICSPSI was developed based on the constructive problem solving aspect of D'Zurilla et al.'s (2002) problem solving approach. Therefore, the constructs of ICSPSI were determined as PPO and RPS of SPSI-R. D'Zurilla et al. (2002) explained PPO and RPS as follow.

Positive Problem Orientation (PPO). Positive problem orientation (PPO) measures the general tendencies of problem solvers to (a) appraise their problems as a "challenges", (b) believe that their problems are solvable, (c) believe in their own problem solving capabilities to solve the problems effectively, (d) believe in getting positive outcomes at the end of problem solving process, and (e) commit their time and effort to solve problems with determination.

Rational Problem Solving (RPS). Rational problem solving (RPS) examines the problem solvers' cognitive-behavioral pattern defined as the rational, deliberate, and systematic application of effective problem-solving skills during problem solving process involving four major steps: (1) problem definition and formulation, (2) generation of alternative solutions, (3) decision making, and (4) solution implementation and verification.

Social problem solving covers all kinds of problems that an individual encounters in his/her life. Since the current study aims to measure the abilities of classroom teachers' in-class problem solving, items for the PPO and RPS were generated regarding the classroom problems. Four items for PPO, and nine items for RPS were generated benefitting from SPSI-R and short form of it, Turkish versions of SPSI-R and short form of Turkish version, Heppner and Peterson's (1982) PSI, and Turkish adaptations of PSI.

3.5.2.3 Expert opinion

In order to get feedback on physical layout, clarity and appropriateness of the items and constructs, and provide content and face validity, expert opinion was taken from three faculty members (two assistant professors of Curriculum and Instruction (C&I), an associate professor of Psychological Counseling and Guidance (PCG)) and a PhD candidate of PCG.

Based on their feedback, the necessary modifications were done and the instrument was given to two teachers, one of which was a classroom teacher and the other was a Turkish language teacher. They were asked to review the instrument for content coverage, clarity of the items and direction, and visual appearance of the scale. Final revisions were undertaken based on their feedback. After the final revisions, 13-item 5-point Likert type ICSPSI was ready for pilot study.

3.5.2.4 Pilot testing

In order to test the 13-item ICSPSI, the data collected from Ankara were used. 263 classroom teachers filled ICSPSI. 75.3% of the participants were female (*n*=198), and 23.6% of them were male (*n*=62). 1.1% (n=3) did not state their gender. The data were exposed to EFA in order to investigate the factor structure.

Prior to EFA, the data were screened for wrong data entry, missing data, normality, and influential outliers. The missing values were observed to be less than 5%. In order not to lose cases and decrease the power due to missing values, data imputation was undertaken using Expectation Maximization (EM) technique (Tabachnick & Fidell, 2012). Outliers were checked by applying both univariate and multivariate outlier check methods. Univariate outliers were checked through the z-scores exceeding -4 or +4 (Hair, Black, Babin, & Anderson, 2010), and multivariate outliers were checked through Mahalanobis distance ($\chi 2$=34.53) (Tabachnick & Fidell, 2012). EFA was conducted with and without outliers, and the results of the two EFAs were compared. Since it was observed that outliers had an influence on results, all outliers were decided to be excluded from the data set. After deletion of outliers, the data set consisted of 249 cases which is still satisfactory for EFA for current scale (Tabachnick & Fidell, 2012).

Normality was checked by Skewness-Kurtosis values and no violation was observed. (Kline, 2011). In order to examine multivariate normality Mardia's test was used, and a non-normal multivariate distribution was observed. As a remedy, Principal Axis Factoring (PAF) was decided to be used as the extraction method through the EFA (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

After cleaning the data, corrected item-total correlations were checked to examine whether the items correlate with the scale at an acceptable value, which is .30 (Field, 2009). It was observed that all item-total correlations were higher than .30, ranging between .38 and .66.

Lastly, other assumptions of EFA were checked, which were multicollinearity, Bartlett's test of sphericity, and Kaiser Meyer Olkin (KMO) measure of sampling adequacy. Correlation matrix table showed no correlation higher than .90 (Tabachnick & Fidell, 2012). Also, Bartlett's test of sphericity was found as significant ($p < .001$), and KMO value was found as .91, which was satisfactory for a good EFA (Tabachnick & Fidell, 2012).

Common factor analysis was conducted by using Principal Axis Factoring (PAF) as the extraction technique and oblique rotation as the rotation method. In order to determine the number of factors, scree plot and eigenvalues higher than one (5.41) were taken into consideration. Both scree plot and eigenvalues higher than one indicated that there was single factor. Scree plot is presented in Figure 3.2.

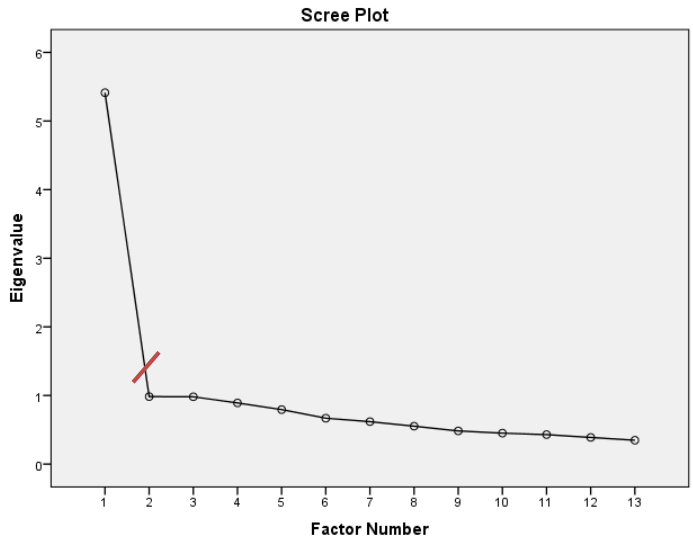

Figure 3.2 Scree plot for ICSPSI

The single factor explained 41.63% of the total variance. Hair et al. (2010) states that "in the social sciences, where information is often less precise, it is not uncommon to consider a solution that accounts for 60 percent of the total variance (and in some instances even

less) as satisfactory" (p. 109). Based on Hair et al. (2010), 41.63% of total variance was considered as adequate.

The factor loadings to the single factor ranged from .39 to .72. Tabachnick and Fidell (2012) proposes that the variables with a loading of at least .32 can be interpreted. Based on this criterion, the factor loadings for this scale were considered as sufficient. Factor loadings are presented in Table 3.2.

Table 3.2

Factor Loadings for Common Factor Analysis for ICSPSI

Item	Factor 1
icspsi8	.72
icspsi13	.72
icspsi12	.69
icspsi7	.66
icspsi11	.65
icspsi4	.62
icspsi2	.60
icspsi9	.59
icspsi5	.58
icspsi1	.55
icspsi6	.55
icspsi3	.52
icspsi10	.39

3.5.2.5 Confirmation of the factor structure of ICSPSI

The factor structure of ICPSI was examined by performing Confirmatory Factor Analysis (CFA) using Mplus version 6.12. CFA was conducted with the data that were collected from Adana. 728 of the 743 participants filled the ICPSI; therefore, the CFA was conducted with 728-case data set.

Prior to CFA, missing values were checked and it was observed that missing values were not more than 5%, and it is quite acceptable (Tabachnick & Fidell, 2012). Since the number of missing values were low in the data set, data imputation was done using Expectation

Maximization (EM) technique (Tabachnick & Fidell, 2012). After missing value analysis, influential outliers were checked. Univariate outliers were inspected by means of z-scores exceeding -4 or +4 (Hair et al., 2010), and multivariate outliers were inspected through Mahalanobis distance (χ^2=34.53) (Tabachnick & Fidell, 2012). The analysis was performed with and without outliers, and no difference was observed between the results of two analyses. Thus, the outliers were decided to be retained in the data set. Univariate and multivariate normalities were checked by Skewness-Kurtosis values and Mardia's test respectively. While univariate normality was assumed (Kline, 2011), multivariate normality was violated. Linearity was examined by scatterplot. A Matrix scatterplot showing the relationships among all variables was produced and visually inspected. The linear regression lines among all of the variables indicated linear relationships. Multicollinearity was checked by bivariate correlations, variance inflation factors (VIF), and tolerance values. The bivariate correlations among the variables should not be higher than .90 (Tabachnick & Fidell, 2012), VIF values should not be higher than 10, and tolerance values should not be lower than .10 (Field, 2009). All three tests indicated that multicollinearity assumption was met.

After all the data screening and assumption check, CFA was performed by using Maximum Likelihood estimation with robust standard errors (MLR) as the estimation method due to multivariate non-normality (Muthen & Muthen, 2010). In order to evaluate the hypothesized model fit, several model fit indices were examined: Model Chi-square (χ2), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR) as suggested by Hair et al. (2010). CFA produced significant chi-square value, $\chi^2(65)=398.921$ ($p<.05$). Hooper, Coughlan, and Mullen (2008) asserts that since chi-square value is sensitive to sample size, it is virtually always significant when the sample size is large. Since the sample size of the current study is large (Kline, 2011; Schumacker & Lomax, 2004), other model fit indices were examined to evaluate the hypothesized model fit (Byrne, 2001). CFA revealed RMSEA value of .08 with 90% confidence interval of .076 to .092, CFI value of .90, TLI value of .87, and SRMR value of .047. Hu and Bentler (1999) suggested that CFI and TLI values should be close to .95 or greater. However, since this not a rigid cut-off point (Brown, 2006), CFI and TLI values of the current analysis was considered as acceptable. While

RMSEA indicated a mediocre fit (MacCallum, Browne, & Sugawara 1996), SRMR value indicated a close fit (Hu & Bentler, 1999). Although the overall model fit was considered as favorable, the modification indices checked in order to see whether it is possible to improve the model fit. Modification indices indicated error covariances of five item pairs (1-2, 3-6, 4-5, 11-12, and 12-13) were high. Items 1 and 2 examine developing as many possible solutions as possible (item 1) and deciding one of them based on the evaluation of positive and negative sides of all possible solutions (item 2). Items 3 and 6 examine the teacher's beliefs on his/her own ability to solve problems and on solvability of the problems (item 6). Item 11 investigates to what extent the teacher gather data about the problem, item 12 investigates whether the teacher specifies goal(s) for the problem solving process, and item 13 investigates to what extent the teacher considers the problem from different aspects. Since these pairs of items meaningfully related to each other, CFA was performed again by freely estimating error covariances of these item pairs as suggested by Muthen and Muthen (2010). CFA produces the following model fit indices: significant chi-square value, $\chi 2(60)=162.692$ ($p<.05$), RMSEA value of .05, CFI value of .97, TLI value of .96, and SRMR value of .03. After the modifications, the model fit indices indicated good model fit. Unstandardized estimates of path coefficients showed that indicators' loadings on the single latent variable were statistically significant at $p=.001$ level, which means that each item significantly contributed to the latent variable. Standardized path coefficients were inspected for examining each indicator's effect size based on the criteria that standardized path coefficients less than .10 are considered as "small" effect, values around .30 as "typical" or "medium" effect, and values higher than .50 as "large" effect (Kline, 2011). The standardized path coefficients ranged from .52 to .74, all large effect. Figure 3.3 displays the standardized path coefficients for one-factor model of ICPSI.

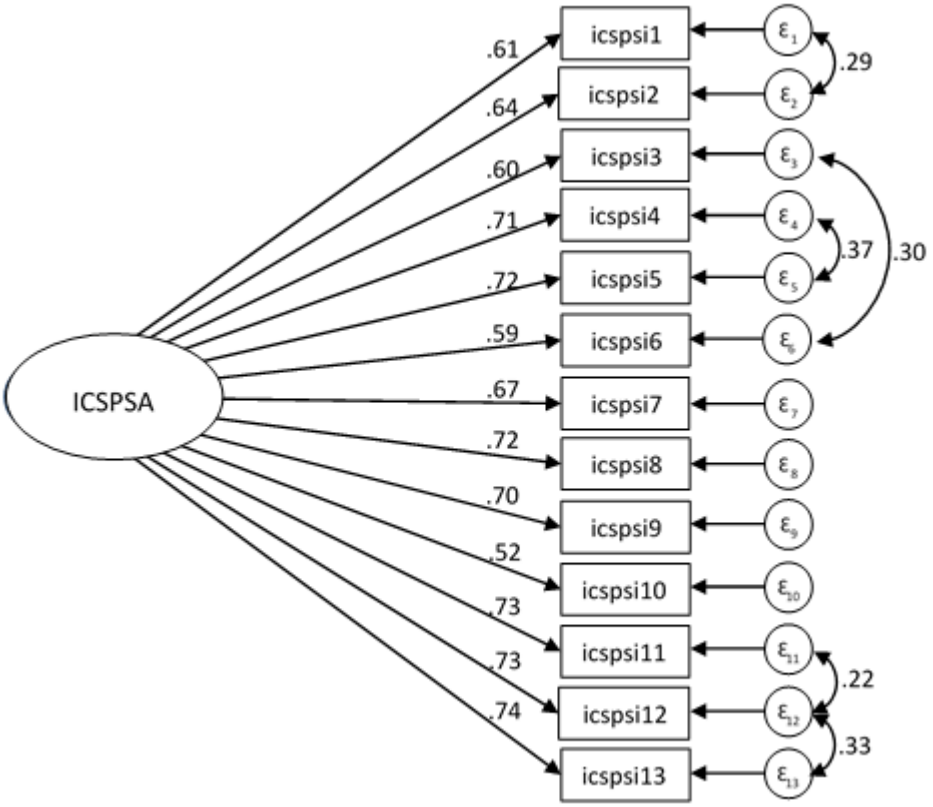

Figure 3.3 Standardized path coefficients for one-factor model of ICPSI
Note: All coefficients are significant at $p<.001$, ICSPSA=in-class social problem solving ability, icpsi1-icpsi13=ICPSI items.

3.5.2.6 Validity and reliability of ICPSI

Validity is defined as "*appropriateness, correctness, meaningfulness,* and *usefulness* of the specific *inferences* researchers make based on the data they collect" (Fraenkel et al., 2012, p. 148). There are different types of validity evidences that assess the different aspects of a data collection instruments such as content-related validity, criterion-related validity, and construct-related validity (Fraenkel et al., 2012). ICPSI was validated based on content-related validity and construct-related validity.

Content-related evidence of validity refers to the validity of the content and format of the instrument (Fraenkel, et al., 2012). Content validity is a sign of "whether the items of an instrument adequately represent the domain they are supposed to measure" (Kaplan, Bush, & Berry, 1976, p. 481). Furthermore, Fraenkel et al. (2012) asserts that presenting

the instrument in an appropriate format for the participants is part of content-related validity. The format of the instrument covers "the clarity of printing, size of type, adequacy of work space (if needed), appropriateness of language, clarity of directions, and so on" (Fraenkel et al., 2012, p. 150). In order to ensure content validity of ICPSI, (1) the constructs and items were generated based on the literature review, and a direction was written; the form was given to the experts and teachers to review for content coverage, clarity of the items and direction, and visual appearance. Having received feedback, the necessary modifications were carried out on the instrument.

Construct-related evidence of validity refers to examining the theoretical and/or psychological construct that the instruments measures (Fraenkel et al., 2012, Hair et al., 2010). In order to provide construct validity for ICPSI, the first attempt was to identify the constructs and test it with EFA. Although initially two constructs, which are PPO and RPS, were hypothesized, EFA results showed that all items of ICPSI contributed to one construct. In the current study, after EFA, CFA was conducted with a different data set. CFA is emphasized as a popular statistical method that is used to provide evidence for construct validity in the literature of psychological assessment (DiStefano & Hess, 2005). CFA results supported the one factor structure of ICSPSI. This result was considered as consistent with Çekici's (2009) adaptation of Social Problem Solving Inventory-Revised: Short form (SPSI-R:S) into Turkish. In her adaptation, PPO and RPS items combined and contributed to one factor.

Reliability is defined as the "consistency of scores or answers from one administration of an instrument to another, and from one set of items to another" (Fraenkel et al., 2012, p. 147). In order to examine the reliability of ICPSI, Cronbach's Alpha coefficient of internal consistency was calculated by using SPSS 21, and found as .91. This coefficient was considered as "excellent" (Kline, 2011).

Finally, ICSPSI was developed as a valid and reliable inventory measuring classroom teachers' perceived ability to solve the problems that they encounter in their classrooms. It consisted of single factor with 13 items (e.g., While solving a problem that I encounter in my classroom, I try to develop as many alternative solutions as I can, I try to collect as

much information as possible in order to solve a problem that I encounter in my classroom, I try to consider the problem that I encounter in my classroom from different points of view).

3.5.3 Teacher Autonomy Scale - Turkish (TAST)

A 5-point (ranging from '1-not at all' to '5-extremely') Likert type scale measuring how much autonomous the teachers feel while doing their job was developed by the researcher throughout the current study. The following steps were taken during the instrument development process.

3.5.3.1 Literature review on teacher autonomy

As the first step of the instrument development, literature on teacher autonomy was comprehensively reviewed. The literature review on the concept of teacher autonomy is presented in the literature review section of the present study. Herein, the measures of teacher autonomy in the literature are presented.

The literature review on the measures of teacher autonomy points two main instruments: Teaching Autonomy Scale (TAS) and Teacher Work Autonomy Scale (TWAS). Pearson and Hall (1993) developed TAS in order to measure teachers' perceptions of teaching autonomy. TAS is a 4-point ranging from 1 (definitely true) to 4 (definitely false) Likert type scale consisting of 18 items. It has two subscales: general teaching autonomy and curriculum autonomy. General teaching autonomy involved classroom standards of conduct and personal on-the-job decision making whereas curriculum autonomy included the selection of activities and materials, and instructional planning and sequencing. The internal consistency coefficients for the subscales (r=.85 for general teaching autonomy, and r=.81 for curricular autonomy) were considered as sufficient.

Friedman (1999) developed Teacher Work Autonomy Scale (TWAS) in order to measure teachers' sense of work autonomy. TWAS is a 32-item 5-point (ranging from 1=not at all to 5=always) Likert type scale consisting of four factors: (1) student teaching and assessment,

(2) school mode of operating, (3) staff development, and (4) curriculum development. The first factor involves evaluation of the students' attainments, specification of norms for student behaviors, organization of physical environment, deciding on content and teaching techniques. The second factor includes establishing goals and vision of the school, making decisions on usage of school budget, and contributing to school policy making process. The third factor involves making decisions on the topic, time schedule, location, and general criteria for the in-service teacher training activities. The last factor includes developing a new curricula and/or making changes on the existing curricula. The Cronbach alpha internal consistency coefficients for the four subscales were found as .85, .80, .84 and .86 for the subscales above respectively. The internal consistency coefficient for the whole scale was calculated as .91.

Beside the two instruments above, LaCoe's (2006) Have and Desire Autonomy Scales, Public School Teacher Questionnaire: Schools and Staffing Survey 1999-2000 school year developed by United States Department of Education's National Center for Education Statistics, and Broeck, Vansteenkiste, Witte, Soenens, and Lens's (2010) Work-related Basic Need Satisfaction Scale were also reviewed and utilized in the current study.

3.5.3.2 Identification of constructs and item generation

Based on the literature review and teachers' roles and latitude in Turkish education system, first of all, constructs were identified. Initially, three constructs were designated: (1) Autonomy in Instructional Planning and Implementation, (2) Autonomy in Professional Development, and (3) Autonomy in Organizational Decision Making. The items were generated by the researcher benefitting from the teacher autonomy measures in literature, and revised by the supervisor. 14, 10, and 6 items were generated for each of the constructs respectively.

3.5.3.3 Expert opinion

In order to get feedback on physical layout, clarity and appropriateness of the items and constructs, and provide content and face validity, expert opinion was taken from three

faculty members (a professor and an assistant professor of Curriculum and Instruction (C&I), and an assistant professor of Educational Administration and Planning (EAP)) and two PhD candidate (one of them was studying PCG, and the other was studying EAP). Expert opinion suggested that autonomy in organizational decision making was not an appropriate area of autonomy for teachers in Turkish educational system. After this feedback, the teachers' given roles in Turkish education system was reconsidered and it was decided to exclude the construct of autonomy in organizational decision making. Also, taking into account the feedback from all experts, the final modifications were made on the items. Finally, the constructs in TAST were hypothesized as "autonomy in instructional planning and implementation" and "autonomy in professional development". Each of these constructs had 14 and 6 items respectively. After that, the scale was given to two teachers in order to receive their feedback on the content coverage, clarity of the items and direction, and visual appearance of the scale. After last modifications were done based on their feedback, a 5-point (ranging from '1-not at all' to '5-extremely') Likert type scale was ready for pilot testing.

3.5.3.4 Pilot testing

The instrument was tested on the data that were collected in Ankara. 292 classroom teachers filled TAST. Of the 292 teachers, 220 (75.3%) were female, 72 (24.7%) were male. The purpose of pilot study was to explore the factor structure of TAST; therefore, Exploratory Factor Analysis (EFA) was conducted using SPSS 21.

First of all, the data were screened for wrong data entry, missing data, influential outliers, and normality. The missing values were found as less than 5% of the data which is acceptable amount of missing data according to Tabachnick and Fidell (2012). For the missing values, data imputation was undertaken using Expectation Maximization (EM) (Tabachnick & Fidell, 2012). Outliers were checked by applying both univariate and multivariate outlier check methods. Univariate outliers were checked through the z-scores exceeding -4 or +4 (Hair et al., 2010), and multivariate outliers were checked by Mahalanobis distance (χ^2=45.32) (Tabachnick & Fidell, 2012). The EFA was conducted with and without outliers and it was observed that the results were influenced by the outliers.

Therefore, 14 cases were excluded from the data set and the analysis was continued with 278 cases which is satisfactory for EFA for the current scale (Tabachnick & Fidell, 2012).

Normality was checked by Skewness-Kurtosis values and no violation was observed (Kline, 2011). In order to examine multivariate normality Mardia's test was used, and a non-normal multivariate distribution was observed. Principal Axis Factoring (PAF) was used as the extraction method through the EFA as a remedy for the multivariate non-normality (Fabrigar et al., 1999).

On the cleaned data, corrected item-total correlations were examined. It was observed that item-total correlations ranged from .33 to .70. Since none of the item-total correlations was lower than .30 (Field, 2009), all items were retained in the analysis.

After that, multicollinearity, Bartlett's test of sphericity, and Kaiser Meyer Olkin (KMO) measure of sampling adequacy were examined. Correlation matrix table showed no correlation higher than .90, which means non-existence of multicollinearity (Tabachnick & Fidell, 2012). Also, Bartlett's test of sphericity was found as significant ($p < .001$), and KMO value was found as .89, which was satisfactory for a good EFA (Tabachnick & Fidell, 2012).

EFA was conducted by using Principal Axis Factoring (PAF) and oblique rotation method. In order to determine the number of factors, eigenvalues higher than one and the number of points above the breaking point in scree plot were checked out. Both of them revealed three factors. Considering the eigenvalue results and scree plot, the number of factors was decided as three. The 1st, 2nd, and 3rd factors explained 39.54%, 12.68%, and 7.39% of the variance respectively. The total variance explained by these three factors was calculated as 59.61%.

Pattern matrix was checked in order to examine the factor loadings of the items. It was observed that the items 3, 4, 5, 8, 9, 10, 12, 14, 16, 17, 18, 19, and 20 loaded to the 1st factor ranging from .78 to .43. When the items loading to the first factor were thoroughly investigated, an inconsistency was observed for two items: numbers 3 and 20. Although items 3 and 20 were initially planned to measure autonomy in professional development,

they loaded to the 1st factor together with 11 items measuring autonomy in pedagogical activities. Due to this inconsistency, items 3 and 20 were excluded from the scale.

Items 7, 11, 13, and 15 loaded to the 2nd factor ranging from .83 to .49. These items were examining the autonomy level in teachers' professional development. Items 1, 2, and 6 loaded to the 3rd factor ranging from -.61 to -.90. These items were investigating the teacher autonomy in defining the aims and objectives, choosing the content to teach, and preparing annual/daily plans.

After deleting the 2 items loading to the 1st factor (items 3 and 20), EFA was conducted with the same data set. Similar to the first EFA results, three values of eigenvalue were observed higher than one, and the scree plot indicated three factors including three points after the break point. Thus, the number of factors was decided as three. Scree plot is presented in Figure 3.4.

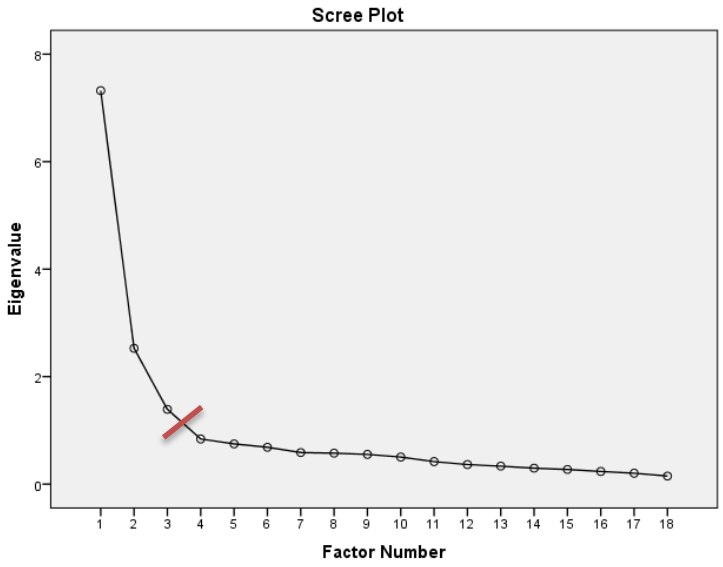

Figure 3.4 Scree plot for TAST

The 1st, 2nd and 3rd factors explained 40.67%, 14.04% and 7.73 of the variance respectively. The total variance explained by these three factors was calculated as 62.44%. The eigenvalues which were higher than 1 are presented in Table 3.3.

Table 3.3

Eigenvalue, Percentages of Variance and Cumulative Percentages of the Factors of TAST

Factor	Eigenvalues	% of Variance	Cumulative %
1	7.32	40.67	40.67
2	2.53	14.04	54.71
3	1.39	7.73	62.44

Pattern matrix indicated that items 4, 5, 8, 9, 10, 12, 14, 16, 17, 18, and 19 loaded to the 1st factor in the range of .48 to .79. As mentioned earlier, these items were investigating the teacher autonomy in instructional planning and implementation activities. Therefore, the 1st factor was named as "autonomy in instructional planning and implementation (AIPI)". Items 7, 11, 13, and 15 loaded to the 2nd factor ranging from .47 to .86. Since these items were examining the teacher autonomy in their own professional development, the 2nd factor was named as "autonomy in professional development (APD)". Finally, items 1, 2, and 6 loaded to 3rd factor ranging from -.61 to -.91. Although these items were initially hypothesized as investigating the autonomy in instructional planning and implementation, they differ from the items in the 1st factor. These three items examine the autonomy of teachers on the main framework of the curriculum that teachers were practicing. Since in Turkish education system this framework is determined by Ministry of National Education (MoNE), these three items combined together and constructed a different factor. The 3rd factor was named as "autonomy in determining the framework of the curriculum (ADFC)". Comrey and Lee (1992) proposed to consider the loading exceeding .71 as "excellent", .63 as "very good", .45 as "fair", and .32 as "poor". Based on this interpretation, most of the loadings in this scale were considered as very good or excellent. The factor loadings are presented in Table 3.4.

Table 3.4

Factor Loadings for Common Factor Analysis for TAST

	Factor		
Items	1	2	3
tast18	.79		
tast16	.78		
tast19	.76		
tast9	.76		
tast17	.69		
tast14	.66		
tast5	.62		
tast8	.62		
tast12	.61		
tast4	.60		
tast10	.48		
tast11		.86	
tast13		.81	
tast15		.55	
tast7		.47	
tast2			-.91
tast1			-.81
tast6			-.61

Note: The factor loadings lower than .30 are suppressed.

3.5.3.5 Confirmation of the factor structure of TAST

The factor structure of TAST was confirmed by Confirmatory Factor Analysis (CFA). CFA was conducted with the data including 743 participants that were collected from Adana. Mplus version 6.12 was used or this analysis, after checking the assumptions in SPSS 21.

Prior to CFA, missing values were checked and no variable with more than 5% of missing data was observed (Tabachnick & Fidell, 2012). Therefore, data imputation was performed for the missing values using Expectation Maximization (EM) technique (Tabachnick & Fidell, 2012). Univariate outliers were inspected by z-scores exceeding -4 or +4 (Hair et al., 2010), and multivariate outliers were inspected by Mahalanobis distance at the chi square value of 42.31 (Tabachnick & Fidell, 2012). CFA was performed with and without outliers, and the

results were compared. Since there observed no difference between the results of the two analyses, the outliers were decided not to be excluded from the data set. Univariate and multivariate normalities were checked by Skewness-Kurtosis values and Mardia's test respectively. Univariate normality was assumed (Kline, 2011); however, since Mardia's test result was significant, multivariate normality was violated. Linearity assumption of CFA was checked by matrix scatterplot, and linear relationships were observed among the variables, which means linearity assumption was met. Multicollinearity assumption was examined by inspection of bivariate correlations, variance inflation factors (VIF), and tolerance values. None of the correlation coefficients among variables exceeded .90 (Tabachnick & Fidell, 2012). Also, none of the VIFs exceeded 10, and none of the tolerance values were less than .10 (Field, 2009). These values indicated non-violation of multicollinearity assumption.

Since multivariate normality assumption was not met, CFA was performed by using the estimation method of Maximum Likelihood with robust standard errors (MLR). The model fit was evaluated by model chi-square, RMSEA, CFI, TLI, and SRMR as suggested by Hair et al. (2010). CFA produced the following model fit indices: $\chi 2(132)=752.589$ ($p<.05$), RMSEA=.08 with 90% confidence interval of .074 to 0.085, CFI=.88, TLI=.86, and SRMR=.07. Since Hu and Bentler (1999) suggested that CFI and TLI values should be close to .95 or greater, CFI and TLI values indicated poor fit (Hu & Bentler, 1999). RMSEA and SRMR indicated mediocre model fit (Hu & Bentler, 1999; MacCallum et al., 1996). Since the overall model fit was not very good, the modification indices were examined to see whether it is possible to improve the model fit. Error covariances were screened for having high values, and covariances of item pairs 1-2, 3-4, 8-9, 10-12, 1-3, 2-3, and 3-5 observed as high. Items 1 and 2 are both the items of the same construct, which is the first factor ADFC. Item 1 focuses on the autonomy on the determining goals of the curricula whereas item 2 focuses on the autonomy over the content selection. They are theoretically connected to each other. Items 3-4 and 8-9 are items of the same construct, which is the second factor AIPI. Item 3 examines the autonomy over the selection of classroom activities, and item 4 examines the selection of teaching methods and techniques in the classroom. Item 8 measures the autonomy over homework given to the students, and item 9 measures planning extracurricular activities. Items 10-12 are the items of the same construct, which is third factor APD. Item 10 measures the autonomy over the selection of the location for

the in-service teacher training whereas item 12 measures the autonomy over the selection of the educator for the training. In the item pairs of 1-3, 2-3, and 3-5, the items 1, 2, and 5 are the items of ADFC while item 3 is the item of AIPI. However, it is theoretically meaningful that selection of classroom activities (item 3) is related to goals (item 1), content (item 2), and daily plans (item 5) of the course. Since these items are meaningfully related to each other, CFA was re-run by freely estimating the error covariances of related item pairs as suggested by Muthen and Muthen (2010). CFA resulted in chi-square value of 483.454 (df=125, p<.05), RMSEA value of .06, CFI value of .93, TLI value of .92, and SRMR value of .05. After the modifications, the model fit indices indicated moderate fit. Unstandardized estimates of path coefficients showed that indicators' loadings on the associated latent variables were statistically significant at p=.001 level, which means that each item significantly contributed to the corresponding latent variable. The standardized path coefficients ranged from .53 to .85, indicating large effect (Kline, 2011). Figure 3.5 shows the standardized path coefficients for three-factor model of TAST.

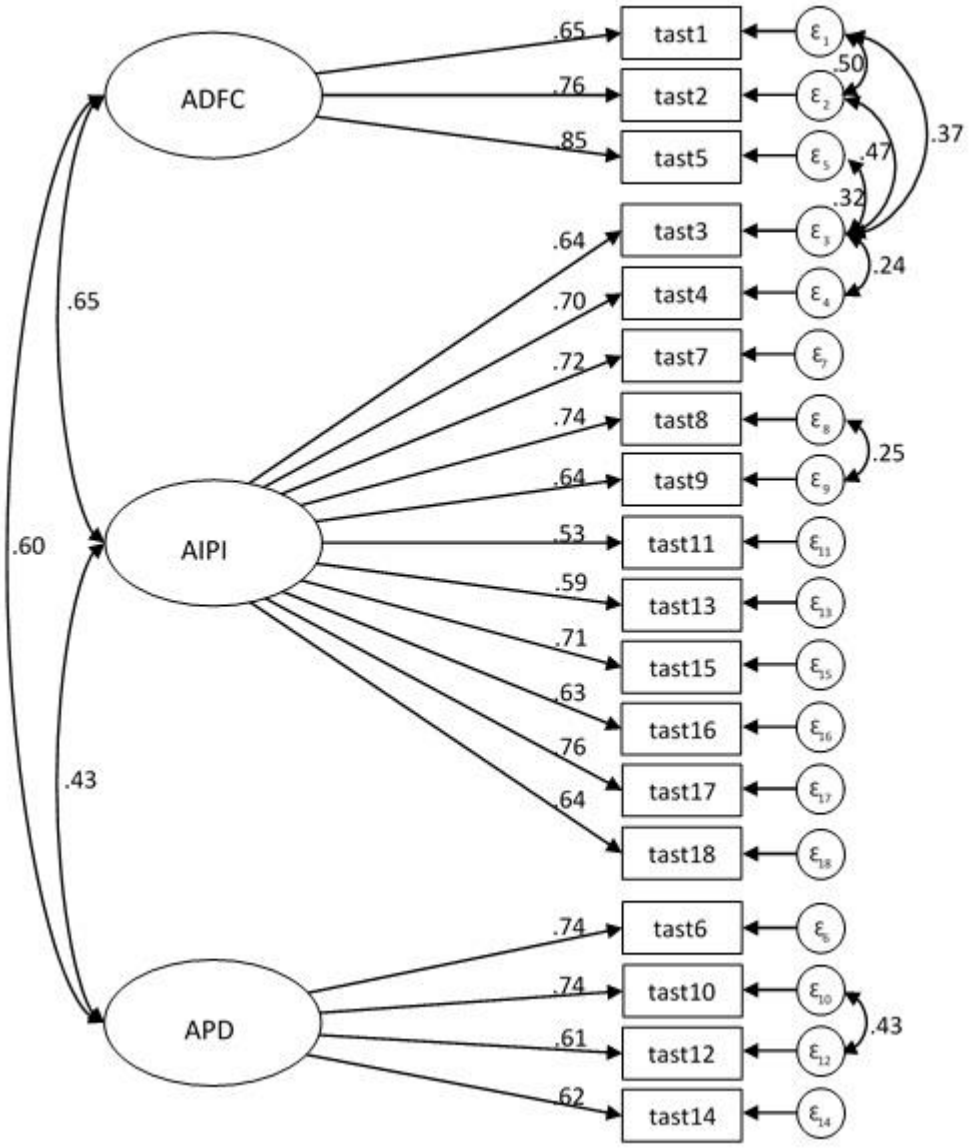

Figure 3.5 Standardized path coefficients for three-factor model of TAST
Note: All coefficients are significant at p<.001, ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, tast1-tast18=TAST items.

3.5.3.6 Validity and reliability of TAST

TAST was validated based on content-related validity and construct-related validity (Fraenkel et al., 2012). In order to validate the instrument in terms of content-related validity, the constructs were defined based on a comprehensive literature review, related items were generated benefitting from current autonomy scales in literature and taking

into account the teachers roles and latitude in Turkish education system. Afterwards a direction was written for the participants. The form was given to the experts and teachers to review the instrument with respect to content coverage, clarity of the items and direction, and visual appearance. The revisions were made based on the feedback received from the experts and teachers. As for the construct validity of TAST, EFA and CFA were conducted in order. First, the factor structure of TAST was tested with EFA. Although the number of constructs was hypothesized as two, EFA resulted in identifiable three-factor structure. Next, CFA was conducted with a different data set. The results supported the three-factor model of TAST.

Reliability was examined by Cronbach's Alpha coefficients of internal consistency. Cronbach's Alpha coefficients were calculated for each subscale and the whole scale. The reliability coefficients for the ADFC, AIPI, and APD were calculated as .85, .90, and .79 respectively, and the Cronbach's Alpha coefficient for the whole scale was calculated as .90. While the reliability coefficients of ADFC and APD were considered as 'very good', those of AIPI and the whole scale were considered as 'excellent' (Kline, 2011).

Finally, TAST was developed as a valid and reliable 18-item 5-point (ranging from '1-not at all' to '5-extremely') Likert type scale consisting of three subscales: 1. autonomy in instructional planning and implementation (AIPI), 2. autonomy in professional development (APD), and 3. autonomy in determining the framework of the curriculum (ADFC). AIPI consisted of 11 items (e.g., I feel autonomous in identifying the criteria to evaluate student achievement, I feel autonomous in choosing the instructional materials that I will use in the classroom), APD consisted of four items (e.g., I feel autonomous to choose where the in-service teacher training programs will be held, I feel autonomous to choose who will teach in the in-service teacher training programs), and ADFC consisted of three items (e.g., I feel autonomous to select the topics for the annual/daily plans, I feel autonomous to specify the aims and objectives for my instruction).

3.5.4 Vocational Social Support Scale: Teacher (VSSST)

In order to measure the perception of classroom teachers on receiving social support in their profession, Vocational Social Support Scale: Teacher (VSSST), which is 5-point (ranging from 1=-never to 5=always) Likert type scale, was developed by the researcher. The following steps were taken during the development process of this scale.

3.5.4.1 Literature review on social support

The instrument development process started with a comprehensive literature review on social support. Both the concept and its measures were reviewed. The review of the literature on the concept of social support is presented in literature review section of the present study. In the current section review of measures of social support are presented.

In the literature, a variety of social support measures were reviewed. These measures were Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet, Dahlem, Zimet, and Farley (1988), Perceived Social Support – Friend and Family Scales (PSS-Fr, PSS-Fa) developed by Procidano and Heller (1983), Social Provisions Scale developed by Russel and Cutrona (1984), Social Support Appraisals Scale (SS-A) developed by Vaux et al. (1986), Scales of Perceived Social Support developed by Macdonald (1998), Duke-UNC Functional Social Support Questionnaire (DUFSS) developed by Broadhead, Gehlbach, DeGruy, and Kaplan (1988), Social Support Questionnaire (SSQ) developed by Sarason et al. (1983), Interpersonal Support Evaluation List (ISEL) developed by Cohen and Hoberman (1983), Medical Outcomes Study Social Support Survey (MOS-SSS) developed through Medical Outcomes Study (Hays, Sherbourne, & Mazel, 1995), Colleague, Principal, and Mentor support scales developed by Çapa (2005), Sources of Social Support Questionnaire developed by Bataineh (2009), Teacher Professional Social Support Scale developed by Kaner (2006), Social Support List-Discrepancies (SSL-D) developed by Van Sonderen (1991) and although not exactly measures of social support Work-related Basic Need Satisfaction Scale developed by Broeck et al. (2010), and The Need for Relatedness Scale (NRS-10) developed by Richer and Vallerand (1996) was reviewed. Some of these instruments investigate the perception of social support from different sources. For instance, MSPSS

investigates the perceived support from family, friends and significant other, PSS-Fr and PSS-Fa investigated perceived support from friends and family, and Sources of Social Support Questionnaire investigates perceived support from supervisor, co-workers, friends, spouse, and family. Some of these instruments examine the types of perceived social support. For instance, ISEL investigates the appraisal support, tangible support, self-esteem support, and belonging support from others; MOS-SS investigates emotional/informational support, tangible support, affectionate support from others, and positive social interaction with other people. More comprehensively, Scales of Perceived Social Support investigates both sources and types of social support. It measures total emotional support, total appraisal support, total informational support, total instrumental support, family emotional support, family appraisal support, family informational support, family instrumental support, friends emotional support, friends appraisal support, friends informational support, and friends instrumental support.

Among these instruments, Colleague, Principal, and Mentor Support Scales, Sources of Social Support Questionnaire, Teacher Professional Social Support Scale, and Social Support List-Discrepancies (SSL-D) were developed and used particularly for teachers. They investigate how much social support the teachers receive in their work environment from other people in the environment.

3.5.4.2 Identification of constructs and item Generation

VSSST mainly focused on the sources of social support for classroom teachers. While identifying the sources of social support, the parties that teacher might be in a relationship about their job-related issues in or out of their work environment were conceived. Initially, the sources of social support for classroom teachers were identified as administrators, colleagues, parents, students, and teachers' families. When came to generation the items for each construct, types of social support identified by House (as cited in Sarros, 1989) were also taken into consideration. These types of support are emotional, instrumental, informational, and appraisal support. The aim was including all possible kinds of support that might be received from the defined sources. 17, 13, 5, 3, and 5 items were generated for administrators, colleagues, parents, students, and teachers' families respectively. Also,

in both identification of constructs and generation of items processes, the reviewed social support scales in literature were utilized.

3.5.4.3 Expert opinion

In order to get feedback on physical layout, clarity and appropriateness of the items and constructs, expert opinion was taken from three faculty members (an associate professor and an assistant professor of C&I, a professor of PCG) and two PhD candidates (one of them was studying PCG, and the other was studying EAP). One of the experts suggested school counselor as an important social support source for teachers in the schools. Based on this suggestion, school counselor was added to the sources of vocational social support as a new construct, and 4 items were generated for this source. Also, based on the feedback from experts, student support was excluded. Finally, the sources of vocational social support were identified as school administrators, colleagues, school counselor(s), parents, and teachers' families. They had 14, 13, 4, 7, and 5 items respectively. Lastly, the instrument was given to two teachers to review the instrument for content coverage, clarity of the items and direction, and visual appearance of the scale, and final revisions were undertaken based on their feedback.

3.5.4.4 Pilot testing

The instrument was tested by using the data that were collected from Ankara. 281 of 294 classroom teachers filled out VSSST. Among these teachers, 208 (74%) of them were female, and 73 (26%) of them were male. In order to explore the factor structure of VSSST, the data were analyzed through Exploratory Factor Analysis (EFA) by means of SPSS 21.

First of all, the data were screened for wrong data entry, missing data, normality, and influential outliers. It was observed that the missing values were less than 5%. For the missing values, data imputation was carried out using Expectation Maximization (EM) (Tabachnick & Fidell, 2012). Outliers were checked by applying both univariate and multivariate outlier check methods. Univariate outliers were checked through the z-scores exceeding -4 or +4 (Hair et al., 2010) and multivariate outliers were checked by

Mahalanobis distance with the critical value of 86.66 (Tabachnick & Fidell, 2012). EFA was conducted with and without outliers in order to examine the influence of outliers. Due to the difference in the results of the two EFA, all outliers were excluded from the data set and the analysis was conducted with 252 cases.

Normality was checked by Skewness-Kurtosis values and no violation was observed (Kline, 2011). In order to examine multivariate normality Mardia's test was used, and a non-normal multivariate distribution was observed. As a remedy, Principal Axis Factoring (PAF) was used as the extraction method through the EFA (Fabrigar et al., 1999).

Corrected item-total correlations were examined in order to observe the reliability of each item. It was observed that item-total correlations ranged between .36 and .79. Since none of the item-total correlations was lower than .30 (Field, 2009), all items were retained in the analysis.

The analysis procedure was continued with examination of other assumptions of EFA, which are no multicollinearity, Bartlett's test of sphericity, and Kaiser Meyer Olkin (KMO) measure of sampling adequacy. Correlation matrix table showed no correlation higher than .90 (Tabachnick & Fidell, 2012). Also, Bartlett's test of sphericity was found as significant ($p < .001$), and KMO value was found as .93, which was satisfactory for a good EFA (Tabachnick & Fidell, 2012).

EFA was conducted by using Principal Axis Factoring (PAF) and oblique rotation technique. The analysis resulted in five factors as hypothesized at the beginning of the study. In order to determine the number of factors, eigenvalues higher than one and scree plot were checked. Five values were found as higher than one. Also, scree plot supported the five factors by indicating five points after the break point. Considering the eigenvalues and scree plot, the number of factors was decided as five. Scree plot is presented in Figure 3.6.

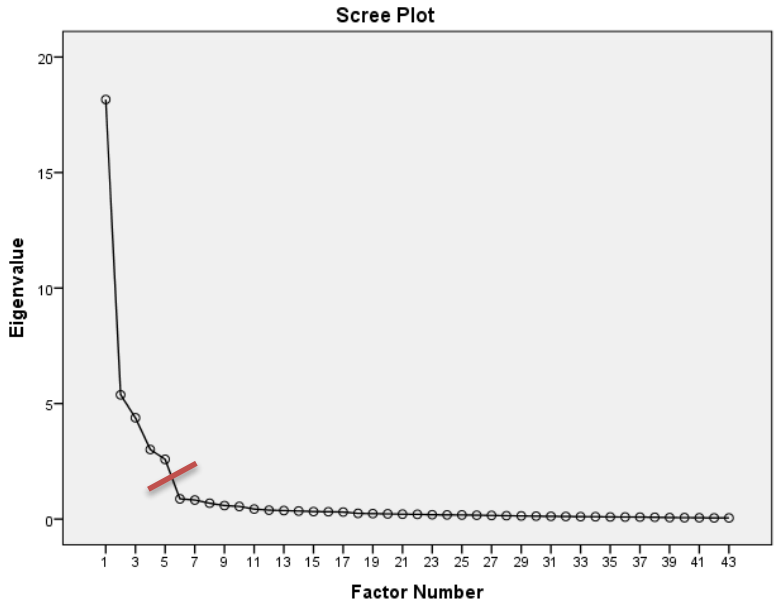

Figure 3.6 Scree plot for VSSST

The 1st, 2nd, 3rd, 4th and 5th factors explained 42.24%, 12.51%, 10.20%, 7.00%, and 6.01% of the variance respectively. The total variance explained was calculated as 77.95%. The eigenvalues and percentages of explained variance are displayed in Table 3.5.

Table 3.5

Eigenvalue, Percentages of Variance and Cumulative Percentages of the Factors of VSSST

Factor	Eigenvalues	% of Variance	Cumulative %
1	18.16	42.24	42.24
2	5.38	12.51	54.75
3	4.39	10.20	64.94
4	3.01	7.00	71.94
5	2.59	6.01	77.95

Pattern matrix was checked in order to examine the factor loadings of the items. The pattern matrix indicated that the first 14 items (1 to 14) loaded to the 1st factor ranging from .93 to .75. These items were investigating perceived support from school administrators. Therefore, the 1st factor was named as "Administration Support (AdS)". Items 32 to 38 loaded to the 2nd factor ranging from .89 to .72. These items were investigating the support received from the students' families. Therefore, the 2nd factor

was named as “Parent Support (PaS)”. Items 15 to 27 loaded to the 3rd factor ranging from -.76 to -.90. These items were investigating the colleagues’ support; therefore, the 3rd was named as “Colleague Support (CgS)”. The last 5 items of the scale (39 to 43) loaded to the 4th factor ranging from .94 to .82. These items were examining the support that teachers receive from their families. Thus, the 4th factor was named as “Family Support (FaS)”. Finally, items 28, 29, 30, and 31 loaded to the 5th factor ranging from .95 to .75. These items were questioning the support that teachers receive from school counselor. Thus, the last factor was named as “Counselor Support (CoS)”. All the factor loadings were considered as excellent (Comrey & Lee, 1992). Factor loadings for VSSST are presented in Table 3.6.

Table 3.6

Factor Loadings for Common Factor Analysis for VSSST

	Factor				
Items	1	2	3	4	5
vss5	.93				
vss14	.93				
vss7	.92				
vss4	.90				
vss6	.88				
vss9	.87				
vss12	.86				
vss8	.86				
vss10	.85				
vss13	.80				
vss2	.80				
vss11	.80				
vss3	.79				
vss1	.75				
vss38		.89			
vss37		.87			
vss33		.85			
vss36		.84			
vss35		.82			
vss34		.78			

Table 3.6 (cont'd)

	Factor				
Items	1	2	3	4	5
vss32		.72			
vss23			-.90		
vss21			-.89		
vss25			-.89		
vss27			-.87		
vss24			-.86		
vss19			-.84		
vss22			-.82		
vss20			-.81		
vss18			-.81		
vss17			-.81		
vss26			-.81		
vss15			-.79		
vss16			-.76		
vss40				.94	
vss41				.92	
vss42				.92	
vss39				.90	
vss43				.82	
vss29					.95
vss30					.91
vss28					.87
vss31					.75

Note: The factor loadings lower than .30 are suppressed. vss1-vss43=VSSST items.

3.5.4.5 Confirmation of the factor structure of VSSST

The factor structure of VSSST was confirmed by CFA. The analysis was conducted with the data that were collected from Adana. 729 of the all participants (N=743) filled the VSSST, therefore, CFA was performed with the data including 729-case data set.

Prior to CFA, missing values were checked and no variable with more than 5% of missing data was observed. Therefore, the missing values were imputed using Expectation Maximization (EM) technique (Tabachnick & Fidell, 2012). Influential outliers were

inspected by z-scores exceeding -4 or +4 (Hair et al., 2010) and Mahalanobis distance (Tabachnick & Fidell, 2012). The analysis was performed with and without outliers, and the results were compared. No difference was observed between the results of the two analyses; therefore, the analysis procedure was continued by retaining the outliers in the data set. Univariate and multivariate normalities were checked by Skewness-Kurtosis values and Mardia's test respectively. Univariate normality was assumed (Kline, 2011), multivariate normality was violated. Linearity was checked by matrix scatterplot; and linear relationships were observed among the variables. Thus, it was concluded that linearity assumption was met. In order to check multicollinearity among the indicators, bivariate correlations, variance inflation factors (VIF), and tolerance values were observed. The bivariate correlation between items 29 and 30 –both of them are items loading to Counselor support (CoS)- exceeded .90 (r=.908) (Tabachnick & Fidell, 2012). However, VIF and tolerance values were found in the accepted range (less than 10 for VIF and higher than .10 for tolerance) (Field, 2009). Therefore, the analysis was continued by retaining both of these items in the instrument.

Due to multivariate non-normality, Maximum Likelihood estimation with robust standard errors (MLR) was used in CFA as a remedy (Muthen & Muthen, 2010). The model fit was evaluated by model chi-square, RMSEA, CFI, TLI, and SRMR. CFA produced chi-square value of 3496.653 (df=850, p<.05), RMSEA value of .065 with 90% confidence interval of .063 to .068, CFI value of .90, TLI value of .90, and SRMR value of .043. While CFI and TLI values indicated acceptable (Hu & Bentler, 1999), RMSEA and SRMR values indicated a good fit (Hu & Bentler, 1999; MacCallum et al., 1996). When modification indices were examined, it was seen that the model can be improved by freely estimating the error covariances of item pairs 1-2, 14-15, 25-26, and 36-37. Item pair 1-2 belongs to AdS, and while item 1 examines to what extent the teachers feel valued, item 2 examines to what extent the teachers feel they are listened and understood by the administrators. These two items meaningfully close items. Item pairs 14-15 and 25-26 are the items of CgS. Item pair 14-15 measures the same kind of support with the item pair 1-2, but from colleagues. Item 25 investigates the teacher perception on to what extent their colleagues share their educational materials, and item 26 investigates the colleagues help on teaching issues (planning, implication, and assessment). Both of the items examine teachers' perceptions

on colleagues' contribution in their teaching-related processes. Item pair 36-37 belongs to PaS, and these items investigate the teachers' perception on parents' help in in-class (item 36) and out-of-class (item 37) activities. CFA was re-run by freely estimating the error covariances of these item pairs as suggested by Muthen and Muthen (2010). The analysis resulted in chi-square value of 2626.235 (df=846, p<.05), RMSEA value of .054 with 90% confidence interval of .051 and .056, CFI value of .93, TLI value of .93, and SRMR value of .039. RMSAE and SRMR indicated close fit (Hu & Bentler, 1999; MacCallum et al., 1996) whereas CFI and TLI indicated acceptable model fit since they were observed to be close to .95 (Hu & Bentler, 1999). Based on all the model fit indices, the model was considered as acceptable. The unstandardized estimates of path coefficients revealed that indicators' loadings on the associated latent variables were statistically significant at p=.001 level, indicating that each item significantly contributed to the corresponding latent variable. The standardized path coefficients were observed to range from .75 to .95 revealing large effect for all indicators (Kline, 2011). Figure 3.7 displays the standardized path coefficients for the five-factor model of VSSST.

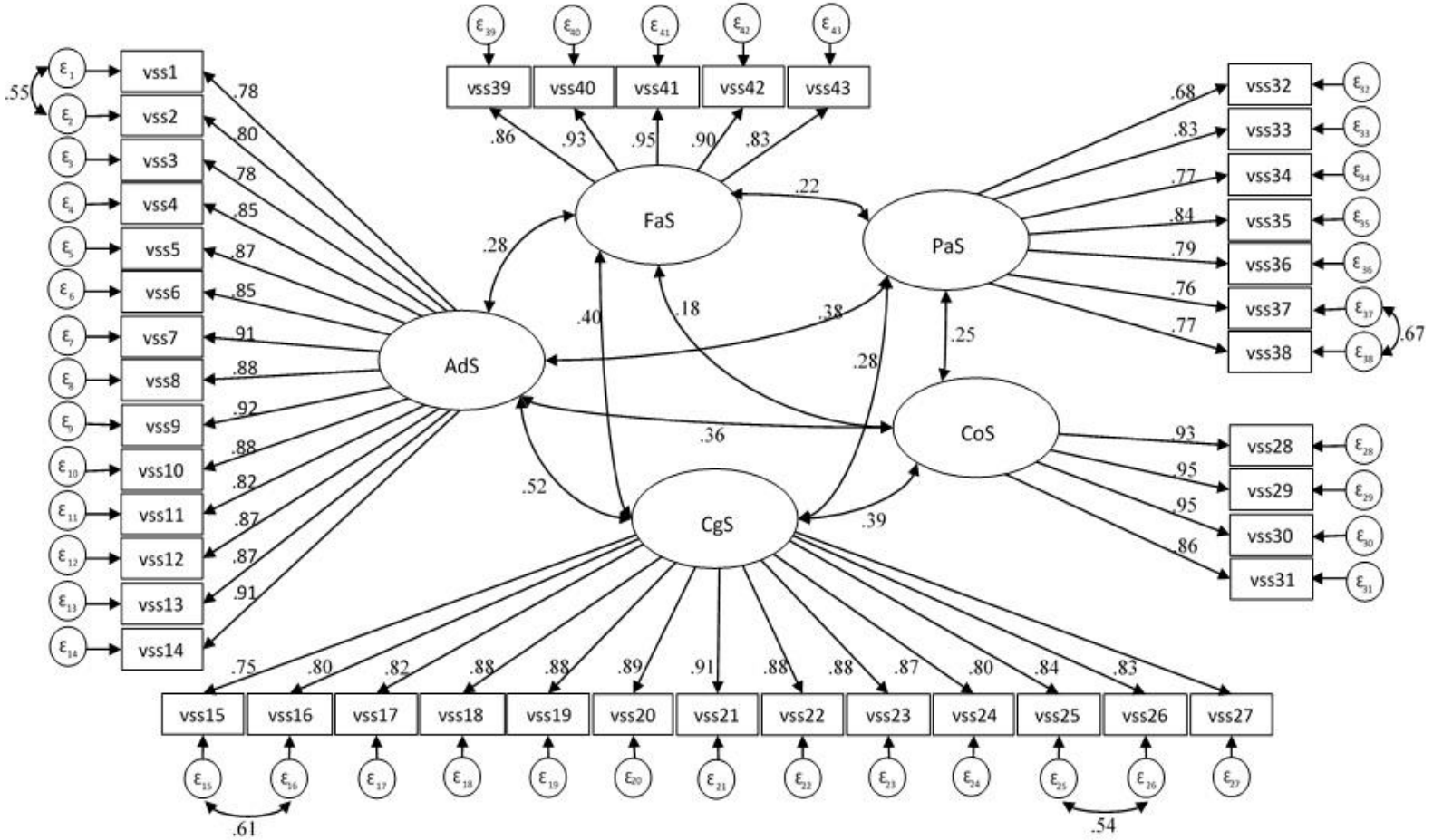

Figure 3.7 Standardized path coefficients for the five-factor model of VSSST
Note: All coefficients are significant at $p<.001$, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support, vss1-vss43=VSSST items.

3.5.4.6 Validity and reliability of VSSST

Validity of VSSST was provided by content-related validity and construct-related validity (Fraenkel et al., 2012). The constructs of VSSST was identified based on a comprehensive literature review and the possible parties that teachers might be in contact about their job-related issues. Corresponding items were generated by benefitting from current social support instruments in the literature and the school context in Turkey regarding classroom teachers. Also a direction for the participants was written. Afterwards, the instrument was given to the experts and teachers to review it with respect to content coverage, clarity of the items and direction, and visual appearance. Modifications were carried out based on their feedback. This process provided content-related validity of VSSST.

When come to construct-related validity of VSSST, two different analysis were performed in order to explore and confirm the factor structure: EFA and CFA. First, the instrument was tested with EFA. The analysis indicated that VSSST had five-factor structure. Thereafter, CFA was conducted with a different data set in order to examine whether the predefined five-factor structure of the instrument is confirmed or not. The results of CFA confirmed the five-factor structure of the scale.

The reliability of whole scale and subscales were examined by Cronbach's Alpha coefficients of internal consistency. The reliability coefficients for AdS, CgS, CoS, PaS, and FaS were calculated as .98, .97, .96, .92, and .95 respectively, and the Cronbach's Alpha coefficient for the whole scale was calculated as .96. All of the reliability coefficients were considered as excellent (Kline, 2011).

As a result of the instrument development process, VSSST was considered as a valid and reliable instrument that measures classroom teachers' perceived social support that they receive from different sources. It consisted of 43 items, five subscales: 1. administration support (AdS), 2. colleague support (CgS), 3. counselor support (CoS), 4. parent support (PaS), and 5. family support (FaS). Some sample items for each of the subscales are presented as follow. AdS comprised of 14 items (e.g., School administrators give me suggestions when I have a problem related to my job, School administrators appreciate my

vocational success), CgS comprised of 13 items (e.g., My colleagues give me suggestions when I have a problem related to my job, My colleagues appreciate my vocational success), CoS comprised of four items (e.g., School counselor(s) give(s) me suggestions when I have a problem related to students/parents, School counselor(s) are always ready to collaborate with me when I need), PaS comprised of seven items (e.g., Parents are always ready to collaborate with me about the students' education, Parents give me support for the in-class activities), and FaS comprised of five items (e.g., My family motivates me about the job-related issues, My family gives me suggestions when I have a problem in my job).

3.5.5 Turkish Version of the Teachers' Sense of Efficacy Scale (TTSES)

Turkish Version of the Teacher Sense of Efficacy Scale (TTSES) is a 9-point (ranging from 1=nothing to 9=a great deal) Likert type scale consisting of three subscales: *efficacy for student engagement, efficacy for instructional strategies,* and *efficacy for classroom management.* The scale has long and short forms with the same factor structure. In this study short form of TTSES, which is comprised of 12 items, was employed.

The Teacher Sense of Efficacy Scale (TSES), which was previously called as Ohio State Teacher Efficacy Scale, was originally developed by Tschannen-Moran and Woolfolk Hoy (2001). During the development of the scale, Tschannen-Moran and Woolfolk Hoy (2001) tested the scale in three studies in which different groups of both pre-service and in-service teachers participated. First, they developed 52 items and tested them on 224 participants. Based on the first analysis results, they reduced the number of the items to 32. Second, they tested this 32-item scale with 217 participants. As a result of the factor analysis in the second study, the number of the items was decreased to 18, and three factors were identified and labeled as: (1) *efficacy for student engagement* (ESE) consisting of 8 items; (2) *efficacy for instructional strategies* (EIS) consisting of 7 items; and (3) *efficacy for classroom management* (ECM) consisting of 3 items. Third, Tschannen-Moran and Woolfolk Hoy (2001) developed 18 more items so as to improve the subscales (especially ECM) and tested the 36-item scale with 410 participants. The factor analysis resulted in the same 3-factor structure with the inclusion of 24 items of 36, and each factor included 8 items. The factor loadings of the 24 items ranged from .58 to .78. After, they developed the long form

of the scale, they created the short form by selecting four items with the highest loadings for each subscale. The intercorrelations between the long and short forms for the whole scale and the three subscales indicated high values ranging from .95 to .98. The reliability coefficients were calculated as .81 for ESE, .86 for EIS, and .86 for ECM. Sample items for ESE might be “How much can you do to get students to believe they can do well in school work?, How much can you assist families in helping their children do well in school?”, sample items for EIS might be “How much can you use a variety of assessment strategies?, To what extent can you provide an alternative explanation or example when students are confused?”, and sample items for ECM might be “How much can you do to control disruptive behavior in the classroom?, How much can you do to get children to follow classroom rules?”.

While the long version of TTSES was adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya in 2005, the short version was tested by Çapa-Aydın, Sungur, and Uzuntiryaki (2009). Confirmatory factor analysis (CFA) for the short version of the scale produced a CFI value of .99, TLI value of .99, RMSEA value of .07, which indicated an acceptable model fit. The reliability coefficients were calculated as .75 for ESE, .75 for EIS, and .81 for ECM.

3.5.5.1 Pilot test of TTSES

The factor structure of TTSES for the participants of the current study was examined by CFA. CFA was performed using Mplus version 6.12 with the data set including 294 cases which were collected from Ankara. The participants consisted of 220 (74.8%) female and 74 (25.2%) male classroom teachers.

Prior to CFA, missing values were checked and it was observed that none of the variables had more than 5% of missing data (Tabachnick & Fidell, 2012). For missing values, data imputation was conducted using Expectation Maximization (EM) technique (Tabachnick & Fidell, 2012). After missing value, univariate and multivariate outliers were examined. Univariate outliers were inspected by z-scores exceeding -4 or +4 (Hair et al., 2010) and multivariate outliers were inspected by Mahalanobis distance at the chi square value of 32.91 (Tabachnick & Fidell, 2012). The analysis was conducted once with outliers and once

without outliers, and the results were compared to each other. Since no difference was observed between the results of the two analyses, the outliers were decided to be retained in the data set. Univariate and multivariate normalities were checked by Skewness-Kurtosis values and Mardia's test respectively. Univariate normality was assumed (Kline, 2011) but multivariate normality was violated. Linearity was checked by scatterplot. Matrix scatterplot indicated linear relationships among the variables, which means linearity assumption was met. Multicollinearity assumption was examined by inspection of bivariate correlations, variance inflation factors (VIF), and tolerance values. None of the correlation coefficients among variables exceeded .90 (Tabachnick & Fidell, 2012). Also, none of the VIFs exceeded 10, and none of the tolerance values were less than .10 (Field, 2009). These values indicated non-violation of multicollinearity assumption.

Since the multivariate normality was not met, CFA was performed with the estimation method of Maximum Likelihood with robust standard errors (MLR). CFA produced the following model fit indices: $\chi 2(51)=102.393$ ($p<.05$), RMSEA=.06 with 90% confidence interval of .042 to .075, CFI=.95, TLI=.93, and SRMR=.04. All fit indices except chi-square indicated a good model fit (Hu & Bentler, 1999; MacCallum et al., 1996). Unstandardized estimates of path coefficients showed that indicators' loadings on the associated latent variables were statistically significant at $p=.001$ level. This means that each item significantly contributed to the corresponding latent variable. The standardized path coefficients were inspected for examining each indicator's effect size, and they were observed as ranging from .60 to .81 indicating large effect for all indicators. Figure 3.8 displays the standardized path coefficients for three-factor model of TTSES.

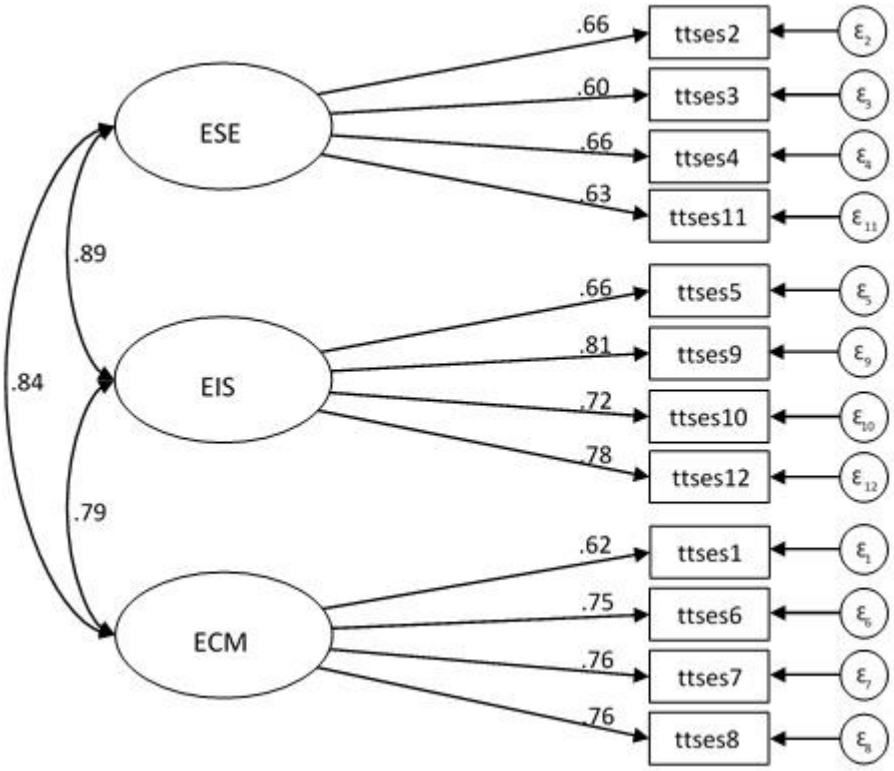

Figure 3.8 Standardized path coefficients for the three-factor model of TTSES
Note: All coefficients are significant at $p<.001$, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, ttses1-ttses13=TTSES items.

In order to examine the reliability, Cronbach's Alpha coefficients of internal consistency were calculated for each subscale and the whole scale. The Cronbach's Alpha coefficients for the ESE, EIS, ECM were calculated as .73, .83, and .81 respectively, and it was calculated as .90 for the whole scale.

3.5.6 Demographic Information Form

In order to gather data on the participants' characteristics, a demographic information form was developed by the researcher. The form included five questions; 1. gender (female and male), 2. age range (23-34, 35-44, 45-54, 55 and higher), 3. years of teaching experience (0-4, 5-9, 10-14, 15-19, 20 and higher), 4. education level (associate degree,

bachelor's degree, master's degree, and PhD), and 5. the grade they were teaching at (1st, 2nd, 3rd, and 4th).

3.6 Data Collection Procedures

First of all, the necessary documents (such as consent form, debriefing from, application form etc.) were prepared for taking permission from Human Subjects Ethics Committee of Middle East Technical University and applied for approval of the ethical considerations for the current study. Following, Provincial Directorate for National Education in Ankara was applied for taking permission to visit the selected elementary schools in Ankara for collecting data in order to collect data for pilot testing of the data collection instruments. After receiving the permission, the researcher collected data in May-June 2014 by personally visiting the selected schools in Ankara in order to collect data for pilot study of the data collection instruments. Subsequently, data were analyzed. Following the pilot study, Provincial Directorate for National Education in Adana was applied for taking permission to visit the selected schools in Adana for gathering data. After receiving the related permission, the researcher collected the data from the classroom teachers working at the selected schools by personally visiting them in November-December 2014. In both data collection procedures, all participants were informed that participation to the current study was based on their voluntariness, and their participation would be kept anonymous and confidential. The teachers were asked to fill out the data collection instruments during the breaks. To fill out the form for teachers took 10 minutes on average.

3.7 Data Analysis Procedures

Since the major aim of this study was to investigate the relationships among teacher autonomy, teacher sense of self-efficacy, teacher perceived vocational social support, and in-class problem solving as perceived by classroom teachers, the data were analyzed by conducting Structural Equation Modelling (SEM).

At the first stage of data analyses procedure, the data screened and cleaned for the descriptive and inferential statistics, and general assumptions were checked for the

inferential statistics by means of Statistical Package for Social Sciences (SPSS) version 21. This stage included independent observation, checking wrong data entry, and missing values.

Independent observation refers to “measures for each respondent be totally uncorrelated with the responses from other respondents in the sample. A lack of independence severely affects the statistical validity of the analysis unless corrective action is taken” (Hair et al., 2010, p. 345). This requires the participants not to be affected by each other. In order to provide independent observation, the researcher kindly asked the participants to fill the data collection form on their own without discussing with other participants about the questions.

Since independent observation was provided, the data was decided to be used for the purpose of this study, and the analysis procedure was continued with data screening for wrong entry. After all the data were entered to Statistical Package of Social Sciences (SPSS) software version 21, the minimum and maximum values for each variable were examined, and the wrong data entries were corrected. Furthermore, approximately 50 cases were randomly selected and checked for wrong data entry.

As stated in the participants section, all of the participants of the study were 743. The data were collected from the participants with a two-sided three-page form that involved data collection instruments. 15 of the 743 participants were excluded from the data set for the main analysis due to existence of pages that were not filled at all by the participants on the data collection form. As a result, the sample consisted of 728 cases. These cases had missing values as well but they were observed as less than 5%. Tabachnick and Fidell (2012) suggest that if the sample size is large and missing values are less than 5%, any technique that handles missing data would produce similar results. Therefore, in order not to decrease power by deleting cases with missing values, data imputation was conducted by using Expectation Maximization (EM) algorithm. EM imputes values by forming “a missing data correlation (or covariance) matrix by assuming the shape of a distribution (such as normal) for the partially missing data and basing inferences about missing values on the likelihood under that distribution” (Tabachnick & Fidell, 2012, p. 68).

At the second stage, assumptions of SEM were examined. This stage included influential outliers (univariate and multivariate), normality (univariate and multivariate), linearity, homoscedasticity, and multicollinearity.

Univariate and multivariate outliers were inspected by z-scores exceeding -4 or +4 (Hair et al., 2010) and Mahalanobis distance ($\chi 2$=32.909) (Tabachnick & Fidell, 2012) respectively. Tabachnick and Fidell (2012) suggest that performing the analysis once with outliers and once excluding the outliers, and compare the difference in the results before deciding to take an action about the outliers. Applying their suggestion, inspected outliers (10 univariate and 2 multivariate outliers) were decided to be retained in the data set.

Univariate normality was checked by Skewness-Kurtosis values. Skewness is about the "symmetry of the distribution" around the mean (Tabachnick & Fidell, 2012, p. 79), and Kurtosis is about the "peakedness of a distribution" (Tabachnick & Fidell, 2012, p. 79). Kline (2011) suggests that a Skewness value exceeding ±2 and a Kurtosis value exceeding ±10 cause serious problems in the analysis. In the present study, Skewness and Kurtosis values were found in the accepted range. Beside Skewness and Kurtosis, histograms and Q-Q plots were visually inspected, and univariate normality was assumed for the indicators of independent variables (IV), and dependent variable (DV).

In order to examine multivariate normality Mardia's test was performed. The test resulted with a significant *p* value, which indicates non-normal multivariate distribution among the variables.

Linearity refers to predicting "values that fall in a straight line by having a constant unit change (slope) of the dependent variable for a constant unit change of the independent variable" (Hair et al., 2010, p. 35). Homoscedasticity refers to "the assumption that dependent variable(s) exhibit equal levels of variance across the range of predictor variable(s)" (Hair et al., 2010, p. 74). Linearity and homoscedasticity are the aspects of multivariate normality (Kline, 2011). Residual plots were created and visually inspected for linearity and homoscedasticity. The approximately elliptical shape on the residual plot

indicated linear relationship, and the distribution of their variances are homogeneous (Stevens, 2007).

Multicollinearity refers to the "extent to which a variable can be explained by the other variables in the analysis" (Hair et al., 2010, p. 4). Field (2009) proposes to examine multicollinearity by three ways: bivariate correlation, VIF (variance inflation factor), and tolerance. Tabachnick and Fidell (2012) suggest that the bivariate correlation between two variables should not exceed .90. The highest correlation coefficient was calculated as .77 between *efficacy for student engagement* (ESE) and *efficacy for instructional strategies* (EIS). Field (2009) suggests that the VIF values should not be higher than 10 and the tolerance values should not be lower than .10. The VIF values in the present study were found to be ranged between 1.25 and 3.15 whereas tolerance values ranged between .32 and .79. Considering three of the tests, it was concluded that there was no multicollinearity problem.

At the third stage, descriptive statistics were conducted by using SPSS 21 in order to describe the data. This stage included describing the data by means, and standard deviations.

At the fourth stage, bivariate correlations among the dependent variable and indicators of independent variables were examined.

At the final stage, SEM was performed to test the hypothesized model by means of Mplus version 6.12. Structural equation model is a technique to test a conceptual model -which has a theoretical base- that involves hypothesized directional and/or nondirectional relationships among a set of observed (measured/manifest) and unobserved (latent) variables (MacCallum & Austin, 2000; Maruyama, 1998). Hair et al. (2010) suggest that multiple fit indices should be examined to assess the model fit. In order to evaluate the hypothesized model in the current study, several model fit indices were checked: model Chi-square ($\chi 2$), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR). The criteria for these indices are as follow.

Chi-square χ2: For a good model fit, *χ2* value should be nonsignificant (Hooper et al., 2008). Although *χ2* is still used as model fit index, there are some problems with it that it might lead the researcher to conclude the model fit erroneously (Schumacker & Lomax, 2004). Since it is sensitive to sample size, it is almost always significant if the sample size of the study is large (over 200) (Hooper et al., 2008; Schumacker & Lomax, 2004). Due to this limitation, other model fit statistics are also taken into consideration to evaluate the model fit (Hooper et al., 2008).

RMSEA: Browne and Cudeck (1993) proposed that an RMSEA value of 0 indicates perfect fit, a value lower than .05 indicates close fit, a value between .05 and .08 indicated mediocre fit, and a value higher than .10 indicates poor fit. Later, MacCallum et al. (1996) proposed RMSEA values of .01, .05, and .08, higher than .10 to indicate perfect, good, mediocre and bad model fit respectively.

CFI and TLI: The values of CFI and TLI ranges from 0 to 1, and higher values indicates better fit (Schumacker & Lomax, 2004). Hu and Bentler (1999) proposed that CFI and TLI should be close to .95 or higher. Hair et al. (2010) suggest that if CFI and TLI are higher than .90, it is concluded that the model fits well.

SRMR: As a rule of thumb SRMR should be lower than .05 for a good model fit, but an SRMR value close to .08 is still acceptable (Hu & Bentler, 1999).

3.8 Limitations

The limitations of the current study are discussed under the following titles: internal validity threats and external validity threats.

3.8.1 Internal Validity Threats

Internal validity refers to the "differences on the dependent variable are directly related to the independent variable, and not due to some other unintended variable" (Fraenkel et al.,

2012, p. 166). There exist many categories of possible threats for internal validity. These threats and the ways to control them are presented as follow.

For the current study, subject characteristics might be a threat to internal validity. In order to prevent this threat, the sample of the study was selected by stratified cluster random sampling method. All the participants were working the state elementary schools located either of the three main districts (Çukurova, Seyhan, and Yüreğir) in Adana.

Loss of subjects (mortality) is a possible threat to internal validity. In this study, there were teachers who were absent from the school on the data collection day. Since the schools which were visited per day was not selected based on any fact influencing their absenteeism, loss of subject was not considered as a threat for the current study.

Location might be another possible threat to the current study. Since it was not possible to administer the data collection form at the same location and time, the researcher visited the schools to collect data. In order to control the location threat, the instruments were administered in the teachers' lounges and classrooms. Although in different schools, the teachers' lounges and classrooms were similar to each other with respect to the physical environment. Most of the teachers were reached in the teachers' lounges during the breaks and kindly asked to fill the data collection form in there. However, in some schools there were some teachers who did not come to the teachers' lounges in the breaks. They were visited in their classrooms during the breaks and asked to participate in the study. Since they preferred to stay in their classrooms during the breaks, they filled the data collection instruments there. Also, there were some teachers among all the participants who wanted to complete the data collection form at home and asked me to get them back at another day. Those teachers were kindly asked to complete the form at school. While some of them accepted to participate, some of them did not due to some different reasons such as being too busy with their work, being sick, or being in a bad mood at that particular time.

Instrumentation could be a threat to interval validity. This threat was controlled by using the copies of the same data collection form (including Likert type instruments) for all

participants, and gathering the data by the same data collector. The researcher herself visited all the schools to collect data.

The last threat to internal validity of the current study might be history. As stated in the data collection instruments, the study includes a vocational social support scale which measures the teachers' perception on how much social support they receive on the job-related issues from different sources. One of those sources is school administration team. At the period of data collection, it was the time that MoNE was rotating the school principals. Therefore, some schools did not have a school principal for a short period of time, and a teacher from school or a vice principal was substituting the school principal position temporarily. In those schools the teachers were asked to answer the questions regarding school administration (including principal and deputy principal/s) as a team, and take into account the time that they had the school principal just before s/he left.

3.8.2 External Validity Threats

External validity is determined by the extent to which the results of a study can be generalized to other situations (Fraenkel et al., 2012). The sampling is one of the important factors that contributes to external validity. First of all, only 728 classroom teachers working in state elementary schools in Adana participated in the study. However, this number is not representative of all classroom teachers in Turkey. Thus, it is not possible to generalize the results to all classroom teachers in Turkey. Second, since the study was conducted with only classroom teachers, it is not possible to generalize the results of the study to other teachers. They might have different characteristics, culture, conditions and so on. Third, the study was carried out with the teachers working only in state elementary schools in Adana. However, it is possible that the teacher working in private schools have different conditions. Because of this, it is not possible to generalize the results of the current study to the teachers working in private schools. Fourth, it was a requirement for the study to visit the schools in which at least one school counselor was working. However, it is not the fact that all of the schools have a school counselor in Turkey. Hence, it is not possible to generalize the results of the current study to the teachers working in a school without a school counselor. However, although these limitations, this study provides

evidences for further research studies to be conducted in other situations such as with other teachers teaching at different areas, working in higher levels of education, working in private schools, working in different cities, and so on.

Also, all of the data collection instruments used in the current study is self-report instruments. Accordingly, the teacher autonomy, teacher self-efficacy, perceived social support, and in-class problem solving ability are limited to TAST, TTSES, VSSST, and ICPSI respectively. Different instruments may provide different results.

CHAPTER IV

RESULTS

The main purpose of the study was to investigate how well perceived teacher autonomy, sense of self-efficacy, and vocational social support predict in-class social problem solving abilities of classroom teachers. The previous chapters presented a brief and clear introduction to the current study, review of literature, and methodology that was followed throughout the study. This chapter presents the results of both descriptive and inferential analyses.

4.1 Descriptive Statistics for ICSPSA and indicators of TA, TSE, and VSS

Before conducting the main analysis, which is Structural Equation modelling, the descriptive statistics (means and standard deviations) for dependent variable and indicators of independent variables were examined. The three independent variables, which are teacher autonomy (TA), teacher self-efficacy (TSE), and vocational social support (VSS), consisted of 3, 3, and 5 indicators respectively.

The mean of dependent variable, ICSPSA, was calculated as 4.34 (SD=.48). TA consists of three indicators *autonomy in deciding on framework of curriculum* (ADFC), *autonomy in instructional planning and implementation* (AIPI), and *autonomy in professional development* (APD). The teachers indicated that they feel more autonomy in instructional planning and implementation activities (*M*=3.89, *SD*=.70) than making decisions on the framework of curriculum that they practice (*M*=3.00, *SD*=1.02) and their own professional development (*M*=2.13, *SD*=.98). TSE had three indicators: *efficacy for student engagement* (ESE), *efficacy for instructional strategies* (EIS), and *efficacy for classroom management* (ECM). The participants of the current study reported that they feel more efficacious in

using the necessary instructional strategies (*M*=7.48, *SD*=1.02) than engaging students into the class activities (*M*=7.28, *SD*=1.01) and managing the classroom (*M*=7.28, *SD*=1.09) effectively. The last independent variable VSS consisted of five indicators: *administration support* (AdS), *colleague support* (CgS), *counselor support* (CoS), *parent support* (PaS), and *family support* (FaS). Among all, the reports of teachers indicated that they receive the highest social support from their families (*M*=4.40, *SD*=.81), second from their colleagues (*M*=4.20, *SD*=.73), third from parents (*M*=3.92, *SD*=.80), fourth from school counselor(s) (*M*=3.86, *SD*=1.10), and least from school administrators (*M*=3.73, *SD*=.92). The means and standard deviations for the variables are displayed in Table 4.1.

Table 4.1

Means and Standard Deviations for ICSPSA and Indicators of TA, TSE, and VSS

	M	*SD*
ICSPSA	4.34 (out of 5)	.48
TA		
ADFC	3.00 (out of 5)	1.02
AIPI	3.89 (out of 5)	.70
APD	2.13 (out of 5)	.98
TSE		
ESE	7.28 (out of 9)	1.01
EIS	7.48 (out of 9)	1.02
ECM	7.28 (out of 9)	1.09
VSS		
AdS	3.73 (out of 5)	.92
CgS	4.20 (out of 5)	.73
CoS	3.86 (out of 5)	1.10
PaS	3.92 (out of 5)	.80
FaS	4.40 (out of 5)	.81

Note: ICSPSA=in-class problem solving ability, ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support.

4.2 Bivariate Correlations among the Variables in SEM

The intercorrelations among the variables of the study were examined by calculating Pearson Moment correlation coefficients. For this purpose the bivariate correlations among dependent variable and indicators of independent variables were calculated, examined, and interpreted. Cohen's (as cited in Field, 2009) criteria were employed while evaluationg the sizes of correlations. Cohen (as cited in Field, 2009) suggested the criteria for evaluating the strength of correlations among variables as to be small if it is ±.10, medium if it is ±.30, and large if it is ±.50. The bivariate correlations among dependent variable and the indicators of independent variables are presented in Table 4.2.

Table 4.2

Bivariate Correlations among Variables

	ICSPSA	ADFC	AIPI	APD	ESE	EIS	ECM	AdS	CgS	CoS	PaS
ICSPSA											
ADFC	.24**										
AIPI	.37**	.56**									
APD	.12**	.46**	.34**								
ESE	.52**	.22**	.29**	.10**							
EIS	.51**	.21**	.31**	.07	.77**						
ECM	.48**	.19**	.30**	.08*	.74**	.75**					
AdS	.29**	.22**	.31**	.25**	.29**	.31**	.28**				
CgS	.32**	.19**	.26**	.18**	.29**	.34**	.30**	.52**			
CoS	.21**	.14**	.18**	.08*	.27**	.30**	.24**	.36**	.39**		
PaS	.34**	.22**	.28**	.12**	.40**	.33**	.38**	.36**	.26**	.23**	
FaS	.32**	.10**	.18**	.03	.30**	.32**	.30**	.28**	.40**	.19**	.20**

Note: *p<.05. **p<.01. ICSPSA=in-class problem solving ability, ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support.

As presented in the table above, the ICSPSA of classroom teachers significantly ($p<.01$) and positively correlated with all indicators of the independent variables. ICSPSA strongly correlated with the indicators of teacher self-efficacy, and moderately correlated with the indicators of vocational social support and teacher autonomy except professional development subscale of teacher autonomy. The size of the correlation between ICSPSA and APD was found to be small.

4.3 Prediction of ICSPSA by TA, TSE, and VSS

AS stated earlier, a structural model was hypothesized and tested in order to investigate how well do perceived teacher autonomy, teacher self-efficacy and vocational social support received predict in-class social problem solving abilities of classroom teachers. The hypothesized model was tested through Structural Equation Modelling (SEM). Structural equation models are tested by following two steps suggested by Anderson and Gerbing (1988): first measurement model is tested, and second structural model is tested. Measurement model is tested through confirmatory factor analysis in order to examine the proposed relations of the observed indicators to the associated constructs. Measurement model provides evidence for convergent validity and discriminant validity (Anderson & Gerbing, 1988). Structural model investigates the relationships among unobserved variables (Kline, 2011), or in some cases among latent and manifest variables (Hoyle, 1995) and observed variables (Kline, 2011). Structural regression model consists of the combination of measurement model and structural model. In essence, the first step of testing a structural regression model is to test the measurement model. Accordingly, in the present study, first the measurement model was tested, and then, the structural regression model was tested. Figure 4.1 displays the hypothesized structural regression model of the current investigation.

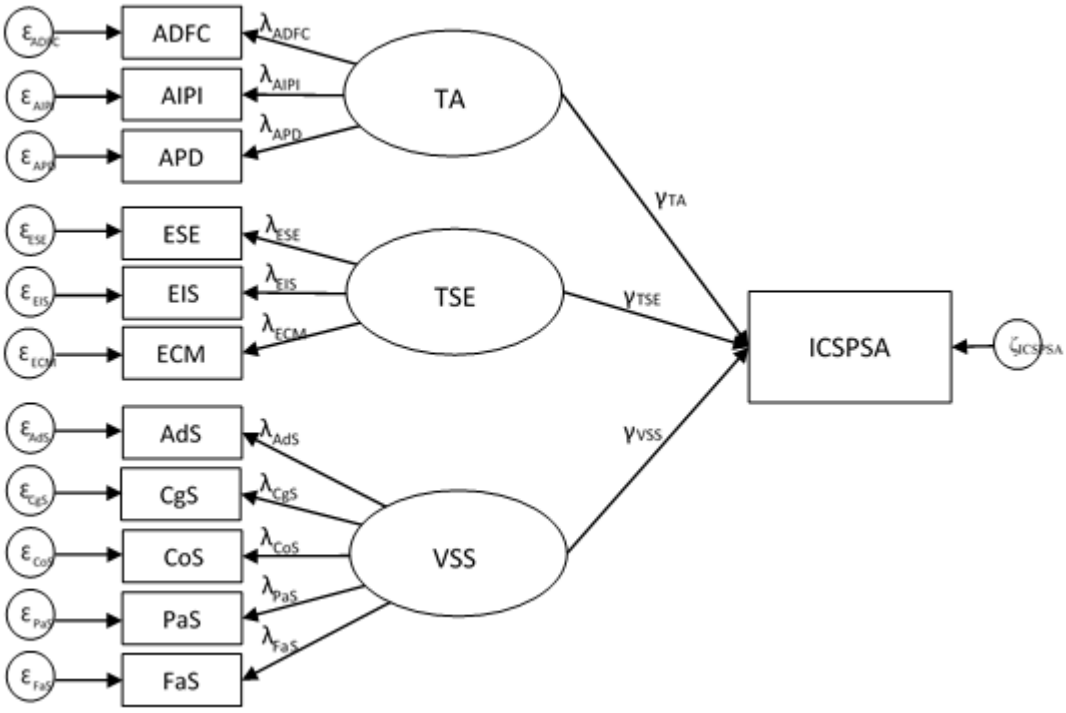

Figure 4.1 Hypothesized structural regression model
Note: ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support, TA=teacher autonomy, TSE=teacher self-efficacy, VSS=vocational social support, ICSPSA=in-class social problem solving ability.

While testing the measurement and structural components of structural regression model, Maximum likelihood estimation with robust standard errors (MLR) was applied due to multivariate non-normality (Muthen & Muthen, 2010), since this method of estimation does not require multivariate normality. The tests were performed by means of Mplus version 6.12.

4.3.1 Measurement of Latent Variables in SEM

In order to evaluate the measurement model Chi-square ($\chi 2$), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR) were examined. The result of the analysis

produced the following fit indices: $\chi 2(41)=166.590$ ($p<.05$), RMSEA=.065 with 90% confidence interval of .055 to .075, CFI=.95, TLI=.93, and SRMR=.05. Model chi-square indicated that the relationships in the data did not fit to the hypothesized relationships. Yet, as tatted earlier, since it is sensitive to sample size, other fit indices were examined as well. Among other fit indices CFI, TLI, and SRMR indicated close fit (Hu & Bentler, 1999) whereas RMSEA indicated mediocre fit (MacCallum et al., 1996). It was concluded that the model fitted to the data well. The unstandardized estimates of path coefficients were examined for significance. All factor loadings were found to be significant at .001 level, indicating that each indicator significantly contributed to the associated latent variables. The standardized estimates of path coefficients were examined for the indicators' effect sizes. They were observed to be ranged between .47 (medium) to .89 (large) (Kline, 2011). Figure 4.2 depicts the standardized path coefficients for the measurement model.

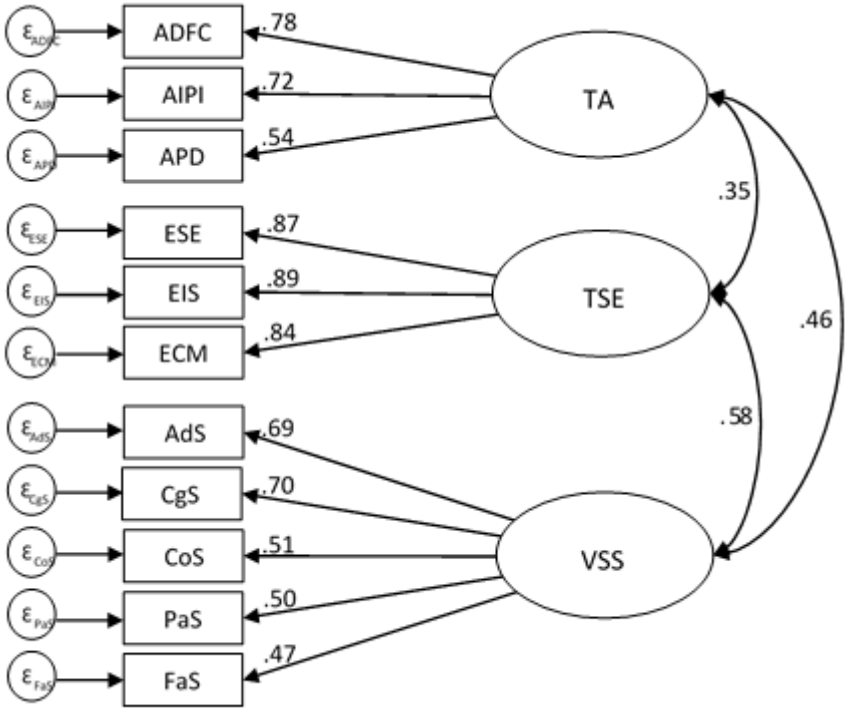

Figure 4.2 Standardized path coefficients in measurement model
Note: All coefficients are significant at $p<.001$, ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support, TA=teacher autonomy, TSE=teacher self-efficacy, VSS=vocational social support.

Factor score determinacies were examined in order to investigate how well each latent variable is explained by the related indicators. Factor score determinacy is "the correlation between the estimated and true factor scores" (Muthen & Muthen, 2010, p. 651). This score ranged from 0 to 1, and describes how well the construct is measured by its indicators (Muthen & Muthen, 2010). Factor score determinacy coefficient of ≥0.80 suggests strong determinacy of the factor (Schembre & Geller, 2011). The factor determinacy coefficients were found to be .84 for teacher autonomy, .95 for teacher self-efficacy, and .88 for vocational social support, all of which indicated that the latent variables were strongly constructed by their indicators.

4.3.2 Testing Relationships between ICSPSA and TA, TSE, VSS

After measurement model had been evaluated, structural regression model was tested based on measurement model. In order to interpret the structural regression model, model Chi-square (χ2), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR) were examined. The result of the analysis produced the following fit indices: $\chi^2(49)=189.413$ ($p<.05$), RMSEA=.06 with 90% confidence interval of .053 to .072, CFI=.95, TLI=.93, and SRMR=.05. Model chi-square with a significant value indicated that the model did not fit. However, as stated earlier in the data analysis part, chi-square is sensitive to sample size; therefore, other fit indices were examined as well. Among other fit indices CFI, TLI, and SRMR indicated close fit (Hu & Bentler, 1999) whereas RMSEA indicated mediocre fit (MacCallum et al., 1996). Based on all fit indices, the overall model fit was considered as quite acceptable.

As seen in the measurement model earlier, all of the factor loadings were found to be significant at .001 level, indicating that each indicator significantly contributed to the associated latent variables. They ranged between .48 (medium) to .89 (large) (Kline, 2011).

The *p* values of the unstandardized parameter estimates were examined for the significance of the parameter estimates for the structural part of the structural regression model, and all three parameters were observed to be statistically significant. While

parameter estimates for teacher autonomy and vocational social support were significant at .01, it was significant at .001 for teacher self-efficacy. The effects of these coefficients were small for teacher autonomy (.15) and vocational social support (.17), medium for teacher self-efficacy (.43). The standardized parameter estimates along with the path coefficients are presented in Figure 4.3.

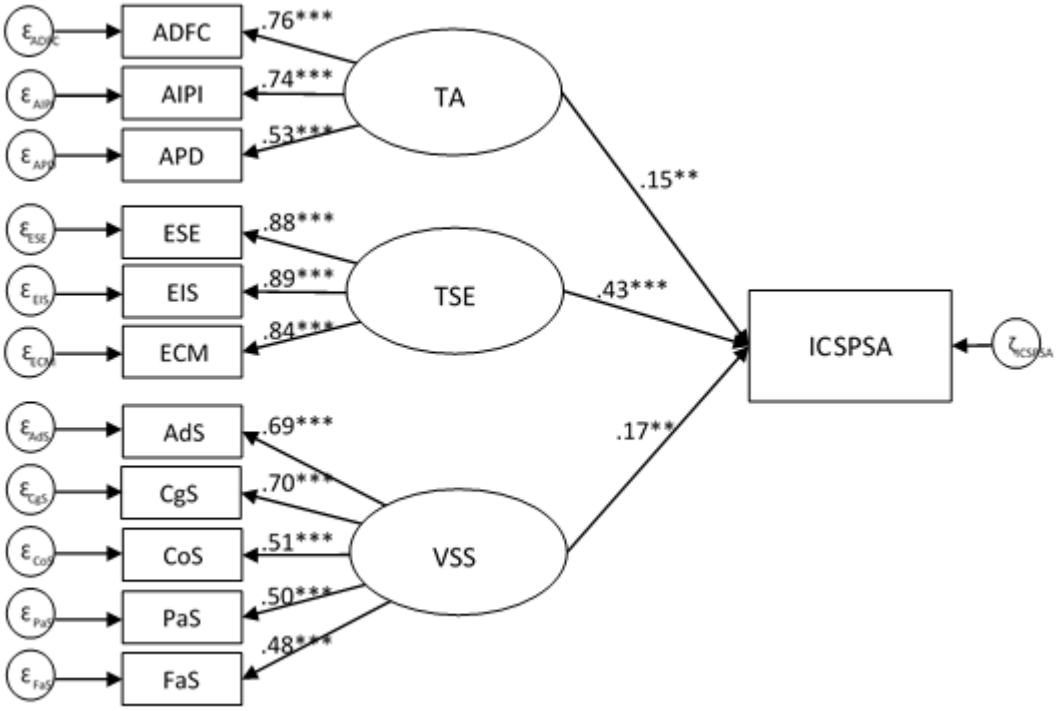

Figure 4.3 Structural regression model
Note: ***p*<.01. ****p*<.001. ADFC=autonomy in deciding framework of curriculum, AIPI=autonomy in instructional planning and implementation, and APD=autonomy in professional development, ESE=efficacy for student engagement, EIS=efficacy for instructional strategies, ECM=efficacy for classroom management, AdS=Administration support, CgS=colleague support, CoS=counselor support, PaS=parent support, and FaS=family support, TA=teacher autonomy, TSE=teacher self-efficacy, VSS=vocational social support, ICSPSA=in-class social problem solving ability.

The results of the structural regression model revealed that teacher autonomy, teacher self-efficacy and vocational social support significantly predicted in-class social problem solving abilities of classroom teachers. Among three independent variables, TSE was found to be a better predictor than others.

The squared multiple correlation coefficients were examined in order to investigate the amount of variance in ICSPSA explained by TA, TSE and VSS. The results revealed that 39% of the variance in ICSPSA significantly explained by the independent variables.

CHAPTER V

DISCUSSION

The study was designed to answer the question of how well do perceived teacher autonomy, teacher self-efficacy, and vocational social support predict in-class social problem solving abilities of classroom teachers. The previous chapters presented a brief and clear introduction to the current study, review of literature, methodology that was followed throughout the study, and the results of descriptive and inferential statistics. This chapter contains the discussion of the results, implications for practice, and recommendations for further research. They are presented in detail in the following sections.

5.1 Discussion of the Results

This study was designed to investigate how well teacher autonomy, teacher self-efficacy, and vocational social support predict in-class social problem solving ability of classroom teachers. In order for this investigation, the data which were collected from classroom teachers working in state elementary schools were subjected to Structural Equation Modelling (SEM). The results of the analysis indicated that perceived teacher autonomy (TA), teacher sense of self-efficacy (TSE), and vocational social support (VSS) significantly predicted perceived in-class social problem solving ability (ICSPSA) of classroom teachers. Each of these predictive relationships are discussed in the following sections.

5.1.1 Prediction of ICSPSA by TSE

As stated above TSE significantly predicted ICSPSA. This result indicated that when teachers report high sense of self-efficacy, they also report high performance in solving the problems that they encounter in their classrooms. Some studies in literature (e.g., Akama, 2006; Altunçekiç et al., 2005; Yenice, 2012) found out a correlational relationship between self-efficacy and problem solving in different contexts. Besides being consistent with the studies in literature, results of the current study expanded what was known about the relationship between these two concepts indicating a predictive relationship between them.

Furthermore, as stated earlier, teacher self-efficacy was used as a proxy for competence need, which is one of the basic psychological needs in self-determination theory (SDT). SDT defines competence as "feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to exercise and express one's capacity" (Deci & Ryan, 2002, p. 7). Individuals inherently desire to feel effective in the tasks that they engage (Guay et al., 2000; Deci & Vansteenkiste, 2004) and are more likely to engage in the activities that they feel effective in it (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004). Based on competence need of SDT, it was concluded that as long as teachers feel competent in their profession, they feel that they can solve the problems occurring in their classrooms. In other words, the teachers who feel competent in their profession are likely to be better problem solvers.

Among the three predictors, TSE was found to be the best predictor of ICSPSA. This result indicated that ICSPSA had a stronger relationship with TSE than with VSS and TA. This can be interpreted as teachers are more likely to be better problem solvers when they feel competent even if they do not have high level of autonomy and/or they do not receive high level of social support from others. The reason why teacher self-efficacy is the best predictor of ICSPSA might be explained by the theory of self-efficacy. Bandura (1977) states that "expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences" (p. 191). Bandura (1977) clearly states if a person

believes that s/he can do the task, s/he gives time and effort to struggle with the obstacles and reach the goal. When thought of the participants of the current investigation, it can be concluded that when teachers believe that they can overcome the problems by engaging in the problem solving procedures they spend time and effort and most likely can achieve at the end.

From the point of SDT, this difference might be due to the measurement of the basic psychological needs in the current study. Although need for autonomy, need for competence, and need for relatedness are coherent with teacher autonomy, teacher self-efficacy, and vocational social support, it should be noted that they are not exactly same concepts. If the basic psychological needs for teachers could be measured immediately as they are defined by SDT, it would be possible that all needs have a similar size of relationship with ICSPSA. Another possibility is that although satisfaction of all three basic psychological needs is essential for human functioning, the size of their effect on specific behaviors might be different. It might be possible that satisfaction of a specific need controls some behaviors more than the satisfaction of other needs. In this case, in-class social problem solving ability might be under a higher control of satisfaction of competence need than the satisfaction of autonomy and relatedness needs.

5.1.2. Prediction of ICSPSA by VSS

The other independent variables, vocational social support (VSS), significantly predicted ICSPSA. Receiving social support from school administration, colleagues, school counselor, parents, and family contributed to the classroom teachers' perceived problem solving performance in their classrooms. This finding was considered as concurrent with the previous research studies that were conducted in different contexts (e.g., Arslan, 2009; Kimbler et al., 2012; Kruger, 2001; Ünüvar, 2003). It is important to note that these studies in the literature mostly indicated a correlational relationship between social support and problem solving. Differing from those studies, the results of this current investigation augmented the information on the relationship between social support and problem solving revealing that VSS was a significant predictor of ICSPSA.

Moreover, this finding was considered as having a theoretical base as well. VSS was used as a proxy for relatedness need, which is another basic psychological need in SDT. Relatedness refers to feeling belongingness to social environment. Individuals inherently desire to be connected with others, and this connection involves loving, caring for, to be loved and cared for (Deci & Ryan, 2000; Deci & Ryan, 2002). Many activities in an individual's life involve others and each individual desire to feel belongingness (Deci & Vansteenkiste, 2004). Together with other two needs, (autonomy and competence) as relatedness need is satisfied, individuals function better in life. Based on the importance of relatedness in an individual's life, it can be claimed that classroom teachers can function better in their professional life as their relatedness need is satisfied. More specifically, the significant prediction of ICSPSA by VSS indicated that as teachers receive higher levels of social support they are likely to perform better in solving the problems that they encounter in their classrooms.

5.1.3 Prediction of ICSPSA by TA

The final significant predictor of ICSPSA was teacher autonomy (TA). Teachers feeling higher levels of autonomy (in making decisions about the framework of curriculum that they implement, in instructional planning and implementation, and in their own professional development) reported higher performance in solving in-class problems. In literature, to the knowledge of the researcher, the only study investigating a relationship between autonomy and problem solving was conducted by Chang et al. (2009). Although their study was conducted in a different context, they found that while university students' autonomy level significantly correlated to positive problem orientation dimension of social problem solving, it did not significantly correlate to rational problem solving dimension of social problem solving. In the current study, these two dimensions combined in a single dimension and it significantly predicted the in-class social problem solving ability of classroom teachers.

Additionally, teacher autonomy was used a proxy for need for autonomy of SDT. Need for autonomy, as stated earlier, refers to being free to make choices among a number of alternatives, feeling away from suppression, and doing the tasks willingly (Deci & Ryan,

2000; Deci & Ryan, 2002; Deci & Vansteenkiste, 2004; Guay et al., 2000). Autonomy is claimed as an essential aspect of healthy human functioning (Deci & Ryan, 2000). Based on the significance of autonomy need in human life, and the results of the current study can be interpreted that classroom teachers are likely to perform better in solving the in-class problems as they feel autonomous in their job-related activities.

5.2 Implications for Practice

This study was conducted with the classroom teachers working in state elementary schools. The results of the study revealed that teacher autonomy, teacher self-efficacy, and vocational social support significantly predicted the classroom teachers' in-class social problem solving abilities. Based on the results, some implications were suggested in order for classroom teachers to perform better in solving the problems that they encounter in their classrooms.

Since the best predictor of in-class social problem solving ability was found to be teacher self-efficacy, the first suggestion for implication might be taking the necessary actions in order to increase the teachers' sense of self-efficacy. While talking about teacher self-efficacy, it seems reasonable to start with pre-service teacher education. Çapa (2005) found out that the quality of pre-service teacher education programs significantly predicted the self-efficacy beliefs of first-year teachers. Accordingly, it can be suggested that enhancing teacher education programs will increase the teachers' sense of self-efficacy, and it will directly increase their in-class social problem solving abilities. In-service teacher training programs might be another way to increase the teachers' self-efficacy beliefs. In line with the changes in the world such as developments in science and education, globalization, social and psychological changes makes a difference is generations and education of those generations. Teachers need to keep up with those changes in order to carry out teaching tasks effectively. In-service teacher training provides the teachers a way of improving themselves continuously and feel efficacious in their profession. Therefore, teachers need to be supported with in-service teacher training programs for the areas that they need.

Second, it is suggested that the teachers should be provided with more autonomy in the job-related activities. Education system in Turkey is a centralized system regarding many aspects such as "policy decisions, curriculum, approval of textbooks and other instructional materials, governance and inspection of schools, appointment and in-service training of teachers" (Yıldırım, 2003, p. 528). In Turkey, primary, secondary, and high school curricula are developed by Ministry of National Education (MoNE). Accordingly, all the decisions about the curricula are made by MoNE. Teachers' role in this system is to to implement the curriculum in the way that MoNE previously decided. Since higher autonomy leads to higher performance in in-class social problem solving, it can be suggested that MoNE makes policies and identifies the teachers' role and jurisdiction by giving them larger area to make their own decisions about curriculum and teaching, take responsibility of their actions, and carry out the teaching related tasks more volitionally.

Third, the teachers should be socially supported for their work related issues. In order to provide social support for teachers, a collaborative environment should be created. Collaboration requires the people in an organization "to share information, decision making, work together, or *co-labor.* … to change the patterns of their relationship so that they are more interdependent." (Barott & Raybould, 1998, p. 29). Goodson and Hargreaves (1996) believe that "effective collaboration among teachers works best when it is directed by members of the professional community themselves, within facilitating structures and on the basis of enabling resources that others who believe in their vision, and trust them to bring it to fruition …" (p. viii). Collaboration among teachers provides teachers satisfaction and adaptability: providing feelings of satisfaction and effectiveness, precluding from sink-or-swim, preventing from burnout, enabling coping with the problems better and having more control on daily work lives (Inger, 1993). Therefore, it is suggested to create a collaborative environment at schools in order to increase the vocational social support that teachers receive.

Another important component that is effective in increasing vocational social support for teachers might be school administrators since they can both directly and indirectly provide social support to teachers. School administrators are one of the vocational social support resources of this current study. Therefore, they can be called as one of the primary sources

of vocational social support. Also, they can provide indirect social support by creating a school culture that enhances collaboration among school staff. Their leadership style might be an important factor in providing both direct and indirect social support. Therefore, it might be suggested to school administrators to embrace such a leadership style that can increase vocational social support for teachers. An example of this kind of leadership style might be transformational leadership. Transformational leadership consists of ten dimensions: (1) building school vision and establishing goals, (2) providing intellectual stimulation, (3) providing individualized support, (4) symbolizing professional practices and values, (5) identifying high performance expectations, (6) creating structures that fostering participation in school decisions, (7) staffing, (8) instructional support, (9) monitoring school activities, and (10) community focus (Leithwood & Jantzi, 2000). Considering the dimensions, it can be claimed that transformational leadership style both provides vocational social support directly and creates a school environment that the school staff can collaborate with each other. Another type of leadership style that school principals should employ is instructional leadership since it includes "shared instructional leadership" (Marks & Printy, 2003, p.371) which involves collaboration between school principal and teachers on curriculum, instruction, and assessment.

5.3 Recommendations for Further Research

Based on the results of the current investigation, the following recommendations for future research studies were constructed.

- The current study was conducted with the classroom teachers working in state elementary schools located in three main districts of Adana. A further study can be carried out with a larger sample in order to provide generalizability.

- Considering the sample, a study can be carried out with teachers from different majors, and teachers teaching at different levels such as secondary school and high school.

- An experimental study can be designed to measure the change in in-class social problem solving abilities of teachers in an environment that is organized to meet satisfaction of teachers' autonomy, competence, and relatedness needs.

- Future studies also might include other aspects of SDT. For instance, as stated earlier, SDT covers three types of motivation: amotivation, external motivation that includes four types of regulation, and intrinsic motivation.

- In this current investigation, in-class social problem solving ability was measured by a scale which was developed throughout the study based on the constructive social problem solving model of D'Zurilla et al. (2004). In further investigation, dysfunctional social problem solving –which consists of negative problem orientation, impulsivity/carelessness style, and avoidance style- can be examined as well.

- In this study teacher autonomy, teacher self-efficacy, and vocational social support were used as latent variables constructed by related indicators. A further study can be designed to investigate which of those indicators (autonomy in making decisions on the curriculum, autonomy in instructional planning and implementation, autonomy in professional development, efficacy for student engagement, efficacy for instructional strategies, efficacy for classroom management, administration support, colleague support, counselor support, parent support, family support) can significantly predict in-class social problem solving ability of teachers.

- Taking into account the indicators of the teacher autonomy, teacher self-efficacy, and vocational social support, a more comprehensive further study can be conducted which covers more number of potential indicators for these variables. For instance, pedagogical content knowledge might be a potential predictor of teacher self-efficacy. Another example might be community support to schools/teachers as a potential indicator for vocational social support.

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APPENDICES

APPENDIX A: Sample Items of Data Collection Instruments

In-Class Social Problem Solving Inventory (ICSPSI)

Sınıf-İçi Sosyal Sorun Çözme Envanteri (SİSSÇE)

Bu bölümün amacı, sınıf içinde karşılaştığınız sorunlar karşısında genel olarak nasıl tepki gösterdiğinizi belirlemeye çalışmaktır. Sözü edilen bu sorunlar **sınıf içinde karşılaştığınız, öğretiminizi etkileyen, önemli bulduğunuz, sizi rahatsız eden fakat üstesinden nasıl geleceğinizi bilemediğiniz durumları** (disiplin sorunları, öğretim ile ilgili sorunlar vb.) kastetmektedir. Aşağıdaki ifadeleri okurken sizin bu durumlarda genellikle nasıl düşündüğünüzü, hissettiğinizi ve davrandığınızı göz önünde bulundurunuz, "1- Hiçbir zaman, 2- Nadiren, 3- Bazen, 4- Sık sık, 5- Her zaman" şeklindeki derecelendirmede sizi en iyi yansıtan sayıyı daire içine alınız.

Sınıfta karşılaştığım …	**Hiçbir zaman**	**Nadiren**	**Bazen**	**Sık sık**	**Her zaman**
1. bir sorunu çözerken olabildiğince fazla çözüm seçeneği üretmeye çalışırım.	1	2	3	4	5
11. bir sorunu çözmek için olabildiğince fazla bilgi toplarım.	1	2	3	4	5
13. sorunları farklı açılardan değerlendirmeye çalışırım.	1	2	3	4	5

Teacher Autonomy Scale- Turkish (TAST)

Öğretmen Özerklik Ölçeği- Türkçe (ÖÖÖT)

Bu ölçek sınıf öğretmenlerinin meslek hayatlarında kendilerini ne kadar özerk hissettiklerini belirlemek amacıyla geliştirilmiştir. Aşağıdaki ifadeleri düşündüğünüzde, her bir madde ile ilgili karar verip uygulamakta kendinizi ne derece özerk hissediyorsunuz, başka bir ifadeyle kontrolün ne derece sizde olduğunu hissediyorsunuz? Lütfen aşağıdaki her bir maddeyi okuyunuz ve "1-Hiç, 2-Çok az, 3-Biraz, 4-Oldukça, 5-Tamamen" şeklindeki derecelendirmede size en uygun sayıyı daire içine alınız.

	Hiç	Çok az	Biraz	Oldukça	Tamamen
1. Öğreteceğim konulara ait hedef ve davranışları belirlemede kendimi özerk hissediyorum.	1	2	3	4	5
2. Uygulayacağım günlük/yıllık planlar için konu (içerik) seçiminde kendimi özerk hissediyorum.	1	2	3	4	5
10. Hizmet içi eğitimlerin düzenleneceği yer/mekanın seçiminde kendimi özerk hissediyorum.	1	2	3	4	5
12. Hizmet içi eğitimi verecek kişi/lerin seçiminde kendimi özerk hissediyorum.	1	2	3	4	5
15. Sınıfta kullanacağım öğretim materyallerinin seçiminde kendimi özerk hissediyorum.	1	2	3	4	5
17. Öğrenci başarısını değerlendirirken kullanacağım ölçütleri belirlemede kendimi özerk hissediyorum.	1	2	3	4	5

Vocational Social Support Scale-Teacher (VSSST)

Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ)

Bu ölçek sınıf öğretmenlerinin meslek yaşamlarında farklı kaynaklardan ne derece sosyal destek aldıklarını belirlemek amacıyla geliştirilmiştir. Lütfen aşağıdaki her bir maddeyi okuyunuz ve "1-Hiçbir zaman, 2-Nadiren, 3-Bazen, 4-Sık sık, 5-Her zaman" şeklindeki derecelendirmede size en uygun rakamı daire içine alınız.

Okul yöneticileri …	**Hiçbir zaman**	**Nadiren**	**Bazen**	**Sık sık**	**Her zaman**
3. işimle ilgili bir sorunum olduğunda bana önerilerde bulunurlar.	1	2	3	4	5
6. mesleki başarılarımı takdir ederler.	1	2	3	4	5

Çalıştığım okuldaki öğretmen arkadaşlarım …	**Hiçbir zaman**	**Nadiren**	**Bazen**	**Sık sık**	**Her zaman**
3. işimle ilgili bir sorunum olduğunda bana önerilerde bulunurlar.	1	2	3	4	5
6. mesleki başarılarımı takdir ederler.	1	2	3	4	5

Okul rehber öğretmen(ler)i …	**Hiçbir zaman**	**Nadiren**	**Bazen**	**Sık sık**	**Her zaman**
1. öğrenci ve/veya velilerle ilgili bir sorunum olduğunda bana önerilerde bulunur(lar).	1	2	3	4	5
3. ihtiyacım olduğunda benimle işbirliği içinde çalışmaya hazırdır(lar).	1	2	3	4	5

Öğrenci velileri …	**Hiçbir zaman**	**Nadiren**	**Bazen**	**Sık sık**	**Her zaman**
2. öğrencilerimin eğitimi ile ilgili her konuda benimle işbirliği yapmaya hazırdırlar.	1	2	3	4	5
6. yaptığım ders içi etkinliklere destek olurlar.	1	2	3	4	5

Ailem (annem, babam, kardeşim, eşim…) …	Hiçbir zaman	Nadiren	Bazen	Sık sık	Her zaman
2. işimle ilgili konularda beni motive eder.	1	2	3	4	5
4. işimle ilgili bir sorunum olduğunda bana önerilerde bulunur.	1	2	3	4	5

Turkish version of Teachers' Sense of Self-Efficacy Scale (TTSES)

Öğretmen Öz-yeterlik Algısı Ölçeği (ÖÖAÖ)

Lütfen aşağıdaki soruları dikkatle okuyunuz ve her bir soru için kendinizi ne derece yeterli hissettiğinizi '1-yetersiz'den '9-çok yeterli'ye uzanan derecelendirmede size en uygun rakamı daire içine alarak belirtiniz.

	yetersiz		**çok az yeterli**		**biraz yeterli**		**oldukça yeterli**		**çok yeterli**
1. Sınıfta dersi olumsuz yönde etkileyen davranışları kontrol etmeyi ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
3. Öğrencileri okulda başarılı olabileceklerine inandırmayı ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
6. Öğrencilerin sınıf kurallarına uymalarını ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
9. Farklı değerlendirme yöntemlerini ne kadar kullanabilirsiniz?	1	2	3	4	5	6	7	8	9
10. Öğrencilerin kafası karıştığında ne kadar alternatif açıklama ya da örnek sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
11. Çocuklarının okulda başarılı olmalarına yardımcı olmaları için ailelere ne kadar destek olabilirsiniz?	1	2	3	4	5	6	7	8	9

Demographic Information Form

Demografik Bilgi Formu

Bu bölümde demografik bilgilerinize ilişkin sorular bulunmaktadır. Lütfen maddeleri dikkatle okuyarak size en uygun seçeneğe (√) işareti koyunuz.

Cinsiyetiniz:	☐ Kadın ☐ Erkek
Yaşınız (lütfen uygun yaş aralığını seçiniz):	☐ 23-34 ☐ 35-44 ☐ 45-54 ☐ 55 ve üstü
Öğrenim durumunuz (en son aldığınız diploma derecesi):	☐ Önlisans ☐ Lisans ☐ Yüksek Lisans ☐ Doktora
Öğretmenlik deneyiminiz :	☐ 0-4 yıl ☐ 5-9 yıl ☐ 10-14 yıl ☐ 15-19 yıl ☐ 20 yıl ve üzeri
Şu anda kaçıncı sınıfı okutuyorsunuz?	☐ 1. Sınıf ☐ 2. Sınıf ☐ 3. Sınıf ☐ 4. Sınıf

APPENDIX B: Permission from Human Subjects Ethics Committee of Middle East Technical University

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

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04.04.2014

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Eğitim Bilimleri

Gönderen : Prof. Dr. Canan Özgen
IAK Başkanı

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Eğitim Bilimleri Bölümü öğrencisi Jale Ulaş'ın "Social Problem Solving Abilities of Classroom Teachers: A Self-Determination Theory Approach" isimli araştırması "İnsan Araştırmaları Komitesi'' tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

04/04/2014

Prof.Dr. Canan Özgen
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkanı
ODTÜ 06531 ANKARA

APPENDIX C: Permission from Provincial Directorate for National Education in Adana

T.C.
ADANA VALİLİĞİ
İl Milli Eğitim Müdürlüğü

ÖĞRENCİ İŞLERİ DAİRESİ BAŞKANLIĞI

TÜRKİYE CUMHURİYETİ 1,25 TÜRK LİRASI RESMİ POSTA

6 Kasım 14

Sayı : 56815420/100/5017322
Konu: Tez Çalışması (Jale ULAŞ)

04/11/2014

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06800 Çankaya/ANKARA

İlgi : 08/10/2014 tarihli ve 4960 sayılı yazınız.

Üniversiteniz Eğitim Programları ve Öğretim Ana Bilim Dalı doktora Programı öğrencisi Jale ULAŞ'ın hazırlamış olduğu "Sınıf Öğretmenlerinin Sosyal Problem Çözme Becerileri:Bir Öz-Belirleme Kuramı Yaklaşımı" başlıklı doktora tezini İlimiz Çukurova, Seyhan, Yüreğir İlçelerinde ekli listede isimleri bulunan ilkokullardaki sınıf öğretmenlerine 13/10/2014-05/12/2014 tarihleri arasında uygulama yapmak istediği ile ile ilgili Valilik Makamının 04/11/2014 tarihli ve 4985142 sayılı oluru ekte gönderilmiştir.

Bilgilerinizi ve gereğini rica ederim.

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Güvenli Elektronik İmzalı
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V.H.K.İ

Din Öğretimi Şubesi
Elektronik Ağ: www.adana.meb.gov.tr
e-posta: dinogretimi01@meb.gov.tr

Ayrıntılı bilgi için:E.GÜLTEKİN GÜNGÖREN VHKİ
Tel: (0 322) 4588371-1231
Faks: (0 322) 4588392-95

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APPENDIX D: Copyright Permission for Figure 2.1

Book: Social problem solving: Theory, research, and training.
Author: Edited by Edward C. Chang, PhD; Thomas J. D'Zurilla, PhD; Lawrence J. Sanna, PhD
Publisher: American Psychological Association
Date: Jan 1, 2004

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May 11, 2015

Jale Ulas Marbouti
Department of Educational Sciences
Middle East Technical University
Üniversiteler Mahallesi, Dumlupınar Bulvarı No: 1
Ankara, Çankaya 06800 Turkey

RE: Request for permission to reprint figure I.1 on page 8 of *Intrinsic Motivation and Self-Determination in Exercise and Sport,* by M.S. Hagger and N.L.D. Chatzisarantis, in your dissertation at Middle East Technical University [ID #9383]

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Martha Gullo
Rights Manager
Ph: 217-351-5076 ext. 2223
Email: marthag@hkusa.com

APPENDIX F: Input for SEM and Selected Outputs

Input for SEM

```
Title:
   Main SEM
Data:
   File is "sem.csv";
Variable:
   Names are
     gender,age,edu,exp,grade,experien,ADFC,AIPI,APD,ESE,EIS,ECM,
     AdS,CgS,CoS,PaS,FaS,ICSPSA;

   Usevariables
     ADFC,AIPI,APD,ESE,EIS,ECM,AdS,CgS,CoS,PaS,FaS,ICSPSA;

Analysis:
   estimator=MLR;
   iterations=5000;

Model:
    TA by ADFC* AIPI APD; TA@1;
    TSE by ESE* EIS ECM; TSE@1;
    VSS by AdS* CgS CoS PaS FaS; VSS@1;

    ICSPSA on TA TSE VSS;

output:
          sampstat standardized residual tech1 modindices fsdeterminacy;
```

Model Fit Information

Number of Free Parameters 41

Chi-Square Test of Model Fit

Value	189.413*
Degrees of Freedom	49
P-Value	0.0000
Scaling Correction Factor for MLR	1.076

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV,

and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.063
90 Percent C.I.	0.053 0.072
Probability RMSEA <= .05	0.013

CFI/TLI

CFI	0.949
TLI	0.931

Chi-Square Test of Model Fit for the Baseline Model

Value	2801.891
Degrees of Freedom	66
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.050

Unstandardized Model Results

			Two-Tailed	
	Estimate	S.E.	Est./S.E.	P-Value
TA BY				
ADFC	0.774	0.046	16.967	0.000
AIPI	0.523	0.029	17.867	0.000
APD	0.512	0.045	11.325	0.000
TSE BY				
ESE	0.884	0.033	26.651	0.000
EIS	0.901	0.034	26.694	0.000
ECM	0.913	0.041	22.382	0.000
VSS BY				
ADS	0.629	0.034	18.652	0.000
CGS	0.509	0.031	16.159	0.000
COS	0.555	0.043	12.980	0.000
PAS	0.401	0.034	11.950	0.000
FAS	0.389	0.038	10.133	0.000

ICSPSA ON				
TA	0.069	0.024	2.947	0.003
TSE	0.206	0.024	8.699	0.000
VSS	0.081	0.030	2.698	0.007
TSE WITH				
TA	0.356	0.044	8.073	0.000
VSS WITH				
TA	0.472	0.051	9.334	0.000
TSE	0.585	0.041	14.393	0.000
Intercepts				
ADFC	3.004	0.038	79.276	0.000
AIPI	3.894	0.026	149.441	0.000
APD	2.128	0.036	58.905	0.000
ESE	7.278	0.037	194.310	0.000
EIS	7.483	0.038	198.514	0.000
ECM	7.279	0.040	180.654	0.000
ADS	3.726	0.034	109.468	0.000
CGS	4.198	0.027	155.459	0.000
COS	3.858	0.041	94.964	0.000
PAS	3.920	0.030	132.330	0.000
FAS	4.397	0.030	146.592	0.000
ICSPSA	4.340	0.018	245.659	0.000
Variances				
TA	1.000	0.000	999.000	999.000
TSE	1.000	0.000	999.000	999.000
VSS	1.000	0.000	999.000	999.000
Residual Variances				
ADFC	0.446	0.059	7.497	0.000
AIPI	0.221	0.027	8.211	0.000
APD	0.688	0.040	16.993	0.000
ESE	0.240	0.022	10.946	0.000
EIS	0.223	0.024	9.315	0.000
ECM	0.348	0.034	10.258	0.000
ADS	0.448	0.040	11.327	0.000
CGS	0.272	0.023	11.580	0.000
COS	0.894	0.059	15.233	0.000
PAS	0.478	0.036	13.180	0.000
FAS	0.504	0.047	10.626	0.000
ICSPSA	0.139	0.010	14.280	0.000

Standardized Model Results

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
TA BY				
ADFC	0.757	0.038	19.803	0.000
AIPI	0.743	0.035	21.036	0.000
APD	0.526	0.040	13.171	0.000
TSE BY				
ESE	0.875	0.013	64.818	0.000
EIS	0.886	0.014	64.829	0.000
ECM	0.840	0.017	50.059	0.000
VSS BY				
ADS	0.685	0.031	22.056	0.000
CGS	0.698	0.031	22.731	0.000
COS	0.506	0.036	14.222	0.000
PAS	0.501	0.040	12.467	0.000
FAS	0.481	0.042	11.498	0.000
ICSPSA ON				
TA	0.146	0.049	2.979	0.003
TSE	0.431	0.047	9.082	0.000
VSS	0.170	0.063	2.718	0.007
TSE WITH				
TA	0.356	0.044	8.073	0.000
VSS WITH				
TA	0.472	0.051	9.334	0.000
TSE	0.585	0.041	14.393	0.000
Intercepts				
ADFC	2.938	0.075	39.068	0.000
AIPI	5.539	0.152	36.438	0.000
APD	2.183	0.044	49.969	0.000
ESE	7.202	0.217	33.120	0.000
EIS	7.357	0.232	31.685	0.000
ECM	6.695	0.246	27.167	0.000
ADS	4.057	0.117	34.568	0.000
CGS	5.762	0.204	28.290	0.000
COS	3.520	0.114	30.965	0.000
PAS	4.904	0.147	33.411	0.000
FAS	5.433	0.252	21.602	0.000
ICSPSA	9.105	0.280	32.515	0.000

Variances				
TA	1.000	0.000	999.000	999.000
TSE	1.000	0.000	999.000	999.000
VSS	1.000	0.000	999.000	999.000
Residual Variances				
ADFC	0.426	0.058	7.360	0.000
AIPI	0.447	0.053	8.514	0.000
APD	0.724	0.042	17.258	0.000
ESE	0.235	0.024	9.932	0.000
EIS	0.216	0.024	8.918	0.000
ECM	0.295	0.028	10.461	0.000
ADS	0.531	0.042	12.504	0.000
CGS	0.513	0.043	11.955	0.000
COS	0.744	0.036	20.663	0.000
PAS	0.749	0.040	18.568	0.000
FAS	0.769	0.040	19.111	0.000
ICSPSA	0.610	0.036	16.910	0.000

APPENDIX G: Turkish Summary

TÜRKÇE ÖZET

SINIF ÖĞRETMENLERİNİN SINIF-İÇİ SOSYAL SORUN ÇÖZME BECERİLERİ: BENLİK-BELİRLEME KURAMI TEMELLİ BİR ÇALIŞMA

GİRİŞ

1.1 Problem Durumu

Dünya günden güne değişmekte ve daha da zorlayıcı bir hale gelmektedir. Böyle bir dünyada bireylerin çevrelerindeki birçok sorunla baş etmeleri gerekmektedir. Bu durum insanların bazı düşünme becerilerine sahip olmalarını gerektirir. Temizyürek (2003) insanların hayatta kalabilmek için karşılaştıkları sorunları çözebilmeleri gerektiğini ve bunun için de problem çözme becerisinin insanların sahip olması gereken en önemli becerilerden biri olduğunu savunmaktadır. Problem çözme günlük hayatta olduğu gibi mühendislik, sanat, mimarlık, sağlık ve eğitim gibi iş alanlarında da oldukça önemli bir beceri olarak karşımıza çıkmaktadır (Jonassen, 2000). Dünya geliştikçe ve değiştikçe, eğitim dünyası da sayısız sorunlarla karşılaşmaktadır. Akademisyenler, okul müdürleri, eğitim programı uzmanları, eğitim psikologları, konu alanı uzmanları gibi birçok eğitim çalışanı karşılaşılan bu sorunları çözmek için emek sarfetmektedirler. Öğretmenler de eğitim alanındaki bu sorunların bir kısmını çözmesi gereken kişilerdendir, çünkü onlar eğitim programlarının uygulayıcılarıdırlar ve mesleklerini icra ederken birçok sorunla karşılaşmaktadırlar.

Aslında, öğretmek sürekli sorun çözmeyi içerir (Castro, Kelly, & Shih, 2010). Öğretmenler ne öğretecekleri, nasıl öğretecekleri, bir öğrenciye nasıl erişebilecekleri, velilerle nasıl iletişim kurabilecekleri (Castro ve diğ., 2010), bir sınıfı nasıl yönetebilecekleri ve istenmeyen davranışlarla nasıl başa çıkabilecekleri (Lee & Choi, 2008; McDonald, 2001; Pannels, 2010; Lee & Powell, 2005) gibi birçok konu hakkında sürekli olarak kararlar alırlar ve uygularlar. İstanmeyen öğrenci davranışlarının sık görüldüğü sınıflarda öğrenciler akademik etkinliklerle kısa süre ilgilenmektedirler ve bu öğrencilerin akademik başarıları zayıf olmaya

yatkındır (Shinn, Ramsey, Walker, Stieber, & O'Neill, 1987). Öğrenciler için etkili bir öğrenme ortamı oluşturabilmek için öğretmenlerin sınıfta ortaya çıkan sorunları çözmesi beklenmektedir.

Ulusal ve uluslararası birçok çalışma öğretmelerin sınıfta/okulda karşılaştıkları sorunları ortaya çıkarmıştır. Bu sorunlardan bir kısmı şu şekilde sıralanabilir; sırası gelmeden konuşma, diğer öğrencileri sürekli şikayet etme, öğrencilerin motivasyonunun düşük olması, disiplinsizlik, öğrencilerin birbirini rahatsız etmesi hatta bazen kavga etmesi, öğrencilerin dersin gerekliliklerini yerine getirmemesi, saygısızlık, anne babaların çocukların eğitim sürecine katılmamaları, anne babaların düşük eğitim düzeyi, okulda materyal eksikliği, sınıfların kalabalık olması vb. (Al-amarat, 2011; Atcı, 2004; Atıcı & Merry, 2001; Clunies-Ross, Little, & Kienhuis, 2008; Çetin, 2002; Jones, Charlton, & Wilkin, 1995; Keskin, 2002; Kocabey, 2008; Leung & Ho, 2001; Sadık, 2002; Sayın, 2001; Siyez, 2009; Stephenson, Linfoot ve Martin, 2000; Sun & Shek, 2012; Tulley & Chiu, 1995; Türnüklü & Galton, 2001; Yapıcı & Yapıcı, 2003).

Öğretmenler sınıflarında karşılaştıkları sorunları çözmek için çeşitli yollara başvurmaktadırlar. Bunlardan bazıları şu şekildedir: el işaretleri kullanma, görmezden gelme, öğrencinin ismini söyleme, göz teması kurma, soru sorma, eleştirme, tehdit etme, ceza verme, öğrenci ile sınıfta veya özelde konuşma, bağırma, sözlü uyarı, öğüt verme, öğrenciyi müdürün odasına gönderme, velilerle görüşme, çocuğu diğerlerinden izole etme, sınıf tahtasına veya çöp kutusuna dönük bir şekilde tek ayak üstünde bekletme, tokat atma, kulak çekme, saç çekme, tekme atma vb. (Atcı, 2004; Aydın, 2010; Boyacı, 2009; Çalışkan Maya, 2004; Erol, Özaydın, & Koç, 2010; Eleser, 2008; Gömleksiz ve diğ., 2008; Sayın, 2001; McDonald, 2001). Buna ragmen, öğretmenler bu yöntemlerin karşılaşılan sorunlarla baş etmekte yeterince etkili olmadığını, bu yüzden de sorun çözme konusunda yeterince etkin olmadıklarını belirtmişlerdir (McDonald, 2001). Öğretmenlerle veya öğretmen adaylarıyla yaptıkları çalışmaların sonucunda, bazı araştırmacılar (örn., Saracaloğlu, Yenice & Karasakaloğlu, 2009) onların sorun çözme becerilerinin yeterli düzeyde olduğu sonucuna ulaşırken, bazı araştırmacılar (örn., Üstündağ & Beşoluk, 2012; Yıldız, Zırhlıoğlu, Yalçınkaya & Güven, 2011) onların sorun çözme becerilerinin düşük olduğunu ortaya çıkarmışlardır.

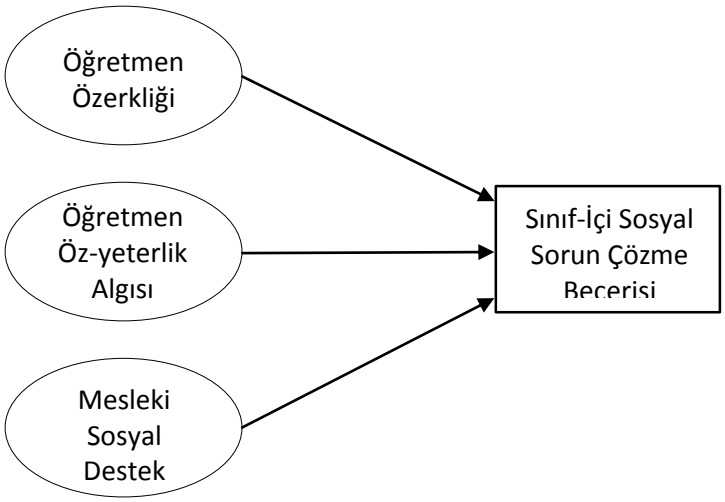
Bu noktada ‘sorun nedir’ ve ‘sorun çözme nedir’ sorularına odaklanmakta fayda vardır. D’Zurilla, Nezu, and Maydeu-Olivares (2004) sorun veya sorun durumunu “uyumlayıcı işlevler (adaptive functioning) için bir çözüm gerektiren ancak durumla karşılaşan kişinin bir ya da daha fazla engelden dolayı etkili bir çözümü kolaylıkla bulamadığı herhangi bir durum” (s. 12) olarak tanımlamışlardır. Sorun çözmeyi ise günlük hayatta karşılaşılan bütün sorunları dikkate alarak *sosyal sorun çözme* olarak adlandırmış ve bunu “günlük yaşamda karşılaşılan sorunları tanımlamak ve bunlara etkili bir çözüm bulmak için kişi veya kişilerin kendileri tarafından yönetilen bilişsel-davranışsal bir süreç” (s. 12) olarak tanımlamışlardır. Bu süreç temelde iki bölümden oluşmaktadır: (a) soruna yönelim ve (b) sorun çözme tarzı. S*oruna pozitif yönelim* (SPY) ve *soruna negatif yönelim* (SNY) olarak iki farklı yönelimden oluşan soruna yönelim boyutu kişinin sorunlara ve bu sorunları çözme becerilerine yönelik inancını ve duygularını ifade etmektedir. Sorun çözme tarzı ise kişinin sorun çözme sürecindeki bilişsel ve davranışsal tepkilerini ifade etmektedir ve üç farklı tarzı içermektedir: (1) akılcı sorun çözme tarzı (ASÇT), (2) dürtüsel-dikkatsiz sorun çözme tarzı (DDSÇT) ve (3) kaçıngan sorun çözme tarzı (KSÇT). D’Zurilla ve diğerleri (2004) soruna pozitif yönelimin kişiyi akılcı sorun çözme tarzına yönlendirdiği, soruna negatif yönelimin ise kişiyi dürtüsel-dikkatsiz sorun çözme tarzına veya kaçıngan sorun çözme tarzına yönlendirdiğini belirtmektedirler. Buna bağlı olarak, D’Zurilla ve diğerleri (2004) yukarıdaki iki ana boyuttan soruna yönelim boyutunu sorun çözme sürecinin motivasyonel boyutu olarak nitelendirmektedirler. Buradan yola çıkılarak motivasyonun problem çözme sürecinde önemli bir yeri olduğu söylenebilir.

Bu noktada da motivasyon konusuna odaklanmakta fayda vardır. Motivasyon, genel ifadelerle, kişinin “amaca-yönlendirilmiş aktivitelerini devam ettiren süreç” olarak tanımlanmaktadır (Pintrich & Shunk, 2002, s. 5). Deci ve Ryan tarafından 1985 yılında geliştirilen Benlik-belirleme kuramına (Self-Determination Theory) göre motivasyon kişinin üç temel psikolojik ihtiyacının kontrolü altındadır: özerklik, yeterlik ve ilişkili olma (Deci & Ryan, 2002; Deci & Ryan, 2012; Deci & Ryan, 2013). Bu kurama göre, bu ihtiyaçlar insanın doğasında vardır ve eğer tatmin edilmezlerse bireyler hayattaki işlevlerini en uygun şekilde yerine getiremezler. Ancak, her ne kadar bu ihtiyaçlar insanın hayatını en uygun şekilde yaşayabilmesi için temel ihtiyaçlar olsa da, benlik-belirleme kuramına göre bu ihtiyaçların etkisi algılanan yeterlik veya inanç gibi sosyal bilişsel faktörlerin süzgecinden geçmektedir.

Literatürdeki sorun çözme ile ilgili araştırmalar incelendiğinde sorun çözmenin epistemolojik inanç (Aksan, 2006), algılanan sosyal destek (Arslan, 2009; Ünüvar, 2003), eğitim/sınıf düzeyi (Katkat & Mızrak, 2003) gibi bir çok değişkenden etkilendiği görülmüştür. Öğretmenlerle veya öğretmen adaylarıyla yapılan çalışmalar incelendiğince ise sorun çözme becerisinin iletişim becerileri (Bozkurt, Serin, & Emran, 2004; Nacar, 2010) ve olumsuz düşünceler (Tümkaya & İflazoğlu, 2000) gibi değişkenlerle korelasyon ilişkisi içinde olduğu, öz-güven (Otacıoğlu, 2008), eğitim alanı (Çam, 1997; Otacıoğlu, 2007), cinsiyet (Arslan, 2001; Bozkurt ve diğ., 2004; Katkat, 2001; Nacar, 2010), epistemolojik inanç (Aksan, 2006), eğitim/sınıf düzeyi (Arslan, 2001, Katkat & Mızrak, 2003) ve yaş/deneyim (Nacar, 2010) gibi değişkenlerin etkisi altında olduğu görülmüştür. Ancak önemi bu bu kadar vurgulandığı halde, bilindiği kadarıyla sorun çözme becerisi ile motivasyon arasındaki bağlantıyı inceleyen bir araştırma bulunmamaktadır.

1.2 Çalışmanın Amacı

Bu çalışmanın amacı Benlik-Belirleme Kuramı çerçevesinde sınıf öğretmenlerinin temel psikolojik ihtiyaçları (özerklik, yeterlik ve ilişkili olma) ile öğretmenlerin sınıfta karşılaştıkları sorunları çözme becerileri arasındaki ilişkileri incelemektir. Bu kapsamda, sınıf öğretmenlerinin algılanan özerklik düzeyleri (özerklik ihtiyacı), öz-yeterlik düzeyleri (yeterlik ihtiyacı) ve aldıkları mesleki sosyal destek düzeyleri (ilişkili olma ihtiyacı) ile sınıf-içi sosyal sorun çözme becerileri arasındaki ilişkiler incelenmiştir. Daha ayrıntılı belirtmek gerekirse, bu çalışmanın amacı sınıf öğretmenlerinin algıladıkları özerklik, öz-yeterlik ve aldıkları mesleki sosyal destek düzeylerinin onların sınıf-içi sorun çözme becerilerini ne kadar iyi yordadığını araştırmaktır. Bunun için bu çalışmada Şekil 1'de gösterilen yapısal model oluşturulmuş ve test edilmiştir.



Şekil 1.1 Hipotez edilen yapısal model

1.3 Çalışmanın Önemi

Öğretmenler sürekli olarak sorun çözmesi gereken profesyonellerdir. Literatürde onların karşılaştıkları sorunları, sorun çözme becerilerini ve sorun çözme becerisi ile bir çok değişken arasındaki ilişkileri inceleyen bir çok araştırma yer almaktadır. Bu çalışmada ise sorun çözme becerisi bir motivasyon kuramı olan Benlik-belirleme kuramı çerçevesinde ele alınmıştır. Sorun çözme becerisi ile Benlik-belirleme kuramının üç temel psikolojik ihtiyacı (özerklik öğretmen özerkliği ile ölçülerek, yeterlik öğretmen öz-yeterliği ile ölçülerek ve ilişkili olma mesleki sosyal destek ile ölçülerek) arasındaki ilişkilere bakılmıştır. Bu yönden bu çalışma hem sorun çözme literatürüne hem de Benlik–belirleme kuramı literatürüne katkıda bulunmaktadır.

Öğretmenlerin veya öğretmen adaylarının sorun çözme becerileri literatürde bir çok çalışmanın konusu olmuştur (örn., Arslan, 2001; Bozkurt ve diğ., 2004; Çam, 1997). Ancak bu çalışmalar incelendiğinde katılımcıların genel sorun çözme becerilerine odaklanıldığı tespit edilmiştir. Şimdiki çalışmanın odağı ise öğretmenlerin sınıf-içi sosyal sorun çözme becerileridir. Bunun için geliştirilen geçerli ve güvenilir bir ölçek olan Sınıf-İçi Sosyal Sorun Çözme Envanteri (SİSSÇE) çalışmanın öneminin bir parçasıdır.

SİSSÇE dışında geliştirilen Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ) ile Öğretmen Özerklik Ölçeği-Türkçe (ÖÖÖT) de çalışmanın özellikle ulusal alanyazına ve sonraki çalışmalar için araştırmacılara katkılarındandır.

Literatüre bakıldığında bir çok araştırmanın öğretmen adaylarıyla yapıldığı görülmektedir (örn., Aksan, 2006; Çam & Tümkaya, 2006). Ancak Arslan (2001) öğretmenleri ve öğretmen adaylarını dahil ettiği çalışmasının sonucunda öğretmenlerin ve öğretmen adaylarının anlamlı derecede farklı düzeylerde sorun çözme becerisine sahip olduklarını bulmuştur. Bu bakımdan, şu anki çalışmanın sınıf öğretmenleriyle yapılmış olması iş başındaki öğretmenleri yansıttığı için önemlidir.

Son olarak bu çalışmanın sonuçları eğitim çevrelerine (ki bunlar öğretmenler, okul müdürleri, akademisyenler, veliler ve politika yapıcılar olabilir) öğretmenlerin sınıfta karşılaştıkları sorunları daha iyi çözebilmeleri için neler yapılabileceği konusunda bilgi sağlamaktadır. Bu da çalışmayı önemli kılan noktalardan biridir.

LİTERATÜR TARAMASI

2.1 Sosyal Sorun Çözme (SSÇ)

Sosyal sorun çözme (SSÇ) gerçek hayatta karşılaşılan sorunların çözümüyle ilgilenir. Her ne kadar sorunlar "sosyal" olarak nitelense de buradaki sosyal sorunlar belirli bir tipteki sorunları değil, insanların gerçek hayatta karşılaştıkları ve hayatlarındaki işlevlerini ve adaptasyonlarını etkileyen her türlü sorunu kapsamaktadır. Bunlar finansal sıkıntılar, sağlık sorunları, evlilikte yaşanan sorunlar hatta ırkçılık gibi daha genel sorunlar bile olabilir (D'Zurilla et al., 1998; D'Zurilla et al., 2004).

SSÇ teorisinde üç temel kavram vardır: (a) sorun, (b) sorun çözme ve (c) çözüm (D'Zurilla et al., 2004).

a. Sorun. En genel ifadeyle sorun insanın bir amacının olduğu ancak bu amaca nasıl ulaşacağının çok açık olmadığı herhangi bir durum (Duncker, 1945; D'Zurilla et al. 2004;

Holyoak, 1995) veya içinde bulunulan durum ile arzu edilen durum arasındaki fark (Jonassen, 2004; Treffinger, Selby, & Isaksen, 2008) olarak tanımlanmaktadır. D'Zurilla ve diğerleri (2004) sorunu gerçek hayatta karşılaşılan sorunlara odaklanarak "uyumlayıcı işlevler (adaptive functioning) için bir çözüm gerektiren ancak durumla karşılaşan kişinin bir ya da daha fazla engelden dolayı etkili bir çözümü kolaylıkla bulamadığı herhangi bir durum" (s. 12) olarak tanımlamışlardır. Gerçek hayatta karşılaşılan sorunlar sosyal çevreden veya kişisel nedenlerden kaynaklanıyor olabilir. Jonassen'a (2004) göre bir sorun bir kişi için sosyal, kültürel veya zihinsel bir değere sahip olmalıdır, başka bir deyişle bir kişi o durumu sorun olarak algılamalı ve bunu çözmek istemelidir. Aksi takdirde bir sorunun varlığından bahsedilemez.

b. Sorun çözme. Genel ifadelerle sorun çözme "amaca yönelik gerçekleştirilen herhangi bir zihinsel aktivite dizisidir" (Anderson, 1980 akt. Jonassen, 2000, s. 65). D'Zurilla ve diğerleri (2004) gerçek hayatta karşılaşılan sorunları çözmeye odaklanarak sorun çözme sürecini *sosyal sorun çözme* olarak adlanadırmış ve "günlük yaşamda karşılaşılan sorunları tanımlamak ve bunlara etkili bir çözüm bulmak için kişi veya kişilerin kendileri tarafından yönetilen bilişsel-davranışsal bir süreç" (s. 12) olarak tanımlamışlardır. Tanımdan da anlaşıldığı üzere, SSÇ sorunlu durumunu daha iyi yönde değiştirmek ve/ya duygusal rahatsızlığı gidermek için gerçekleştirilen bilinçli, akılcı, çaba gerektiren ve amaçlı bir aktivitedir (D'Zurilla ve diğ., 2004).

c. Çözüm. D'Zurilla ve Goldfried (1971) çözümü "durumu birey için sorunlu olmaktan kurtarmak yönünde değiştiren, ve aynı zamanda olumlu sonuçları maksimuma çıkaran, olumsuz sonuçları minimuma indiren tepki veya tepkiler örüntüsü" (s. 108-109) olarak tanımlamışlardır. D'Zurilla ve diğerleri (2004) çözümü "belirli bir sorun durumunda uygulanan, sorun çözme sürecinin ürünü veya sonucu" (s. 13) şeklinde tanımlamışlardır. Etkili bir çözüm bireyi amacına ulaştıran çözümdür (D'Zurilla ve diğ., 2004). Çözümün uzun ve kısa vadede sosyal ve kişisel açıdan farklı etkileri olabilir (D'Zurilla & Goldfried, 1971). Ayrıca, çözüm kişiden kişiye ve durumdan duruma farklılık gösterebilir (Nezu, Nezu, & D'Zurilla, 2013).

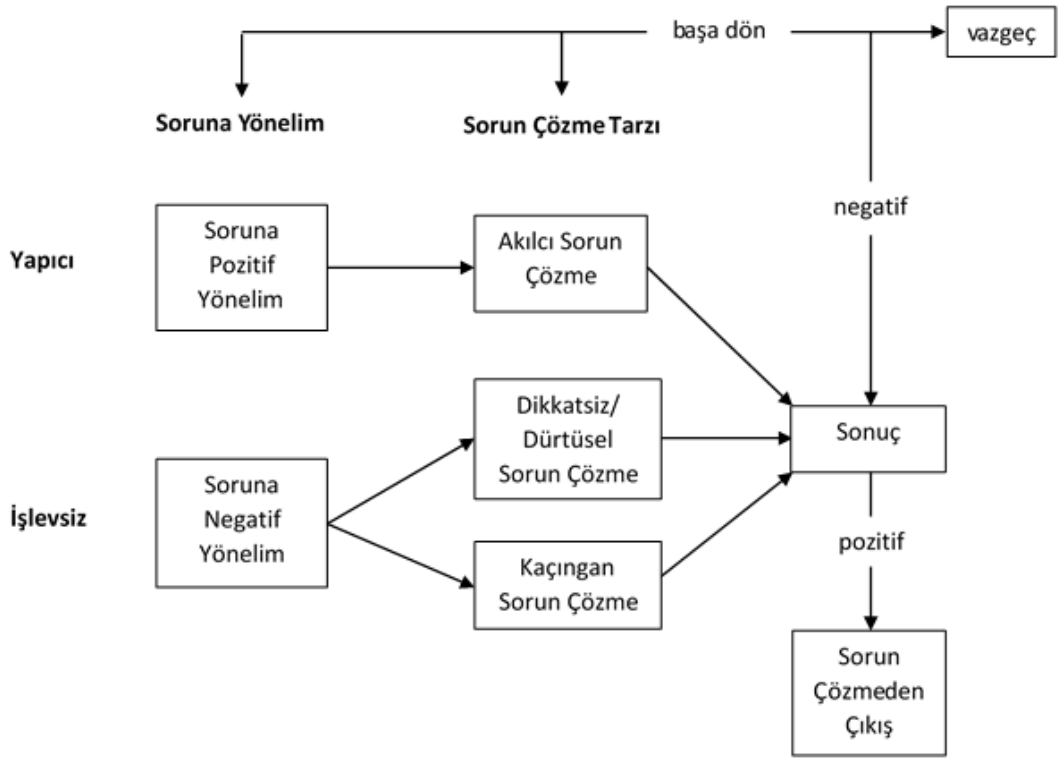
2.1.1 Sosyal Sorun Çözme Modeli

Sosyal sorun çözme (SSÇ) modelinin ilk çalışmaları D'Zurilla ve Goldfried (1971) ile başlamıştır. D'Zurilla ve Goldfried'ın (1971) önerdiği ilk SSÇ modeli beş aşamadan oluşmaktaydı: (1) genel yönelim, (2) sorunu tanımlama ve formule etme, (3) alternatif çözümler üretme, (4) karar verme ve (5) kanıtlama. Daha sonra yapılan çalışmalarla SSÇ modeli revize edilmiştir.

Bugünkü haliyle sosyal sorun çözme süreci *soruna yönelim* ve *sorun çözme tarzı* olmak olmak üzere iki temel aşamadan oluşmaktadır. Soruna yönelim sorun çözen bireyin karşılaştığı soruna ve bu sorunu çözme becerilerine olan inancını ve duygularını ifade etmektedir. Sorun çözen birey soruna iki farklı şekilde yönelebilir: *soruna pozitif yönelim* (SPY) ve *soruna negatif yönelim* (SNY). Soruna pozitif yönelen bireyler sorunların çözülebileceğine inanan, sorunları çözmeye yönelik becerilerine inanan ve güvenen, karşılaşılan sorunları bir mücadele olarak gören, sorunları çözmek için zaman ve çaba harcayan bireylerdir (D'Zurilla ve diğ., 2004; Nezu, 2004; Nezu ve diğ., 2013). Soruna negatif yönelen bireyler ise sorunları birer tehdit olarak algılayan, sorunların çözülebilirliği konusunda kötümser düşünen ve sorunları çözmeye yönelik becerileri olmadığına inanan bireylerdir (D'Zurilla ve diğ., 2004; Nezu, 2004; Nezu ve diğ., 2013).

Sorun çözme tarzı aşaması ise bireylerin sorun çözerken başvurdukları bilişsel-davranışsal aktiviteleri kapsamaktadır (Nezu, 2004; Nezu ve diğ., 2013). SSÇ'ye göre çç farklı sorun çözme tarzı vardır: *akılcı sorun çözme tarzı* (ASÇT), *dürtüsel-dikkatsiz sorun çözme tarzı* (DDSÇT) ve *kaçıngan sorun çözme tarzı* (KSÇT). ASÇT hayattaki sorunlarla başa çıkmak için yapıcı ve uyumlayıcı yaklaşımı ifade eder (Nezu, 2004; Nezu ve diğ., 2013) ve sorun çözme becerilerinin akılcı, bilinçli ve sistematik kullanımını içerir (D'Zurilla ve diğ., 2004). "Bir sorun çözme durumunda, her biri sorunun çözümüne yönelik büyük katkılar sağlayan bazı becerilerin sistematik ve planlı bir şekilde kullanılması" (Nezu, 2004, s.4) olarak da tanımlanmaktadır. DDSÇT etkisiz sorun çözme yaklaşımlarından birisidir ve sorunların çözümünde dikkatsiz, dürtüsel ve aceleci davranmayı ifade eder. KSÇT da diğer bir etkisiz sorun çözme yaklaşımıdır ve bireylerin sorunları çözmeyi ertelediği ve pasif ve tembel davrandıkları sorun çözme tarzını ifade eder.

D'Zurilla ve diğerleri (2004) soruna yönelim ve sorun çözme tarzı aşamalarını birlikte değerlendirerek, SPY'nin kişiyi ASÇT'ye, SNY'nin ise kişiyi DDSÇT'ye veya KSÇT'ye yönlendirdiğini belirtmektedir. SPY ve ASÇT birlikte yapıcı sorun çözme olarak nitelendirilirken, SNY, DDSÇT ve KSÇT işlevsiz sorun çözme olarak nitelendirilmektedir (D'Zurilla ve diğ., 2004). D'zurilla ve diğerleri (2004) tarafından önerilen beş boyutlu sosyal sorun çözme modeli Şekil 2.1'deki bigi şematize edilmiştir.



Şekil 2.1 Sosyal sorun çözme sürecinin beş boyutlu modelinin şematik gösterimi (D'Zurilla ve diğ., 2004, s. 17).

2.2 Benlik-Belirleme Kuramı

Benlik-belirleme kuramı (BBK) deneylere dayalı geliştirilen bir makro-teoridir ve motivasyon, kişilik gelişimi, sosyal gelişim, sağlık, öz-düzenleme, evrensel psikolojik ihtiyaçlar, yaşamdaki hedefler ve arzular, bilinçdışı süreçler, sosyal çevrenin motivasyona etkisi ve psikolojik iyi oluş gibi temel psikolojik konuları inceler (Deci & Ryan, 2008a; Deci & Ryan, 2008b, Deci & Ryan, 2012).

BBK insanın çeşitli mücadeleler vererek ve deneyimlerini benlik algısı ile bütünleştirerek kendini geliştiren, doğuştan aktif, iç motivastonu ve arzuları olan bir organizma olduğunu varsayar. İnsan bütün bu özelliklere doğal olarak sahip olduğu için bunları öğrenmesine gerek yoktur ancak bunları zamanla içinde bulundukları sosyal çevrenin de etkisiyle geliştirebilir (Deci & Ryan, 2002; Deci & Ryan, 2012). Eğer insan sosyal çevresi tarafından desteklenirse, sahip olduğu bu özellikleri geliştirebilir, eğer engellenirse bu özellikler de dizginlenir (Deci & Ryan, 2013). Bu anlamda, BBK sosyal-bağlamdaki faktörlerin insan motivasyonuna katkısını ve insan davranışlarının ne derece kendi iradesine veya benlik algısına bağlı olarak belirlendiğini açıklayabilmek (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000b; Deci & Ryan, 2008b) için geliştirilmiştir (Deci & Ryan, 2008b). BBK'ya göre insan davranışları eğer insanın hür iradesi ile belirleniyorsa kendi benliği tarafından belirleniyordur (Deci & Ryan, 1990).

BBK insanın motivasyonunu, psikolojik iyi oluş düzeyini, gelişimini ve işlevselliğini etkileyen, ki bunlar araştırmalarla ortaya konulmuştur, üç evrensel temel psikolojik ihtiyaç olduğunu ileri sürer. Bu ihtiyaçlar özerklik ihtiyacı, yeterlik ihtiyacı ve ilişkili olma ihtiyacıdır (Deci & Ryan, 2002; Deci & Ryan, 2012; Deci & Ryan, 2013). Eğer insanın bu üç temel ihtiyacı karşılanırsa, insan iç motivasyonla hareket eder, sağlıklıdır ve işlevselliği optimum düzeydedir; bu temel ihtiyaçlar karşılanmadığında ise insanın işlevselliği ve sağlığı kötü durumda olur (Deci & Ryan, 2013). Günlük hayattaki iyi veya kötü oluş halleri de bu ihtiyaçların karşılanma düzeyinden etkilenir (Deci & Ryan, 2002). Bu yüzden de insanlar bu ihtiyaçlarını karşılayabilecekleri etkinliklere katılmak ve bu ihtiyaçlarının karşılanmasını engelleyecek durumlardan kaçınmak yönünde doğal bir istek duyarlar (Deci & Vansteenkiste, 2004). Bu ihtiyaçlar insanların neyi neden istediklerini anlamak ve açıklamak açısından son derece büyük öneme sahiptir (Deci & Ryan, 2000). Bu üç temel psikolojik ihtiyaç aşağıdaki gibi tanımlanmıştır.

Özerklik ihtiyacı. Özerklik en iyi irade ile açıklanabilir. İrade kişinin deneyimlerini ve davranışlarını kendisinin düzenlemesine ve bu davranışların kişinin benlik algısı ile bütünleşik olmasına yönelik organizmaya ait doğal bir arzudur (Deci & Ryan, 2000). Asıl mesele benlik algısı ile uyumlu etkinliklere dahil olmak, buna bir çok seçenek arasından

özgürce seçim yaparak ve baskı altında kalmadan karar vermektir (Deci & Ryan, 2000; Guay, Vallerand, & Blanchard, 2000). Öte yandan, özerk olmak diğer kişilerden tamamen bağımsız olmak veya onlardan hiç etkilenmemek demek değil, ne olursa olsun yaptığını istekle yerine getirmek demektir (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004).

Yeterlik ihtiyacı. Yeterlik kişinin sosyal çevre ile olan etkileşimlerinde kendini etkili hissetmesi ve kendi kapasitesini kullanmasına ve ifade etmesine olanak sağlayan fırsatları değerlendirmesidir (Deci & Ryan, 2002). Çevreyle olan etkileşimlerde etkili hissetmek içten gelen bir arzudur (Guay et al., 2000; Deci & Vansteenkiste, 2004). Hayatları boyunca insanlar üstesinden geldiklerinde kendilerini iyi hissedecekleri, becerileri ve kapasitelerine uygun, onları mücadeleye iten etkinlikler içinde yer almak isterler (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004).

İlişkili olma ihtiyacı. İlişkili olma kişinin sosyal çevresindeki diğer kişilerle bağlantılı olması için içten gelen arzuyu ifade eder. Bu bağlantılı olma hali sevmeyi, özen göstermeyi, sevilmeyi ve özen gösterilmeyi içerir (Deci & Ryan, 2000; Deci & Ryan, 2002). İlişkili olma insanoğlunun diğer insanlarla bağlantı kurma, onlarla bütünleşme ve onlar tarafından kabul görme ihtiyacını yansıtan türe has bir özelliğidir. Bu yüzden ilişkili olma güvenli bir toplulukta yer alarak birliğin (unity) hissedilmesini ifade eden psikolojik bir ihtiyaçtır (Deci & Ryan, 2002). Insan yaşamındaki bir çok aktivite çevredeki diğer insanlarla birlikte yapılır ve bunun amacı da aidiyet hissetmektir (Deci & Vansteenkiste, 2004).

YÖNTEM

3.1 Araştırma Deseni

Öğretmenlerin algılanan özerklik, öz-yeterlik, ve mesleki sosyal destek düzeylerinin sınıf-içi sorun çözme becerilerini yordayıp yordamadığını araştıran bu çalışmada tarama modeli esas alınmıştır. Çalışmada öz-bildirime dayalı (self-report) ölçekler aracılığıyla nicel veriler toplanmış ve analiz edilmiştir.

3.2 Araştırma Sorusu

Bu çalışmada cevap aranan araştırma sorusu şu şekildedir:

Algılanan öğretmen özerkliği, öğretmen öz-yeterlik algısı ve alınan mesleki sosyal destek sınıf öğretmenlerinin sınıf-içi sosyal sorun çözme becerilerini ne kadar iyi yordamaktadır?

3.3 Araştırmanın Değişkenleri

Sınıf-içi sosyal sorun çözme becerisi (SİSSÇB) araştırmanın bağımlı değişkenidir. Tek faktörden oluştuğu için bu çalışmada gözlenen değişken olarak kullanılmıştır.

Öğretmen özerkliği (ÖÖ) araştırmanın bağımsız değişkenlerinden biridir. Üç alt boyut ile ölçülmektedir: (1) eğitim programları ile ilgili karar verme (EPKV), (2) öğretimi planlama ve uygulama (ÖPU) ve (3) mesleki gelişim (MG). Her bir alt boyut gözlenen değişken, ÖÖ üç alt boyuttan oluştuğu için gizil değişkendir.

Mesleki sosyal destek (MSD) araştırmanın bağımsız değişkenlerinden biridir ve beş alt boyuttan oluşmaktadır: (1) yönetim desteği (YD), (2) meslektaş desteği (MD), (3) rehber öğretmen desteği (RD), (4) veli desteği (VD) ve (5) aile desteği (AD). Alt boyutlar gözlenen değişkendir ve bu alt boyutlardan oluşan MSD gizil değişkendir.

Öğretmen öz-yeterlik algısı (ÖÖA) araştırmanın bağımsız değişkenlerindendir ve üç alt boyut ile ölçülmektedir: (1) öğrenci katılımını sağlama (ÖKS), (2) öğretim stratejileri (ÖS) ve (3) sınıf yönetimi (SY). Çalışmada her bir alt boyut gözlenen değişken ve bu alt boyutlardan oluşan ÖÖA gizil değişken olarak kullanılmıştır.

3.4 Örneklem

Çalışmanın örneklemini Adana ilinin üç merkez ilçesindeki (Çukurova, Yüreğir ve Seyhan) devlet okullarında görev yapan 728 sınıf öğretmeni oluşturmuştur. Örneklem seçkisiz tabakalı küme örnekleme yöntemi ile belirlenmiştir.

Katılımcılara ulaşmak için öncelikle 60 ilkokul (devlet okulu) seçkisiz tabakalı örnekleme yöntemi ile belirlenmiş ve bu okullarda okullarda çalışan bütün sınıf öğretmenlerine ulaşılması hedeflenmiştir. Veri toplama araçlarından biri (Mesleki Sosyal Destek Ölçeği: Öğretmen) sınıf öğretmenlerinin aralarında okul rehber öğretmenlerinin de olduğu farklı kaynaklardan aldıkları mesleki sosyal destek düzeylerini ölçmektedir ve veri toplanan okullarda rehber öğretmen olmasını gerektirmektedir. Bütün okullarda rehber öğretmen olmaması dolayısıyla veri toplanacak okullar belirlenirken sayı özellikle yüksek tutulmuştur ve belirlenen 60 okulun 15'inde rehber öğretmen olmadığı belirlendmiştir. Bu yüzden, bu okullar örneklemden çıkarılmıştır. Geriye kalan 45 okulun 34'ünde görev yapmakta olan 743 sınıf öğretmeninden veri toplanmıştır. 743 öğretmenin de 15'i veri toplama araçlarının tamamına cevap vermediği için 728 sınıf öğretmeninden toplanan veriler analiz edilmiştir. Bu sayı da yapısal eşitlik modellemesi için yeterli bir sayı olarak kabul edilmiştir (Kline, 2011).

Çalışmaya katılan 728 öğretmenin %61.3'ü (n=446) kadın, %37.1'i (n=270) erkektir. Öğretmenlerin %40.5'i (n=295) 35-44 yaş aralığında, % 36'sı (n=262) 45-54 yaş aralığında, %16.3'ü (n=119) 23-34 yaş aralığında ve %5.4'ü (n=39) 55 ve üzeri yaş aralığındadır. Katılımcıların öğretmenlik deneyimlerine bakıldığında % 37.5'inin (n=273) 20 yıl veya üzeri, %35.7'sinin (n=260) 15-19 yıl arası, %14'ünün (n=102) 10-14 yıl arası, %8.9'unun (n=65) 5-9 yıl arası ve %2.5'inin (n=18) 1-4 yıl arası deneyime sahip oldukları bulunmuştur. Öğretmenlerin büyük çoğunluğunun (n=576, %79.1) eğitim düzeyi lisans iken, % 12.9'unun eğitim düzeyi ön lisans ve %5.9'unun eğitim düzeyi yüksek lisanstır. Son olarak, katılımcı öğretmenlerin %29.5'i (n=215) üçüncü, %25.3'ü (n=184) ikinci, % 21.7'si birinci ve %21.6'sı dördüncü sınıf öğretmenidir.

3.5 Veri Toplama Araçları

Bu çalışmada dört adet ölçek ve bir demografik bilgi formu kullanılarak veri toplanmıştır. Kullanılan ölçekler şu şekildedir: Sınıf-İçi Sosyal Sorun Çözme Ölçeği (SİSSÇE), Öğretmen Özerklik Ölçeği-Türkçe (ÖÖÖT), Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ) ve

Öğretmen Öz-yeterlik Algısı Ölçeği (ÖÖAÖ). Bu ölçeklerden ilk üçü bu araştırma kapsamında araştırmacı tarafından geliştirilmiştir.

Bu çalışma kapsamında geliştirilen ölçekler hazırlanırken öncelikle her bir ölçeğin ölçtüğü değişkene dair kapsamlı bir literatür taraması yapılmış ve literatürde bu değişkeni ölçen ölçekler varsa bunlar incelenmiştir. Sonrasında incelenen literatür ve Türk eğitim sistemi dikkate alınarak muhtemel faktörler (alt-ölçekler) tanımlanıp bu faktörleri ölçebilecek maddeler yazılmıştır. Daha sonra, her bir ölçek için uzman görüşü alınmış ve gelen öneriler doğrultusunda düzenlemeler yapılmıştır. Sonrasında ölçeklerin faktör yapılarını ortaya çıkaran pilot çalışma yapılmıştır.

3.5.1 Veri Toplama Araçlarının Pilot Çalışması

Araştırmacı tarafından geliştirilen veri toplama araçları için yapılan pilot çalışmada amaç ölçeklerdeki faktör yapısını ortaya çıkarmaktır. Daha sonra bu ölçekler için ortaya çıkan faktör yapılarının doğrulanıp doğrulanmadığı ölçülmüş ve Cronbach alfa güvenirlik katsayıları hesaplanmıştır. Araştırmacı tarafından geliştirilmeyen ÖÖAÖ için ise pilot çalışmada faktör yapısının doğrulanıp doğrulanmadığı ölçülmüş ve Cronbach alfa güvenirlik katsayıları hesaplanmıştır.

Pilot çalışmanın katılımcılarını Ankara ilinin beş merkez ilçesindeki 22 ilkokulda (devlet okulu) görev yapmakta olan 294 sınıf öğretmeni oluşturmuştur. Bu öğretmenler seçkisiz tabakalı küme örnekleme yöntemi ile belirlenmiştir. Örneklem için 30 okul seçilmiş, ancak daha sonra 8 tanesi rehber öğretmen olmadığı için örneklemden çıkarılmıştır. Ancak 294 öğretmenin hepsi ölçeklerin tamamını yanıtlamamıştır. Bu yüzden aşağıdaki pilot çalışma kısımlarında yapılan analizlerde kullanılan veri setlerinki kişi sayıları farklılık göstermektedir. Örneğin, SİSSÇE için yapılan analizdeki veri seti 263 kişiden oluşurken, MSDÖÖ için yapılan analizdeki veri seti 281 kişiden oluşmaktadır.

Araştırmacı tarafından geliştirilen ölçeklerin faktör yapısının doğrulanıp doğrulanmadığını ölçen analizler örneklem başlığı altında anlatılan, Adana ilinden toplanan veri seti ile yapılmıştır. Bu analizler de yine tüm katılımcılar ölçeklerin hepsini doldurmadığından dolayı

farklı ölçekler için farklı sayıdaki katılımcılardan oluşan veri setleri ile yapılmıştır. Örneğin, SİSSÇE için kullanılan veri seti 728 kişiden oluşurken, ÖÖÖT için veri seti 743 kişiden oluşmaktadır.

3.5.2 Sınıf-İçi Sosyal Sorun Çözme Envanteri (SİSSÇE)

Sınıf-İçi Sosyal Sorun Çözme Envanteri (SİSSÇE) 13 maddeden oluşan, beş dereceli (1='Hiçbir zaman' ile 5='Her zaman' arasında değişen) Likert tipi bir ölçektir. Bu ölçek D'Zurilla, Nezu ve Maydeu-Olivares (2002) tarafından geliştirilen Gözden Geçirilmiş Sosyal Sorun Çözme Envanteri (SSÇE:G) baz alınarak geliştirilmiştir.

SSÇE:G iki bölümden ve beş faktörden oluşan bir ölçektir. İki bölüm Soruna Yönelim ve Sorun Çözme Tarzları iken beş faktör Soruna Pozitif yönelim (SPY), Soruna Negatif Yönelim (SNY), Akılcı Sorun Çözme Tarzı (ASÇT), Dikkatsiz/Dürtüsel Sorun Çözme Tarzı (DDSÇT) ve Kaçıngan Sorun Çözme Tarzıdır (KSÇT). SPY ve ASÇT birlikte yapıcı sorun çözme yaklaşımını, SNY, DDSÇT ve KSÇT birlikte etkisiz sorun çözme yaklaşımını ifade etmektedir. SİSSÇE yapıcı sorun çözme yaklaşımı baz alınarak geliştirilmiştir.

SİSSÇE'nin faktörleri belirlendikten sonra SSÇE:G ve literatürde var olan sorun çözme ölçekleri incelenmiş ve SPY faktörü için dört, ASÇT faktörü için dokuz madde yazılmıştır. Daha sonra üç öğretim üyesi ve bir doktor adayından uzman görüşü alınmış ve gelen geri bildirimlere göre gerekli düzenlemeler yapıldıktan sonra hazırlanan ölçek için pilot çalışma yapılmıştır.

Pilot çalışmanın amacı geliştirilen ölçeğin faktör yapısını ortaya çıkarmak olduğu için Ankara'dan toplanan 263 kişilik veri seti ile açımlayıcı faktör analizi (AFA) yapılmıştır. AFA sonuçları tüm maddelerin tek faktör altında toplandığını ve bu tek faktörün toplam varyansın %41.6'sını açıkladığını göstermiştir. Faktör yüklerinin de .39 ve .72 arasında değiştiği gözlenmiştir ki istenen en düşük değer olan .30'un üzerindedirler (Tabachnick & Fidell, 2012).

AFA'dan sonra faktör yapısının doğruluğunu test etmek için Adana ilinden toplanan 728 kişilik veri seti ile doğrulayıcı faktör analizi (DFA) yapılmıştır. Analiz sonucunda model uyum indeksleri şu şekilde bulunmuştur: $\chi^2(65)=398.921$ ($p<.05$), RMSEA=.08, CFI=.90, TLI=.87 ve SRMR=.047. Model modifikasyon indekslerine (modification indices) göre modelde düzenleme yapıldıktan analiz tekrarlanmış ve model uyum indeksleri iyi bir modeli işaret etmiştir: $\chi 2(60)=162.692$ ($p<.05$), RMSEA=.05, CFI=.97, TLI=.96 ve SRMR=.03. Son olarak da ölçeğin Cronbach alfa güvenirlik kaysayısı hesaplanmış ve .91 bulunmuştur.

3.5.3 Öğretmen Özerklik Ölçeği-Türkçe (ÖÖÖT)

Öğretmen Özerklik Ölçeği-Türkçe (ÖÖÖT) 18 maddeden oluşan, beş dereceli (1='Hiç' ile 5='Tamamen' arasında değişen) Likert tipi bir ölçektir.

Bu ölçeğin geliştirilme aşamasında öncelikle öğretmen özerkliği üzerine kapsamlı bir alanyazın taraması yapılmış ve öğretmen özerkliğinin üç başlık altında toplandığı görülmüştür: (1) öğretimi planlama ve uygulama, (2) okul yönetimi süreçlerine katılım ve (3) mesleki gelişim. Bu başlıklar alt ölçek olarak belirlenmiş ve öğretmen özerkliğini ölçmek için geliştirilmiş farklı dillerdeki ölçeklerden de faydalanılarak birinci alt ölçek için 14, ikinci alt ölçek için 10 ve üçüncü alt ölçek için 6 madde yazılmıştır. Hazırlanan ölçek için üç öğretim üyesi ve iki doktor adayından uzman görüşü alınmıştır. Gelen öneriler doğrultusunda okul yönetimi süreçlerine katılım alt boyutu ölçekten çıkarılmış ve diğer maddeler üzerinde de düzenlemeler yapılmıştır. Daha sonra ölçeğin faktör yapısını ortaya çıkarmak için Ankara'dan toplanan 292 kişilik veri seti ile AFA yapılmıştır.

AFA sonuçları ölçeğin üç alt boyuttan oluşturduğunu göstermiştir. Ancak mesleki gelişim (MG) alt boyutuna yüklenmesi beklenen iki madde öğretimi planlama ve uygulama (ÖPU) alt boyutu maddeleri ile birlikte aynı alt boyuta yüklenmiştir. Bu durum bir alt boyutun maddeleri arasında uyumsuzluğa neden olduğu için ölçekten bu iki madde ölçekten çıkarılarak AFA aynı veri seti ile yinelenmiştir. İkinci kez yapılan AFA sonuçları da üç alt boyut olduğu sonucunu göstermiştir. Planlanan iki alt boyutun dışında ÖPU alt boyutu için yazılmış 3 madde bu boyuttan ayrılarak farklı bir alt boyut oluşturmuşlardır. Bu maddeler incelendiğinde, üç maddenin öğretmenlerin eğitim programları ile ilgili karar verme

konusundaki özerklik düzeylerini ölçtüğü belirlenmiştir. Bu yüzden bu alt boyut "eğitim programları ile ilgili karar verme (EPKV)" olarak adlandırılmıştır. AFA sonuçları üç alt boyutun toplam varyansın %62.44'ünü açıkladığını göstermiştir. ÖPU alt boyutu %40.67, MG alt boyutu %14.04 ve EPKV alt boyutu %7.73 oranında varyans açıklamışlardır.

Daha sonra Adana'dan toplanan 743 kişilik veri seti ile DFA yapılmıştır. DFA sonucunda bulunan model uyum indeksleri şu şekildedir: $\chi 2(132)=752.589$ ($p<.05$), RMSEA=.08, CFI=.88, TLI=.86 ve SRMR=.07. Model uyumunu geliştirmek üzere modifikasyon indeksleri kontrol edilmiş ve gerekli düzenlemeler yapıldıktan sonra analiz tekrar edilmiştir. Yapılan ikinci DFA daha iyi model uyum indeksleri vermiştir: $\chi 2(125)=483.454$ ($p<.05$), RMSEA=.06, CFI=.93, TLI=.92 ve SRMR=.05. Ölçeğin Cronbach alfa güvenirlik katsayıları tüm ölçek için .90, EPKV alt boyutu için .85, ÖPU alt boyutu için .90 ve MG alt boyutu için .79 olarak hesaplanmıştır.

3.5.5 Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ)

Mesleki Sosyal Destek Ölçeği: Öğretmen (MSDÖÖ) 43 madde beş alt boyuttan oluşan beş dereceli (1='Hiçbir zaman' ile 5='Her zaman' arasında değişen) Likert tipi bir ölçektir.

MSDÖÖ'nün geliştirilme sürecinde ilk olarak kapsamlı bir literatür taraması yapılmıştır. Literatür taraması ve sınıf öğretmenlerinin mesleki sosyal destek alabilecekleri kaynaklar değerlendirilerek beş alt boyut oluşturulmuştur: (1) yönetim desteği, (2) meslektaş desteği, (3) veli desteği, (4) aile desteği ve (5) öğrenci desteği. Bu alt boyutlar için maddeler de yazıldıktan sonra üç öğretim üyesinden ve iki doktor adayından uzman görüşü alınmıştır. Gelen geri bildirimler doğrultusunda öğrenci desteği alt boyutu ölçekten çıkarılmış, rehber öğretmen desteği alt boyutu eklenmiş ve bu boyutu ölçen maddeler yazılmıştır.

MSDÖÖ için Ankara'dan toplanan 281 kişilik veri seti ile AFA yapılmıştır. Analiz sonuçları planlandığı gibi ölçeğin beş alt boyutu olduğunu ve maddelerin bu alt boyutlara planlandığı şekilde yüklendiğini göstermiştir. Beş alt boyutun açıkladığı toplam varyans %77.95 olarak hesaplanmıştır. Her bir alt boyutun tek başına açıkladığı varyans yönetim desteği (YD) için

%42.24, veli desteği (VD) için %12.51, meslektaş desteği (MD) için %10.20, aile desteği (AD) için % 7 ve rehber öğretmen desteği (RD) için %6.01'dir.

AFA'dan sonra Adana'dan toplanan 729 kişilik veri seti ile DFA yapılmış ve model uyum indeksleri şu şekilde bulunmuştur: $\chi 2(850)=3496.653$ ($p<.05$), RMSEA=.065, CFI=.90, TLI=.90 ve SRMR=.043. Modifikasyon indekslerine göre düzenlemeler yapıldıktan sonra analiz tekrar edilmiş ve model uyum indekslerinin iyileştiği görülmüştür: $\chi 2(846)=2626.235$ ($p<.05$), RMSEA=.054, CFI=.93, TLI=.93 ve SRMR=.039. Son olarak Cronbach alfa iç tutarlık katsayıları hesaplanmış ve ölçeğin tümü için güvenirlik kaysayısı .96 olarak bulunurken YD, MD, RD, VD ve AD için güvenirlik katsayıları sırasıyla .98, .97, .96, .92 ve .95 olarak bulunmuştur.

3.5.6 Öğretmen Öz-yeterlik Algısı Ölçeği (ÖÖAÖ)

Bu çalışmada Tschannen-Moran ve Woolfolk Hoy (2001) tarafından geliştirilen, Çapa-Aydın, Sungur ve Uzuntiryaki (2009) tarafından Türkçe'ye adapte edilen Öğretmen Öz-yeterlik Algısı Ölçeği (ÖÖAÖ) kısa formu kullanılmıştır. Ölçek 12 madde ve üç faktörden oluşan 9 dereceli (1='Yetersiz' ile 9='Çok yeterli' arasında değişen) Likert tipi bir ölçektir. Her biri dört maddeden oluşan üç faktör sırasıyla öğrenci katılımını sağlama (ÖKS), öğretim stratejileri (ÖS) ve sınıf yönetimi (SY) olarak adlandırılmıştır.

Bu ölçeğin pilot çalışmasında Ankara'dan toplanan 294 kişilik veri seti ile DFA yapılmıştır. Analiz sonucunda ulaşılan model uyum indeksleri şu şekildedir: $\chi 2(51)=102.393$ ($p<.05$), RMSEA=.06, CFI=.95, TLI=.93 ve SRMR=.04. Cronbach alfa iç tutarlık katsayısı tüm ölçek için .90, ÖKS, ÖS ve SY alt boyutları için sırasıyla .73, .83 ve .81 olarak hesaplanmıştır.

3.5.7 Demografik Bilgi Formu

Katılımcıları tanımlayıcı bilgiler elde etmek üzere araştırmacı tarafından geliştirilen Demografik Bilgi Formu kullanılmıştır. Bu form katılımcıların cinsiyetleri, yaş aralıkları, öğretmenlik deneyimleri, eğitim düzeyleri ve hangi sınıf düzeyinde eğitim verdikleri ile ilgili beş sorudan oluşmuştur.

3.6 Veri Toplama Süreci

Veri toplama sürecinde ilk olarak Orta Doğu Teknik Üniversitesi İnsan Araştırmaları Etik Kurulu'ndan çalışmanın etik kurallar çerçevesinde yapıldığına dair onay alınmıştır. Daha sonra Ankara Milli Eğitim Müdürlüğü'nden pilot çalışma için veri toplamak üzere izin alınmıştır. Araştırmacı bu izinle 2014 yılının Mayıs-Haziran aylarında belirlenen okullara gidip bu okullarda çalışmakta olan sınıf öğretmenlerinden veri toplamıştır. Toplanan veriler analiz edildikten sonra, çalışmanın asıl verisini toplamak için Adana Milli Eğitim Müdürlüğü'ne izin başvurusunda bulunulmuştur. Buradan da izin alındıktan sonra 2014 yılının Kasım-Aralık aylarında belirlenen okullar yine araştırmacı tarafından ziyaret edilip bu okullardaki sınıf öğretmenlerinden veri toplanmıştır. Hem Ankara hem de Adana ilindeki veri toplama sürecinde sınıf öğretmenleri çalışmaya katılımlarının tamamen gönüllülük esasına dayalı olduğu, çalışmaya katılımlarının tamamen gizli tutulacağı ve toplanan verilerin yalnızca bu araştırma kapsamında kullanılacağı konusunda bilgilendirilmişlerdir. Öğretmenler veri toplama araçlarını teneffüslerde doldurmuşlardır ve tüm ölçekleri doldurmak ortalama 10 dakikalarını almıştır.

3.7 Verilerin Analizi

Bu araştırma kapsamında Adana ilinden toplanan veriler hem betimsel hem de çıkarsamalı analiz teknikleri kullanılarak analiz edilmiştir.

Analiz aşamasında ilk etapta, veri seti gözden geçirilmiş ve veri setinin ilgili analizler için uygunluğunu tespit etmek üzere analizler yapılmıştır. Sonrasında bağımlı değişken (SİSSÇB) ve bağımsız değişkenlerin (ÖÖ, MSD ve ÖÖA) alt boyutlarının ortalama ve standart sapma değerleri ve bu değişkenler arasındaki korelasyonlar SPSS 21 programı ile incelenmiştir. Hipotez edilen modeli test etmek amacıyla Mplus 6.12 programı kullanılarak Yapısal Eşitlik Modellemesi (YEM) analizi yapılmıştır. Test edilen modelin iyi bir model olup olmadığı Hair, Black, Babin ve Anderson (2010) tarafından önerildiği gibi bir çok farklı model uyum indeksi değerlendirilerek karar verilmiştir ki bu indeksler ki-kare ($\chi 2$), RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index) ve SRMR'dır

(Standardized Root Mean Square Residual). Bunun dışında değişkenler arasındaki ilişkilerin düzeyleri ve anlamlı olup olmadıkları da parametre değerleri ile kontrol edilmiştir.

3.8 Sınırlılıklar

Bu çalışma Adana ilinin üç merkez ilçesindeki devlet okullarında görev yapmakta olan 728 sınıf öğretmeni ile sınırlıdır. Bu yüzden bu çalışmanın sonuçları branş öğretmenlerine, ilkokul düzeyi dışında görev yapan öğretmenlere, özel okullarda çalışan öğretmenlere, Adana dışındaki okullarda görev yapan öğretmenlere genellenemez. Ancak bu farklı durumlarda benzer sonuçlara ulaşmak için temel oluşturabilir. Bunun dışında, bu çalışmada ölçülen değişkenler (SİSSÇB, ÖÖ, MSD ve ÖÖA) bu çalışmada kullanılan ölçeklerle sınırlıdır. Farklı ölçekler farklı sonuçlara ulaştırabilir.

BULGULAR

4.1 Betimsel Analiz Sonuçları

Betimsel analiz aracılığıyla çalışmanın bağımlı değişkeni ve bağımsız değişkenlerinin alt boyutları için ortalama ($\bar{x}$) ve standart sapma (*SS*) değerleri incelenmiştir. Betimsel analiz sonuçlarına göre SİSSÇB için için ortama değer 4.34 (*SS*=.48) olarak bulunmuştur. Öğretmen özerkliği bağımsız değişkeni ile ilgili, katılımcı öğretmenlerin özerklik düzeylerinin en yüksek olduğu alanın öğretimi planlama ve uygulama (ÖPU) ($\bar{x}$=3.89, *SS*=.70) olduğu görülmüştür. Katılımcıların eğitim programları ile ilgili karar verme (EPKV) ($\bar{x}$=3.00, *SS*=1.02) konusundaki özerklik düzeylerinin mesleki gelişim (MS) ($\bar{x}$ =2.13, *SS*=.98) konusundaki özerklik düzeylerinden daha yüksek olduğu görülmüştür. Öğretmenlerin öz-yeterlik algılarına bakıldığında öğretmenlerin kendilerini öğretim stratejileri (ÖS) ($\bar{x}$ =7.48, *SS*=1.02) konusunda öğrenci katılımını sağlama (ÖKS) ($\bar{x}$=7.28, *SS*=1.01) ve sınıf yönetimine (SY) ($\bar{x}$ =7.28, *SS*=1.09) göre daha yeterli hissettikleri görülmüştür. Son bağımsız değişken olan mesleki sosyal destek ile ilgili ise sınıf öğretmenlerinin en çok ailelerinden ($\bar{x}$=4.40, *SS*=.81), daha sonra sırasıyla meslektaşlarından ($\bar{x}$=4.20, *SS*=.73), öğrenci velilerinden ($\bar{x}$=3.92, *SS*=.80), okul rehber öğretmenlerinden ($\bar{x}$ =3.86, *SS*=1.10) ve en son da okul yöneticilerinden ($\bar{x}$=3.73, *SS*=.92) destek aldıkları görülmüştür.

4.2 Korelasyon Analizi Sonuçları

Bağımlı değişken ve bağımsız değişkenlerin alt boyutları arasındaki korelasyonlar Pearson Moment korelasyon değerleri ile ölçülmüştür. SİSSÇB'nin EPKV ile .24 (p<.01), ÖPU ile .37 (p<.01), MG ile .12 (p<.01), ÖKS ile .52 (p<.01), ÖS ile .51 (p<.01), SY ile .48 (p<.01), YD ile .29 (p<.01), MD ile .32 (p<.01), RD ile .21 (p<.01), VD ile .34 (p<.01) ve AD ile .32 (p<.01) düzeyinde pozitif yönde ve anlamlı bir ilişki içinde olduğu bulunmuştur. SİSSÇB'nin ÖÖA alt boyutları ile yüksek düzeyde, MSD alt boyutları ile orta düzeyde, ÖÖ alt boyutlarından EPVK ve ÖPU ile orta düzeyde ve MG ile düşük düzeyde bir ilişki içinde olduğu görülmüştür (Cohen, 1988, Akt. Field, 2009).

4.3 YEM Analizi Sonuçları

Araştırmanın asıl amacı olan hipotez edilen modelin test edilmesi için Yapısal Eşitlik Modellemesi (YEM) analizi yapılmıştır. Model testi iki basamakta gerçekleştirilmiştir. İlk önce ölçme modeli (measurement model) test edilmiş daha sonra ise yapısal regresyon modeli (structural regression model) test edilmiştir.

Birinci basamakta test edilen ölçme modelinde YEM'de kullanılan gizil değişkenlerin (latent variables) kullanılan göstergeler (indicators) ile ne kadar iyi ölçüldüğü test edilmiştir. Ölçme modeli testi sonucunda bulunan model uyum indeksleri şu şekildedir: $\chi 2(41)=166.590$ (p<.05), RMSEA=.065 (%90 güven aralığında .055 ile .075 arasında), CFI=.95, TLI=.93, and SRMR=.05. Ki-kare değerinin anlamlı olması ölçülen modelin verilerin gösterdiği modelden farklı olduğunu, yani test edilen modelin veriler ile doğrulanmadığını göstermiştir. Ancak ki-kare katılımcı sayısına duyarlı bir test olduğu için katılımcı sayısı yüksek olduğunda neredeyse her zaman anlamlı sonuç vermektedir (Hooper, Coughlan ve Mullen, 2008). Bu yüzden de Byrne (2001) katılımcı sayısının yüksek olduğu YEM analizlerinde diğer model uyum indekslerinin de dikkate alınması gerektiğini belirtir. Bu çalışmanın katılımcı sayısının yüksek olması (Kline, 2011; Schumacker & Lomax, 2004) nedeniyle diğer indeksler de kontrol edilerek model iyiliğine karar verilmiştir. CFI, TLI ve SRMR modelin iyi bir model olduğunu gösterirken (Hu & Bentler, 1999), RMSEA orta derecede iyi bir model sonucu vermiştir (MacCallum, Browne, & Sugawara 1996). Tüm indeksler birlikte

değerlendirildiğinde verilerin ölçülen modeli desteklediği sonucuna varılmıştır. Test edilen ölçme modelindeki gözlenen değişkenler ile gizil değişkenler arasındaki faktör yükleri de gözden geçirlmiştir. Standardize edilmemiş faktör yükleri kontrol edilerek bütün faktör yüklerinin *p*=.001 düzeyinde anlamlı olduğu görülmüştür ki bu her bir göstergenin ilgili gizil değişkenin anlamlı bir parçası olduğunu göstermiştir. Standardize edilmiş faktör yükleri de yüklerin etki büyüklüğünü değerlendirmek amacıyla kontrol edilmiştir. Standardize edilmiş faktör yükleri .10 civarında ise etkisi küçük, .30 civarında ise etkisi orta düzeyde ve .50'den büyük ise etkisi büyük olarak değerlendirilir (Kline, 2011). Ölçme modelindeki standardize edilmiş faktör yük değerlerinin .47 (orta) ile .89 (büyük) arasında değiştiği görülmüştür.

YEM analizinin ikinci basamağında yapısal regresyon modeli bağımsız değişkenlerin bağımlı değişkeni ne kadar iyi yordadığını ortaya çıkarmak amacıyla test edilmiştir. Yapısal regresyon modeli testi sonucunda ulaşılan model uyum indeksleri şöyledir: $\chi 2(49)=189.413$ ($p<.05$), RMSEA=.06 with (%90 güven aralığında .053 ile .072 arasında), CFI=.95, TLI=.93 ve SRMR=.05. Ölçme modelinde olduğu gibi CFI, TLI ve SRMR yapısal regresyon modelinin iyi bir model olduğunu gösterirken (Hu & Bentler, 1999), RMSEA bu modelin orta derecede iyi bir model olduğunu göstermiştir (MacCallum ve diğ., 1996). Tüm model uyum indeksleri birlikte değerlendirildiğinde hipotez edilen yapısal regresyon modelinin veriler ile uyumlu olduğu sonucuna varılmıştır. Bağımlı değişken ile bağımsız değişkenler arasındaki regresyon kaysayıları bağımsız değişkenlerin bağımlı değişkeni ne kadar iyi yordadığını değerlendirmek amacıyla kontrol edilmiştir. Bağımsız değişkenlerin üçünün de bağımlı değişkeni anlamlı bir şekilde yordadığı sonucuna ulaşılmıştır. Öğretmen özerkliği ve algılanan mesleki sosyal destek değişkenlerinin sınıf-içi sosyal sorun çözme becerisini *p*=.01 düzeyinde anlamlı bir şekilde yordadığı ve etki büyüklüklerinin ($\gamma_{ÖÖ}$=.15, γ_{MSD}=.17) küçük olduğu (Kline, 2011), öğretmen öz-yeterlik algısı değişkeninin ise sınıf-içi sosyal sorun çözme becerisini *p*=.001 düzeyinde anlamlı bir şekilde yordadığı ve etki büyüklüğünün ($\gamma_{ÖÖA}$=.43) orta düzeyde olduğu tespit edilmiştir (Kline, 2011). Üç bağımsız değişken arasında sınıf-içi sosyal sorun çözme becerisini en iyi yordayan değişkenin öğretmen öz-yeterlik algısı olduğu görülmüştür.

Son olarak çoklu korelasyon katsayısının karesi (R^2) incelenerek öğretmen özerkliği, öğretmen öz-yeterlik algısı ve mesleki sosyal destek değişkenlerinin sınıf içi sosyal sorun çözme becerisinin toplam varyansının %39'unu açıkladığı tespit edilmiştir.

TARTIŞMA

5.1 YEM Analizi Sonuçları Üzerine Tartışma

Araştırmanın sonuçları algılanan öğretmen özerkliği (ÖÖ), öğretmen öz-yeterlik algısı (ÖÖA) ve alınan mesleki sosyal destek (MSD) düzeyinin öğretmenlerin sınıf-içi sosyal sorun çözme becerilerini (SİSSÇB) anlamlı düzeyde yordadıklarını göstermiştir.

ÖÖA ve SİSSÇB arasındaki ilişkinin alanyazındaki çalışmalarla (örn., Akama, 2006; Altunçekiç et al., 2005; Yenice, 2012) örtüştüğü görülmüştür. Alanyazındaki çalışmaların öz-yeterlik ile sorun çözme arasında genellikle korelasyona dayalı ilişkiler bulduğu göz önüne alındığında, bu çalışmanın sonuçlarının öz-yeterliğin sorun çözmenin anlamlı bir yordayıcısı olduğunu ortaya çıkarmasıyla öz-yeterlik ile sorun çözme arasındaki ilişki konusunda bilinenleri artırdığı söylenebilir. Bunun yanında, ÖÖA ile SİSSÇB arasındaki bu ilişkinin teorik temelleri de vardır. Daha önce de belirtildiği gibi ÖÖA benlik-belirleme kuramının (BBK) temel psikolojik ihtiyaçlarından biri olan yeterlik ihtiyacını ölçmek için kullanılmıştır. BBK'ya göre insanlar kendilerini yetkin hissetmek için doğal bir istek duyarlar (Guay ve diğ., 2000; Deci & Vansteenkiste, 2004) ve başarılı olabileceklerine inandıkları etkinlerde yer almaya meyillidirler (Deci & Ryan, 2002; Deci & Vansteenkiste, 2004). BBK'nın bu argümanına dayanarak, ÖÖA ve SİSSÇB arasındaki ilişki sınıf öğretmenlerinin mesleklerinde kendilerini yeterli hissettikleri oranda sınıfta karşılaştıkları sorunları başarıyla çözmeye yatkın oldukları şeklinde yorumlanabilir.

SİSSÇB ile MSD arasındaki ilişki de alanyazındaki çalışmalarla (örn., Arslan, 2009; Kimbler, Margrett & Johnson, 2012; Kruger, 2001; Ünüvar, 2003) örtüşmektedir. Alanyazındaki bu çalışmalar sorun çözme ile sosyal destek arasında çoğunlukla korelasyon ilişkisi olduğunu göstermektedir. Bu çalışmanın sonuçları ise MSD'nin SİSSÇB'yi anlamlı bir şekilde yordadığını ortaya çıkarmıştır. Ayrıca, bu ilişki BBK ile de açıklanabilir. Bilindiği gibi, MSD bu

çalışmada BBK'nın üç temel psikolojik ihtiyacından biri olan ilişkili olma ihtiyacını ölçmek üzere kullanılmıştır. BBK'ya göre diğer iki ihtiyaçla (özerklik ve yeterlik) birlikte ilişkili olma ihtiyacının karşılanma düzeyi insanların davranışlarını ve işlevselliğini etkiler. Buna dayanarak, MSD ve SİSSÇB arasındaki ilişki, öğretmenlerin daha yüksek düzeyde sosyal destek aldıklarında sınıfta karşılaştıkları sorunları çözme konusunda daha başarılı olaya yatkın oldukları şeklinde yorumlanabilir.

Üçüncü bağımsız değişken olan ÖÖ'nün de SİSSÇB'nin anlamlı bir yordayıcısı olduğu bulunmuştur. Bilindiği kadarıyla alanyazında özerklik ile sorun çözme arasındaki ilişkiyi araştıran tek çalışma Chang, D'Zurilla ve Sanna (2009) tarafından yapılmıştır. Araştırma kapsamında yaptıkları korelasyon analizi sonuçları üniversite öğrencilerinin özerklik düzeylerinin soruna pozitif yönelimleri ile anlamlı akılcı sorun çözme tarzları ile anlamsız düzeyde ilişki içinde olduğunu göstermiştir. Soruna pozitif yönelim ile akılcı sorun çözme tarzı alt boyutlarının tek faktörde birleştiği şu anki çalışmada da ÖÖ'nün SİSSÇB'yi anlamlı düzeyde yordadığı sonucuna ulaşılmıştır. ÖÖ ile SİSSÇB arasındaki bu ilişkinin teorik bir temeli de vardır. Daha evvel belirtildiği üzere ÖÖ BBK'nın üç temel ihtiyacından biri olan özerklik ihtiyacını ölçmek üzere kullanılmıştır. Özerklik ihtiyacının BBK açısından önemine ve işlevine dayanarak, ÖÖ'nün SİSSÇB'yi anlamlı düzeyde yordaması sınıf öğretmenlerinin özerklik düzeyi arttıkça sınıf içinde karşılaştıkları sorunları daha iyi çözmelerine olanak sağlayabileceği şeklinde yorumlanabilir.

5.2 Uygulamaya Yönelik Öneriler

Analiz sonuçları ÖÖ, ÖÖA ve MSD'nin SİSSÇB'ni anlamlı düzeyde yordadığını göstermiştir. Buna dayanarak, sınıf öğretmenlerinin özerklik, öz-yeterlik algıları ve aldıkları mesleki sosyal destek artarsa sınıfta karşılaştıkları sorunları daha iyi çözmelerinin mümkün olabileceği düşünülmüş ve buna bağlı olarak sınıf öğretmenlerinin algıladıkları özerklik, öz-yeterlik ve aldıkları sosyal destek düzeyinin artırılması önerilmiştir.

Öğretmenlerin öz-yeterlik algıları düşünüldüğünde hizmet öncesi eğitim programlarının kalitesi ilk akla gelen etkenlerden biridir. Çapa (2005) hizmet öncesi eğitim programlarının kalitesinin öğretmenlerin öz-yeterlik algılarını yordayan önemli bir değişken olduğunu

ortaya çıkarmıştır. Buna dayanarak, hizmet öncesi eğitim programlarının kalitesinin artırılmasıyla öğretmenlerin öz-yeterlik algılarının dolayısıyla da sorun çözme becerilerinin artırılabileceği düşünülmektedir. Bunun yanında öğretmenlerin değişen zamanın getirdiği değişikliklere uyum sağlayarak öz-yeterlik algılarını yüksek tutmaları için hiçmet-içi eğitimlerin önemi unutulmamalıdır. Sınıf öğretmenleri ihtiyaç duydukları konularda kaliteli hiçmet-içi eğitim programlarıyla sürekli olarak desteklenmelidir.

Öğretmenlerin özerklik algılarının artırılması da sorun çözme becerilerini geliştirmek adına önemlidir. Türkiye'de politik kararlar, eğitim programları, kitap ve diğer eğitim materyallerinin belirlenmesi, okulların denetimi, öğretmen ataması ve öğretmenler için hizmet-içi eğitimlerin düzenlenmesi merkezi bir sistemle yürütülmektedir (Yıldırım, 2003). Milli Eğitim Bakanlığı (MEB) eğitimle ilgili bütün önemli kararları almakta, öğretmenlerden ise bu kararları uygulamaları beklenmektedir. Bu noktada MEB'e eğitim ile ilgili öğretmenlere daha fazla özerklik sağlayacak yönde kararlar alması önerilmektedir.

Sınıf öğretmenlerinin aldıkları mesleki sosyal destek düzeyini artırmak için ise okulda işbirlikçi yaklaşımı benimseyen bir ortam oluşturulması önerilmektedir. İşbirliği bir kurumdaki insanların ilişki örüntüsünü değiştirerek birbirlerine olan bağlılıklarını artırmak için bilgiyi paylaşmasını, karar vermesini, birlikte çalışmasını veya iş-birliği yapmasını gerektirir (Barott & Raybould, 1998, s. 29). Öğretmenler arası işbirliği onları tükenmişlik duygularından koruyarak, onlara sorunları birlikte çözme fırsatı sunarak, günlük iş hayatı üzerinde daha fazla kontrol sahibi olmalarına fırsat vererek öğretmenlere tatmin ve uyum yeteneği sağlar (Inger, 1993). İşbirliğinin olduğu bir yerde öğretmenlerin aldıkları mesleki sosyal desteğin de artacağı düşünülmektedir. Alınan mesleki sosyal desteği artırmanın bir diğer yolu da okul yöneticilerinin mesleki sosyal desteğin artmasına olanak veren liderlik tarzlarını benimsemeleridir. Okul yöneticileri öğretmenlere hem kendileri doğrudan sosyal destek sağlayabilir hem de okulda sosyal desteği artıracak uygulamaları hayata geçirerek doğrudan olmayan bir yolla destek olabilirler. Bunun için müdürlere dönüşümsel (transformational) veya öğretimsel (instructional) liderlik tarzlarını benimsemeleri önerilmektedir.

5.3 İleride Yapılacak Araştırmalar için Öneriler

İleride yapılacak çalışmalar için verilen öneriler şu şekildedir:

- Bu çalışma Adana ilinin üç merkez ilçesindeki devlet okullarında görev yapmakta olan sınıf öğretmenleriyle yapılmıştır. Sonuçların genellenebilirliği açısından daha büyük bir öğretmen grubuyla bu araştırma tekrarlanabilir.

- Ayrıca, başka bir araştırma sınıf öğretmenleri dışındaki ortaokul veya lise öğretmenleri ile yapılabilir.

- Öğretmenlerin özerklik, öz-yeterlik ve ilişkili olma ihtiyaçlarının tatmin edildiği ve böyle bir ortamda sınıf-içi sorun çözme becerilerinin nasıl değiştiğinin takip edildiği deneysel bir çalışma yapılabilir.

- Bu çalışmada benlik-belirleme kuramının (BBK) temel psikolojik ihtiyaçları dikkate alınmıştır. Daha sonraki bir araştırmada BBK'nın diğer önemli bileşenleri de çalışmaya dahil edilebilir. Örneğin iç motivasyon, dış motivasyonun dört tip düzenleyicisi gibi...

- Bu çalışmada sosyal sorun çözme modelinin beş boyutundan yapıcı sorun çözme dahilindeki boyutlara dayalı olarak sınıf-içi sosyal sorun çözme becerisi ölçülmüştür. Daha sonraki bir araştırmada sosyal sorun çözme modelinin işlevsel olmayan sorun çözme boyutları ile de çalışılabilir.

- Bu çalışmada öğretmen özerkliği, öğretmen özyeterlik algısı ve alınan mesleki sosyal destek değişkenleri analize alt boyutların oluşturduğu gizil değişkenler olarak dahil edilmiştir. Daha sonraki bir çalışmada bu değişkenlerin alt boyutlarının sınıf-içi sosyal sorun çözme becerisini ne kadar iyi yordadığı araştırılabilir.

- Bu çalışmada öğretmen özerkliği, öz-yeterlik algısı ve alınan mesleki sosyal destek değişkenleri belirli sayıdaki göstergelerle ölçülmüştür. İleride yapılacak çalışmalarda

bu değişkenler kapsamları genişletilerek ölçülebilir. Örneğin, konu alanı bilgisi öğretmenler için öz-yeterlik algısının bir parçası olabilir veya toplum desteği alınan mesleki sosyal desteğin bir parçası olabilir.

APPENDIX H: Vita

I was born in Adana on December 2, 1983. I got my Bachelor's degree from the Department of Computer Education and Intructional Technologies in Çukurova University, Adana. During my undergraduate years, I worked as a student assistant in the Department of Computer Education and Intructional Technologies. I was responsible for maintaining the computers in the labs and preparing some instructional materials for the faculties. After I had graduated from Çukurova University, I started to purse my PhD degree in Curriculum and Instruction, Department of Educational Sciences, Middle East Technical University, Ankara. I have worked as a research assistant at the same department since 2007. During my PhD study, i assisted the faculties for some courses such as Introduction to Education, Theories of Instruction, and Classroom Management. I also had some responsibilities for technical issues such as being computer coordinator of the department for five years and designing and updating the department's website for four years. Furthermore, I have been to Univeristy of Twente, Enschede, The Netherlands as an exchange student for 2008-2009 spring semester. Later, I have been to Purdue University as a visiting research scholar and to University of Washington as a student intern in 2012. I believe that I was born to learn. Each of those activities that I engaged in during my education years taught me and improved me both personally and academically. I will continue learning working on my research areas which are curriculum development, social problem solving, teacher education, teacher professional development, motivation, and self-dermination theory.

APPENDIX I: Tez Fotokopisi İzin Formu

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ■

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : Ulaş Marbouti
Adı : Jale
Bölümü: Eğitim Bilimleri Bölümü- Eğitim Programları ve Öğretim

TEZİN ADI: In-Class Social Problem Solving Abilities of Classroom Teachers: A Self-Determination Theory Based Study

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora ■

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. ☐

2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ■

Yazarın imzası ……. Tarih …….