EFFECTS OF THE QUALITY OF EDUCATIONAL ENVIRONMENTS ON STUDENT LITERACY RESULTS BASED ON PISA 2012

A MASTER'S THESIS

BY

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THE PROGRAM OF CURRICULUM AND INSTRUCTION
İHSAN DOĞRAMACI BILKENT UNIVERSITY
ANKARA

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To our minik miracle Melodi, your presence is a blessing

and this is for you fistık…

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The Graduate School of Education

of

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Deniz Sümer

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THESIS TITLE: Effects of the Quality of Educational Environments on Student Literacy Results Based on PISA 2012

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June 2015

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

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ABSTRACT

EFFECTS OF THE QUALITY OF EDUCATIONAL ENVIRONMENTS ON STUDENT LITERACY RESULTS BASED ON PISA 2012

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June 2015

This study aims to explore the effect of school environments on student literacy achievement levels in reading among 15-year-old students participating in PISA 2012. The purpose of this study is to determine the variables that significantly affect the quality of education using school principals' evaluations given in the PISA 2012 questionnaires. The target population of this study consists of 15-year-old students at the time of the assessment from various categories of Turkish schools. The sample of PISA 2012 for Turkey consists of 4,848 students who were randomly chosen from 170 schools across all regions in the country. The results of this study shed light on the effect of: shortages in a schools' capacity to provide instruction; factors which hinder learning; the extent of parental involvement; teacher morale; and school management. The findings suggest that a number of constituents of these factors have a significant relationship with student literacy achievement of 15 year olds in Turkey.

Key Words: educational environment, reading literacy, PISA 2012

ÖZET

PISA 2012 SONUÇLARINA GÖRE EĞİTİM ORTAMI KALİTESİNİN OKUMA BECERİSİ ÜZERİNDEKİ ETKİSİ

Deniz Sümer

Yüksek Lisans, Eğitim Programlari ve Öğretim

Tez Yöneticisi: Y. Doç. Dr. İlker Kalender

Haziran 2015

Çalışmanın hedefi, okul ortamlarının, PISA 2012 kapsamındaki 15 yaşındaki öğrencilerin okuma başarı düzeyine ne kadar etkisinin olduğunu araştırmaktır. Araştırmanın amacı eğitim ortamının kalitesini önemli ölçüde etkileyen faktörleri belirlemektir. Metodoloji olarak, PISA 2012 araştırma formlarındaki okul yöneticilerinin, öğretmenlerinin ve velilerinin cevapları kullanılmıştır. Araştırma kapsamına, Turkiye'deki farklı okul türlerinden gelen öğenciler seçilmiştir. Türkiye PISA 2012 örneklemesi ülkenin bütün bölgelerinden toplam 170 okuldan seçilen 4848ögrenci arasında yapılmıştır. Araştırma bulgularından elde edilen sonuçlara gore öğrenmeyi etkileyen faktörler arasında; okul yönetimi ve okul kapasitesi, öğretmenin morali, veli katılımı gibi değerlerin özellikle etkili olduğu görülmüştür.

Anahtar Kelimeler: eğitim ortamı, okuma becerisi, PISA 2012

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CHAPTER 1: INTRODUCTION

Introduction

Quality of education is determined by providing a balanced environment that enables student learning. Such quality can be measured in various ways across many different cultures worldwide. When we think about education and the importance society places on attaining a standard level of education, many questions arise about the factors that influence the quality of education. Educational quality and therefore achievement is essentially linked to the amount of national production, which leads to monetary growth of a single household, or the grand scale, of a nation's economy.

What is education really and how do educators and national leaders come together to create a system of learning that enables the best possible quality of education for its future? When we talk about education, important questions relate to the factors which contribute most to quality education and who decides what should be taught? To answer such questions, educators come together to agree on a set curriculum that provides a testable end result and allocate resources; they desire to make society function in a proper and cyclical manner (OECD, 2013a). We have people who start jobs and those who finish them and all other individuals in between to keep a steady rate of turnover in any field of production that results in societal growth and success. If everyone had something to do and did it well, then society would have no gaps to give cause for concern when it comes to maintaining a successfully functioning economy.

In order to contribute to economic and political growth, the quality of education provided by schools is among the most important factors when determining success for the future. An optimal learning environment ensures that all members of that environment have a sense of emotional belonging, along with physical resources that contribute to the results of student achievement.

Attaining a high level of literacy skills is fundamental in any economy, large or small, as such skills encourage personal empowerment, active role taking in society and working towards the betterment of the surrounding community. According to UNESCO, literacy should be understood within a rights-based approach and included among principles for human development (UNESCO, 2006). The relationship between literacy and the economic well-being of a community is clear. Demographics show that educated people are more likely to vote and voice their opinions, which result in decision-making that positively affects the quality of education in their immediate community (Hannum & Bechmann, 2003).

The purpose of this study is to examine the relationship between students' literacy, and important factor in economic development, and the quality of the learning environment as measured by Program of International Student Assessment (PISA) 2012 as reported by administrators in schools across Turkey.

Background

PISA is an international study that assesses and compares how well 15 year old students around the world are prepared for real-life situations and challenges. PISA takes a broad approach to measuring knowledge, skills and attitudes that reflect

current changes in educational curricula, moving beyond the school-based approach towards the use of knowledge in everyday tasks and challenges. It is based on a dynamic model of lifelong learning in which new knowledge and skills necessary for successful adaptation to a changing world are continuously acquired throughout life. PISA focuses on skills that 15-year-old students will need in the future and aims to assess what they can do with what they have learned. While it does assess students' knowledge, PISA also examines students' ability to reflect, and to apply their knowledge and experience to real-life situations and to continue learning throughout their lives by applying what they learn in school to non-school environments, evaluating their choices and making decisions (OECD, 1999).

In recent years, there has been a growing interest in Organization for Economic Cooperation and Development (OECD) rankings of countries educational standards. One way for countries around the world to compare their level of societal functioning is through standardized testing using PISA. Over the past 15 years, PISA has organized tests in reading, science and mathematics. The tests do not focus on curriculum knowledge of students; they are developed to gain information on students' ability to use what they learn in school in their daily lives, i.e. literacy (OECD, 2013a).

Many countries monitor students' learning to evaluate how well their education systems prepare students for real-life situations. International benchmarking studies provide a national picture by showing a larger context within which to interpret national performance rates to compare to international levels. These assessments can show what is possible in education, in terms of the quality of educational outcomes

as well as in terms of the financial distribution of learning opportunities. They can also support setting policy targets by establishing measurable goals achieved by other systems and help to build a plan for reform.

Research on what makes schools effective indicates that learning must take place in an orderly and co-operative environment both in and outside of the classroom (Jennings and Greenberg, 2009). Effective schools require the right amount of trained teachers, adequate resources, challenging curricula and a motivated student population. Along with these factors, enough financial equity will make for a successful learning environment (Colby, 2000). When considering environmental factors that may directly affect learning, we should think about teacher-student relations, readily available resources, a disciplined school climate, school leadership, parent perceptions and an overall pressure to raise academic standards. Some of these factors are strongly linked to performance rates perhaps because of socio-economically advantaged backgrounds that may result in a higher level of discipline and more appreciation for the value of a good education, or perhaps because of students from disadvantaged backgrounds may not experience the same kind of parental pressure to influence more school wide structure and discipline (Altintas & Arici, 2014). Most of these factors that measure the quality of the learning environment are based on the perceptions and opinions of students and school principals. PISA aims to measure the relationship between these aspects and student achievement results within each country.

In response to the need for cross-nationally comparable evidence on student performance, OECD launched the PISA in 1997. The first PISA was conducted in

2000. Consistent participation in this program represents a commitment by governments to monitor the outcomes of their education system through measuring student achievement within an internationally agreed common framework. The program aims to provide collaboration in defining and implementing educational goals, in innovative ways that reflect day to day skills used in the real world. The OECD member countries as well as over 30 non- member, as of May 2015, partner economies measure how well students, at age 15, are prepared to meet the challenges they may encounter in future life. PISA has been measuring the knowledge, skills and attitudes of 15-year-olds over the last fifteen years and is therefore able to give some insight into how countries have been progressing over time (OECD, 2009).

Turkey has been a dedicated member of the OECD community and has taken part in PISA since 2003. Turkey has consistently shown improvement over the years in all skills of PISA (PISA 2012 ULUSAL ÖN RAPORU, 2015). The factors leading to this improvement are the results of a number of sources related to extra government funding where there is more importance placed on equal rights to an education for all students across the country. Government spending on education in Turkey has more than tripled in the past 10 years however; major problems in the system are still prevalent with 213,000 unemployed teachers waiting for public school positions, along with the longest working hours and the highest number of students per class and the lowest starting salaries when compared to other OECD countries. (PISA 2012 ULUSAL ÖN RAPORU, 2015). The latest reports on PISA results rank Turkey below the OECD average even though the country continues to increase its achievement rates. Figure 1 shows the gradual increase in results for Turkey between 2003 and 2012 and Table 1 shows a brief summary of the results for PISA 2012.

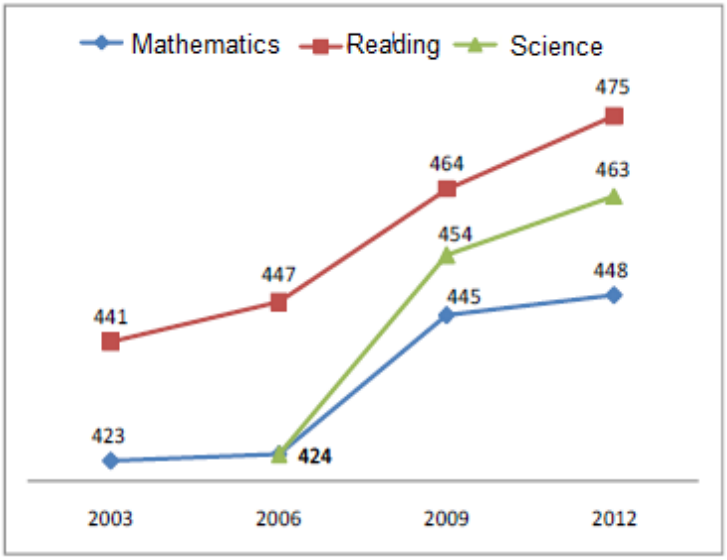

Figure 1 PISA results for Turkey (PISA, 2015)

Table 1
Summary of PISA 2012 results

	Math	**Reading**	**Science**
China (ranking 1st place across all skills)	613	570	580
OECD Average (of 65 countries)	494	496	501
Turkey (ranking 44th, 42nd, 43rd respectively)	448	475	463

PISA prepared two questionnaires to be given to both the school management and the student to be assessed. The information provided by the school questionnaire helps to illustrate the structure and organization of the school, generally, information on the student body and teachers, the school's resources, instruction, curriculum and assessment, the school's climate, policies and practices, parent perspectives and other financial statuses for education in the school. Seven items from the school questionnaire, prepared by PISA, have been used in this study to describe the context for students' test results and provide more detail as to what factors may affect

students motivation levels, and as a result, their level of achievement. The results obtained from the analysis of the questionnaires will be presented in this study.

Problem

Although Turkey is amongst the countries that show the largest improvement in scores from the previous exam, Turkish students are still scoring in the bottom 30 percent (OECD, 2010). To increase the achievement, quaility of the educational environment seems to be an influential factor. We will look into variables regarding learning which play a role in the quality of the learning environment and the overall achievement results in learning. We will consider the literacy rate of students in the PISA 2012 cycle based on their exposure to their learning environment and their success rate related to their motivation levels.

Purpose

The main purpose of this study is to determine the relationships of the quality of educational environment and student literacy levels in reading, using school principals' views. The study will determine which variables, if any, boost and/or hinder students' learning.

Research questions

This study will address the following questions:

The main question:

> What is the relationship between reading literacy and quality of the learning environment as reported by school principals in PISA 2012?

Sub-question:

- What is the success rate of students reading performance levels in relation to the quality of their learning environment as defined by the schools' capacity to provide instruction, reasons for learning hindrance, parent perspectives and involvement, teacher morale and contentment and the role of school principals?

Significance

Although specific knowledge acquisition is important in school learning, the application of that knowledge in adult life depends on the acquisition of concepts and skills. In reading, the capacity to develop interpretations of written material and to reflect on the content and qualities of text are central skills. Other skills include communication, flexibility, adaptability, problem solving and the use of information technologies. The PISA literacy scores reflect the students' ability in these areas. The main objectives of the PISA 2012 assessment are described in terms of the skills students need to acquire, the processes they need to perform and the contexts in which knowledge and skills are applied. We will explore the main school environmental factors that have an impact on students' literacy results. If we can determine the effects of the educational environment in terms of student literacy, we will be able to adjust our approach to learning accordingly.

Definition of terms

Learning environment – a space in which the learning community is subjected to physical attributes and social interactions that enable opportunities of inquiry which develop a safe and supportive culture.

Student literacy – understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society (OECD 2013b).

Quality of education – the effectiveness of a complex system that imparts knowledge, skills and attitudes, while nurturing learners in a healthy and safe environment with adequate resources and trained teachers which all come together with one specific common goal, to facilitate learning and reduce disparities (Colby, 2000).

CHAPTER 2: LITERATURE REVIEW

Introduction

This chapter will first explore which factors are included in the framework of a school environment following into a general background of the importance of an effective learning environment while considering the role of school leadership. Next, the definition, benefits and drawbacks in the PISA reading literacy framework will be explained according to previous studies and reports done mainly by PISA. Finally, motivational factors, teacher morale and attitudes and perceptions of school principals towards the effectiveness of quality learning environments will be presented.

School environment framework

There are many factors that contribute toward building an environment which is safe and supportive within a school community. The value in creating a positive atmosphere where learning takes place can result in fewer problems and higher productivity and an overall more pleasant living condition. A learning environment is a balance between social and physical qualities that create a context and culture for the learning experience (Woolfolk, 2004). The Australian Government provides an agreed national approach to helping schools and their surrounding school communities to address issues of safety. The National Safe Schools Framework recognizes the need to encourage all members of the community to enforce a positive approach when dealing with potential conflicts. This framework highlights the

importance to: value diversity; contribute positively to the safety and well-being of themselves and others; act independently, justly, cooperatively and responsibly in school, work, civic and family relationships; and to contribute to the implementation of appropriate strategies that create and maintain a safe and supportive learning environment (Building a Safe and Supportive School Environment, 2015). The United Kingdom's approach to organized education presents theoretical models of effective schooling and improved schools (Hopkins, 1994). Hopkins concludes that the key to sustain school improvement is through ongoing development of collaborative work cultures. Hopkins explains six key conditions that support the school-development process including: staff development; involvement; inquiry and reflection; leadership; coordination; and collaborative planning (Hopkins, 1994).

A visually pleasing and physically practical school building speaks volumes to prospective visitors about the value of the activities that take place within the compounds of the property (Willower, 1994). Some schools place the privileged responsibility of designing and managing the artistic appeal of the school on its students and teachers who take an interest in the formation of the school environment. The impact of the school environment not only has an effect on student learning and motivation, but also shows an effect on teachers' attitudes, behaviors, and performance (Dawson & Parker, 1998). The physical state of the school influences its surrounding community and level of appeal to parents who show involvement, Berner (1993) found that parents in Washington, D.C. were more likely to volunteer and show interest depending on the condition of the school building. Similarly, Hawkins and Overbaugh (1988) studied the increase of learning in schools

that were designed to reflect community values with cleanliness and care for their school as the most important factors.

Effective learning environments in reading

A great deal of research on the effectiveness of the learning environment on reading has been undertaken since the publication of the PISA 2000 results which focus on reading literacy achievements (Kamil, 2010). PISA surveys have gathered considerable information on the instructional strategies, curriculum, teaching resources, and home opportunities for enhancing student achievement. While not all of these survey questions are pertinent strictly to reading, it should be noted that even mathematics and science build on capable reading skills. A major shift has taken place in the last decade in the student populations that are of interest for the study on reading achievement (Rutherford-Becker &Vanderwood 2009).

Most research on reading focuses on the importance of elementary school with an assumption that reading is very fundamental to learning and that it is considered to be a basic skill that must be acquired in the early years of schooling. Thus, adolescents were considered to have developed their reading skills in elementary school, and reading was not a subject of high priority at the secondary level (Grady, 2011). According to the Institute of Education Sciences, the OECD's International Assessment of Adult Literacy Survey (IALS) found that many adults lacked fundamental literacy skills in understanding reading and applied mathematics, even among those who had attended or completed secondary school. But more recently, and largely as a result of the findings of PISA 2000, it became recognized that a substantial number of 15-year-olds were not proficient readers within a

knowledgeable society (IES, 2015). It seems reasonable to assume that reading still is a basic skill which should be acquired in early years, but this skill requires life-long practice to maintain and build on, and should be further supported and developed throughout life (OECD and Statistics Canada, 2000).

Students who for some reason do not acquire good reading skills early in elementary school are disadvantaged in many ways in comparison to those who obtain the necessary skills early on (Rutherford-Becker &Vanderwood 2009). Thus, the challenges of reading performance at the secondary level have been widely confirmed and have become topics of educational concern. This concern has been exacerbated by the growth of immigrant populations whose mother tongue differs from the official language of their adopted society and schools. Because reading is so fundamental to overall literacy and the learning of the other subjects, poor reading performance is an obstacle, in itself, to secondary school academic achievement and further education (Deshler *et al.*, 2007).

The PISA 2009 questionnaires contain considerable data that would be useful for assessing both school effectiveness and school management and leadership. For example, they reflect questions on the specific leadership activities undertaken by the principals of participating schools and activities that have been linked to student achievement (Hallinger & Heck, 1998). Thus, in addition to the overall attempt to discern policy influences of schools on achievement, a special effort could be devoted to that of school management and leadership.

Further research related to educational management and strategic planning of effective learning environments report on the various pedagogical, organizational, technological and managerial factors that contribute to quality enhancement of the educational organization. According to a publication in the Baltic Journal of Sustainability, the most essential macro environment factors are associated with globalization. This refers to rapid economic growth, technological advances and innovation, positive international cooperation politically, scientifically, and economically, and socio-cultural and demographic changes (Stukalina, 2013). With effective strategic management, development in the quality of the educational environment is closely associated with the ability to process any obtained information that will help support decision making. The purpose of education intends to prepare students for a prospective dynamic and multidisciplinary job market. The manner in which this educational service is delivered must address the global context through internal resources that sustain social relationships within the academic community, all influenced by the analysis of the external environment (Stukalina, 2013).

Along with effective management, research in the sociology of education has identified that school socioeconomic composition is one of the most important school-level attributes in explaining student outcomes, and that the strength of this effect varies across schools and countries (Montt, 2012). A study on the effects of school socioeconomic composition was conducted by decomposing them into contagion and frog-pond effects. According to the contagion theories, socioeconomically advantaged peers provide all students with academically oriented social networks and therefore produce a better learning environment as a result of

social interactions between students of different social origins (Jencks and Mayer, 1990). As students begin to form opinions about themselves in relation to their classmates, students with a relatively lower position within the school are more likely to be “the frogs of the pond” and are more likely to have lower academic self-concepts, less motivation, less achievement-oriented behavior, lower grades, and as a result lower long term expectations of themselves (Marsh et al., 2008).

With that being said, the learning environment is largely influenced by the characteristics of the individual student. Students, who rely on a surface approach to understanding, actively prefer and rate more highly, lecturers who provide pre-digested information ready for 'learning', while students with a deep approach to learning prefer lecturers who challenge and stimulate (Entwistle and Tait, 1990). Thus, it is students' perceptions of the learning environment that influence how a student learns, not necessarily the context in itself (Entwistle, 1987). Montt (2012) analyzes how the strength of these composition effects varies according to the way schools and school systems organize themselves through promoting cross-status relationships, differentiating opportunities to learn and providing information about students’ capacities of greater educational attainment (Montt, 2012). The studies highlight that disadvantaged students benefit from attending socioeconomically advantaged schools and perform better irrespective of their own socioeconomic background.

Reading literacy framework

Reading literacy is defined in terms of students’ ability to understand, use and reflect on written text to achieve their purposes. In PISA, reading literacy is assessed in

relation to the capacity not just to understand a text but to reflect on it, drawing on one's own thoughts and experiences (OECD, 2002).

Studies in Australia, Canada and Denmark display a strong relationship between the performance in reading on the PISA 2000 assessment at age 15 and the chance of a student completing secondary school and of carrying on with post-secondary studies at age 19. For example, Canadian students who had achieved reading proficiency Level 5 at age 15 were 16 times more likely to be enrolled in postsecondary studies when they were 19 years old than those who had not reached the reading proficiency Level 1. (The European Commission, 2001)

According to Holloway (1999), reading skills are essential to the academic achievement of middle- and high school students. Olson (1977a; 1977b) claims that in today's society, reading literacy introduces a bias because it provides advantages to those who acquire the necessary skills. As the currency used in schools, literacy provides access to literate institutions and has an impact on cognition, or thinking processes (Olson, 1994); it also shapes the way in which we think. Achievement in reading literacy is not only a foundation for achievement in other subject areas within the educational system, but also a prerequisite for successful participation in most areas of adult life (Cunningham & Stanovich, 1998; Smith, Mikulecky, Kibby, & Dreher, 2000).

Elwert (2001) has advanced the concept of societal literacy, referring to the way in which literacy is fundamental in dealing with modern bureaucratic society. Law, commerce and science use written documents and written procedures such as laws,

contracts and publications that one has to be able to understand in order to function in these domains. The European Commission (2001) summed up the foundational nature of reading literacy skills as key to all areas of education and beyond, facilitating participation in the wider context of lifelong learning and contributing to individuals' social integration and personal development. More recently, the European Union expressed the importance of communication in the mother tongue, comprising listening, speaking, reading and writing, as the first of eight key competencies, "which all individuals need for personal fulfillment and development, active citizenship, social inclusion and employment" (Education Council, 2006).

Reading literacy skills matter not just for individuals, but for economies as a whole. Policy makers and others are coming to recognize that in modern societies, human capital – the sum of what the individuals in an economy know and can do – may be the most important form of capital. Economists predict that a country's education level is a predictor of its economic growth potential. In a recent study, several Canadian economists analyzed links between literacy levels and economic performance over a long period. They found that the average literacy level of a nation's population is a better predictor of economic growth than educational achievement (Coulombe, Trembly, & Marchand, 2004).

Metacognition in literacy

Metacognition in reading refers to the awareness of and ability to use a variety of appropriate strategies when processing texts in a goal oriented manner. Learning from texts requires the reader to take an active role in their reading by making inferences, filling in gaps, and to identify relevant information; selectively reinstate

previous text information; retrieve or reinstate information from long term memory; or perform all three tasks (Baker & Brown, 1984; Borkowski & Turner, 1990; Körkel & Schneider, 1992).

Metacognition has both a significant correlation with reading proficiency and is responsive to teaching and learning. A number of studies have found an association between reading proficiency and metacognition (Artelt, Schiefele, & Schneider, 2001; Brown, Palincsar, & Armbruster, 2004). It is assumed that the reader becomes independent of the teacher after various text processing strategies have been acquired and are applied without much effort. By using these strategies, the reader can effectively interact with the text by use of strategic thinking, to solve reading comprehension problems.

The relationship between metacognitive knowledge and the understanding of text in a given situation is moderated by students' actual motivation to read or to invest effort. There is evidence to suggest that there is a correlation between appropriate pieces of metacognitive knowledge and the effective use of related strategies on the one hand, and proficiency in reading on the other. An instrument measuring metacognitive knowledge about text comprehension was administered to students who took part in the PISA 2000 assessment in Germany. A correlation of $r = 0.51$ between the combined reading literacy scale and the measure of students' metacognitive knowledge was found (Artelt, Schiefele, & Schneider, 2001). Research based on PISA 2003, where such an approach was also implemented revealed a similar correlation between metacognitive knowledge and reading literacy

(Schlagmüller & Schneider, 2002). A similar measurement instrument was administered in PISA 2012.

The general finding of the report of the U.S. National Reading Panel (2000) was that remediating poor reading literacy is possible through explicit teaching of metacognitive skills. That is, when readers are given cognitive and metacognitive strategy instruction, they make more significant gains on measures of reading comprehension than students only trained with conventional instruction procedures (Pressley, Graham, & Harris, 2006; Pressley, *et al.*, 1989; Rosenshine & Meister, 1994; Rosenshine, Meister, & Chapman, 1996). Gathering information in PISA 2012 on aspects of metacognition that have an association with reading proficiency can provide the kind of information used for improving reading literacy and therefore meet one of PISA's aims; to provide policy makers and school leaders with strategies for improving the educational outcomes of their students.

Motivational and behavioral elements of reading literacy

PISA defines reading literacy as understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society (OECD, 2009).

Reading-related skills, habits, interests, attitudes and behaviors have been shown in a number of recent studies to be strongly linked with reading proficiency. For example, in PISA 2000 there was a greater correlation between reading proficiency and reading engagement which comprises of attitudes, interests and practices than between reading proficiency and socio-economic status (OECD, 2002). In other

studies reading engagement has been shown to account for more variance in reading achievement than any other variable (Guthrie & Wigfield, 2000).

In related studies, learning styles play an important role in the manner in which students process information, problem solve in effective learning. Grasha (1990) defines learning styles as a preference made by a student as a result of the classroom environment and class experiences with three dimensions relating to social interaction in the classroom: students' approaches/decisions towards learning; opinions about their teachers; and responses to the processes in the classroom (Grasha, 1990). The results in this study support the hypothesis that there was a significant difference between the students learning styles and class level. The results also indicated that there was a significant difference in the students' learning styles and students' gender. According to Bayrak (2012), competitive learning style is the most preferred learning style, with collaborative and independent style respectively in second and third place and participative, avoidant and dependant learning styles to follow.

The reader generates meaning in response to text by using previous knowledge of social and cultural situations. While constructing meaning, the reader uses various processes, skills, and strategies to further, monitor, and maintain understanding. These processes and strategies are expected to vary with context and purpose as readers interact with a variety of different texts. In addition, the information collected takes into account the background variables on students such as socio-economic, immigrant status, gender, and their learning approaches and attitudes towards

learning in order to uncover the patterns of relations between these variables, and the apparent achievement results.

Teacher and student morale

Morale is defined by a state of mind determined by the individual's anticipation of the extent of satisfaction of those needs which s/he perceives as significantly affecting her/his total work situation. This interpretation incorporates the notion of morale as an individual, rather than a group phenomenon, and quite distinct from group cohesiveness, which is often misinterpreted as morale (Evans, 1997). In a learning environment, one's morale is very often dependent upon the energy that is sent and received by all members in any given group. Some individuals are more susceptible to this energy whereas others can be completely oblivious. For this reason, morale has very much to do with receptiveness and overall interest. In the learning environment, all members should feel a sense of belonging and pride. In order for achieve proficiency and results; there are many factors that should be considered. Some of these are the working and learning conditions for both teachers and students, a sense of job security, health and safety, teaching and learning hours, rewards and recognitions attained, opportunities and encouragements for growth are among some of the factors that contribute to the overall morale of the learning community (Perumal, 2011).

In schools, the morale of teachers is an important factor to ensure that teachers give their best at all times for students to receive the best possible education. As young minds can be easily influenced and affected by their emotions and what they see and

hear, creating a positive school climate is crucial in providing good quality education where students and teachers are motivated members of the learning community.

With the teaching profession comes a responsibility in the community to help contribute to a nation's capital. This is why schools should be happy places with teachers who are inspiring and enthusiastic leaders that ensure the willingness to learn of students in the learning process. High morale and a positive learning environment are key factors in improving the learning process for educational success (Perumal, 2011). As teacher morale directly impacts the delivery of lessons, their effectiveness as leaders also impact student attitudes, behavior and discipline, and as a result, student performance levels (Perumal, 2011).

In recent studies by Perumal (2011), over the last 10 years or more there has been a steady decline in teacher morale in many public schools in South Africa, which has led to many teachers adopting an apathetic attitude to their profession. Even the most skilled teachers find it increasingly difficult to maintain standards and give off their best. Undisciplined learners, heavy workloads, violence at school, lack of parental and management support and reduced chances of promotion are among only a few of the reasons for this (Perumal, 2011). It is also important for school security to be strong and able to provide a sense of safety to make for a caring and pleasant learning environment. For this, a stern management team must instill school rules and discipline procedures and even more, must follow through on the implementation of them.

In the end, the key to improving school-wide morale is a practice of confidence, cheerfulness, discipline, and overall willingness to learn. This is then reflected in the physical and psychological aspects of the school community where optimal learning takes place. Once these factors are in place, reforms in curriculum, teaching standards, teacher evaluation and learner assessments can become successful and meaningful.

Conclusion

The goal of education has shifted its emphasis from the collection and memorization of information only, to a broader concept of knowledge: The meaning of knowing has shifted from being able to remember information, to being able to find and use it (Simon, 1996). The ability to access, understand and reflect on all kinds of information is essential if individuals are to be able to participate fully in our knowledge-based society. To summarize the review of the researched literature related to quality in education and literacy achievement, the PISA framework for assessing reading literacy of students towards the end of compulsory education uses national assessment results to shed light on inadequacies and areas of need for development. The global desire for higher quality of education is best defined by UNICEF, reminding the world that every child has a right to an education.

> In all aspects of the school and its surrounding education community, the rights of the whole child, and all children, to survival, protection, development and participation are at the centre. This means that the focus is on learning which strengthens the capacities of children to act progressively on their own behalf through the acquisition of relevant knowledge, useful

> skills and appropriate attitudes; and which creates for children, and helps them create for themselves and others, places of safety, security and healthy interaction (Bernard, 1999).

Internationally recognized organizations that support educational development continue to shape our approach to learning and teaching. We can conclude that the quality of education and the learning environment is impacted by the form in which learning that takes place. That is, the balance between the physical and social environments which create a culture of learning. In this culture, teachers, students and parents are held accountable for maintaining an effective learning environment where all members of the community perform to adequate standards. These standards can be defined by individual societies that place value on attaining some form of education. Literacy is among one of the crucial skills that is essential to academic achievement (Holloway, 1999). Literacy is best acquired through metacognitive skills that formulate how a student may process information and the speed at which they deepen their literacy skills which can also later be transferred onto other disciplines (Artelt, Schiefele, & Schneider, 2001; Brown, Palincsar, & Armbruster, 2004). In the end, learning is best achieved in pleasant environments that enhance curiosity and motivate young minds to experience new endeavors. With high morale, a positive atmosphere is most often one of the leading factors in higher quality of the learning environment.

CHAPTER 3: METHODOLOGY

Introduction

This chapter will focus on the context and sample being studied. The method of data collection will be explored and finally the method of data analysis will be discussed.

Research design

The main purpose of this study is to examine the effects of various learning-related variables which comprise the educational environment defined by PISA of student performance levels on reading, using school principals' views.

This study is a quantitative research that includes correlational research methods. Correlational method is a form of descriptive research used to test the relationship between variables where there is no manipulation of the variables. The data from the PISA database will serve to show which factors affect student literacy results. In this study, the relationship between Turkish students' reading literacy and the quality of the learning environment will be of focus.

Context

PISA is designed to collect information in order to evaluate education systems worldwide through assessments of the skills and knowledge of 15-year-old students once every three years and presents data in three specific knowledge and skills in

reading, mathematics and *science* of students in various countries. It combines the assessment of science, mathematics and reading with information collected by survey questionnaires based on students' home background, their approaches to learning, their learning environments and their familiarity with computers. Student outcomes are then associated with these background factors whereby, PISA is able to provide insights into the factors that influence the development of skills and attitudes of students' learning.

In PISA 2012, approximately 510,000 students in 65 economies took part in the assessment of reading, mathematics and science representing about 28 million 15-year-olds globally. Of those economies, 44 took part in an assessment of creative problem solving and 18 in an assessment of financial literacy. (PISA FAQ, 2015). The sample of this study will include 4848 students from all geographical regions of Turkey who participated in PISA 2012.

PISA focuses on the application of student acquired knowledge. Through three main stream topics of Maths, Science and Reading, students' ability to apply their knowledge is assessed (OECD, 2013a). Results are later used by educators and policy makers to compare similarities and differences between various education systems and are further used to adjust national standards that make up the international averages presented by the OECD. The economies that choose to participate in this form of testing have seen changes over the past 15 years where some countries like Turkey are exceedingly improving their performance rate on these assessments since their initial attempt in international assessments. Therefore,

PISA has become a tool for participating economies to gauge the progress of student success rates over 5 successive assessments over a period of 15 years.

Participants

According to the Organization for Economic Co-operation and Development (OECD), 4848 students ranging from 15 years, 3 months to 16 years, 2 months of age within Turkey were randomly selected to take part in the PISA 2012 assessment. Adminstrators were also part of the process through school questionnaires as were the students and their parents.

Instrumentation

Data was obtained from the OECD website that includes PISA data sets downloadable for public use. For the present student, the PISA 2012 reading achievement test, along with 4,848 Student and 170 School Questionnaires administered in 2012 were used.

PISA literacy tests are paper-based exams covering topics in mathematics, reading, science literacy and problem solving assessments. They are designed to be completed by the student in an approximate length of 2 hours. All topic areas of PISA consist of multiple choice and open-ended questions and are related to real life situations for the student to make references to academic experiences along with their own life experiences (OECD, 2013a). The reading literacy component of the test includes different tasks such as retrieving specific information, developing an interpretation, obtaining a broad understanding and reflecting on the content or form of the text and the context in which the text was written (OECD, 1999).

In terms of some of the general uses of the results, policy makers are using PISA findings to gauge the knowledge and skills of students in their own country in comparison with those of the other participating countries; establish benchmarks for education improvement, for example, in terms of the mean scores achieved by other countries or their capacity to provide high levels of equity in educational outcomes and opportunities; and understand relative strengths and weaknesses of their education systems (OECD, 2007).

Good educational policy is informed educational policy in which all of the responsible actors (policy makers, school principals, teachers, students and parents), are provided with the knowledge that they need to make good educational decisions. Although the test results from PISA may inform and motivate these actors to seek ways of improving the levels and equality of educational performance, they need considerable further information that will assist them in formulating strategies to achieve those ends.

For this reason PISA has made an effort to gather background information on educational systems, schools, families, and students that might inform the potential sources of differences in achievement, both within and among countries, and that might be used to formulate strategies for improvement of overall academic performance and educational equity.

The student and school questionnaires provide background information on mainly two instructional settings: the home and the classroom. Some principal categories in

which PISA 2012 has attempted to obtain information on instructional settings include:

• Students and their family backgrounds, including their economic, social and cultural capital.

• Aspects of students' lives, such as their attitudes towards learning, their habits and life inside school, and their family environment.

• Context of instruction, including institutional structures and types, class size, classroom and school climate and reading activities in class.

• Aspects of learning and instruction in reading, including students' interest, motivation and engagement, orderliness of classroom environment.

• Opportunity to learn, quality of school and teaching, material resources readily available, extra-curricular activities offered (OECD, 2013a).

The information from these background questionnaires help to illustrate the similarities and differences between groups of schools, both within and between countries, to better understand the context in which students achievements are assessed. The approximate length of these questionnaires is 30 minutes. The information obtained is central to the analysis of student and school characteristics. These findings along with the results from the PISA paper-based achievement tests work together to form overall general results that make up PISA 2012. The questionnaire is introduced in the Appendix.

Method of data collection

Using stratified random sampling methods, PISA 2012 data from students and principals in 12 statistical regions, 56 provinces, in 170 schools across Turkey will be

utilized (Altintas & Arici, 2014). Multiple linear regression method will determine the differences and causes of the data results. This will help to show how the learning environment affects overall literacy performance rates of Turkish students.

The data used provides information about socio-economic, social and cultural backgrounds of students and their families. Aspects of students' attitudes towards learning and their habits inside school and family environments, along with quality of schools, public and private funding, school-wide decision making processes; the context of instruction and the classroom climate that all effect students' interest, motivation and engagement in learning.

PISA randomly selects schools in each country to participate in assessments once every three years. The selected sample of students comes from a broad range of backgrounds and abilities all at the age of 15, who are nearing the end of compulsory education in most countries. OECD member countries are selected on a voluntary basis with an initial 43 countries who took part in PISA 2000, 41 in PISA 2003, 58 in PISA 2006 and 74 in PISA 2009, 65 in PISA 2012 and 71 are signed up to participate in 2015. Once a country has applied to participate in the assessment, students are randomly selected by PISA, parents are asked for permission and school coordinators are informed with support of the ministry of education (PISA FAQ, 2015). Table 1 shows the seven items from the school questionnaire, prepared by PISA, which have been used in this study. These questions were selected to in context to factors that may affect students' motivation levels, and as a result, their level of achievement.

Table 2
Questionnaire Items

	Value of Responses					
Questionnaire Items	***1***	***2***	***3***	***4***	***5***	***6***
Shortages in schools' capacity to provide instruction (13 items) SC 14	Not at all	Very little	To some extent	A lot		
Reasons for learning hindrance (18 items) SC 22	Not at all	Very little	To some extent	A lot		
Parental involvement in school related activities (12 items) SC 25	0% of the time	25% of the time	50% of the time	75% of the time	100% of the time	
Teacher morale (4 item) SC 26	Strongly agree	Agree	Disagree	Strongly disagree		
Teacher contentment (7 items) SC 31	No change	A small change	A moderate change	A large change		
School management (22 items) SC 34	Did not occur	1-2 times during the year	3-4 times during the year	Once a month	Once a week	More than once a week

Method of data analysis

Using quantitative data downloaded from the PISA database, a series of multiple linear regressions were conducted. A linear regression attempts to model the relationship between the dependent variable, Plausible Reading Value (PV1Read), with the various independent variables which allows us to make more powerful predictions about the reasons behind each result. The multiple linear regression equation is as follows:

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + \ldots + b_pX_p$$

Where $\hat{Y}$ is the expected value of PV1Read, and X_1 through X_p are the various independent variables when b_0 is the value of Y when all the independent variables are equal to zero, and b_1 through b_p are the estimated regression coefficients. Each regression represents the PV1Read variable relative to the change in the independent variables. As a result, the outcome of the analysis quantifies the association between the variables to assess whether each variable is statistically significant. In general, if the regression coefficient varies more than 10%, then the independent variable is said to be statistically significant. In qualitative research, it is considered more likely for there to be a variability of less than 50% (Multivariable Methods, 2015). In each regression within this study, all items representing one quality of learning environment factor were included to estimate their relationships with reading literacy results. The SPSS package program was used to conduct these tests. Later, the standardized coefficients for each item were investigated to assess the relationships and finally the explained variances were reported accordingly.

CHAPTER 4: RESULTS

Introduction

This chapter will explain the results of this study with focus on the following questions:

- What is the relationship between reading literacy and quality of the learning environment as reported by school principals in PISA 2012?
- What is the success rate of students reading performance levels in relation to the quality of their learning environment as defined by the schools' capacity to provide instruction, reasons for learning hindrance, parent perspectives and involvement, teacher morale and contentment and the role of school principals?

School responses towards educational environment using PISA 2012 school questionnaire

Shortages in schools' capacity to provide instruction

When looking at the school's capacity to provide adequate instruction, results indicate that in Turkey, on average, most schools are affected to some extent by a lack of science laboratory equipment, not enough school buildings and grounds, and a shortage of computers for instructional purposes. Schools were asked to provide information regarding the lack of qualified teachers in sciences, mathematics, and foreign language teachers. The results to these questions are represented in Figure 2a and 2b, which show there to be sufficiently qualified teachers and very little

hindrance on the school's capacity to provide instruction. According to this item in the school questionnaire, on average most schools are least affected in general by a shortage of heating/cooling and lighting systems as well as a lack of internet connectivity.

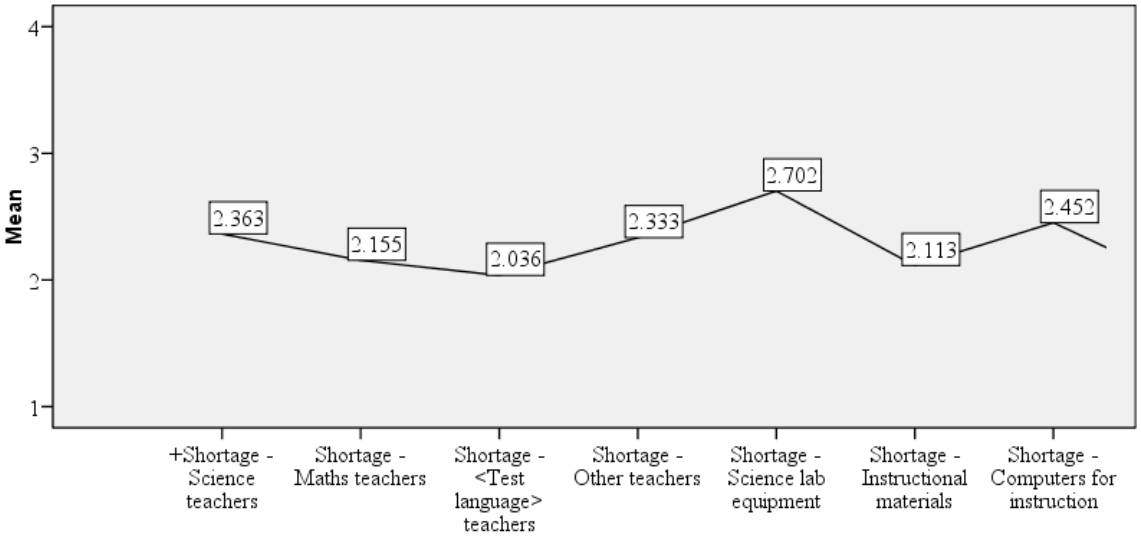

Figure 2a School's capacity to provide instruction (SC14)

Figure 2b School's capacity to provide instruction (SC14)

A multiple linear regression analysis was conducted with the 13 items that represent shortages within the schools' capacity to provide adequate instruction. These

shortages are the independent variables. The results indicated that the regression was overall significant where $F(13,167) = 3.577$, $p < .001$.

Results reveal that only 3 out of 13 were significant: (i) Other teacher, (ii) Science laboratory equipment, and (iii) Instructional space. All standardized coefficients of the three significant predictors were negative. This negative relationship shows that when teachers have lower level of agreement on these items, students' reading literacy performance increases. In other words, in schools with no shortage or inadequacy of other teachers, science lab equipment, and instructional space of instructional space students have a higher reading literacy. Or the shortage on these three aspects has a negative effect on reading literacy outcomes. These 3 items in the regression model explained 16.7% of the variability in reading literacy.

Table 3
Shortages in schools' capacity to provide instruction (SC14)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	569.689	21.489		26.511	.000
	+Shortage - Science teachers	8.498	7.864	.115	1.081	.282
	Shortage - Maths teachers	1.409	9.021	.018	.156	.876
	Shortage - <Test language> teachers	2.730	9.810	.034	.278	.781
	Shortage - Other teachers	-19.325	9.619	-.216	-2.009	.046
	Shortage - Science lab equipment	-19.598	6.593	-.269	-2.972	.003
	Shortage - Instructional materials	10.454	7.539	.132	1.387	.168

a Dependent Variable: PV1Read

Table 3
Shortages in schools' capacity to provide instruction (SC14) (cont'd)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	Shortage - Computers for instruction	-9.361	8.180	-.127	-1.144	.254
	Shortage - Internet connectivity	-3.467	7.866	-.044	-.441	.660
	Shortage - Computer software	1.469	8.617	.020	.170	.865
	Shortage - Library materials	-3.232	7.214	-.040	-.448	.655
	Shortage - Buildings and grounds	4.833	6.986	.073	.692	.490
	Shortage - Heating/cooling and lighting	-.514	7.125	-.006	-.072	.943
	Shortage - Instructional space	-16.339	7.591	-.238	-2.152	.033

a Dependent Variable: PV1Read

Reasons for learning hindrance

Students who are exposed to a certain kind of climate learn to adapt themselves accordingly; however, some factors play a crucial role in the learning of students and can hinder their learning. In Turkey, school administrators provide detail on the factors that hinder student learning. In Figure 3a, 3b, and 3c, it appears that on average, hindrance is cause by student truancy, students skipping classes, students arriving late for school, disruption of classes by students themselves, teachers having to teach students of heterogeneous ability levels within the same class, and teachers' low expectations of students are all factors that show a higher level of hindrance on student learning. Other factors among these that affect student learning, there are some factors that show a lower level of hindrance, if any. Among Turkish schools who have participated in this questionnaire, it appears that there are nearly no issues when it comes to students not attending school events, students lacking respect for

teachers, students use of alcohol or illegal drugs, poor student-teacher relations, teachers having to teach students of diverse ethnic backgrounds within the same class, teacher absenteeism, staff resisting change, teachers being too strict with students, teachers being late for classes, teachers not being well prepared for classes. The results to this item are displayed in Figures 3a, 3b, and 3c below.

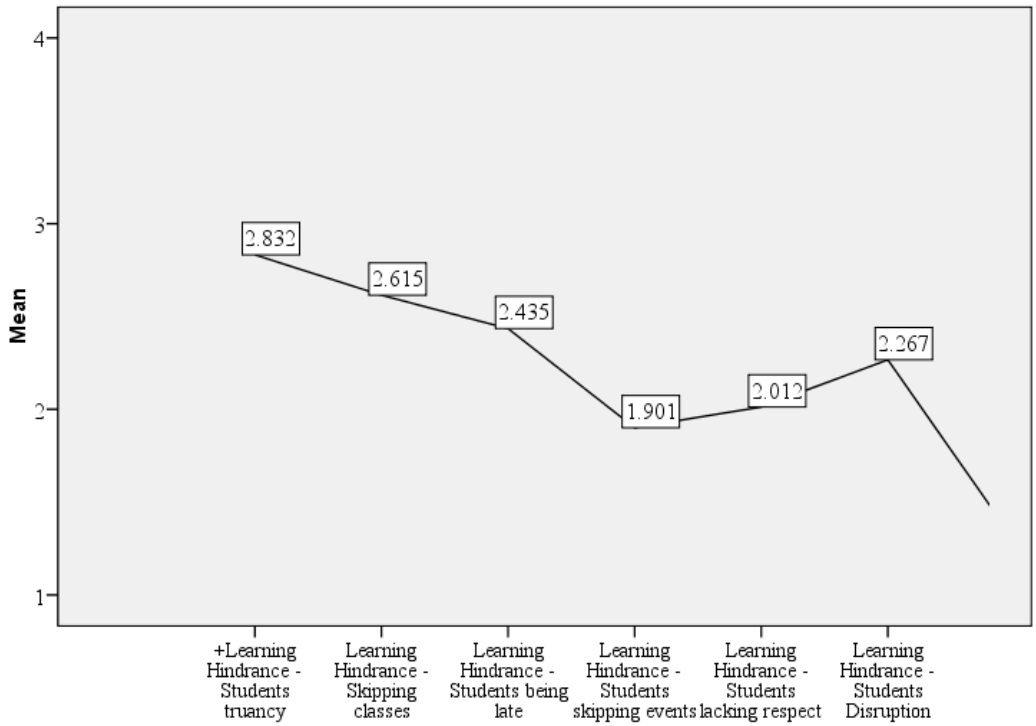

Figure 3a Reasons for learning hindrance (SC22)

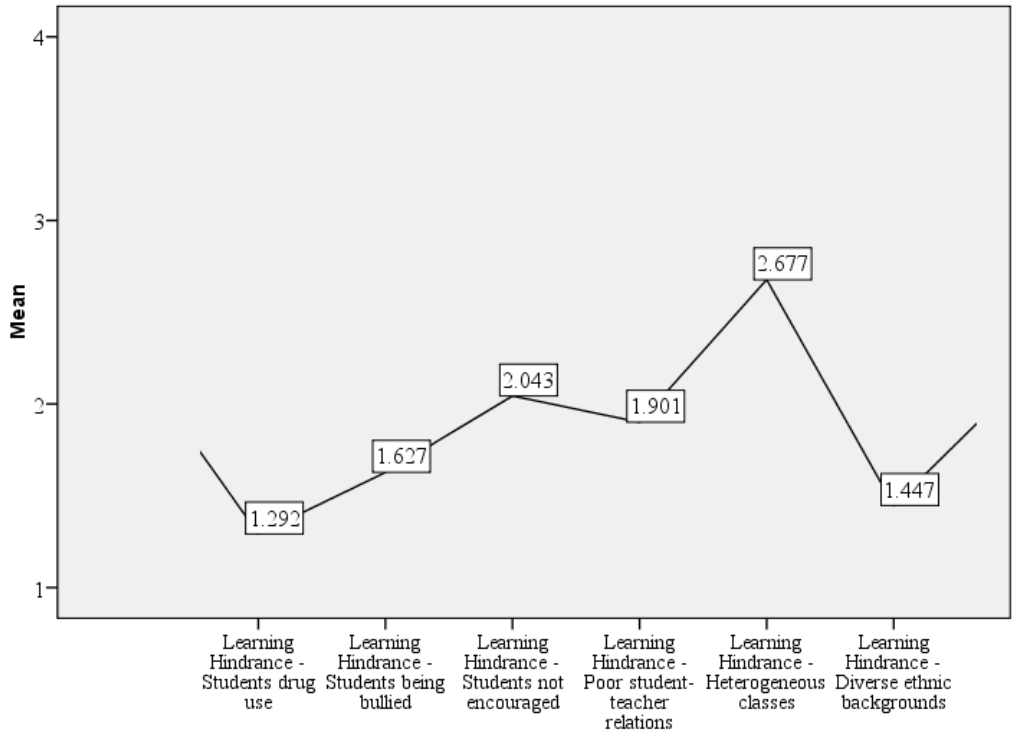

Figure 3b Reasons for learning hindrance (SC22)

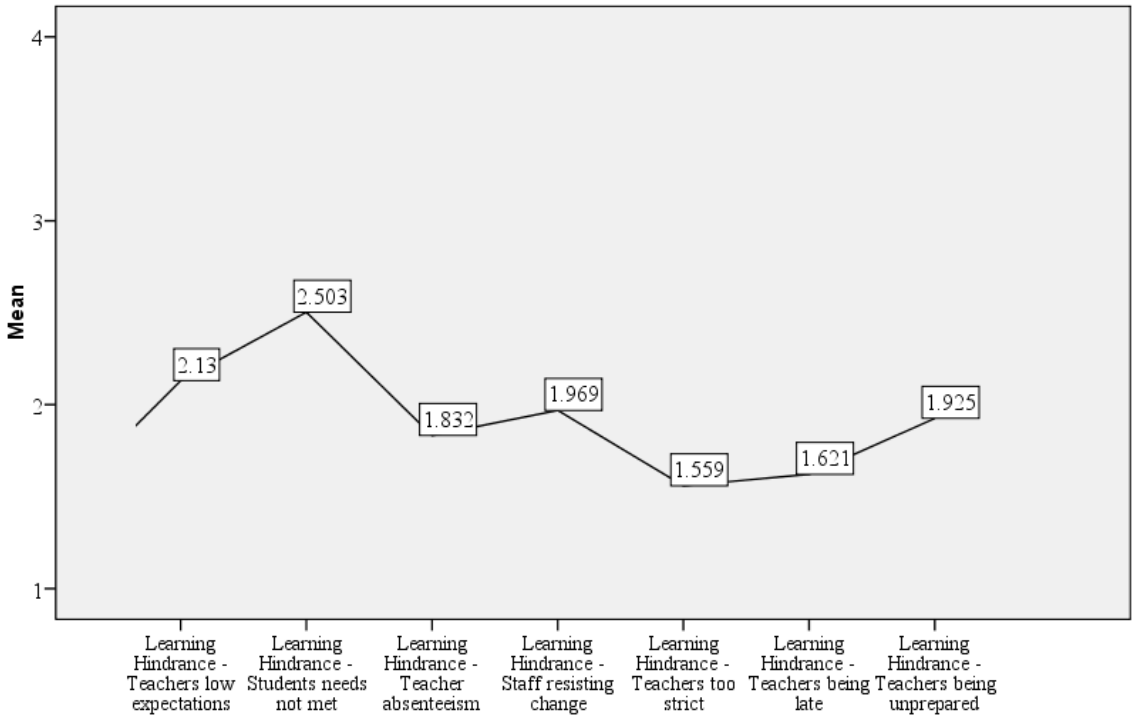

Figure 3c Reasons for learning hindrance (SC22)

A multiple linear regression analysis was conducted with 18 items that represent reasons for hindrance in the learning environment. These hindrances are the independent variables. The results indicated that the regression was overall significant where $F(19,16) = 4.629$, $p < .001$.

Results reveal that only 2 out of 18 were significant: (i) Teachers teaching heterogeneous ability levels within the same class and (ii) Teachers teaching students of diverse ethnic backgrounds within the same class. All standardized coefficients of the four significant predictors were negative. This negative relationship shows that when teachers have lower level of agreement on these items, students' reading literacy performance increases. In other words, in schools where homogeneous abilities are streamed and classrooms are of same ethnic backgrounds, students result in higher reading literacy outcomes. These 2 variables in the regression model explained 30.1% of the variability in reading literacy.

Table 4
Reasons for learning hindrance (SC22)

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	590.148	23.134		25.510	.000
	+Learning Hindrance - Students truancy	-4.989	10.700	-.059	-.466	.642
	Learning Hindrance - Skipping classes	.538	10.931	.007	.049	.961
	Learning Hindrance - Students being late	2.017	9.024	.021	.224	.823
	Learning Hindrance - Students skipping events	-.309	9.548	-.003	-.032	.974

a Dependent Variable: PV1Read

Table 4
Reasons for learning hindrance (SC22) (cont'd)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	Learning Hindrance - Students lacking respect	-7.200	9.584	-.083	-.751	.454
	Learning Hindrance - Students Disruption	-9.930	10.928	-.113	-.909	.365
	Learning Hindrance - Students drug use	3.600	10.102	.035	.356	.722
	Learning Hindrance - Students being bullied	-20.745	10.803	-.220	-1.920	.057
	Learning Hindrance - Students not encouraged	.688	7.845	.008	.088	.930
	Learning Hindrance - Poor student-teacher relations	12.713	10.497	.140	1.211	.228
	Learning Hindrance - Heterogeneous classes	-14.973	6.686	-.188	-2.240	.027
	Learning Hindrance - Diverse ethnic backgrounds	-19.429	7.714	-.185	-2.519	.013
	Learning Hindrance - Teachers low expectations	-15.976	8.144	-.179	-1.962	.052
	Learning Hindrance - Students needs not met	-15.138	8.108	-.169	-1.867	.064
	Learning Hindrance - Teacher absenteeism	-10.287	11.103	-.098	-.927	.356
	Learning Hindrance - Staff resisting change	12.225	8.976	.140	1.362	.175
	Learning Hindrance - Teachers too strict	12.806	10.852	.120	1.180	.240
	Learning Hindrance - Teachers being late	-.054	13.237	.000	-.004	.997
	Learning Hindrance - Teachers being unprepared	18.857	10.421	.203	1.810	.073

a Dependent Variable: PV1Read

Parental involvement in school related activities

Parent involvement is crucial when it comes to students' level of motivation towards learning. When parents are involved, students can tend to feel a sense of worth and pride. School administrators were asked to provide the proportion of students' parents' participation in various school-related activities. In Figure 4, results show that 75-80% of parents, respectively, in schools around Turkey participate in discussions relating to their child's progress and behavior on the initiative of their child's teachers. Where close to 10-20% of parents participated in volunteering around the school community in physical maintenance, extra-curricular activities, appearing as a guest speaker, helping in the school library, or assisting a teacher in the school.

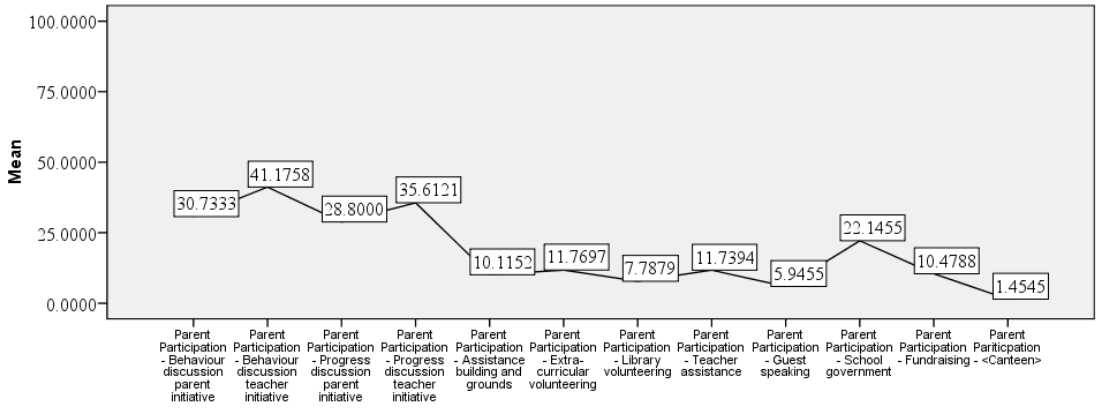

Figure 4 Parental involvement in school related activities (SC25)

A multiple linear regression analysis was conducted with 12 items that represent parental involvement within the school. These items are the independent variables. The results indicated that the regression was overall significant where $F(12,164) = 4.955$, $p < .001$.

Results reveal that only 5 out of 12 were significant: (i) Parents took initiative to talk to teachers, (ii) Parents assisted teachers in the school, (iii) Parents appeared as a guest speaker, (iv) Parents volunteered in physical activities around the school, and (v) Parents volunteered in extra-curricular activities around the school. Standardized coefficients of the initial three significant predictors were positive and the latter two significant predictors were negative. The positive relationships show that when parents participate in high percentages based on these items, students' reading literacy performance increase. The negative relationships show low percentages in parent involvement on the latter two items, students' reading literacy performance decreases. In other words, in schools with high rates of parent initiative, assistance and involvement students have a higher reading literacy. Or the lack of parent volunteers has a negative effect on reading literacy outcomes. These 5 variables in the regression model explained 22.4% of the variability in reading literacy.

Table 5
Parental involvement in school related activities (SC25)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	514.762	21.901		23.504	.000
	Parental achievement pressure	-22.366	8.829	-.192	-2.533	.012

a Dependent Variable: PV1Read

Morale and teacher involvement

Student motivation is often times directly related to the positive morale of their teacher. When focusing on the teacher morale of a school and level of teacher involvement, PISA questionnaires have asked four main questions to school administrators. On average, most schools have indicated that their teachers value

high academic achievements and overall, generally, agree that their teachers take pride in the school in which they work in, that they work with enthusiasm and their morale is generally high. Figure 5 will show a general overview of the results of teacher morale.

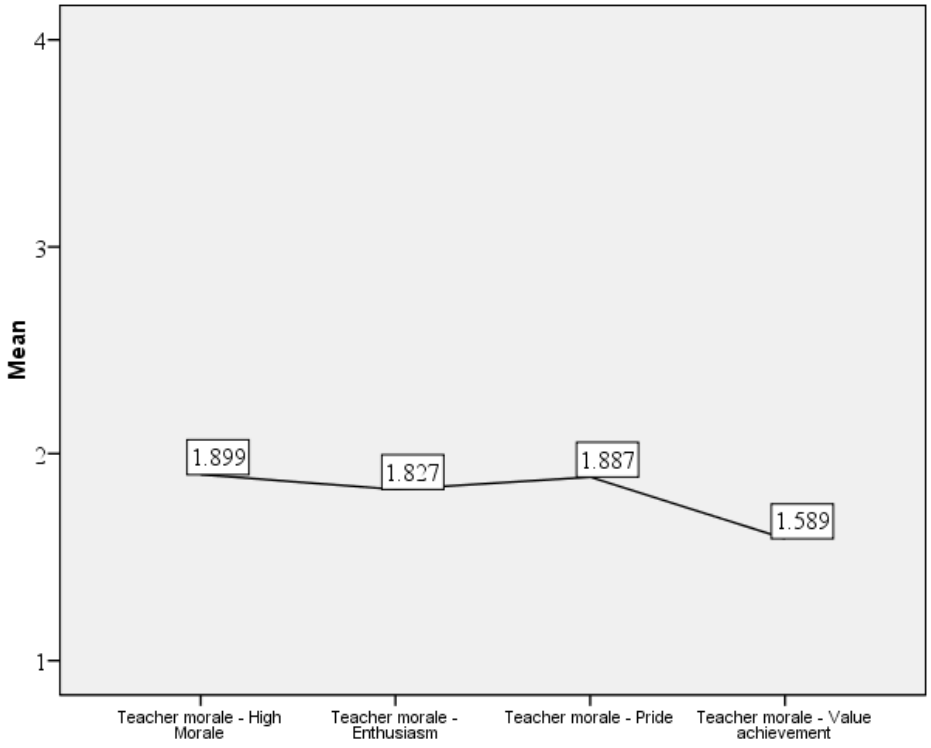

Figure 5 Morale and teacher involvement (SC26)

A multiple linear regression analysis was conducted with 4 items that represent teacher morale in the school. These items are the independent variables. The results indicated that the regression was overall significant where $F(4,167) = 11.678$, $p < .001$.

Results show that 3 out of 4 were significant: (i) Teachers work with enthusiasm, (ii) Teachers take pride in the school, and (iii) Teachers value academic achievement. The Standardized coefficient of the initial significant predictor is positive and

therefore inversely correlated with literacy results. The latter two significant predictors are negative and directly correlated with literacy results. The positive relationship shows that when school administration strongly agrees that teachers work with enthusiasm, students' reading literacy performance decreases. The negative relationships show that when school administration strongly agrees that teachers take pride in their school and value academic achievement, students' reading literacy performance increases. These 3 variables in the regression model explained 20.4% of the variability in reading literacy.

Table 6
Morale and teacher involvement (SC26)

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	534.224	18.830		28.370	.000
	Teacher morale - High Morale	-8.270	9.442	-.081	-.876	.382
	Teacher morale - Enthusiasm	39.935	10.785	.342	3.703	.000
	Teacher morale - Pride	-36.422	9.757	-.355	-3.733	.000
	Teacher morale - Value achievement	-38.820	11.495	-.296	-3.377	.001

a Dependent Variable: PV1Read

Teacher contentment

For a more detailed analysis on what adds to teacher morale and makes teachers content, Figure 6 will show to what extent teachers directly affect school wide decisions resulting in a higher level of teacher contentment. The highest level of changes that teachers have pushed for and seen a moderate change in is in their work responsibilities that make the job more attractive. The lowest level of change in response to teacher feedback appears to be in teacher salaries that show small

changes if any. In general, other items worth feedback from teachers that relate to their level of content have resulted in moderate changes, such as, financial bonuses or other monetary rewards, opportunities for professional development activities, the likelihood of career advancement, public recognition from their school leaders, new roles in school development initiatives like curriculum development or management committees.

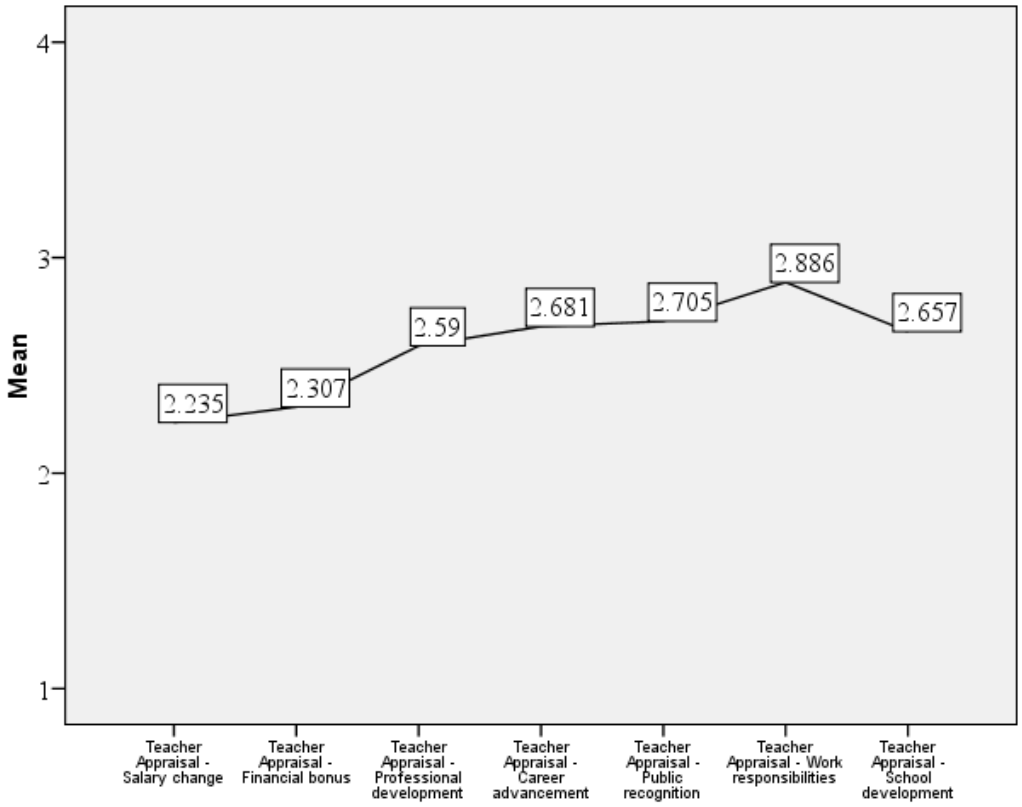

Figure 6 Teacher contentment (SC31)

A multiple linear regression analysis was conducted with 7 items that represent teacher contentment from school principal's perspectives. These items are the independent variables. The results indicated that the regression was overall insignificant where $F(7, 165) = 0.801$, $p > .001$.

Results indicate no significant relationship between these items and student literacy results. These variables in the regression model explained -0.9% of the variability in reading literacy.

Table 7
Teacher contentment (SC31)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	494.240	21.548		22.937	.000
	Teacher Appraisal - Salary change	-4.148	10.239	-.070	-.405	.686
	Teacher Appraisal - Financial bonus	1.802	10.315	.030	.175	.862
	Teacher Appraisal - Professional development	-1.423	9.579	-.018	-.149	.882
	Teacher Appraisal - Career advancement	1.740	10.267	.024	.169	.866
	Teacher Appraisal - Public recognition	1.681	8.876	.023	.189	.850
	Teacher Appraisal - Work responsibilities	-16.474	10.398	-.208	-1.584	.115
	Teacher Appraisal - School development	5.158	9.090	.060	.567	.571

a Dependent Variable: PV1Read

School management

Schools were asked to evaluate on a weekly basis, activities they frequent throughout the academic year that indicate some behaviors in their school. This is in direct relation to how teachers work and in turn how well motivated students appear to be. The results show that across Turkey, generally schools spend every week focusing on promoting teaching practices based on recent educational research, praising teachers

whose students are actively participating in learning, taking initiative to discuss matters relating to teachers problems in the classroom, drawing teachers' attention to the importance of critical and social capacities and paying attention to disruptive behavior in classrooms. It appears that on average schools across Turkey spend less time throughout the academic year in engaging its teachers in helping to build a school culture of continuous improvement, providing its staff with opportunities to participate in school decision-making or reviewing school management practices, and using student performance results to develop the school's educational goals. Figures 7a, 7b, and 7c represent the results of this item in the school questionnaire.

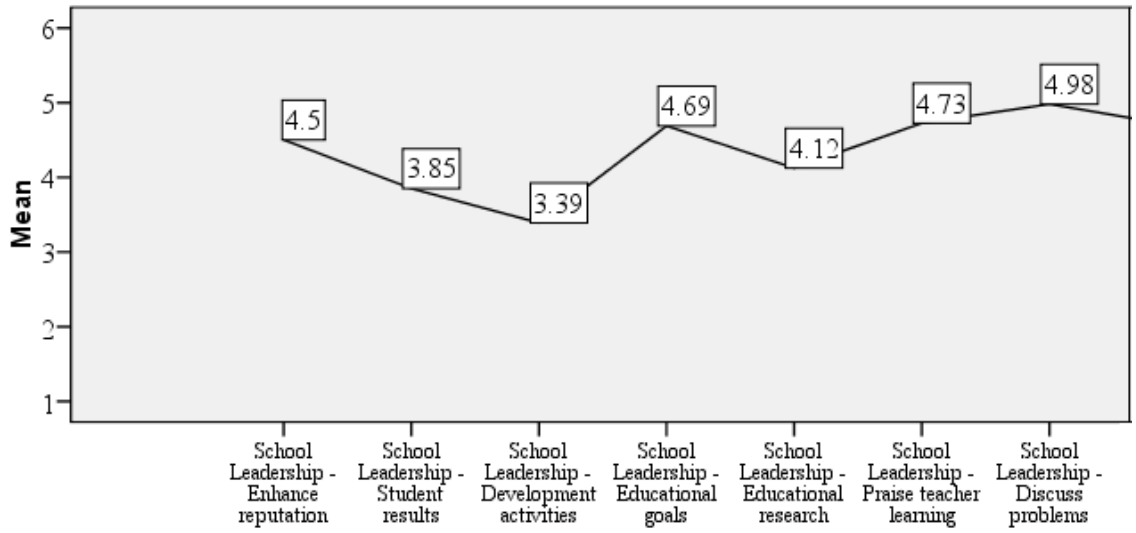

Figure 7a School management (SC34)

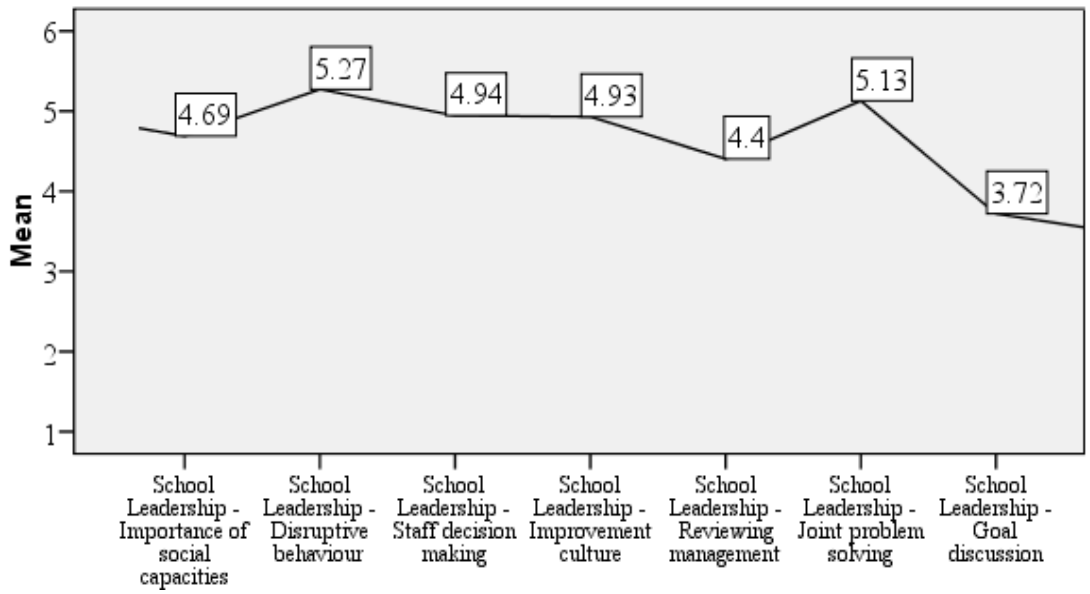

Figure 7b School management (SC34)

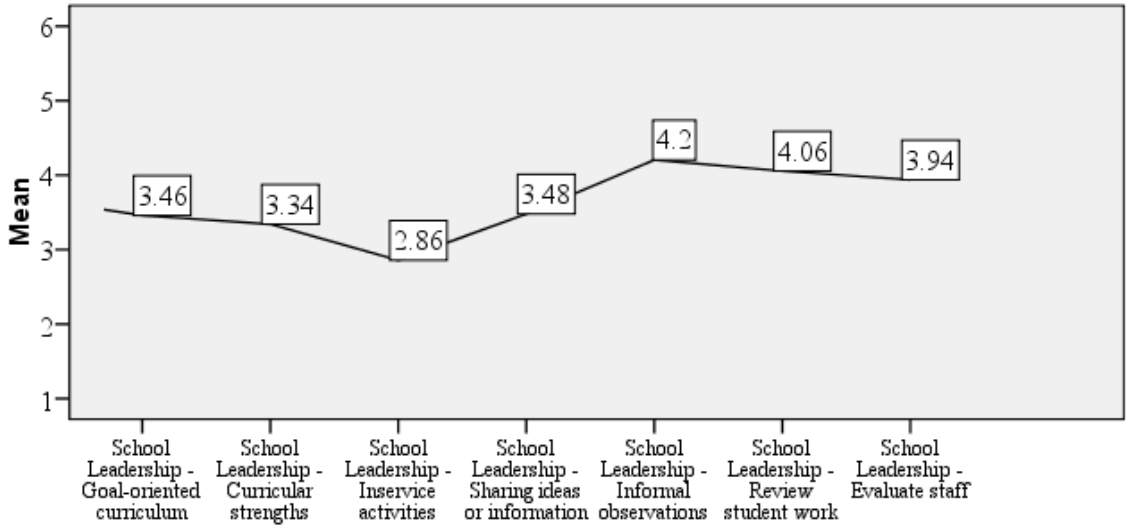

Figure 7c School management (SC34)

A multiple linear regression analysis was conducted with 22 items that represent school management perspectives. These perspectives are the independent variables. The results indicated that the regression was overall significant where $F(21,160) = 1.315$, $p > .001$.

Results reveal that only 1 out of 22 was significant: management engages teachers to help build a school culture of continuous improvement. The standardized coefficient of this significant predictor was positive. This positive relationship shows that when teacher are led by management in building a school culture of continuous improvement, students' reading literacy performance increases. In other words, in schools with no managerial guidance, students have a lower reading literacy. As the occurrence of this item has a positive effect on reading literacy outcomes. This variable in the regression model explained 4.0% of the variability in reading literacy.

Table 8
School management (SC34)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	495.723	35.577		13.934	.000
	School Leadership - Enhance reputation	8.017	5.580	.150	1.437	.153
	School Leadership - Student results	9.292	7.597	.151	1.223	.223
	School Leadership - Development activities	-1.990	5.824	-.041	-.342	.733
	School Leadership - Educational goals	-9.656	6.712	-.177	-1.439	.153
	School Leadership - Educational research	6.656	6.457	.124	1.031	.304
	School Leadership - Praise teacher learning	-8.141	7.573	-.138	-1.075	.284
	School Leadership - Discuss problems	-5.316	8.261	-.086	-.644	.521
	School Leadership - Importance of social capacities	.668	7.143	.012	.094	.926
	School Leadership - Disruptive behaviour	-13.672	8.455	-.184	-1.617	.108

a Dependent Variable: PV1Read

Table 8
School management (SC34) (cont'd)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	School Leadership - Staff decision making	8.002	8.233	.127	.972	.333
	School Leadership - Improvement culture	19.768	9.055	.312	2.183	.031
	School Leadership - Reviewing management	-10.459	7.494	-.183	-1.396	.165
	School Leadership - Joint problem solving	-4.436	8.236	-.071	-.539	.591
	School Leadership - Goal discussion	-4.623	6.975	-.081	-.663	.509
	School Leadership - Goal-oriented curriculum	10.662	7.795	.202	1.368	.174
	School Leadership - Curricular strengths	-10.520	8.493	-.183	-1.239	.218
	School Leadership - Inservice activities	4.321	5.522	.081	.782	.435
	School Leadership - Sharing ideas or information	-2.128	7.276	-.032	-.292	.770
	School Leadership - Informal observations	-8.638	7.143	-.154	-1.209	.229
	School Leadership - Review student work	2.765	8.109	.048	.341	.734
	School Leadership - Evaluate staff	4.927	5.856	.089	.841	.402

a Dependent Variable: PV1Read

CHAPTER 5: DISCUSSION

Overview of the study

This study investigated teachers' practices and school principal perceptions regarding educational learning environments in Turkey. 170 schools across Turkey participated in the study. For this study, a questionnaire was used as the data-collection device. The study aimed to find out the extent to which educational environments have an overall effect on student learning and literacy achievement results based on the reading tests prepared by PISA 2012. The responses to the questionnaire were recorded and analyzed using descriptive data-analysis to identify any evidentially notable differences in responses across schools. To further explain the relationships of these differenced multiple linear regression methods were used to draw conclusions of the factors that affect literacy results.

The purpose of this chapter is to summarize the main findings of this study based on the six items used in the analysis to address the research questions focusing on the degree of students' motivation level as a response to the main questions:

- What is the relationship between reading literacy and quality of the learning environment as reported by school principals in PISA 2012?
- What is the success rate of students reading performance levels in relation to the quality of their learning environment as defined by the schools' capacity to provide instruction, reasons for learning hindrance, parent perspectives and

- involvement, teacher morale and contentment and the role of school principals?

Major findings

The results of this study suggest that the learning environment has some influence on student literacy results in schools across Turkey. The regression analyses identified plausible reading literacy results as the dependent variable in correlation to a different combination of independent variables relating to the quality of the learning environment. The following findings in Table 9 describe the outcomes of the six items studied in Chapter 4.

Table 9
Summary of major findings

Factors that decrease literacy	Factors that increase literacy
Shortage in: • Instructional space • Science lab equipment • Other teachers Parent involvement academically Enthusiastic teachers	Leveled classes with similar ethnic backgrounds Encouragement from school leadership Parent involvement actively Prideful teachers

Results indicate that in Turkey, reading literacy decreases when there is a shortage in instructional space, science laboratory equipment and other teachers. To some extent, these shortages hinder a schools' capacity to provide instruction. A lack of resources makes for ineffective learning environments. Results from this study show how significant instructional space and shortage in teacher capital can affect student achievement levels. These results may indicate that in general, across Turkey, there

is a lack of available resources that reflects poorly on students reading scores. There are many possible reasons for how students' literacy is affected by these shortages. A lack in science equipment may also indicate a lack of equipment in other disciplines; as literacy is a skill that requires practice and application throughout all disciplines, it is important to maintain a balance throughout the school in resources available (Grady, 2011). When there is a lack in one area, immediate reactions are to employ other unrelated resources just to get the job done. This leads to over exhaustion and could most likely result in an error of productivity. When there is a lack in science teachers, if the language teacher must work extra hours to make up for this shortage, chances are that language teacher may unintentionally affect the literacy learning of some students. Otherwise, it could be argues that a lack of science teachers may not necessarily show any direct impact on the literacy achievement in student learning.

Reading literacy results prove to be higher when students are in homogenous ability leveled classrooms and similar ethnic background populations are in the same classroom. Among all other question items, learning hindrance has the highest r2 correlation of 38.4% indicating the variability of the responses around the mean. The results to these items parallel with the studies presented in the review of literature. Grady (2011) investigates the importance of early childhood exposure to literacy; he states the importance of this skill as a fundamental tool that should be acquired early on. Where there is a balance of skill sets and capabilities for reasoning, students who are exposed to homogeneous environments benefit and tend to perform at higher rates. For these reasons, reading skills should be acquired in early years and continue to develop throughout life (OECD and Statistics Canada, 2000). Grasha's (1990) studies confirm significance between student learning styles and class achievement

levels. Further support of this claim from the general findings in the report of the U.S. National Reading Panel (2000) confirm lower literacy rates are attained through forceful and explicit teaching of metacognitive skills where heterogeneous learners are in the same classroom. Deshler *et al.* (2007) adds evidence to the challenges faced by having a diverse set of ethnic backgrounds in the same classroom. These claims support the findings that homogeneous learning environments are beneficial for student achievement results. On the contrary, it could be argued that a heterogeneous environment may stimulate some students to excel and reach higher standards for themselves if faced with competition. Verhoeff (1997) explains the benefits of a challenge as it gives students the opportunity to prove themselves and enhance their level of motivation and self-confidence. These challenges would be present in a heterogeneous learning environment however; there are damaging effects of these challenges if learning is forced on the student creating a more stressful environment where students are involved in competition that results in a negative experience.

Parent involvement can be both directly and also inversely related to literacy results. In general, in schools across Turkey less than 28% of parents appear to take active roles within their child's school community. In cases where parents have appeared as a guest speaker or assisted teachers in the school, or have taken initiative to discuss their child's progress, these show a direct correlation to reading literacy results, which prove to decrease the results. In the very few cases, around 10% of students' parents across Turkey, who volunteered in extra-curricular or physical maintenance activities around the school community, these students show an inverse relationship and therefore reading literacy results increase. Parent involvement in a child's

education can cause both students and teachers to have positive attitudes and increase in motivation if accomplished in the right way. Parents from all backgrounds, ethnic and socio-economic, help contribute to the learning process with their presence. Some of their expectations are automatically met when they decide to enroll their child in school. Any changes throughout the school year should be discussed in regular parent meetings so that parents also feel as though they are part of the learning process. According to PISA (2012) questionnaire results, parent participation in the school community is very low. It is also proven that parental support increases student morale and therefore results in high achievement rates. Parents who are both cognitively and emotionally involved; expose and stimulate their children to activities and experiences that enhance their outlook on the value of school. These are the parents that contribute to sustaining higher quality learning environments. Ways to involve parents and ensure they are kept informed and updated could be through use of online computer based programs or a school-wide server that allows only parent access to follow their child's progress.

Results indicate that when teachers take pride in their school and value academic achievement, reading literacy levels increase whereas, when teachers work with enthusiasm, literacy levels decrease. Results related to teacher morale suggest that among most teachers in Turkey, teachers maintain high morale from the perspective of their school principals. There is always room for improvement and new strategies that could be implemented in order to keep things fresh and teachers motivated. Some strategies that Perumal (2011) suggests in her study is to provide intrinsic motivation instead of external rewards in the classroom, to include students in creating rules, routines and consequences using a variety of communicating

channels. Perumal (2011) suggest for school principals to model a vision for excellence through professional development opportunities and incentives for teachers. When there is a support from school leaders in terms of discipline, mentoring, collaboration, and sense of team work, logically, teacher morale will remain high. Of course, in addition to a wide range of readily available resources depending on student needs such as teacher aides, technology, adequate planning and meeting times. These are among the main factors that all must work in harmony with one another to build high morale school-wide.

According to the perspectives of school administrators in Turkey, appraisals of or feedback to teachers have had insignificant effects on the reading literacy results of students. The general findings related to the mean contentment of teachers is also support the research by Stakalina (2013), who mentions the effectiveness of strategic planning and refers to external factors outside of the classroom such as, opportunities for professional development, teacher recognition or financial rewards among other factors may have a positive influence on development of the quality of the learning environment. In some schools, there are opportunities for teachers and administrators to actively participate in professional development initiatives, some as a requirement to meet standards set by the school community. Bilkent Primary School in Ankara, Turkey is similarly one of these schools where teachers and department head leaders are encouraged and provided with funding to take part in conferences as participants or presenters at various other educational institutes around the world that may be of particular interest or need teachers. Such activities of professional development are not only rewarding for the teacher, but also add to their working environment to

make for a richer and higher intellectual capital for sharing and learning from one another and also to gain more prestige around their immediate school community.

School managements across Turkey engage their teachers to help build a school culture of continuous improvement, in general once a month, and this shows to have a positive correlation with reading literacy results. The research findings suggest that teachers should be aware of benefits of professional training to seek support where necessary. For this, guidance and assistance should be provided from experts and trainers. School administrators and teachers can work on issues collaboratively with experienced teachers from around the world. New teachers may need a lot of support while older teachers may need less support. But all teachers need motivation and to feel a sense of belonging to the school community. In some schools, new teachers are mentored by senior teachers and consulting teachers. They are constantly given support and monitored by level leaders or department heads through lesson observations and unit meeting hours where teachers share their tools and techniques. If a new teacher makes very little progress then he/she may be given a probationary period accompanied by further support to try to reach the required standard. The last resort to remove a teacher from the system will only be effected after many attempts to provide assistance and guidance have failed. The whole process is documented so that teachers are aware that the process is fair. Providing support in this manner ensures that new teachers grow professionally and become stronger teachers. Thus, teacher self-confidence is an important factor to raise morale (Perumal, 2011).

Implications for practice

The value in quality education comes from a strong supporting community that consists of parents, teachers, students, administrators and all other members living within the community. With continuous efforts to maintain a successful learning environment, educators must show their pride whilst controlling their enthusiastic nature that takes away from the student experience of learning. Parents must continue to show interest and actively volunteer within the school community rather than just hold high academic standards for their children. School leaders should encourage positive achievements and work to sustain the culture created by students and teachers around the school. As Brighouse (2006) states, a leader should possess three essential qualities: energy, enthusiasm and hope which to him equate as the formula to solve the jigsaw of making a school successful whatever the circumstances may be.

Implications for further research

The importance of the quality of the learning environment suggests the need for continuous studies. It is necessary to investigate teachers' practices and perceptions as well as administrators roles regarding the learning environment in Turkish schools. The results of such studies could be compared to results from PISA questionnaires and further insight could be obtained using a wider variety of data-collection devices. For example, interviews or classroom observations would be useful for a more accurate and vivid picture of the various learning environments. It is also very important to find out the perceptions of other parties like students, program administrators and coordinators, curriculum developers, material

developers, and teacher trainers concerning the same questions. This could be accomplished by adjusting the questionnaire to accommodate for all perspectives.

Limitations

The data provided by the OECD ensure confidentiality and anonymity of the participants and the research conducted is therefore independent and impartial. The study conducted is limited to the content of the surveys provided by the OECD PISA 2003, 2006, 2009, 2012.

The first limitation of the study is how the questionnaire items are generally measured through opinions of school principals and therefore can be difficult to examine consistently across all participating schools.

Another issue is the number of schools participating in the research study. The 170 schools who participated in PISA 2012 cannot represent all the schools in Turkey. To get more reliable data about the whole of Turkey, which schools are chosen to participate must be further explored.

The study would have been strengthened by inclusion of some student questionnaire items such as who lives in the household, mothers' main job, mothers' level of schooling, fathers' main job, fathers' level of schooling, parents' nationality, what school has done to prepare for life, how school has helped to gain confidence and make decisions, other resources available at home i.e., a quiet place to study, books, classic literature or poetry, internet, T.V., dishwasher, rooms with a bath or shower.

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APPENDIX A: PISA School Questionnaire

	Value of Responses					
Questionnaire Item	***1***	***2***	***3***	***4***	***5***	***6***
School's capacity to provide instruction a) A lack of qualified science teachers b) A lack of qualified mathematics teachers c) A lack of qualified language teachers d) A lack of qualified teachers of other subjects e) Shortage or inadequacy of science laboratory equipment f) Shortage or inadequacy of instructional materials g) Shortage or inadequacy of computers for instruction h) Lack or inadequacy of internet connectivity i) Shortage or inadequacy of computer software for instruction j) Shortage or inadequacy of library materials	Not at all	Very little	To some extent	A lot		

k) Shortage or inadequacy of school buildings and grounds l) Shortage or inadequacy of heating/cooling and lighting systems m) Shortage or inadequacy of instructional space	Not at all	Very little	To some extent	A lot		
Reasons for learning hindrance a) Student truancy b) Students skipping classes c) Students arriving late for school d) Students not attending compulsory school events or excursions e) Students lacking respect for teachers f) Disruption of classes by students g) Student use of alcohol or illegal drugs h) Students intimidating or bullying other students i) Students not being encouraged to achieve their full potential j) Poor student-teacher relations k) Teachers having to teach students of heterogeneous	Not at all	Very little	To some extent	A lot		

ability levels within the same class l) Teachers having to teach students of diverse ethnic backgrounds (i.e. language, culture) within the same class m) Teachers' low expectations of students n) Teachers not meeting individual students' needs o) Teacher absenteeism p) Staff resisting change q) Teachers being too strict with students r) Teachers being late for classes s) Teachers not being well prepared for classes	Not at all	Very little	To some extent	A lot		
Parental involvement in school related activities a) Discussed their child's behavior with a teacher on their own initiative. b) Discussed their child's behavior on the initiative of one of their child's teachers. c) Discussed their child's progress with a teacher on their own initiative. d) Discussed their child's progress on the initiative	0% of the time	25% of the time	50% of the time	75% of the time	100% of the time	

of one of their child's teachers. e) Volunteered in physical activities, e.g. building maintenance, carpentry, gardening or yard work. f) Volunteered in extra-curricular activities, e.g. book club, school play, sports, field trip. g) Volunteered in the school library or media centre. h) Assisted a teacher in the school. i) Appeared as a guest speaker. j) Participated in local school <government>, e.g. parent council or school management committee. k) Assisted in fundraising for the school. l) Volunteered in the school <canteen>.	0% of the time	25% of the time	50% of the time	75% of the time	100% of the time	
Morale and teacher involvement a) The morale of teachers in this school is high. b) Teachers work with enthusiasm. c) Teachers take pride in this school. d) Teachers value academic achievement.	Strongly agree	Agree	Disagree	Strongly disagree		

Teacher contentment a) A change in salary b) A financial bonus or another kind of monetary reward c) Opportunities for professional development activities d) A change in the likelihood of career advancement e) Public recognition from you f) Changes in work responsibilities that make the job more attractive g) A role in school development initiatives (e.g. curriculum development group, development of school objectives)	No change	A small change	A moderate change	A large change		
School management a) I work to enhance the school's reputation in the community. b) I use student performance results to develop the school's educational goals. c) I make sure that the professional development activities of teachers are in	Did not occur	1-2 times during the year	3-4 times during the year	Once a month	Once a week	More than once a week

accordance with the teaching goals of the school. d) I ensure that teachers work according to the school's educational goals. e) I promote teaching practices based on recent educational research. f) I praise teachers whose students are actively participating in learning. g) When a teacher has problems in his/her classroom, I take the initiative to discuss matters. h) I draw teachers' attention to the importance of pupils' development of critical and social capacities. i) I pay attention to disruptive behavior in classrooms. j) I provide staff with opportunities to participate in school decision-making. k) I engage teachers to help build a school culture of continuous improvement.	Did not occur	1-2 times during the year	3-4 times during the year	Once a month	Once a week	More than once a week

l) I ask teachers to participate in reviewing management practices. m) When a teacher brings up a classroom problem, we solve the problem together. n) I discuss the school's academic goals with teachers at faculty meetings. o) I refer to the school's academic goals when making curricular decisions with teachers. p) I discuss academic performance results with the faculty to identify curricular strengths and weaknesses. q) I lead or attend in-service activities concerned with instruction. r) I set aside time at faculty meetings for teachers to share ideas or information from in-service activities. s) I conduct informal observations in	Did not occur	1-2 times during the year	3-4 times during the year	Once a month	Once a week	More than once a week

classrooms on a regular basis (informal observations are unscheduled, last at least 5 minutes, and may or may not involve written feedback or a formal conference). t) I review work produced by students when evaluating classroom instruction. u) I evaluate the performance of staff.	Did not occur	1-2 times during the year	3-4 times during the year	Once a month	Once a week	More than once a week