DIFFERENCES BETWEEN SCHOOL TYPES IN READING RELATED
FACTORS BASED ON 2009 CYCLE OF PISA

A MASTER'S THESIS

BY

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GRADUATE SCHOOL OF EDUCATION

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September 2016

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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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

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September 2016

This study aims to find out whether there is any difference between school types in terms of reading enjoyment time, reading attitude and learning strategies based on Programme for International Student Assessment (PISA) 2009 cycle. The target population of this study consists of 15 years old students at the time of the assessment from different groups of school in Turkey. Four thousand nine hundred ninety-six randomly chosen students from 170 schools participated in PISA from Turkey. The reading-related data collected through a student questionnaire. The results of this study reveals that reading enjoyment time differs between vocational high school and Anatolian, general high schools. Also, reading attitude differs between school types; while Anatolian high school students got higher mean scores, vocational high school students got lower mean scores in terms of reading attitude. Additonally, learning strategies differs across all school types to some extent and while maximum difference was found between Anatolian high school and vocational high school, minimum difference was found between Anatolian high school and science high school.

Key words: Reading literacy, reading enjoyment, reading attitude, learning strategies, Programme for International Student Assessment

ÖZET

PISA 2009 UYGULAMASI KAPSAMINDA OKUMA İLE İLİSKİLİ
FAKTÖRLERİN OKUL TÜRLERINE GÖRE FARKLILIKLARI

GÜLHAN KIR

Yüksek Lisans, Eğitim Programları ve Öğretim

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Bu çalışmanın amacı 2009 yılında uygulanan Uluslararası Öğrenci Değerlendirme
Programına katılan okul türleri arasında, zevk için okumaya ayrılan zaman, okuma
tutumu ve öğrenme stratejileri açısından bir fark olup olmadığını belirlemektir.
Araştırmanın kapsamını Türkiye'de farklı okul türlerine kayıtlı 15 yaş grubu
öğrencileri oluştururken PISA 2009 uygulamasına Türkiye'yi temsilen 170 okuldan
seçilen 4996 öğrenci katılmıştır. Araştırmaya dair veriler PISA çalışmasında
kullanılan öğrenci anketinden elde edilmiştir. Araştırma sonuçlarına göre keyfi
okumaya ayrılan zaman değişkeni hem meslek lisesiyle Anadolu lisesi arasında hem
de meslek lisesiyle genel lise arasında farklılık oluşturmaktadır. Okuma tutumu
değişkeni ise fen lisesi ile Anadolu ve genel lise arasında çok az değişiklik
gösterirken meslek lisesi ile Anadolu ve genel lise arasında önemli ölçüde değişiklik
göstermektedir. Ayrıca, öğrenme stratejileri de okul türleri arasında belli ölçülerde
farklılık oluşturmaktadır; en fazla değişiklik Anadolu lisesi ile meslek lisesi arasında
bulunmuşken en az değişiklik Anadolu lisesi ile fen lisesi arasında bulunmuştur.

Anahtar Sözcükler: Okuma becerisi, zevk için okuma, okumaya yönelik tutum,
öğrenme stratejileri, Uluslararası Öğrenci Değerlendirme Programı

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CHAPTER 1: INTRODUCTION

Introduction

Reading literacy can be defined as the ability to read and make sense of written text in simple terms. It is considered as a basic skill throughout in the world, it plays an important role in many areas of life. People encounter many written and visual texts in daily life and use their reading skills almost every single day. For example, we use our reading skills while using a map to find our way, while reading an operating manual to activate our washing machine, while following road signs, or reviewing messages on social media. Also, we use them to get information from a newspaper or in reading a poem, a story, or a novel just for pleasure. In addition, reading literacy plays a key role in students' mental development (Rintaningrum, 2009) and academic achievement (Bilican & Yıldırım, 2014; Paris, 2005; Reardon, Valentino, & Shores, 2012) because it functions as a core element for many subjects including literature, language, history, geography at school (Geske & Ozola, 2008; Gülleroğlu, Demir, & Demirtaşlı, 2014; Marchand-Martella, Martella, Modderman, Petersen, & Pan, 2013; Rintaningrum, 2009). Thus, reading skills are necessary at least an average level for both students to be successful at school and for other people to survive in modern society.

In general, reading literacy is an essential set of skills in the development of individuals, it is accepted as a must to be successful in life. Stanovic (1986) asserted that reading affects everything that people do. Firstly he stated that, it has a direct

impact on people's cognitive capacity and development and it influences how we think, how we perceive and it promotes the improvement of other cognitive skills. Secondly, the researcher mentioned that, people who have better reading literacy skills can communicate easily with the people in a society and they can have a good relationship with others. In relation to that Freire and Macedo (1987) considered literacy as a process of reading the world, rather than just reading the word or text. So, people who improve literacy skills and use them effectively can be successful in academic fields, in business life, in social life and in daily life.

In addition, literacy plays an important role in the development of society; societies can reach their objectives easily and quickly with the individuals who are equipped with better literacy skills. More literate individuals can promote a higher quality of life and a more powerful society. For example, it was mentioned that literacy supports the reduction of poverty and of child mortality rates; it even curbs population growth, as well as being correlated with the establishment of peace, democracy, gender equality and sustainable development (United Nations Education Science and Culture Organization [UNESCO], 2016).

There are various factors that can be influential in the acquisition and improvement of reading literacy such as; reading enjoyment, reading attitude, reading motivation, reading strategies and reading instruction. People who read for pleasure have the chance to improve their reading literacy skills than others. In line with this, Clark and Rumbold (2006) stated that reading for enjoyment is crucial in the acquisition of literacy skills of children. Also, it was reported that reading enjoyment has a contribution on students' academic achievement (Organization for Economic Cooperation and Development [OECD], 2002). In addition to this, reading

motivation and having positive attitudes towards reading have an influence on reading achievement. In relation to this, Fletcher, Grimley, Greenwood and Parkhill (2012) concluded that 5th grade students who had positive attitudes towards reading had better results in reading achievement. Similarly, two other researches reported that reading motivation has a contribution on primary, middle and high school students reading success (OECD, 2010; Taboada, Tonks, Wigfield, & Guthrie, 2009). With all that, reading strategies have an influence both in attaining and developing reading literacy skills. Students who use reading strategies more often showed better reading performance than their peers (Iwai, 2011).

On the other hand, reading literacy performance level and academic achievement level can vary depending on school type. Lafontaine, Baye, Vieluf and Monseur (2015) found that 15 years old students from different schools were not offered equal opportunities to increase their reading skills. Similarly, a study from Turkey reported that school type has an effect on 8th students' success; while students enrolled in private schools got higher scores from nationwide exams, students enrolled in public schools got lower scores from the same exams (Çavuşoğlu, Şen, E. Uçar, & M. Uçar, 2013).

Due to it's importance as stated above, improvement of reading literacy is an important issue for formal education. Generally, students gain reading literacy in language courses. In parallel to this, Turkish language and literature courses are courses in which reading skills can be acquired at a high level in Turkish education system. The Ministry of National Education (MoNE) has given special emphasis to preparing the program for Turkish language and literature lessons so that, it includes reading skills in the general objectives of these courses (MEB, 2011a; 2011b). And

this raises a question as to equality between school types in terms of development of students' reading skills. Altough MoNE make the emphasize for importance of reading literacy for all students regardless of their schools, reported differences between school types in several outcomes of Turkish students in national and international studies (Berberoglu & Kalender, 2005) made the researchers investigate differentiation between schools.

Background

Literacy is accepted as a human right and it is considered as the basis for life-long learning (UNESCO, 2013). That is to say that, it is vital for all people to have literacy skills in order to be successful in all the periods of their lives and across all fields of life. Therefore, every individual in the society should be given the chance to improve their reading skills. Also, students need to develop a high level of reading skills to get a deeper understanding of the texts they read. Thus, they can make more accurate analyses about written materials they read, they can have a critical view about the content and quality of them, they can make meaningful inferences from the texts they read. Additionally, students can make links between their personal experiences, real life situations and the knowledge they obtained from written materials, they can make inter-textual studies and they can use their background information functionally in daily life if they have better reading skills.

Reading literacy became vitally important for both the development of individuals, societies and countries in recent years. Research findings are corroborative with this statement. It was stated that literacy skills play an important role in the social and

economic development of any country (OECD, 2010). According to the results of PISA 2009, students need to be proficient in reading skills in order to be succesful in other courses in the school, to deal with difficulties in life and to become an active and productive member of the society (OECD, 2010). Likewise, another research emphasized the importance of reading literacy:

> In today's information society, the ability to read is essential for maximizing success in the endeavours of daily life, continuing intellectual growth and realizing personal potential. Similarly a literate citizen is vital to a nation's social growth and economic prosperity (Mullis, Martin, Kennedy, & Foy, 2007. p. 15).

However, recent studies showed that many middle and high school students do not acquired the expected level of reading skills and they underachive in reading comprehension. For example Merkuri (2011) mentioned that, students in Albania are getting worse in reading when they go to secondary school. Similarly Hasting and Henry (2006) described the results of a survey conducted with 1200 primary and secondary school students in England and they stated that "Reading is a closed book to today's children." and most students do not have any information about the classic texts that they are responsible to read. Same researchers reported that teachers don't have time for reading a book in regular lessons and considerable majority of students don't engage in reading activities out of school. The situation in Turkey is not so different. Aydın, Erdağ and Taş (2011) stated that most Turkish students do not have a high level of reading skills described in PISA's reading domain based on PISA 2003 and 2006 results. Another study concluded that, many students do not show the

expected level of achievement in Turkey's nationwide exams due to a lack of effective reading and learning strategies (Aslan, 2011)

There are many factors that can be helpful in developing students' reading capacity. Elley (1992) analyzed the results of The International Association for the Evaluation of Educational Achievement (IEA) reading literacy study and found "large school and classroom libraries, regular book borrowing, frequent silent reading in class, more scheduled hours spent teaching the language" (p.73) as determinant factors on students' reading achievement. Merkuri (2011) mentioned that implementation of an effective school-wide content-based reading intsruction can lead to positive differences in students' reading proficiency. Williams (2014) focused on the strategies used by a middle and a high school in overcoming the failure in reading comprehension and she reported that sustained silent reading and trade books can be helpful in increasing students' reading motivation and reading achievement in United States.

Students who use effective learning strategies are more likely to have high level of reading skills and reading for enjoyment can increase the performance of students (OECD, 2010). Another study conducted with university students in Turkey concluded that, there is a positive correlation between reading comprehension capacity and reading enjoyment, reading practice (Aslan, 2011).

Rintaningrum (2009) studied with 5th grade students enrolled in public schools in South Australia to investigate factors that influence students' success in reading literacy and she concluded that locality of school, gender, racial backgrounds of students and student disability have a direct impact on students' reading

achievement. In a different study Staden and Howie (2012) focused on both student level factors (e.g. reading motivation, language skills and home environment) and school level factors (e.g. educational quality, time spent on reading activites and opportunities created for reading) that can be associated students' reading competence. Researchers reported that there is a significant correlation between reading performance and students' gender, time spent on reading at school. A recent study conducted with secondary school students in Turkey showed a positive correlation between students' use of metacognitive strategies in reading and their reading attitudes (Keskin, 2013). The same study also reported that having positive reading attitudes leads to more success according to students' year-end grades from main courses such as; language, math and social studies. Geske and Ozola (2008) analyzed the data of Progress in International Reading Literacy Study (PIRLS) to investigate the factors behind low reading literacy performance of 4th grade students and they reported that the socioeconomic status of the family, parent's education, reading aloud to a child at preschool age and reading for enjoyment make an important difference in students' reading achievement. A study from Turkey came through with similar results to some extent; it was reported that socio-economic background of students has a predictive power on 15 years old students' reading performance (Arıcı & Altıntaş, 2014).

Many studies (Canadian Council on Learning, 2009; Gambell & Hunter, 2010; Geske & Ozola, 2008; Lynn & Mikk, 2009; Mark & Ainley, 1997; Staden & Howie, 2012) conducted with primary, secondary and high school students have showed that female students are better in reading literacy than their male peers. Singh (2008), examined the factors contributing to reading literacy differences between girls and boys by using the Canadian results of PISA 2000. Another study concluded that,

socio-cultural factors such as; peer pressure, gender perceptions and literacy preferences can have an impact on boys' reading engagement and motivation (Atkinson, 2009).

Problem

Few international studies such as; PISA and PIRLS assess students' performance in reading literacy periodically and provide feedback to participant countries about the outcomes of their educational systems. PISA mainly aims to assess to what extent students can use their reading skills and learned knowledge in real-life situations and in solving problems rather than what they learned in the school or what they remember from their learnings (OECD, 2010). PISA was conducted in 2000 for the first time and after that it has been implemented every three years. The main focus of this study was on reading literacy in PISA 2009. The report showed that half of the students in Turkey did not have basic reading skills and they could not reached the expected level of achievement in reading proficiency. In addition, the same report showed that there was an significant difference in students' reading literacy scores across school types. For example, while students enrolled in science high school,a highly selective schools which follow science based curriculum, or Anatolian teacher training high school got higher scores, students from general or vocational high schools got lower scores. As a result of the conducted literature review it can be said that, there are scarcely any studies oriented to find out the reasons for the differences across school types.

There are two basic institutions in which literacy skills can be improved; one is family and the other one is school. Unfortunately, every family may not have same opportunities for helping their children develop these skills. Inequalities among families in socio-economic status which is highly associted with this issue. Differences in what can be provided by families also shows itself in profiles school types. School type of a student is highly related to socio-economic status of families.

On the other hand, every school should provide equal opportunities to all students and should care equally about academic development of all students as required by the principle of equal opportunity. It is expected that schools as institutions, should support the improvement of students' literacy skills to prepare students for life (Berberoğlu & Kalender, 2005). Also Akşit (2007) stated that, it is a major responsibility for goverment to provide same quality of education to students in all types of school. However, there are still huge differences between school types in terms of students' scores in reading literacy as shown by the PISA 2009 results. While students from science high school got very high scores, students from vocational schools got very low scores in all domains.

Until recently, there has been little investigation in Turkey about the factors that affect students' success in reading and cause differences in reading performance scores across school types. To better understand what the factors are that may be associated with students' achievement in reading skills on the basis of school types, more studies should be done on this issue.

Purpose

The present study investigates whether there is any difference between school types in terms of reading related factors (reading enjoyment time, reading attitude, study strategies, stimulating strategies, understanding and remembering strategies) based on PISA 2009 evaluation. These issues have not been adequately investigated by the literature yet for students in Turkey. For this reason, a quantitative research was designed to investigate the group differences in students' reading literacy performance between school types in PISA 2009 in terms of some specific reading related variables.

Research questions

The present study will use the data of PISA 2009 conducted in Turkey and will address the following questions:

1. In PISA 2009 is there any mean difference across school types in terms of following reading related variables;

      a)   Reading enjoyment time?

      b)   Reading attitude?

      c)   Study strategies?

      d)   Stimulating strategies?

      e)   Text understanding and remembering strategies?

Significance

In the literature there are scarcely any studies investigating the differences about reading related factors across school types. However, present study aims to investigate if there is any difference in students' reading related factors scores across school types. Therefore, the results of this study will give insights into these factors and make a contribution to fill the gap in the literature. Given the large achievement and socio-economic profile differences acroos school types in Turkey, this study becomes more important.

Also, the findings of this study are expected to be useful for school principals and teachers. School principals, language and literature teachers can prepare a school-wide reading instruction considering students' reading interest and needs. Also, they can provide opportunities to students in order to reduce the impact of inequality of opportunity in terms of reading literacy among students. Additionally, teachers can promote students' attitudes toward reading and increase reading enjoyment of students by implementing an effective reading instruction. Furthermore, they can use efficient reading comprehension strategies during their lessons and scaffold students to use these comprehension strategies to improve their reading literacy.

Definition of key terms

PISA is an acronym that stands for Programme for International Student Assessment. It is implemented by OECD every three years to assess reading literacy, math literacy, and science literacy proficiency of students at the age of fifteen.

Reading literacy is defined 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, 2010, p. 37). Varified definitions of the term will be available in chapter two.

Reading attitute means to be enthusiastic about and interested in reading, reading related activities and books.

Reading enyoyment means to read for one's free will and anticipating to be satisfied during or after reading (Clark & Rumbold, 2006).

Learning strategies refers to the techniques that facilitates one's own learning (Özer, 2002)

CHAPTER 2: REVIEW OF THE RELATED LITERATURE

Introduction

This literature review provides essential background information about reading literacy, reading related factors used in this study and PISA. In this way, readers will obtain information about the essential background knowledge before reading the method and results of present study and have the opportunity to evaluate the study in a wider perspective.

This chapter consists of three sections: (1) theory of reading literacy, (2) reading related factors specific to the current study and, (3) PISA and reading literacy. In the first section reading literacy and the similar concepts used interchangeably with reading literacy in this study and in the literature will be described. Also, there will be information about the studies conducted with preschool, primary school, middle and high school studenst and adults on reading literacy. In the second section reading related factors such as; reading enjoyment, reading attitude, reading motivation, reading and learning strategies will be described. Besides, research studies about the concepts mentioned in the preceding sentence will be discussed. In the final section PISA will be described and research studies about reading literacy which used PISA's data and results will be summarized.

Reading literacy

Reading literacy can be examined as a whole or it can be analyzed by dividing into subheadings. Although reading literacy basically stemmed from reading and writing abilities, it turned into a comprehensive concept which includes more complex skills within the process. That is to say, reading literacy tends to be a generic term which includes all the cognitive abilities, mental processes and acts about reading and writing. Therefore, it is interchangeably used with some similar concepts such as; reading comprehension/proficieny/capacity/competence and reading ability in the literature and it will be used in the same manner in this study.

It will be useful to define reading and literacy terms separately to get a deep understanding about the theoretical framework of reading literacy. Ott (1997) defined reading as the ability to decode written symbols in a text. The author focused on one aspect of the term however reading activity includes the act of sense-making and it consists of different components. In parallel with this, reading described in a wider perspective and defined as the process of creating meaning through making links between the reader, writer and the context (Stone, Merritt, & Cherkes-Julkowski, 1998). On the other hand, literacy concept is more complex and dynamic (Kurudayioğlu & Tüzel, 2010) therefore it is not easy to have a consensus on the definition of the term. It is considered as an active and broad-based learning process which specifically focused on applicable cognitive reading and writing skills (UNESCO, 2006). Also, literacy defined in the same report as the ability which enables an individual to read and comprehend the meaning of a text and use and transmit written information that s/he encounters in her/his daily life.

Recently, there are different literacy types emerged such as; reading literacy, math literacy, visual literacy and media literacy (Kurudayioğlu & Tüzel, 2010). Present study focuses on whether reading related variables differ and may have a relation with reading literacy achievement across groups of school.

There are different definitions of the term reading literacy however, OECD addresses reading literacy in a multi-dimensional perspective; reading literacy is discussed in terms of both it's cognitive dimensions and it's contribution to individual and society. OECD (2010) defined reading literacy as the ability to understand, use, reflect on and engage with written texts, to reach one's goals, to increase ones' knowledge and potential and to become a productive member of the society.

Reading literacy in the early ages

Basis of reading literacy skills is acquired in the early years of life before attending formal education (Gül, 2007; Lonigan, Burgess & Anthony, 2000; Staden & Howie, 2012) and parent's support in reading activities is really important in this period. Gül (2007) examined different literacy types and stated that family literacy plays an important role in acquisition of literacy skills. So, it was mentioned that educators and schools should make collaboration with families and prepare family involvement programmes in order to enhance students' (especially special needs students) literacy skills. In a similar study, Büyüktaşkapu (2012) investigated if family supported pre-reading training program contributes students reading skills or not. Researcher studied with 50 nursery school students in an experimental design. While students from experimental group were participated in family supported pre-reading training

program, control group students did not. Pre-reading training program includes activities about phonological awareness, letter recognition, story creation, reading concepts, predicting events' choronology and it was implemented by students' families. Students' reading performance were measured when they attended to primary school after a year and it is reported that students in experimental group got higher results than students in control group. In addition to this, Geske and Ozola (2008) focused on family involvement in the development of reading skills at pre-school period. They reported that supportive reading activities given by parents before beginning school has a positive impact on students' reading performance.

Reading literacy in primary school

In the first years of primary school instructional reading programmes based on teaching to read. Teachers make effort to help students learn to read (Goldman, 2012) and they aimed to teach basic procedural word reading and reading comprehension skills. Studies on primary school students mostly focused on the factors that affect acqusition and improvement of reading comprehension skills.

Instructional reading programme or reading interventions plays an important role in acquiring and improving reading literacy skills. Guthrie et al. (2004) investigated the degree of influence of three instructional practices (concept-oriented reading instruction, strategy instruction and traditonal instruction) on the development of reading comprehension skills and reading engagement in an experimental design. Researchers studied with third grade students in a mid-Atlantic city. Concept-oriented reading instruction model is a combination of cognitive strategies

such as; activating background knowledge, generating questions about the text being read and specific motivational practices such as; using hands-on experiences, supporting students choices about reading materials. Strategy instruction included cognititive strategies for reading comprehension but no involvement of motivational support. Whereas traditional instruction included text interaction and limited number of cognitive strategies. It is reported that students who took concept-oriented reading instruction showed better performance in reading comprehension and were more motivated towards reading than the strategy instruction and traditional instruction students.

In a similar study Spörer, Brunstein, & Kieschke (2009) focused on the contribution of three instruction programme on the acquisition of reading comprehension and reading strategies. Researchers studied with 210 elementary school students from Germany and students were assigned one of the following reading programme; traditional reading instruction, reciprocal teaching in small groups, reciprocal teaching in pairs and instructor-guided reading programme. Students in traditonal reading instruction were taught four reading comprehension strategies (summarizing, questioning, clarifying, predicting) implicitly by their regular language teachers during their regular lessons. On the contrary, students in the intervention conditions were given extra support by experienced graduate students and taught the same strategies and given the chance to practice these strategies in a collaborative, interactive and scaffolded learning environment. It is found that, students in three intervention conditions outperformed in reading comprehension than students in the control condition in post- and follow-up test. Also, it is mentioned that students in all intervention conditons were better in applying summarizing, questioning and predicting strategies at post-test but only studens in reciprocal teaching in small

groups had a better perfomance in strategy acquisition at follow-up test. In this vein, Rosenshine and Meister (1994) stated that reciprocal teaching positively affected students' reading comprehension performance in standardized tests through analyzing previous studies.

Additionally, Elosúa, García-Madruga, Vila, Gómez-Veiga, & Gil (2012) aimed to improve reading comprehension through training executive functions (focusing, switching, connecting and updating mental representations and inhibiting irrelevant knowledge) of working memory. Researchers studied with primary school students that were divided into experimental and control groups. They assessed students' reading comprehension performance (knowledge access, text memory, inferences and integration) before and after intervention programme. Training programme consisted of following tasks; arranging vignettes and sentences to make a coherent story, interpreting and performing written instructions, solving anaphora problems, finding out inconsistencies within the text, making text-based and elaborative inferences, tracking changes throughout different stories, integrating knowledge from multiple sources. It is reported that, students in experimental group got better scores in reading comprehension in the second measurement. As well, Acat (2007) examined whether functional approach has an impact in attaining reading and reading comprehension skills. Researcher studied with 4th grade Turkish students who have same features in terms of age, cognitive and affective readiness level. While students in experimental group were implemented functional language training approach, students in control group were implemented traditional approach. In functional training approach students were informed about the points to take into account in reading the story and they were implemented some activities about creative and critical thinking, story writing, describing and drawing picture of an

image. It was stated that, students in functional language training group got higher scores in reading and reading comprehension skills in regards to narrative and descriptive functions of language compared to the students in control group.

In addition to these there are student level factors such as; students' socio-economic and socio-cultural background and gender that has an impact on students reading performance. Many studies reported that socio-economic and cultural factors such as: parent's educational status and profession and amount of books at home (Fuchs & Woessmann, 2004; Kutlu, Yıldırım, Bilican, & Kumandaş, 2011) have contribution on the improvement of students' reading skills and their reading performance.

On the other hand, there is an achievement gap between boys and girsl in reading literacy skills. Female students engaged reading activities more than male students (Lynn & Mikk, 2009; Singh, 2008) and they showed better performance in reading literacy than their male peers (Canadian Council on Learning, 2009; Lynn & Mikk, 2009; Kutlu et al., 2011; Rintaningrum, 2009; Singh, 2008; Twist, Schagen, & Hodgson, 2007). That's why both families and teachers should make effort to encourage boys' reading attitude and provide reding facilities to boys in order to close or at least reduce this gap.

In the related literature there are a few studies conducted with students who showed poor performance in reading literacy. Geske and Ozola (2008) investigated why some 4th grade students show poor performance at reading literacy through analysing PIRLS 2001 data. They found that, families' socio-economic status has an effect on students' reading achievement; in this sense students who have no sibling or just one, students who have more books in their homes and students from well-educated

families have the chance to become better readers. Also, the authors mentioned that, reading literacy positively influenced by reading different types of literary genres such as; story and poetry however, reading comics does not affect students' reading achievement. Additionally, a study from Turkey examined the impact of enrichment reading program on the performance of students that have problem in basic reading skills. A range of activities used in the application of enrichment programme. It is reported that students can perform better in word recognition and reading aloud skills if they are provided an appropriate reading environment and guidance (Akyol, Çakıroğlu & Kuruyer, 2014).

Reading literacy in middle and high school

Students improve higher order of cognitive skills with the development of abstract thinking when they go to middle and high school. They begin to handle with more complex situations and relations and deal with more difficult problems in daily life. In other respect, content of language and literature courses become harder and texts used in these courses get more complicated. That is to say, they have to "master more complex texts and new comprehension tasks" (Goldman, 2009, p. 91). Therefore, students are expected to have high level of reading literacy skills in this period. However, studies revealed that there is a decline in students' reading proficiency when they go to middle and high school even they seemed to be better readers in early grades (Fletcher et al., 2012; Lesaux, 2012) and many students don't have the expected level of reading skills to deal with challenging content of texts used in subject area courses (Aydın et al., 2011; Goldman, 2012) and to meet the needs of

modern society (Alvermann, 2002; Reardon et al., 2012). That is to say, vast majority of adolescent learners were not able to understand the subtext, make connections between prior knowledge and newly learned information, interpret the text and have a critical view about the text. A study conducted with minority students from United States reached the similar results, it was reported that students showed poor performance in reading skills (Williams, 2014). The author stated that, this situation causes problems for students in graduating, going on post-secondary education and even in having a good career.

Researchers generally stated that there are both school level and student level factors causing low level of literacy proficieny in middle and high schools. Lesaux (2012) clarified the distinction between skills-based competencies that are mostly related with mechanics of reading and knowledge-based competencies that are mostly related with meanings of the words in a specific context and more crucial in text comprehension and caused differences among students in reading ability. She reported that US schools mostly focused on teaching procedural reading skills rather than knowledge-based reading skills in their reading instruction and reading assessment. Lastly, she offered that schools should make a comprehensive change depending on the development of conceptual reading skills rather than procedural reading skills in their reading instruction and asssessment. Likewise, Reardon et al. (2012) mentioned that literacy instruction may not be very effective in teaching knowledge-based reading and comprehension skills. Also, Williams (2014) stated that non-English teachers have deficiency in preparing an efficient reading instruction. Additionally, Goldman (2012) pointed out that many teachers except English teachers are not aware of the fact that they have to teach literacy skills specific to their subject area courses and they don't have the chance to learn these

skills by themselves. So, she stated that it's important to improve teachers'

competence in this area too.

As mentioned above there are also student level factors underlying adolescent

learners' poor performance in reading. Socio-economic status of parents' seems to be

a determinant factor both in students' academic achivement and reading achivement.

Reardon et al. (2012) pointed out that socio-economic factors causes a big difference

among students in literacy achievement. They reported that students coming from

high-income families performing much better than students coming from

low-income families in reading literacy. According to the same researchers, racial

and ethnical factors can make a difference among students in reading ability. They

reported that, Black and Hispanic students had low level of literacy skills compared

to White and Asian students in their study conducted with US students.

Instructional reading programmes used in middle and high school

Some studies in the literature aimed to investigate effective reading instructions and

practices to overcome adolescents' deficiency in reading literacy. Williams (2014)

analyzed the studies carried out in a middle and a high school in California and

reported that sustained silent reading strategy in which students and teachers read

their own chosen books in a specific time regularly should be implemented in

schools to increase reading ability. For the success of this strategy the books should

be varied in levels and genres and culturally relevant. The author also mentioned that

students should be alloted more time for reading, they should be given homework

related to reading. Additionally, Balfanz, Legters, & Jordan (2004) focused on

recovering achievement gaps of poorly performed 9th grade students in reading

through examining the impacts of a catch up programme named as talent

development high school (TDHS). The study was applied in three different ways to a

student group who have same features in terms of attendance, age, gender and prior

achievement level and it was performed in Baltimore, Philadelphia, Newark and

New York cities. Students from both experimental and control groups were given

increased number of English courses during the whole year. However, while students

in the TDHS schools taken strategic reading courses which is aimed to improve

students' reading fluency and comprehension skills; students in the control schools

taken traditional remedial courses. In addition to this, teachers who are implementing

TDHS were given periodical professional development support and in-classroom

implementation support. Besides, teachers in TDHS schools encourage their students

to work collaboratively and used different types of activities in lessons. It was

reported that most of the students in TDHS school performed better in reading than

the students in other schools and they learned new skills and strategies.

Also, Goldman (2009) searched instructional programmes that can be useful in

improving students' reading comprehension capacity and specified three

reading-to-learn instructional approaches by analyzing the results of previous studies.

These are strategy-based instruction, discussion-based instruction and disciplinary

content-based instruction. Strategy-based instruction focuses on text-processing and

includes reciprocal teaching, students achieving independent learning, structure

strategy training and self-explanation reading training. Discussion-based approach

includes intervention programmes such as; collaborative reasoning, instructional

conversation, literature circle and questioning the author. Disciplinary content-based

instruction includes authentic literary and disciplinary practices and aims to foster

students' engagement towards some specific disciplines such as; history and literature. All intervention programmes are dialogue oriented and make students more active during the process.

Goldman (2009) made another contribution to the field. She figured out features of successful readers and stated that successful readers actively engaged with the texts while reading to learn, they focused on to get what text means rather than what text says while studying on a text, they do not give up when they have difficulty in understanding the content; they use strategies to overcome it, they make links between different concepts in the text and relate those concepts with previously learned knowledge and they try to find out the connections between different sections during reading.

In a different study Alvermann (2002) focused on the factors that should be taken into account in designing an effective literacy instruction for middle and high school students. The author stated that it can be beneficial to keep in mind students' needs and interest in terms of literacy skills and consider following suggestions. Firstly, teachers should support students' reading self-efficacy through providing clear goals in dealing with a comprehension task, monitoring students' progress and using technology in their lessons. This can lead increased amount of reading engagemet and motivation. Secondly, teachers should trigger students' prior knowlege and use specific strategies such as; cooperative learning, comprehension monitoring, using graphic and semantic organizers in order to improve students literacy skills in different subject area courses. As well, student generated materials should be used as a learning material and teachers give emphasis on the development of critical thinking among students. Moreover, educators should take advantage of culturally

responsive literacy instruction which aimed to reduce differences betweeen school and home/community environment in dealing with struggling readers. Lastly, teachers should promote peer learning, use active learning strategies and different types of texts during the courses.

Reading related factors

There are many factors that may have an impact on the acquisition and improvement of reading literacy skills such as; reading motivation, reading attitude, reading strategies etc. This study will investigate whether reading enjoyment time, reading attitude and learning strategies differ across school types so, it's worth to discuss findings of the previous studies carried out in this field.

Reading motivation

Reading motivation seems to be a powerful variable affecting reading achievement (Naeghel et al., 2014; Taboada et al., 2009). It can be defined as "the individual's personal goals, values, and beliefs with regard to the topics, processes and outcomes of reading" (Guthrie & Wigfield, 2000, p. 405). Reading motivation consists of some specific components such as; interest, self-efficacy, competition and social interaction etc. (Taboada et al., 2009) and it can be classified into intrinsic and extrinsic reading motivation. Intrinsic reading motivation can emerge due to internal factors such as; interest in books or reading and enjoyment of reading activity

whereas extrinsic reading motivation can emerge due to external factors such as; rewarding, avoding punishment or peer pressure.

Researchers in the field of reading motivation investigated the relation between reading motivation and reading literacy, if dimensions of reading motivation contribute to reading performance and the factors affecting reading motivation. Several studies (Taboada et al., 2009; Wang & Guthrie, 2004) revealed that, internally motivated readers more engaged in reading activities and showed better reading performance. Likewise, reading amount has an impact on reading success (K. Smith, F. Smith, Gilmore, & Jameson, 2012) and if students read more they are likely to become better readers (Çoskun, 2003; Paulson, 2006), whereas students with low interest and less engagement in reading are under the risk to be low achievers (Linnakyla, Malin, & Taube, 2004). Also, reading enjoyment can make an important contribution to reading performance (Fındık & Kavak, 2013; Mikk, 2015). In line with these studies, (Becker, McElvany, & Kortenbruck, 2010) investigated if intrinsic and extrinsic reading motivation predicts reading achievement in case reading amount used as a mediator variable in a longitudinal study conducted with 740 elementary school students from Germany. Researchers also examined bidirectional relation between reading motivation and reading literacy. They found that there is a positive correlation between intrinsic motivation and reading competency and reading amount has a mediating effect between these two variables. That is to say, students who read for pleasure spend more time on reading activities and improve their reading skills. On the other hand, researchers mentioned that extrinsic motivational factors has a negative influence on reading literacy and reading amount has not statistically significant mediating effect between these two variables. Lastly, it is stated that there is a bidirectional relation between extrinsic

motivation and reading achievement. It means that; having high extrinsic motivation can be resulted in poor reading performance and showing low reading performance can lead more parent pressure on students. As well, Unrau and Schlackman (2010) focused on the impacts of intrinsic and extrinsic motivation on reading achievement. Researchers studied with 1032 middle school students coming from economically disadvantaged Hispanic and Asian families. It is reported that, while intrinsic reading motivation influences reading success of Asian students positively; there is a slight negative relation between extrinsic reading motivation and reading achievement for these students. In other respect, there was no statistically significant relation found betwen reading success and intrinsic, extrinsic motivation among Hispanic students. In a similar study from Turkey, Yıldız and Akyol (2011) investigated if there is a relation between reading comprehension and both intrinsic and extrinsic reading motivation. Researchers studied with 5th grade Turkish students. They reported that while internal motivational factors such as; curiosity was positively associated with reading comprehension, external motivational factors except competition were negatively associated with reading comprehension.

Additionally, (Taboada et al., 2009) examined the relation between internal motivational factors and cognitive strategies (activation of background knowledge and student questioning) in regarding their power to predict reading comprehension and it's growth. Researchers studied with 205 fourth grade students from a mid-Atlantic city. They reported that while both motivational and cognitive variables made independent and important contribution to reading comprehension and it's growth, there was no relation found between motivational and cognitive variables. Likewise Retelsdorf, Köller, & Möller (2010) aimed to examine the impacts of reading motivation on reading performance and it's growth while controlling

cognitive skills, familial features, gender and ethnicity of students. Researchers conducted a longitudinal study with 1508 secondary school students from Germany. Although the results are equivocal to some extent it is reported that, while reading enjoyment and reading self-concept positively associated with reading performance, competition negatively associated with reading performance and just reading for interest has a contribution on reading performance growth. In this vein, Molle and Jolles (2014) stated that students who read for pleasure have the chance to gain more success at school. Lastly, Smith et al. (2012) investigated the relationship among reading self-efficacy, reading enjoyment and reading achievement of 8-9 and 12-13 years old students in New Zeland. It is reported that, while there is not statistically significant correlation found between reading achievement and two dimensions of intrinsic reading motivation, there is a strong relation between self efficacy and reading enjoyment for fourth grade sample. That is to say, reading pleasure and self-efficacy in reading do not have an important impact on the reading success of students at an early age however, students who believe themselves to become successful readers have more joy of reading. For eighth grade sample the correlation between reading achievement and two motivational variables became stronger, but reading achivement moderately related to reading enjoyment and reading self-efficacy. Lastly, it is reported that while reading achivement increased, reading enjoyment and self-efficacy showed a decline over school years.

On the other hand, a few studies in the field focused on the factors affecting reading motivation. For example, Villiger, Niggli, Wandeler, & Kutzelmann (2011) investigated contributions of a home-school based intervention program in promoting reading motivation (enjoyment, curiosity, self-concept) of fourth grade students. The intervention program called as LiFuS Reading Program applied for one

school year in Switzerland and the main focus of the program is to foster reading motivation through addressing need for autonomy, need for competence and need for social relatedness. They reported that while school-home based intervention program has a significant effect on reading enjoyment and reading curiosity it has no effect on reading-self concept. Besides, Paulson (2006) focused on the benefits of self-selected reading for enjoyment (SSRE) approach by using the evidence of previous studies. This approach allows students to read because of they want to read not because of they have to read. The researcher pointed out that, SSRE can be a key factor in changing students' love of reading and reading habit. In other respect, he mentioned that traditional skills-based instructions which mostly place emphasis on word-attack strategies, discrete-skill building and textbook study assistance are not very effective in changing students' view about reading and their reading habits. In addititon to these, Naeghel et al. (2014) investigated the role of teacher behaviours in developing high school students' intrinsic reading motivation. Researchers found that, autonomy supportive (providing various reading topics according to students' interest and providing time for free reading), structured (giving feedback and scaffolding to students in dealing with hard reading tasks) and involved (having a good rapport with students) behaviours of teachers have a positive relation with adolescents' reading enjoyment and interest in reading.

Also, reading motivation can be affected by school type and grade level. Naeghel et al. (2014) reported that students in general school have higher levels of intrinsic reading motivation than students in technical and vocational school. Also, it was stated that students' reading motivation particularly intrinsic motivation declines when they passes to upper grades (Smith et al., 2012; Unrau and Schlackman, 2010). Besides, gender and gender perception can be influential on students' reading

motivation. Researchers (Atkinson, 2009; Molle & Jolles, 2014; Naeghel et al., 2014; Smith et al., 2012) concluded that girls enjoy reading more than boys and this may explain part of the gender gap in reading performance. In addition to these, socio-cultural (Atkinson, 2009) and socio-economic background have the power to impact reading motivation. Naeghel et al. (2014) mentioned that socio-economically advantaged students like reading activities more than their socio-economically disadvantaged peers.

Reading attitude

Reading attitude means to have a desire and tendency towards reading and be interested in reading, reading related activities and books (Sainsbury & Schagen, 2004). It can be considered as an element affecting students' reading attainment (Twist et al., 2007) and reading achievement (Askov & Fischbach, 1973). Students who have positive feelings about books and reading and have a tendency to deal with reading related activities for pleasure spend more time on reading and have the chance to improve their reading skills. In this regard, it was stated that students' attitudes toward reading functions as a key element in the development of reading skills (Lazarus & Callahan, 2000), it has a predictive power on students' reading success (Parker, 2004) and students with positive reading attitudes got better reading scores (Bulut, Delen, & Kaya, 2012). Also, it was mentioned that reading attitude can be influential on school success (Keskin, 2013).

Due to it's importance both in reading and academic achievement teachers should become a role model for students (Gambrell, 1996), use effective reading practices (Gambrell, Morrow, & Pressley, 2007) and learning strategies during their lessons in order to increase students' positive attitudes towards reading. In this vein, Fletcher et al. (2012) examined strategies and practices used by teachers in fostering and enhancing students' attitudes toward reading. Researchers made observations in five primary schools which were implementing effective reading programmes supported by literacy experts and demonstrated better reading performance. They reported that, teachers used "reading aloud" as a way of adressing students' imagination about the text and used "questioning" as a way of increasing students' interest about the text, having a deep understanding about the text, making links with prior knowledge and real life experiences. Also, they worked in collaboration with students in explaining the meaning of the text and they provided a safe learning environment in which students ideas were respected and valued. Besides, they formed a reading community where students have fruitful one-to-one, group and whole-class discussion sessions. Furthermore, teachers offered wide range of age and interest appropriate books for students both in their classrooms and in school library. Lastly, some of the teachers used picture books and rewarding system in order to encourage students to have positive attitudes toward reading.

Reading and learning strategies

Reading and learning strategies can play an important role in facilitating reading comprehension (Taboada et al., 2009), getting a deep understanding of the text and

improving reading performance (Belet & Yaşar, 2007; Fındık & Kavak, 2013; Gürsakal, 2012; Muszysnski & Jakubowski, 2015). Several studies in the field revealed that "student questioning" and "background knowledge activation" (Taboada et al., 2009), "memorization" and "elaboration" (Li & Chun, 2012), "summarization", "understanding and remembering", "control" and "note-taking" strategies and using concept maps (Belet & Yaşar, 2007; Bilican & Yıldırım, 2013; Mikk, 2015; Muszynski & Jakubowski, 2015) positively associated with reading performance, "generating and answering question" and "answering question" strategies have more contribution than "rereading" strategy in remembering the information presented in a passage (Weinstein, McDermott, & Roediger, 2010). However, a few studies in the field indicated that "elaboration" (Muszynski & Jakubowski, 2015) and "memorization" (Bilican & Yıldırım, 2014; Muszynski & Jakubowski, 2015) strategies can cause low level of reading achievement. Researchers (McDaniel, Roediger & McDermot, 2007) considered elaboration strategies as high level of cognitive skills and it is not easy to use elaboration strategies effectively (Muszynski & Jakubowski, 2015), also memorization strategies enable surface understanding of the text (Li & Chun, 2012) and generally used by externally movitated readers (Becker et al., 2010). That's why use of these strategies had a negative relation with reading performance.

Likewise, Iwai (2011) focused on the benefits of metacognitive reading strategies mostly used in EFL (English as a Foreing Language) and ESL (English as a Second Language) courses. She classified metacognitive strategies as planning, monitoring and evaluating strategies; planning strategies used before reading and help learners to evoke their prior knowledge and get mentally prepared for a better understanding of the text. Monitoring strategies used during the reading activity and consist of

self-questioning, summarising and making inferences etc. These strategies help students to focus on key elements in the passage and to figure out main idea of the text. Evaluating strategies practiced after reading and these strategies help learners to make connections between what they read and real life situations or previously learned material. The author concluded that, reading metacognitive strategies has an important effect on students' reading performance and they enable students to become independent learners. So, teachers should practice metacognitive reading strategies in their lessons and teach how to use these strategies and provide assistance until their students become proficient at applying them.

PISA and reading literacy

PISA is an international student assessment programme developed by OECD. It has been implemented at 2000 for the first time and afterwards it has been implemented in every three years. It assesses 15-year-old students' reading literacy, math literacy and science literacy skills and while it mainly focuses on one type of literacy in each assessment, it covers the other two literacy domains as well. The major focus domain of PISA 2009 implemantation was reading literacy. PISA mainly focuses on not to assess what students learned in the lessons or whether they can remember the knowledge they learned but to assess to what extent they can use their knowledge and skills in real life situations. It also provides information to participating countries to compare their educational outcomes with other countries, evaluate and improve the quality of their education systems.

Studies on PISA and reading literacy generally focused on comperative analysis of PISA reading literacy results of two or more countries or results of a single country obtained from different PISA measurements within the years. Cross-country comparisions included benchmarking of reading performance of Turkey and reading performance of top-seeded countries or comparision of reading performance of culturally similar countries. In other respects, several studies in the field just focused on the results of a single country without making any comparision. Researchers investigated either the factors influencing students' reading achievement or causes underlying low reading achievement in these studies. It is possible to classify these reasons under three headings; family level factors, school level factors and student level factors.

Family level factors

Parents have an important role in their children's education and in the acquisition and improvement of their reading literacy skill. Also, they have a complementary role with schools in fostering their kids' reading skills. Socio-economic and socio-cultural background tends to be a determinant variable among family level factors (Arıcı & Altıntaş, 2014) and parents' contribution to students' reading achievement varies depending on their socio-economic and socio-cultural level. There is an overall belief that while students coming from socio-economically advantaged families have the chance to become better readers, students coming from socio-ecomically disadvantaged families may have difficulty in reading skills and show low reading achievement and this belief is supported by numerous studies (Aydın et al., 2011;

Gülleroğlu et al., 2014). Also, internationally made assesments supported this view; in many countries students coming from wealthier families tend to show better performance in reading literacy (OECD, 2010). Because if families have higher socio-economic standards they can provide better learning environment and have more educational resources in their home. On the other hand, families with low income can not offer same opportunities to their kids.

Researchers indicated that parents' employment status (Arıcı & Altıntaş, 2014; Linnakyla et al., 2004), home possesions (Arıcı & Altıntaş, 2014; Gürsakal, 2012; Mikk, 2015) were highly associated with students' reading achievement. In this regard, Gülleroğlu et al. (2014) investigated the best predictors of Turkish students' reading performance in terms of their socio-economic background through analysing the results of PISA 2003, 2006, 2009 assesments and concluded that, if students have various educational facilities such as; having a room and a desk to study, educational software and internet connection at home then they can get better reading scores.

Parents' education level has a predictive power on students' reading success (Arıcı & Altıntaş, 2014; Aydın et al, 2011). According to Gürsakal (2012) students showed better reading performance when their parents' education level increased. Because highly educated parents can enhance their children's reading performance through establishing a fruitful literacy environment at home (Gülleroğlu et al., 2014), displaying learning supportive behaviours and including in their kid's learning processes at home. In relation with parent's education status there is a correlation between cultural facilities at home and students' reading success (Rajchert, Zultak, & Smulczyk, 2014). That is to say, if students have the chance to live in a culturally rich family environment and have classic literary work, poetry books and works of

art in their home then they can show better reading performance (Linnakyla et al., 2004).

Apart from the above mentioned factors number of siblings, family togetherness and being immigrant proved to have a relation with reading literacy skills (Linnakyla et al., 2004). Researchers reported that, students coming from single-parent families tend to be low performers than their peers coming from two-parent families and this is also true for those students coming from immigrant familes compared to the native ones. They also mentioned that the risk of low reading achievement increases in paralel with the increasing number of siblings in the family.

School level factors

Although all schools are expected to offer same quality of education and reach same or similar level of educational outcomes, students' academic and reading achivement vary depending on the schools they enrolled. Because studies revealed that there are some school level factors influencing students' reading literacy skills.

According to Rajchert et al. (2014) school curricula has the power to affect students' reading achievement. In this respect, Bozkurt (2014) focused on the improvement of Korean students' achievement in reading within the framework of PISA between the years of 2000-2009. It was reported that Korean students were performed successfully in the last three PISA assessments and ranked in the top among all participating countries. Researcher stated that, Korean students increased their reading achievement in medium level questions (integrate and interpret) and

advanced level questions (reflect and evaluate) within the years. He reported that, this improvement in students' achievement was supported by the changes in Korean curriculum. The curriculum focused on active involvement of students in evaluating the text and reconstructing it's meaning. Also, reading activities were integrated with writing activities in the curricula and this enabled students to do well in open-constructed questions. Likewise, a study from Turkey (Çelen, Çelik, & Seferoğlu, 2011) examined the results of PISA 2009 for Turkish students through comparing them with the results of PISA 2003. It was reported that there was a partial improvement in the last assessment and the changes made in the curriculum between the years of 2005-2009 may have a positive role in the increase of students' achievement.

Schools can provide a well-equipped learning environment to students in terms of their financial potential and give financial support to economically disadvantaged students. Thus, they can make contributions to students' success through minimizing the impact of socio-economic backgound. Research results are in the same direction with this idea. According to Çelen et al. (2011) school finance and educational facilities in the school may have an impact on students' academic achievement. Additionally, Aydın et al. (2014) compared reading literacy performance and finance of schools and education in Turkey and in top five OECD countries and reported that while most of the Turkish students don't have high level of reading literacy skills, most of the students in top-five OECD countries have advanced level of reading skills. Researchers also stated that these countries reserved much more financial source to education and schools than Turkey did. Therefore, students in above mentioned countries were educated in less-crowded classes with more educational

sources and more teachers. On the contrary, most of the schools in Turkey have more-crowded classes and they offered fewer educational facilities to students.

Apart from above mentioned factors studies indicated that school type has a relation with students' reading performance too (Bilican & Yıldırım, 2014; Rajchert et al., 2014). Researchers (Fındık & Kavak, 2013) examined the profile of socio-economically disadvantaged high achievers and low achievers participated PISA 2009 assessment in Turkey. They reported that while the rate of resilient students in general high schools is 36.2%, it declines depending on school type and it is very low especially in technical high schools; it is around 1%. Also, they reported that the rate of disadvantaged low achivers in vocational and general high school is very high when compared to other school types.

Student level factors

Students are the most determinant actors of learning process and that's why student level factors may have an important impact on learning outcomes. Studies (Fındık & Kavak, 2013; Gürsakal, 2012; Linnakyla et al., 2004; OECD, 2010; Rajchert et al., 2014) revealed that there is a significant correlation between gender and reading performance in PISA assessments. Researchers reported that, female students showed better performance in reading literacy than their male peers nearly in all participating countries. Besides, students' personal characteristics such as; having general and academic self-esteem, intelligence level, anxiety state has a relation with reading success (Linnakyla et al., 2004; Aydın et al., 2011; Rajchert et al, 2014). Researchers stated that, students with low general and academic self-esteem, students

with high anxiety level and less intelligent ones are under the risk to be low achievers.

Also, students' literary choices can make a contribution to their reading achivement. According to Fındık and Kavak, (2013); Mikk, (2015); OECD, (2010) if students read diverse reading materials then they can have the chance to outperform in reading literacy. Additionally, engagement in online reading activities (Bulut et al., 2012; Lee & Wu, 2012; Mikk, 2015) and amount of computer and internet use (Gürsakal, 2012; Linnakyla et al., 2004) have a relation with reading performance. Researchers stated that students who use technological devices for reading activities created an advantage in reading performance. On the contrary, it was mentioned that students who spend many hours on the computer and surf the net without dealing any online reading activity showed an increased risk of low performance. So, it was suggested that parents or caregivers should control students' use of information and communication technologies (ICT facilities) at home and they should promote students to use technological facilities for educational purposes.

Apart from above mentioned student level factors, researches revealed that there are some other factors such as; reading motivation, awareness and use of reading and learning strategies influencing students' reading literacy perfomance in PISA assessments. These factors were discussed in the previous section in terms of integrity issues.

On the other hand, there are a few studies aimed to investigate education systems, cultural and social structure of countries showed high achievements is PISA assessments. Çobanoğlu and Kasapoğlu (2010) examined the reasons behind Finnish

students' outstanding success in PISA 2000, 2003 and 2006 assessments. Researchers stated that, Finnish education system offer equal opportunities to all students and provide extra support for special needs students. Also, it has a student-centered approach and promote active involvement of students in the lessons. Also, school curricula shows flexibility; it is sentisitive to students' personal needs and it involves all stakeholders in curriculum committee. Additionally, researchers reported that teachers are well-educated and more equipped and they take more responsibility in preparing curriculum for their subject area courses. Furthermore, it is mentioned that all responsible actors (policymakers, school principals, teachers and parents) work collaboratively and they have a good rapport among themselves. Lastly, they pointed out that cultural structure and income level of Finnish people may have relation with students' literacy achivement in PISA. Finnish people give importance to education and reading literacy and they have similar features in terms of socio-economic status.

Also, Yaman and Göçen (2014) compared native language arts curricula of Turkey and Singapore. Researchers stated that native language teaching of Singapore can be modeled for Turkey in some aspects. They reported that there is an approach aimed at to teach use of language in different contexts and native language teaching practices are determined depending on this approach. Language skills are thought within a context and they were supported with different types of printed/non-printed texts and literacy skills. Besides, native language arts curriulum focuses on communication especially oral communication and presentation skills in Singapore. Additionally, they reported that Singapore applying a student-centered education in native language courses and teachers focuses on process in assessing and evaluating students' success.

CHAPTER 3: METHODOLOGY

Introduction

Information about methodology of the present study will be given in this chapter. First, research design and context will be explained; then participants and instrumentation will be described. Lastly, method of data collection and data analysis will be given.

Research design

Present study is a quantitative research aims to examine if some selected reading related variables differ across groups of school. Therefore, it is carried out as a causal-comparative design.

Causal-comparative design is used to investigate differences between or among groups that are formed in terms of gender, socio-economic status, school type etc. According to Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, (2008); Cohen & Manion, (1994) this research design shows similarity with experimental one in explaining cause and effect relation between variables. However, it can not manipulate any variable used in the study. So, it can "provide limited indication of cause and effect relationship" (Schenker & Rumrill, 2004, p. 118) but, can not guarantee the existence of any impact independent variable has on dependent variable.

Context

PISA study was conducted in 2000 for the first time with the participation of 43 countries around the world. After then, it has been implemented once every three year with an increasing number of participants. In 2009 cycle on which data set of this study is based on, 65 countries took part in main PISA assessment and 33 of these countries were members of OECD.

In PISA 2009, 475.460 students took part in the main PISA assessment study. These students were representative samples of all 15-year-old students in the respective participant countries. The students in the sample were supposed to finish compulsory education or to be at the last year of compulsory education.

PISA assesses proficieny of students' in applying their knowledge to real life situations, new learning processes and it focuses on three main domains; reading, math and science literacy. Besides, it collects information from students in many dimensions such as family, attitudes toward teacher/school, etc. through a questionnaire. Thus, PISA provides information to educators and policy makers to compare their educational outcomes with other countries; evaluate and improve the quality of their education systems.

Turkey has been taking part in PISA studies since 2003 and it showed partial improvement in reading domain over years however there is no change in it's proficiency level. Turkey's avarage reading scores in years are as; 441 in 2003, 447 in 2006 and 464 in 2009. However, it's performance in reading literacy is below world avarage and it was ranked as 39th among all participating countries and as 31th among OECD countries.

PISA 2009 study was conducted in April in Turkey and 170 schools that were chosen randomly from 12 statistical territorial units by PISA international center took part in this application. These statistical regions were created by State Planning Organization and Turkish Statistical Institute in line with Turkey's adaptation process to the European Union. The number of schools representing a region is in proportion with the number of schools in that region (Eğitimi Araştırma ve Geliştirme Dairesi Başkanlığı [EARGED], 2010). Also, in paralel with the rate of private schools in Turkey, just 2% of school sampling is composed of private schools and 98% of school sampling is composed of public schools. In total, 4996 Turkish students participated in PISA 2009 cycle. Figure 1 shows overall success of all school types took part in PISA study. Avarage score of OECD countries in reading literacy is 493 points (OECD, 2010).
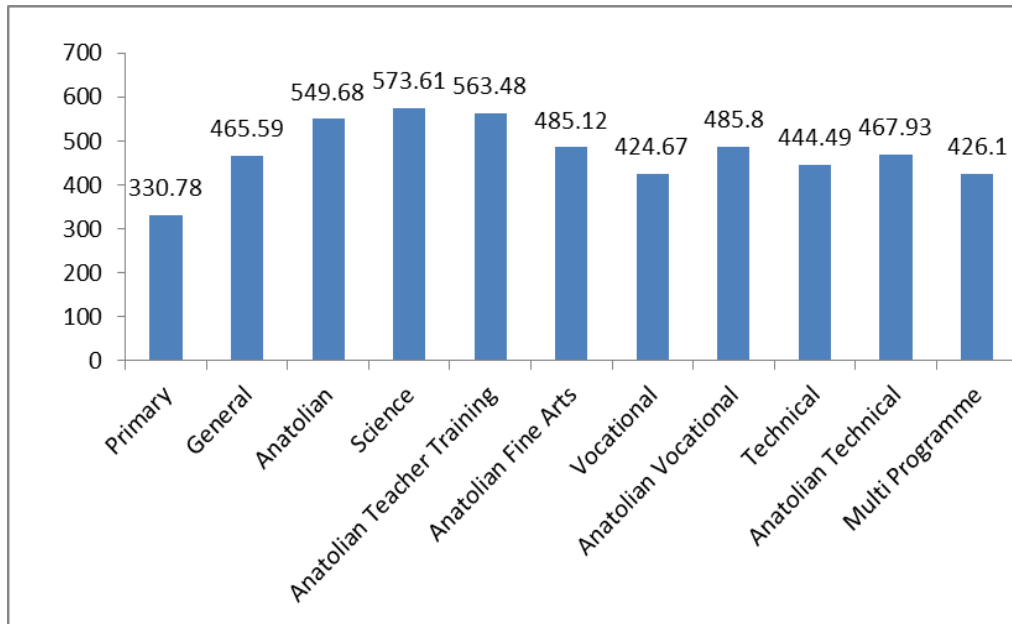
Figure 1. Means of reading literacy scores across school types

There were eleven school types that took part in PISA 2009 from Turkey however only following school types will be used in this study; general high school, Anatolian high school, science high school, vocational high school and 3946 students from these schools took part in PISA 2009 study. These schools were selected since they represented different strata in reading literacy as indicated by Figure 1. They are also representing a wide range of scale in terms of socio-economic background and cognitive level. In addition, these groups of school constitute %79 of the Turkish education system at that age level in PISA study (EARGED, 2010).

School types chosen for present study

Four different schools types were included in the present study. These four schools (general, Anatolian, science, and vocational) were considered to be reading literacy strata in Turkish education system. General high school is a school type which admits students without any entrance exam and it aims to increase students' general knowledge into a minimal level and improve students' citizenship consciousness. Anatolian high school gives priority to foreign language teaching and selects students based on a placement test. Science high school gives special emphasis to natural sciences and accepts students with high cognitive skills. Vocational high school aims to train students as vocational staff. Means of reading literacy scores and corresponding proficiency levels were presented in Table 1 as well as other descriptives.

Table 1
Descriptives of reading literacy with respect to school types

School Type	General	Anatolian	Science	Vocational
Number of students	1877	715	100	1254
Percentage of students	37.6	14.3	2.0	25.1
Mean Score	465.59	549.68	573.61	424.67
Std. Deviation	66.72	52.41	57.29	64.521
Minimum	210.97	401.69	367.38	214.98
Maximum	659.97	706.04	698.07	615.16
Proficiency Level	2	3	4	2

Mean scores of school types showed a large variance; they changed between 424.66 and 573.60. While science high school have the highest mean score, students in vocational high schools did the lowest mean score. If there will be a ranking among the other two schools it can be said that, Anatolian high school had higher mean scores in reading than general high school. Meanwhile there is no school type at proficiency level 5 and 6 in PISA 2009 reading domain.

Instrumentation

In PISA 2009 main focus was on reading literacy besides it covered math and science literacy domains. "Literacy" used as an umbrella term in each assessment domain and it was described as applying one's knowledge in daily life, making logical inferences, discussing and solving problems in various context (EARGED, 2010).

Students' reading literacy levels were measured by different evaluation units that were consist of texts, figures, tables and graphics. Reading literacy achievement test includes different types of tasks such as; accessing knowledge, making links between information gathered from different sections within a text, developing an interpretation about the subtext and evaluating the content and form of the text. Besides, questions in the test were composed of multiple-choice, yes/no, agree/disagree and open-ended questions which requires students' own answer (EARGED, 2010). Finally, students reading literacy achievement is not only measured by numeric values, it's also placed into one of the seven proficieny levels described in table 2. Summary descriptions were created depending on the descriptions in preliminary national report for PISA 2009 (EARGED, 2010)

Tablo 2
Summary descriptions of proficiency levels in reading literacy used in PISA 2009

Level	Lowest Score	Features of the tasks in this level
6	698	Students in this level can make inferences and find similarities and differences, get a deeper understanding about the text and integrate information from more than one text, deal with the concepts which are not stated clearly in a text includes prominent information and interpret the abstract concepts, critically evaluate the texts which include unfamiliar topics by using many criteria and point of view and develop an hypothesis, realize unimportant details in the text and make analysis.
5	626	Students in this level can find deeply embedded information in text and organize the text by using relevant information, make critical evaluations through emphasizing specific knowledge and hypothesize, deeply understand unfamiliar concepts and deal with anomalous concepts.
4	553	Students in this level can specify deeply embedded information in text and organize the text by using relevant information, interpret the nuances of language through dealing with the text entirely, understand the text and categorize unfamiliar contexts, make a hypothesis through by using their personal knowledge or evaluate text critically, demonstrate a deeper understanding of unfamiliarly long or complex texts.

Tablo 2 (continued)
Summary descriptions of proficiency levels in reading literacy used in PISA 2009

3	480	Students in this level can find the relation between the information corresponding to multi-cases and in some cases define this relation, integrate several pieces of information in order to identify main theme and interpret the meaning of idioms and words, demonstrate an understanding of the text in relation to familiar, everyday knowledge.
2	407	Students in this level can find the information which can correspond to multi-cases or can be used to make inference, identify main idea and understand the relation between several pieces of information or construe meaning from a specific part of the text when there is no need to make much inferences, find the similarities or differences focusing on one aspect of the text, compare the information within text and without text and make links between these information.
1a	335	Students in this level can find one or more independent pieces of explicitly stated information, identify main idea and authors' purpose in a text about a familiar topic, make links between the knowledge in text and commonly used daily knowledge.
1b	262	Students in this level can find a single piece of explicitly stated information in a short, simple text written about a familiar topic or familiar context like a story or a simple list, make simple links between similar information.

After the implementation of PISA test students were conducted a questionnaire which included 42 questions. Questions in the survey were about students' family background and home, reading activities, learning time, classroom and school climate, test language lessons, text reading and understanding strategies. Most of the questions were close-ended and generally four or five point likert scale was used and there were a few short-answered questions. Student's answers to these questions are important in figuring out similarities and differences across school types, within and between participating countries.

For present study, five sub-dimensions (defined by OECD) chosen from student questionnaire in order to investigate whether reading related variables differ across school types. Three of these sub-dimensions are about students' reading activities, one of them is about students' test language lessons and the last one is about strategies used by students in reading and understanding texts.

Table 3 presents information about the variables taken from student questionnaire prepared by OECD and used in the present study as the independent variable that may cause a difference in students' reading literacy performance across school types. Researcher's interest and availability of the data were two factors that considered when the sub-dimensions were selected

Table 3
Sub-dimensions and items taken from student questionnaire for PISA 2009

Item groups	Items	Alternatives
Reading enjoyment time	About how much time do you usually spend reading for enjoyment?	1. I do not read for enjoyment 2. 30 minutes or less a day 3. More than 30 minutes to less than 60 minutes a day 4. 1 to 2 hours a day 5. More than 2 hours a day
Reading Attitude	How much do you agree or disagree with these statements about reading? 1. I read only if I have to. (Only if I have to) 2. Reading is one of my favourite hobbies. (Favourite hobbies) 3. I like talking about books with other people. (Talk about books) 4. I find it hard to finish books. (Hard to finish) 5. I feel happy if I receive a book as a present. (Happy as present) 6. For me, reading is a waste of time. (Waste of time) 7. I enjoy going to a book store or a library. (Enjoy library) 8. I read only to get information that I need. (Need information) 9. I cannot sit still and read for more than a few minutes. (Cannot sit still) 10. I like to express my opinion about books I have read. (Express opinions) 11. I like to exchange books with my friends. (Exchange)	1. Strongly disagree 2. Disagree 3. Agree 4. Strongly Agree

Table 3 (continued)
Sub-dimensions and items taken from student questionnaire for PISA 2009

Study strategies	When you are studying, how often do you do the following?	
	1. When I study, I try to memorize everything that is covered in the text. (Memorize everything)	1. Almost never
	2. When I study, I start by figuring out what exactly I need to learn. (Figure out)	2. Sometimes
	3. When I study, I try to memorize as many details as possible. (Memorize details)	3. Often
	4. When I study, I try to relate new information to prior knowledge acquired in other subjects. (Relate new information)	4. Almost always
	5. When I study, I read the text so many times that I can recite it. (Read many times)	
	6. When I study, I check if I understand what I have read. (Check if understand)	
	7. When I study, I read the text over and over again. (Read text repeatedly)	
	8. When I study, I figure out how the information might be useful outside school. (Useful outside school)	
	9. When I study, I try to figure out which concepts I still haven't really understood. (Haven't understood)	
	10. When I study, I try to understand the material better by relating it to my own experiences. (Relate to experience)	
	11. When I study, I make sure that I remember the most important points in the text. (Important points)	
	12. When I study, I figure out how the text information fits in with what happens in real life. (Real life)	
	13. When I study and I don't understand something, I look for additional information to clarify this. (Additional information	

Table 3 (continued)

Sub-dimensions and items taken from student questionnaire for PISA 2009

Stimulating strategies	In your test language, how often does the following occur? 1. The teacher asks students to explain the meaning of a text. (Explain text) 2. The teacher asks questions that challenge students to get a better understanding of a text. (Better understanding) 3. The teacher gives students enough time to think about their answers. (Time to think) 4. The teacher recommends a book or author to read. (Recommend books) 5. The teacher encourages students to express their opinion about a text. (Express opinion) 6. The teacher helps students relate the stories they read to their lives. (Relate to lives) 7. The teacher shows students how the information in texts builds on what they already know. (Build on knowledge)	1. Never or hardly ever 2. In some lessons 3. In most lessons 4. In all lessons
Text understanding and remembering strategies	How do you rate the usefulness of the following strategies for understanding and memorising the text? 1. I concentrate on the parts of the text that are easy to understand. (Easy to understand) 2. I quickly read through the text twice. (Read twice) 3. After reading the text, I discuss its content with other people. (Discuss content) 4. I underline important parts of the text. (Underline) 5. I summarise the text in my own words. (Summarise) 6. I read the text aloud to another person. (Read aloud)	1. Not useful at all 6. Very Useful

Method of data collection

A coordinator was charged for each school and s/he made a list of students at the age of fifteen and sent it to the national PISA center and 35 students for each school were selected randomly from the list. Selected students and their families were informed about PISA project by school coordinator. PISA study was conducted by trained test implementers in a co-determined day by school and national PISA center.

There were 13 booklets which involved questions about reading, math and science literacy, a student survey and a school survey in PISA implementation. The booklet was determined randomly via computer for each student and three students at most were distributed the same booklet in each group. Students answered sample questions in the test booklet before they begin to answer the essential questions in the test.

PISA 2009 evaluation was consisted of two sessions; the first session took two hours in which PISA achievement test was implemented, the second one took half and hour in which PISA questionnaire was conducted. Students took two short breaks during the process; one was taken in the middle of the achievement test, the other was taken at the beginning of the survey. Test booklets and questionnaires were collected and sent to the national PISA center after the implementation. The data used by present study is gathered from OECD's website which is open to public use.

Method of data analysis

To investigate mean differences of reading related variables across school types, One-Way Analysis of Variance (ANOVA) was used. Then if a significant mean difference is indicated by ANOVA, post-hoc analysis was carried to find out the sources of difference among school types. Based on the assumption of homogeneity of variances, two post-hoc tests were selected; Bonferroni test was used if variances of the groups were equal otherwise Dunnet's C test was used. Meantime, school type is chosen as a grouping variable or factor and 38 items in five sub-dimensions chosen as dependent variable in the present study.

ANOVA has several assumptions. Lindman (1974) and Box (1954) mentioned that the F statistic shows high resistance against the violations of the homogeneity assumption. Besides, ANOVA can show robustness against violation. Schmider et al. (2010) showed that ANOVA has the potential to show consistency under various distributions. According to the results reported in the literature for ANOVA, normality assumptions were not checked for normality. In addititon, ANOVA results were taken into consideration whether equality assumption of variance were met or not. Lastly, alpha level was set to 0.05 through all analyses.

CHAPTER 4: RESULTS

Introduction

In this chapter results of the statistical analyses are presented in order to determine if some reading related variables differ between school types in PISA 2009 or not. This chapter is organized as follows; first, mean differences between school types are given in figures for the respective items. Then results of One-way ANOVAs as to significance of the mean differences are presented. If a significant mean difference is indicated by an ANOVA, post-hoc analysis results are given to investigate the source of mean difference across school types.

Differences in terms of reading enjoyment time across school types

In PISA 2009, the item "About how much time do you usually spend reading for enjoyment" was used to assess time spent by students for reading enjoyment. Figure 2 presents the means for reading enjoyment time across school types. All means vary around 2.50 points which indicates that students spent nearly 30 minutes to read for pleasure in a day. Meanwhile low mean scores indicates that students do not read for enjoyment.
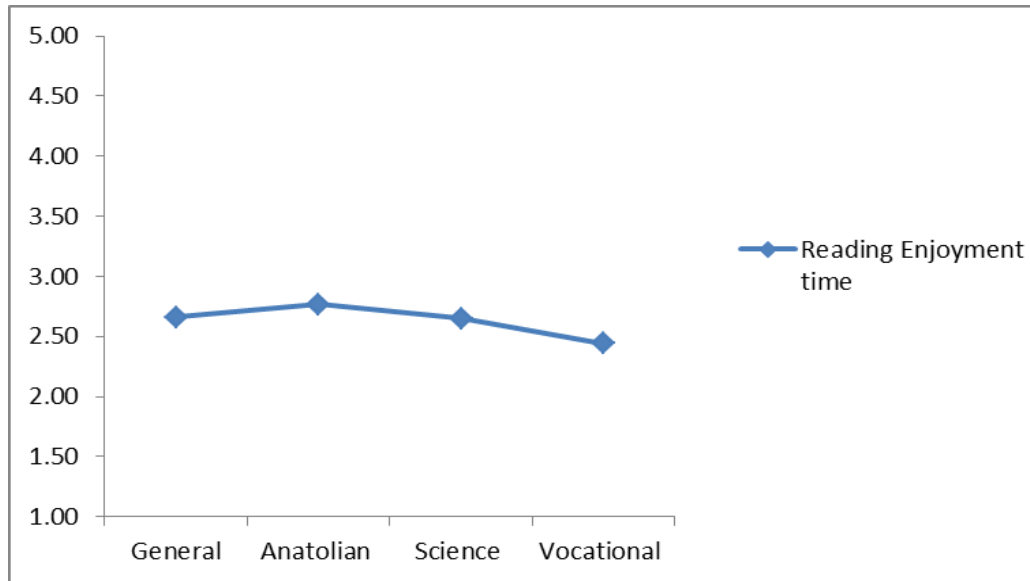
Figure 2. Means of reading enjoyment time across school types

One-Way ANOVA is used to investigate mean differences of reading enjoyment time across school types by referring to the PISA 2009 data. Table 4 shows the results of analysis conducted.

Table 4
Results of ANOVA for reading enjoyment time across school types

Item			Sum of Squares	df	Mean Square	F
Reading Enjoyment Time		Between	59.614	3	19.871	13.613*
		Within	5667.995	3883	1.460	

* p <.05

According to the results, significant mean difference is found for reading enjoyment time. This means that, there is statistically significant mean differences in reading enjoyment scores acros school types. In order to further investigate sources of mean differences, post-hoc analysis is conducted for reading enjoyment time in which significant differences were found.

Table 5
Results of post-hoc tests for reading enjoyment time across school types

Item	School Type (i)	School Type (j)	Mean Difference
Reading enjoyment time	General	Anatolian	-0.118
		Science	0.007
		Vocational	0.218[*]
	Anatolian	Science	0.125
		Vocational	0.336[*]
	Science	Vocational	0.211

* p <.05

According to post-hoc analysis results for reading enjoyment time statistically significant difference is only found between vocational high school and general, Anatolian high schools.

Differences in reading attitude across school types

In PISA 2009, students' attitude towards reading was assessed through 11 items that were presented in Table 3 in the previous chapter. Figure 3 presents mean differences of reading attitude across four schools. There are two groupings between the means of 10 items; means of the items in the first group vary around 3.00 points and having a high mean score in this group indicates that students have a positive attitude towards reading. On the other hand, means of the items in the second group vary around 2.00 points and having a low mean score in this group indicates that students have positive attitude towards reading. Lastly, low mean scores for the item *waste of time* indicates that students develop positive attitude towards reading.
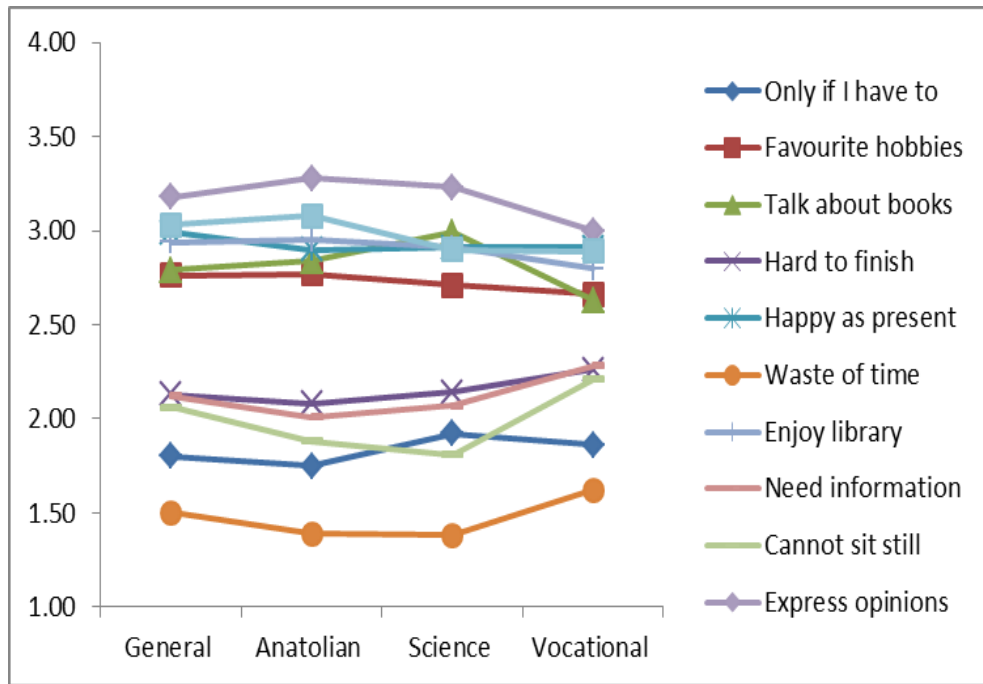
Figure 3. Means of reading attitude across school types

One-Way ANOVA is used to investigate mean differences of reading attitude scores across school types by referring to the PISA 2009 data. Table 6 shows the results of analysis conducted.

Table 6
Results of ANOVA for reading attitude across school types

Item		Sum of Squares	df	Mean Square	F
Only if I have to	Between	6.514	3	2.171	3.009*
	Within	2818.155	3905	0.722	
Favourite hobbies	Between	9.874	3	3.291	4.694*
	Within	2737.697	3904	0.701	
Talk about books	Between	31.590	3	10.530	14.401*
	Within	2843.701	3889	0.731	
Hard to finish	Between	17.928	3	5.976	7.812*
	Within	2988.621	3907	0.765	
Happy as present	Between	7.607	3	2.536	3.762*
	Within	2622.857	3892	0.674	
Waste of time	Between	26.413	3	8.804	17.881*
	Within	1925.257	3910	0.492	
Enjoy library	Between	18.064	3	6.021	9.448*
	Within	2486.183	3901	0.637	
Need information	Between	37.743	3	12.581	16.438*
	Within	2986.439	3902	0.765	

Table 6 (continued)
Results of ANOVA for reading attitude across school types

Can not sit still	Between	56.158	3	18.719	23.762*
	Within	3072.307	3900	0.788	
Express opinions	Between	41.934	3	13.978	24.897*
	Within	2195.180	3910	0.561	
Exchange	Between	24.019	3	8.006	10.654*
	Within	2942.736	3916	0.751	

* p <.05

According to the results, statistically significant mean difference is found for all items. This means that, there are significant mean differences in reading attitude scores across school types. In order to further investigate sources of mean differences across school types, post-hoc analysis is conducted for reading attitude in which significant differences were found.

Table 7
Results of post-hoc tests for reading attitude across school types

Item	School Type (i)	School Type (j)	Mean Differences
Only if I have to	General	Anatolian	0.051
		Science	-0.119
		Vocational	-0.055
	Anatolian	Science	-0.170
		Vocational	-.0106*
	Science	Vocational	0.064
Favourite hobbies	General	Anatolian	-0.005
		Science	0.054
		Vocational	0.107*
	Anatolian	Science	0.059
		Vocational	0.112*
	Science	Vocational	0.053
Talk about books	General	Anatolian	-0.047
		Science	-0.201*
		Vocational	0.159*
	Anatolian	Science	-0.154
		Vocational	0.206*
	Science	Vocational	0.360*

Table 7 (continued)
Results of post-hoc tests for reading attitude across school types

	General	Anatolian	0.057
Hard to finish		Science	-0.009
		Vocational	-0.123[*]
	Anatolian	Science	-0.066
		Vocational	-0.180[*]
	Science	Vocational	-0.115
	General	Anatolian	0.092
Happy as present		Science	0.082
		Vocational	0.087[*]
	Anatolian	Science	0-.010
		Vocational	-0.005
	Science	Vocational	0.005
	General	Anatolian	0.107[*]
Waste of time		Science	0.119
		Vocational	-0.119[*]
	Anatolian	Science	0.012
		Vocational	-0.227[*]
	Science	Vocational	-0.238[*]
	General	Anatolian	-0.010
Enjoy library		Science	0.035
		Vocational	0.144[*]
	Anatolian	Science	0.044
		Vocational	0.154[*]
	Science	Vocational	0.109
	General	Anatolian	0.107[*]
Need information		Science	0.049
		Vocational	-0.163[*]
	Anatolian	Science	-0.058
		Vocational	-0.270[*]
	Science	Vocational	-0.212
	General	Anatolian	0.179[*]
Can not sit still		Science	0.251[*]
		Vocational	-0.149[*]
	Anatolian	Science	0.072
		Vocational	-0.328[*]
	Science	Vocational	-0.400[*]

Table 7 (continued)
Results of post-hoc tests for reading attitude across school types

Express opinions	General	Anatolian	-0.098[*]
		Science	-0.048
		Vocational	0.181[*]
	Anatolian	Science	0.051
		Vocational	0.279[*]
	Science	Vocational	0.228[*]
Exchange	General	Anatolian	0-.051
		Science	0.134
		Vocational	0.147[*]
	Anatolian	Science	0.185[*]
		Vocational	0.198[*]
	Science	Vocational	0.013

$*$ $p < .05$

According to post-hoc results, for general high school statistically significant difference is found for four items over eleven items between it and Anatolian high school; statistically significant difference is found only for two items between it and science high school; statistically significant difference is found for ten items between it and vocational high school. For Anatolian high school, statistically significant difference is found for only one item between it and science high school; statistically significant difference is found for ten items between it and vocational high school. For science high school statistically significant difference is found for four items between it and vocational high school.

Differences in terms of study strategies across school types

In PISA 2009, study strategies were assessed using 13 items that were presented in Table 3 in the previous chapter. Figure 4 presents mean differences of study

strategies across groups of school. It seems that while mean scores of some items such as; *useful outside school* are close to each other, mean scores of some items such as; *read many times* greatly differ across groups of school. In order to make a detailed description about the data in the graph it can be said that, high mean scores for the items *memorize everything*, *memorize details*, *read many times* and *read text repeatedly* indicates that students use memorization while studying on a text. In other respects, frequently use as indicated by high mean scores of the items *relate new information*, *useful outside school*, *relate to experience* and *real life* means that studens use elaboration strategies and make links between what they learn and their prior knowledge, experiences and real life situations. Additionally, high mean scores for the items *figure out*, *check if understand* and *have not understood* indicates that students use control strategies and monitor their learning processes. Also, high mean scores for the item *important points* indicates that students use understanding and remembering strategies during text processing. Finally, frequently use as indicated by high mean scores of the item *additional information* means that students use both control and understanding strategies while studying.
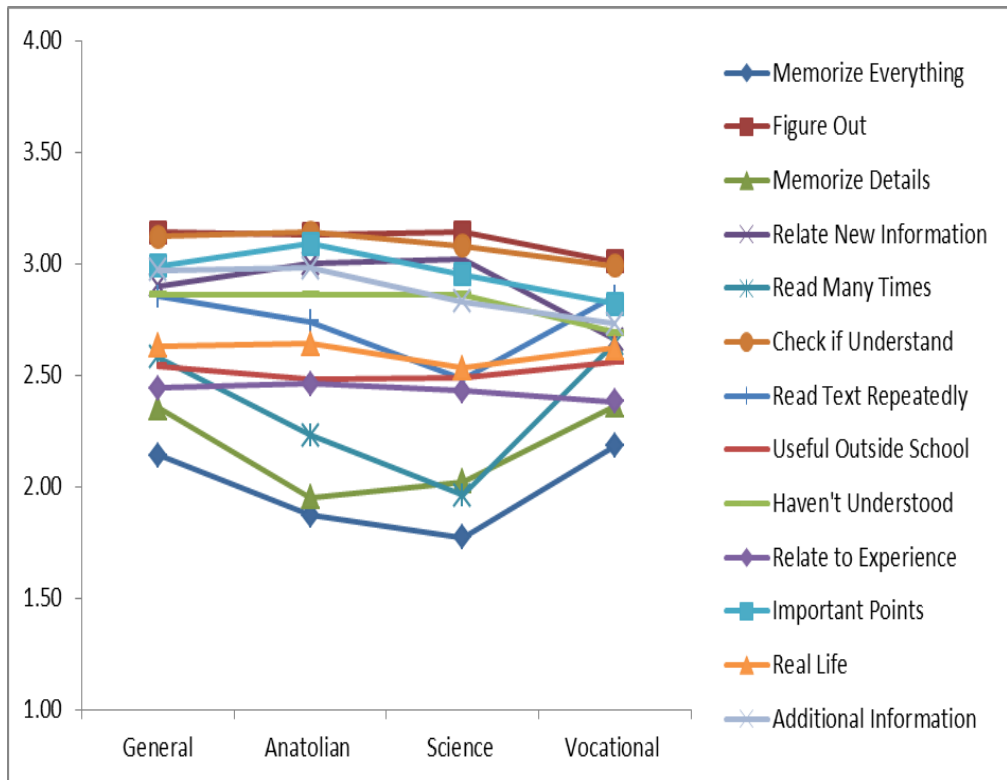
Figure 4. Means of study strategies across school types

One-Way ANOVA is used to investigate mean differences of study strategies scores across school types by referring to the PISA 2009 data. Table 8 shows the results of analysis conducted.

Table 8
Results of ANOVA for study strategies across school types

Item		Sum of Squares	df	Mean Square	F
Memorize Everything	Between	58.541	3	19.514	34.369*
	Within	2224.490	3918	0.568	
Figure Out	Between	14.421	3	4.807	8.192*
	Within	2292.680	3907	0.587	
Memorize Details	Between	104.397	3	34.799	40.672*
	Within	3334.304	3897	0.856	
Relate New Information	Between	65.597	3	21.866	30.056*
	Within	2832.098	3893	0.727	

Table 8 (continued)
Results of ANOVA for study strategies across school types

Read Many Times	Between	116.429	3	38.810	47.697*
	Within	3177.401	3905	0.814	
Check if Understand	Between	14.987	3	4.996	8.445*
	Within	2294.782	3879	0.592	
Read Text Repeatedly	Between	17.442	3	5.814	8.607*
	Within	2625.150	3886	0.676	
Useful Outside School	Between	3.505	3	1.168	1.389
	Within	3253.934	3869	0.841	
Haven't Understood	Between	22.705	3	7.568	11.687*
	Within	2516.534	3886	0.648	
Relate to Experience	Between	4.413	3	1.471	1.837
	Within	3116.885	3892	0.801	
Important Points	Between	37.864	3	12.621	20.506*
	Within	2385.599	3876	0.615	
Real Life	Between	1.221	3	0.407	.551
	Within	2869.758	3884	0.739	
Additional Information	Between	48.943	3	16.314	21.907*
	Within	2910.319	3908	0.745	

* $p < .05$

According to the results, statistically significant mean difference is found for all items except following ones *useful outside school*, *relate to experience* and *real life*. In order to further investigate sources of mean differences across school types, post-hoc analysis is conducted for study strategies in which significant differences were found.

Table 9
Results of post-hoc tests for study strategies across school types

Item	School Type (i)	School Type (j)	Mean Differences
Memorize Everything	General	Anatolian	0.267[*]
		Science	0.368[*]
		Vocational	-0.041
	Anatolian	Science	0.101
		Vocational	-0.308[*]
	Science	Vocational	-0.409[*]
Figure Out	General	Anatolian	0.009
		Science	0.001
		Vocational	0.133[*]
	Anatolian	Science	-0.008
		Vocational	0.124[*]
	Science	Vocational	0.132
Memorize Details	General	Anatolian	0.409[*]
		Science	0.333[*]
		Vocational	-0.008
	Anatolian	Science	-0.075
		Vocational	-0.416[*]
	Science	Vocational	-0.341[*]
Relate New Information	General	Anatolian	-0.095[*]
		Science	-0.120
		Vocational	0.237[*]
	Anatolian	Science	-0.025
		Vocational	0.332[*]
	Science	Vocational	0.357[*]
Read Many Times	General	Anatolian	0.352[*]
		Science	0.620[*]
		Vocational	0-.061
	Anatolian	Science	0.267[*]
		Vocational	-0.413[*]
	Science	Vocational	-0.681[*]

Table 9 (continued)
Results of post-hoc tests for study strategies across school types

Check if Understand	General	Anatolian	-0.024
		Science	0.036
		Vocational	0.126*
	Anatolian	Science	0.061
		Vocational	0.150*
	Science	Vocational	0.090
Read Text Repeatedly	General	Anatolian	0.104*
		Science	0.363*
		Vocational	0.003
	Anatolian	Science	0.260*
		Vocational	-0.101*
	Science	Vocational	-0.361*
Haven't Understood	General	Anatolian	-0.007
		Science	-0.002
		Vocational	0.162*
	Anatolian	Science	0.005
		Vocational	0.169*
	Science	Vocational	0.164
Important Points	General	Anatolian	-0.098*
		Science	0.042
		Vocational	0.172*
	Anatolian	Science	0.141
		Vocational	0.270*
	Science	Vocational	0.129
Additional Information	General	Anatolian	-0.012
		Science	0.140
		Vocational	0.237*
	Anatolian	Science	0.152
		Vocational	0.249*
	Science	Vocational	0.097

* $p < .05$

According to post-hoc results, for general high school statistically significant difference is found for six items over thirteen items between it and Anatolian high school; statistically significant difference is found for four items between it and science high school; statistically significant difference is found for six items between it and vocational high school. For Anatolian high school statistically significant difference is found only for two items between it and science high school; statististically significant difference is found for ten items between it and vocational high school. For science high school statistically significant difference is found for five items between it and vocational high school. Meantime, ANOVA did not find statistically significant mean difference for three items between school types and these items were not included in post-hoc analysis.

Differences in terms of stimulating strategies across school types

In PISA 2009 stimulating strategies were assessed using 7 items that were presented in table 3 in the previous chapter. Figure 5 presents mean differences of stimulating strategies across groups of school. It seems that mean scores of all items differ to some extent and they vary around 3.00 and 2.50 points. High mean scores for the item *explain text* indicates that teachers want students to explain the meaning of the text. Also, high mean scores for the item *better understanding* means that teachers ask questions which enable students to get a better understanding of the text. High mean scores for the items *time to think* and *express opinion* indicates that teachers encourage students to think about the text without time limitaion and comment on the text. Additionally, high mean scores for the items *relate to lives* and *build on*

knowledge indicate that teachers support students in making links between the content of a story or text and their experiences and prior knowledge. Lastly, high mean scores for the item *recommend books* means that teachers make suggestions about a book or an author to students.
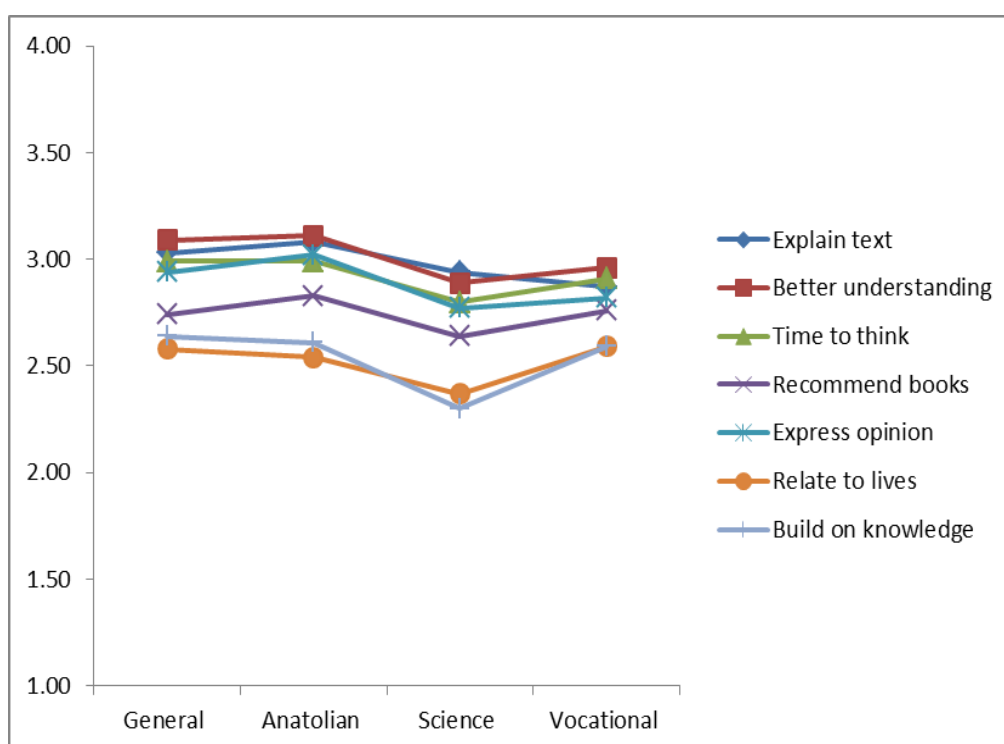
Figure 5. Means of stimulating strategies across school types

One-Way ANOVA is used to investigate mean differences of stimulating strategies scores across school types by referring to the PISA 2009 data. Table 10 shows the results of One-Way ANOVA analysis conducted.

Table 10
Results of ANOVA for stimulating strategies across school types

Item		Sum of Squares	df	Mean Square	F
Explain text	Between	27.492	3	9.164	13.629*
	Within	2633.818	3917	0.672	
Better understanding	Between	17.268	3	5.756	9.025*
	Within	2494.271	3911	0.638	

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Table 10 (continued)
Results of ANOVA for stimulating strategies across school types

Time to think	Between	8.852	3	2.951	4.037*
	Within	2856.007	3908	0.731	
Recommend books	Between	5.485	3	1.828	2.339
	Within	3051.895	3904	0.782	
Express opinion	Between	22.060	3	7.353	10.516*
	Within	2717.953	3887	0.699	
Relate to lives	Between	4.888	3	1.629	1.995
	Within	3184.478	3898	0.817	
Build on knowledge	Between	12.246	3	4.082	5.156*
	Within	3094.049	3908	0.792	

* $p < .05$

According to the results, statistically significant mean difference is found for all items except the items *recommend books* and *relate to lives*. In order to further investigate sources of mean differences between school types, post-hoc analysis is conducted for stimulating strategies in which significant differences were found.

Table 11
Results of post-hoc tests for stimulating strategies across school types

Item	School Type (i)	School Type (j)	Mean Differences
Explain text	General	Anatolian	-0.054
		Science	0.090
		Vocational	0.160[*]
	Anatolian	Science	0.144
		Vocational	0.214[*]
	Science	Vocational	0.070

Table 11 (continued)
Results of post-hoc tests for stimulating strategies across school types

Better understanding	General	Anatolian	-0.026
		Science	0.196*
		Vocational	0.124*
	Anatolian	Science	0.222*
		Vocational	0.150*
	Science	Vocational	-0.072
Time to think	General	Anatolian	0.001
		Science	0.193
		Vocational	0.087*
	Anatolian	Science	0.192
		Vocational	0.085
	Science	Vocational	-0.106
Express opinion	General	Anatolian	-0.075
		Science	0.177
		Vocational	0.122*
	Anatolian	Science	0.252*
		Vocational	0.197*
	Science	Vocational	-0.055
Build on knowledge	General	Anatolian	0.036
		Science	0.343*
		Vocational	0.055
	Anatolian	Science	0.307*
		Vocational	0.019
	Science	Vocational	-0.288*

* $p < .05$

According to post-hoc results, for general high school no statistically significant difference is found between it and Anatolian high school; statistically significant difference is found for two items between it and science high school; statistically significant difference is found for four items between it and vocational high school. For Anatolian high school statistically significant difference is found for three items between it and science high school; statistically significant difference is found for

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three items between it and vocational high school. For science high school statistically significant difference is found only for one item between it and vocational high school. Meantime, ANOVA did not find statistically significant mean difference for two items between school types and these items were not included in post-hoc analysis.

Differences in terms of text understanding and remembering strategies across school types

In PISA 2009, usefulness of text understanding and remembering strategies were assessed through 6 items which were presented in Table 3 in the previous chapter. Figure 6 presents mean differences of text understanding and remembering strategies across groups of school. There is not much difference between the means of related items except the item *read twice* across school types and the mean scores vary around 5.00 and 4.00 points. To make a detailed description it can be said that, high mean scores for the item *underline* indicates that students find it useful to underline important parts of the text in understanding and memorizing the information in it. High mean scores for the items *discuss content* and *summarise* means that students consider both discussing content of the text with other people and summarizing the text with their own words as an effective way of understanding and remembering the content. In other respects, high mean scores for the items *read twice* and *read aloud* respectively indicates that students find it useful to read the text twice and read it loudly to a person in understanding and remembering the knowledge within a text. Finally, high mean scores of the item *easy to understand* means that students find it

useful to focus on easily understandable parts in understanding and memorizing the information in a text.
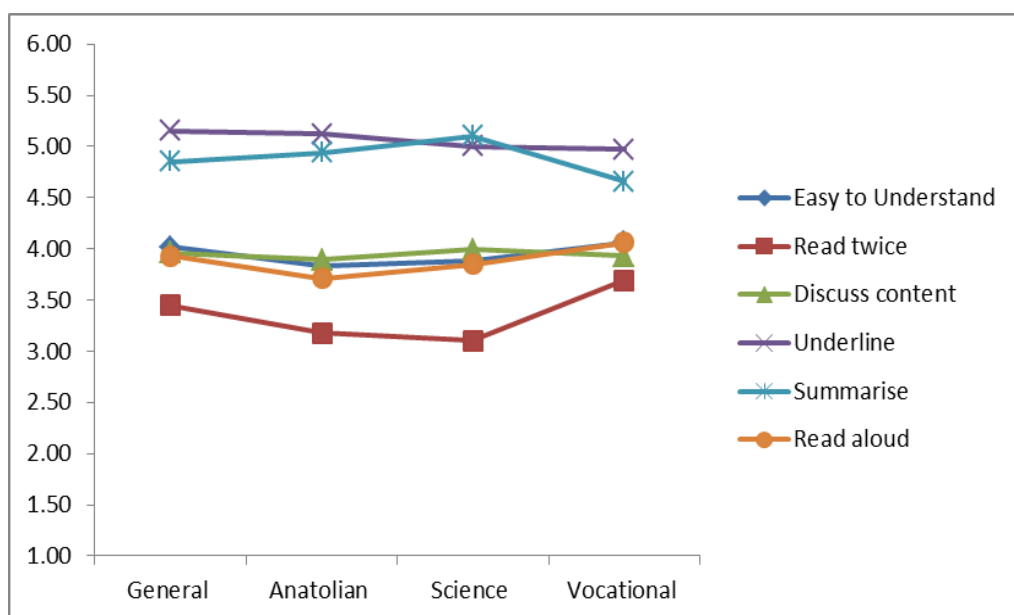
Figure 6. Means of text understanding and remembering strategies across school types

One-Way ANOVA is used to investigate mean differences of text understanding and remembering strategies scores across school types by referring to the PISA 2009 data. Table 12 shows the results of One-Way ANOVA analysis conducted.

Table 12
Results of ANOVA for text understanding and remembering strategies across school types

Item		Sum of Squares	df	Mean Square	F
Easy to Understand	Between	27.383	3	9.128	3.507*
	Within	10066.385	3868	2.602	
Read twice	Between	27.383	3	44.606	16.401*
	Within	10066.385	3866	2.720	
Discuss content	Between	3.114	3	1.038	.394
	Within	10176.311	3859	2.637	

Table 12 (continued)
Results of ANOVA for text understanding and remembering strategies across school
types

Underline	Between	23.452	3	7.817	4.576*
	Within	6607,595	3868	1,708	
Summarise	Between	50.333	3	16.778	8.597*
	Within	7549.038	3868	1.952	
Read aloud	Between	55.571	3	18.524	6.122*
	Within	11706.457	3869	3.026	

* p <.05

According to the results, statistically significant mean difference is found for all items except the item *discuss content*. In order to further investigate sources of mean differences between school types post-hoc analysis is conducted for text understanding and remembering strategies in which significant differences were found.

Table 13
Results of post-hoc tests for text understanding and remembering strategies across school types

Item	School Type (i)	School Type (j)	Mean Differences
Easy to Understand	General	Anatolian	0.195[*]
		Science	0.143
		Vocational	-0.035
	Anatolian	Science	-0.052
		Vocational	-0.229[*]
	Science	Vocational	-0.178
Read twice	General	Anatolian	0.277[*]
		Science	0.353
		Vocational	-0.235[*]
	Anatolian	Science	0.075
		Vocational	-0.513[*]
	Science	Vocational	-0.588[*]

Table 13 (continued)

Results of post-hoc tests for text understanding and remembering strategies across school types

Underline	General	Anatolian	0.029
		Science	0.145
		Vocational	0.172[*]
	Anatolian	Science	0.117
		Vocational	0.144
	Science	Vocational	0.027
Summarise	General	Anatolian	-0.091
		Science	-0.252
		Vocational	0.188[*]
	Anatolian	Science	-0.161
		Vocational	0.279[*]
	Science	Vocational	0.440[*]
Read aloud	General	Anatolian	0.215[*]
		Science	0.078
		Vocational	-0.134[*]
	Anatolian	Science	-0.137
		Vocational	-0.349[*]
	Science	Vocational	-0.213

* $p < .05$

According to post-hoc analysis results, for general high school statistically significant difference is found for three items between it and Anatolian high school; statistically significant difference is found for four items between it and vocational high school. For Anatolian high school statistically difference is found for four items between it and vocational high school. For science high school statistically significant difference is found for two items between it and vocational high school. As well, there is no statistically significant difference found between science high school and general, Anatolian schools. Meantime, ANOVA did not find statistically significant mean difference for the item *discuss content* between school types and this item was not included in post-hoc analysis.

Summary of group differences in terms of reading related variables

Table 14 indicates the differences between school types in terms of reading attitude, study strategies, stimulating strategies, text understanding and remembering strategies. Meantime, (i) before the items in the table indicates that first school type in the comparison has higher mean score for the related item and (ii) indicates that second school type in the comparison has higher mean score for the related item. It seems that reading attitude mostly differs between vocational school and general, Anatolian high schools. However, there is no difference except one item between Anatolian and science high school in terms of reading attitude. Also, while study strategies differ greatly between Anatolian and vocational high school; they are slightly differ between Anatolian and science high school and the items *read many times* and *read text repeatedly* are the most determinant ones on reading achievement across groups of school. In other respect, *additional information* is the least determinant item on reading success. Additionally, there is no significant difference found between general and Anatolian school in terms of stimulating strategies and while *better understanding* is the most determinant item, *time to think* is the least determinant item across school types. Lastly, there is no significant difference found between science and general, Anatolian high schools in terms of text understanding and remembering strategies. Also, *read twice* is the most determinant item and *underline* is the least determinant one across school types.

In brief, it can be said that while maximum mean difference (28 items) was found between Anatolian high school and vocational high school, minimum mean difference (6 items) was found between Anatolian high school and science high school in terms of all reading related variables.

Table 14
Summary table for the findings

	General vs Anatolian	General vs Science	General vs Vocational	Anatolian vs Science	Anatolian vs Vocational	Science vs Vocational
			(i) Reading enjoyment time		*(i)* Reading enjoyment time	
Reading attitude	*(i)* Waste of time	*(ii)* Talk about books	*(i)* Favourite hobbies	*(i)* Exchange	*(ii)* Only if I have to	*(i)* Talk about books
	(i) Need information	*(i)* Can not sit still	*(i)* Talk about books		*(i)* Favourite hobbies	*(ii)* Waste of time
	(i) Can not sit still		*(ii)* Hard to finish		*(i)* Talk about books	*(ii)* Can not sit still
	*(ii)*Express opinion		*(i)* Happy as present		*(ii)* Hard to finish	*(i)* Express opinion
			(ii) Waste of time		*(ii)* Waste of time	
			(i) Enjoy library		*(i)* Enjoy library	
			(ii) Need information		*(ii)* Need information	
			(ii) Can not sit still		*(ii)* Can not sit still	
			(i) Express opinion		*(i)* Express opinion	
			(i) Exchange		*(i)* Exchange	
Study strategies	*(i)* Memorize everything	*(i)* Memorize everything	*(i)*Figure out	*(i)* Read many times	*(ii)* Memorize everything	*(ii)* Memorize everything
	(i) Memorize details	*(i)* Memorize details	*(i)* Relate new information	*(i)* Read text repeatedly	*(i)* Figure out	*(ii)* Memorize details
	(ii) Relate new information	*(i)* Read many times	*(i)* Check if understand		*(ii)* Memorize details	*(i)* Relate new information
	(i) Read many times	*(i)* Read text repeatedly	*(i)* Haven't understood		*(i)* Relate new information	*(ii)* Read many times
	(i) Read text repeatedly		*(i)* Important points		*(ii)* Read many times	*(ii)* Read text repeatedly
	(ii) Important points				*(i)* Check if understand	
					(ii) Read text repeatedly	
					(i) Haven't understood	
					(i) Important points	
					(i) Additional information	

Table 14 (continued)
Summary table for the findings

Stimulating strategies		*(i)* Better understanding	*(i)* Explain text	*(i)* Better understanding	*(i)* Explain text	*(ii)* Build on knowledge
		*(i)*Build on knowledge	*(i)* Better understanding	*(i)* Express opinion	*(i)* Better understanding	
			(i) Time to think	*(i)* Build on knowledge	*(i)* Express opinion	
			(i) Express opinion			
Text understanding and remembering	*(i)* Easy to understand		*(ii)* Read twice		*(ii)* Easy to understand	*(ii)* Read twice
	(i) Read twice		*(i)* Underline		*(ii)* Read twice	*(i)* Summarise
	(i) Read aloud		*(i)* Summarise		*(i)* Summarise	
			(ii) Read aloud		*(ii)* Read aloud	

CHAPTER 5: DISCUSSION

Introduction

The findings of the present study are discussed in this chapter. The discussion begins with an overview of the study which includes information about participants, method of data collection/analysis and the instruments. The overview is followed by major findings and conclusion section. Then, results of the research are examined in terms of their implications for practices and further research. Finally, limitations of the study are described.

Overview of the study

This research aims to find out whether there are differences across school types in terms of reading related variables obtained from PISA 2009 study. School types selected for the present study are; general, Anatolian, science, and vocational high schools. These schools were included since they represented different strata in reading literacy as well as their difference in terms of socio-economic status, student profile and educational resources. Present study investigates whether there is any mean difference across school types in terms of "reading enjoyment time", "reading attitude", "study strategies" "stimulating strategies" and "text understanding and remembering strategies".

Present study was conducted with 3946 Turkish students (enrolled in general, Anatolian, science and vocational high schools) in PISA 2009 data set. For this study, student questionnaire and the reading literacy results were used to investigate differences between school types in terms of reading-related variables

Five dimensions chosen from student questionnaire were analyzed through One-Way ANOVA, and post-hoc tests when necessary, to investigate mean differences across school types.

Major findings and conclusions

The findings for each research question of the study are discussed below:

1. a) Is there any mean difference across school types in terms of reading enjoyment time in PISA 2009?

As presented in Figure 2 and respective analyses reading enjoyment time mean scores differ across groups of school; while Anatolian high school has the highest score, vocational high school has the lowest mean. This finding is in line with the findings in the literature. Naeghel et al. (2014) stated that students enrolled different groups of school have different levels of intrinsic reading motivation.

Students in Anatolian high schools are generally high achivers and may come from more educated families and both their family and school environment may foster reading for pleasure. That's why they are more interested in reading related activities and spend more time for reading enjoyment. Meanwhile, mean of science school is

slightly lower than the mean of general high school. Also, students in vocational school spend less time on reading for pleasure than those in Anatolian, general and science high schools. Considering that vocational high school students are generally from low socio-economic environments, they may also be afford to buy books which can be read for enjoyment alone. Similarly, family awareness of reading may not be so developed that students do not read.

Vocational schools are at the lower strata in terms of reading achievement in PISA, which can explain low attitude toward reading for enjoyment. Also, they may acquired negative experiences about reading in the early years of formal education. That is to say, they may be forced to read the books that they do not want to read by language teachers or those books may not proper to students' level. Because of this, they may not considered reading as an enjoyable activity. The findings related to reading enjoyment time is supported by the findings in the literature. According to Clark and Rumbold, (2006), Fındık and Kavak, (2013), Mikk, (2015) reading enjoyment is positively related with achievement level of students. That is to say, students who read for pleasure have the chance to become successful readers. However, Smith et al. (2012) stated that this relationship differs for grade levels, reporting that while reading for pleasure does not contribute to reading success of fourth graders, it has a moderate relation with reading performance of eight graders.

1. b) Is there any mean difference across school types in terms of reading attitude in PISA 2009?

As presented in Figure 3 and respective analyses mean scores between school types are different from each other in terms of reading attitude. Almost all students develop

positive attitudes towards reading related activities to some extent and consider reading as a worthwhile activity but some of them may have difficulty in finishing a book especially the ones in vocational high school.This may originated from cognitive level of these students, because finishing a book may not be easy for people who has low level of cognitive capacity. As well, the books may not be appropriate to the level of students or students may not find the books enough interesting and intriguing to finish. Also, it may stemmed from amount of reading if they had less reading experience they can barely finish a book. In line with this, Paulson (2006) stated that students who read less tend to become low achiever in reading. Students in Anatolian high school had the highest mean score and unsuprisingly vocational school students got the lowest mean score when making a comparision among groups of school. This finding is supported by few researchers in the literature. Parker (2004) reported that reading attitude has a predictive power on students' reading success and students who has positive attitudes towards reading have the chance to become better readers (Bulut et al., 2012). Noteworthily, mean scores between science high school and general high school are close to each other for some items (e.g. *hard to finish*, *enjoy library* and *need information*) although there is a gap between these schools in terms of reading literacy achievement. This may depend on student profile in general high school, it may consist of both high achieving and low achieving students. Finally it's worth noting that, while some items (e.g. *cannot sit still, waste of time*, *talk about books*) can be more determinant (especially in favor of science school students) than the others in regard to students' reading performance, a few items such as; *happy as present, only if I have to* and *enjoy library* are less determinant on reading achivement. In relation to the former mentioned items in the preceding sentence it can be said that, science high school

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students may have to spend most of their time in school campus and dormitory and they are less exposed to distracting stimulus compared to their peers in other schools. Therefore, they may choose to deal with reading related activies as a leisure time activity. Also, they may have to follow a study program in the evenings while staying in the dorm and spend more time on reading a course book or a fictional book in an atmosphere fostering to study. In other respects, it seeems that students like visiting a library and taking a book as a present but they may not benefit from library resources in an effective way and may not read the book given as a present.

To conclude it can be said that, reading attitude seems to differ between groups of school. Students with higher level of positive attitudes towards reading got better reading scores than their peers who has lower level of positive reading attitude as indicated by school differences. As a supportive finding it was reported in the literature that, there was a positive relationship between reading achievement and reading attitude (Bulut et al., 2012; Fletcher et al., 2012).

1. c) Is there any mean difference across school types in terms of study strategies in PISA 2009?

First of all, it is important to mention that learning strategies used in PISA 2009 study can be classified as elaboration, summarization, understanding and remembering, control and memorization strategies (EARGED, 2010). As presented in Figure 4 and respective analysis it can be said that while mean scores of some items such as; *read many times* and *memorize everything* are greatly differ, mean scores for some items such as; *relate to experience* and *useful outside school* are slightly differ between school types. It's worth noting that students enrolled in

vocational and general high schools use memorization strategies more than students in science and Anatolian high schools. This means that, vocational and general high school students especially the former ones generally use less effective learning strategies while working on a text or studying. This may resulted from study habits used by these students in the past. Also, they may set short-term academic goals (e-g. taking high grade from the exam or just passing the exam) for themselves and prefer to use short-term solutions. Taking into account this finding it can be stated that students who showed low reading achievement tend to use memorization strategies. As a supportive finding in the literature it was reported that, use of memorization strategies can cause low level of reading achievement (Bilican & Yıldırım, 2014; Muszynski & Jakubowski, 2015).

Additionally, Anatolian high school students got the highest mean scores for the items *check if understand*, *additional information* and *important points* which can be considered as control and understanding strategies. This means that, students enrolled in Anatolian high schools are better in monitoring and controlling their learning processes than the students in other groups of school. They are also, better in using understanding and remembering strategies than other students. These may stemmed from cognitive and affective characteristics of students in Anatolian high school, they may be better in goal-setting before studying and working goal-oriented.

Interestingly, mean scores for the items *figure out* and *have not understood* that are related to control strategies are equal to each other between science and general high schools. On the other side, vocational school students got the lowest mean scores in regard to both control and understanding and remembering strategies. To conclude, it can be said that while students with high reading achievement generally use more

effective learning strategies, students with low reading achievement generally use less effective learning strategies. As a supportive finding it was stated in the literature that understanding and remembering and control strategies are positively associated with students' reading success (Bilican & Yıldırım, 2014; Muszynski & Jakubowski, 2015; Mikk, 2015).

Finally, mean scores for the items related to elaboration strategies do not show consistency within groups of school except Anatolian high school. It can be said that students in Anatolian high school got the highest means for the items *relate to experience* and *real life*. Also, they had the second highest mean score for the item *relate new information*. This indicates that students in this school type make more effort in getting more meaningful and permanent learnings through making links between newly acquired knowledge and their prior knowledge and experiences. Besides, they look for correspondence between what they learn and what happens in real life.

1. d) Is there any mean difference between school types with regards to stimulating strategies in PISA 2009?

As presented in Figure 5 and respective analyses mean scores of all items related to stimulating strategies differ across groups of school. It seems that almost all teachers include students in text analysis process through adressing challenging questions which enabling students to have a deeper understanding about the text in most of their lessons. Also, they usually provide supportive learning environment, give enough time to students in working on a solution during the lessons. However, while these practices are mostly observed in the courses in Anatolian high school, less

happens in science and vocational high schools. The reason why teachers in science high school give less time to think on their answers may depending on cognitive characteristics of students in these schools, they can come to a solution quickly and do not need extra time. Also, science high school students may not regard questions enough challenging used in their language and literature lessons.

Additionally, present study reveals that teachers do not usually make links between the subjects discussed in the lessons and students personal experinces and prior knowledge. This may be because of the fact that constructivist approach began to be implemented recently in Turkish education system. So, teachers especially older ones may not be so familiar with the new teaching and learning practices offered by constructivism. Meantime, teachers in vocational and general high schools use above mentioned practices much more in their lessons. This may due the fact that these practices facilitate learning and provide more meaningful learnings and this may be helpful in dealing with students who has low level of cognitive ability. Also, this may stemmed from the awareness about new teaching approaches of younger teachers working in these schools. Finally, teachers in Anatolian high school more promote their students to improve their literary knowledge and pleasure.

1. e) Is there any mean difference across school types in terms of text understanding and remembering strategies in PISA 2009?

As presented in Figure 6 and respective analysis, mean scores of four items related to understanding and remembering strategies differ to a certain degree however, while means of the item *discuss content* are quite close to each other, means of the item *read twice* are quite different from each other across groups of school. Depending on

this finding it can be said that, reading a text twice tends to be most determinant item whereas discussing content of a text may function as the least determinant one between school types. All students find summarising the text and highlighting key points more useful in comprehending and remembering the content of a text than the other strategies. Besides, they consider discussing content and focusing easy parts of a text as moderately effective strategies to understand and remember the information in a book. Additionally, students in science high school are more familiar with effective strategies such as; summarising and discussing content. Surprisingly, students in general high school got the highest mean score for the item *underline* which can be considered as an effective way in understanding and remembering the knowledge. In other respects, students enrolled in vocational and general high schools are more familiar with less effective strategies such as; reading aloud and reading twice and tend to use these strategies while studying on a text. As a consequence, this study reveals that being aware of effective reading and understanding strategies differ among students with high reading achievement and low reading achievement. However, results about general high school do not fully overlap with this finding, they have high level of awareness about two of the effective reading and understanding strategies although they didn't showed expected level of reading performance in PISA study. This may due to the fact that, they also regard less effective strategies (e.g. *read aloud* and *easy to understand*) as an effective way in understanding a text and they may use these strategies while working on the text. The findings related with this variable are in line with the findings in literature to some extent. It was reported that, students who are aware of effective reading comprehension strategies tend to be more successful in reading literacy. (EARGED, 2010)

Implications for practice

Results of this study may have important implications for teachers, school principals families and policy makers. This study reveals that reading enjoyment time and reading attitude differ across groups of school. While students in Anatolian high school spend more time on reading for pleasure and have higher positive reading attitude; students in vocational school spend less time on reading for pleasure and have lower level of positive reading attitude. In other respect, means of reading enjoyment time for students in science and general high school are very close to each other and science high school students got higher reading attitudes than the students in general high school.

First of all, all responsible actors (families, teachers and school principals) should work collaboratively to improve reading skills and foster reading for enjoyment at an early age. Schools can prepare family-supported reading programs both in kindergarten and primary school. These reading programmes can include activities about phonological awareness, letter recognition, story creation and predicting event's choronology which were proved to be effective in contributing to the development of reading skills by Büyüktaşkapu (2012).

It was reported in the literature that family literacy plays an important role in acquiring reading skills (Gül, 2007). So, family members can be a role model as a reader for their kids; they can set a regular time for reading in a day or a week, everyone can read the book that they want to read in these reading sessions and they can discuss or talk about the books after reading and rewarding system can be used

for little kids if they do not want to attend these reading sessions. Also, parents can assist to their kids if they have difficulty in letter-word recognition, reading fluency and understanding meaning of the words, phrases and sentences during these reading sessions. Children can improve positive attitudes toward reading, have the pleasure of reading and obtain reading habit in such a family atmosphere.

As well, there are some reading practices and learning strategies proved to be effective in enhancing students' positive attitudes toward reading in the literature. For instance, Fletcher et al. (2012) reported that teachers used "reading aloud" as a way of addressing students' imagination about the text and used "questioning" as a way of increasing students' interest about the text. Also, it enables students to get a deeper understanding about the text. So, teachers in Turkey can use these practices and learning strategies in the first years of primary school in order to foster reading attitude and reading skills of students.

Additionally, language and literature teachers should set a regular time for reading in their lessons, provide different kinds of fictional and nonfictional books to students and these books should be appropriate to students' level and interest. Teachers should not force students to read the books that they offer, because this may lead students to improve negative attitudes toward reading. They should let students to select the books that they want to read. Sustained silent reading strategy in which students and teachers can read their own chosen books can be used in these reading sessions. Williams (2014) reported that sustained silent reading strategy can be useful in order to improve students' reading skills. As well, teachers can enhance students' reading motivation through creating a safe learning environment in which students can share their opinions about the books they are reading and teachers can talk about their

reading experiences and reward students with books proper to their interest and level. Meantime, apart from language and literature teachers other subject area teachers such as history, philosophy and science teachers can allocate some time for reading in their regular lessons and provide reading material about their course's content for students in order to enhance their reading performance.

Furthermore, teachers can arrange reading clubs after regular courses, they can decide with students to read a common book. They can use different places for reading in order to enhance students' reading attitude and joy of reading. They can use school library, if it is possible they can take students somewhere out of school such as; a park, a book cafe or they can arrange school trips to the public or university libraries which build up passion to read. Teachers can use discussion-based approach which included collaborative reasoning, instructional conversation, literature circle and questioning the author and was found to be useful in increasing students' reading comprehension capacity (Goldman, 2009) in reading clubs.

They can also, want students to prepare a poster about the characters and events in the books, prepare a documentary about the book or the author or make a movie about the events in the book. Thus, it may be possible to address students with different types of intelligence and turn reading as an enjoyable and informative activity for more students. However, it may not be possible to implement these practices with science and vocational high school students; while science high school students do not want to spend time with these activities, students in vocational school may not take much responsibility during the process and they may not have enough

resources because of their parents' socio-economic status. So, these recommendations can be more useful for Anatolian and general high school students.

Additionally, some students may have the desire to read book but they can not decide what to read or they may not know which books are appropriate for their reading level and interest. So, teachers can introduce some specific books in literature and language courses, they can make suggestions about a book or an author to students. Besides, MoNE can prepare informative videos about the books included in the list of 100 books to be read for students. These can be more helpful for students coming from socio-culturally disadvantaged families. Also, graphic novels or pictured books can be used to increase reading attitude and enjoyment of students in vocational and general high schools. Because, it may be easy to read these kind of books for low achievers in reading.

On the other hand, researchers mentioned that social literacy and cultural structure of a society can have a contribution on students' reading and academic achievement (Çobanoğlu & Kasapoğlu, 2010). So, there should be something done to improve literacy and cultural level of Turkish society. For instance, there can be more cultural and art programmes on TV channels in the day time and socio-economically disadvantaged people and students can have free access to participate in cultural and art activities. Besides, there should be more public libraries in city centers and these libraries should provide more culturally relevant books.

Another notable finding of this study was that, while low achievers use less efficient learning strategies such as, memorization strategies; high achievers use more effective strategies (e.g. summarization and control strategies) during studying.

Teachers should inform students especially the ones in vocational and general high schools about the fact that memorization strategies may be useful in remembering factual knowledge and requiring low level of reading skills however they are not useful in comprehending content of a text or analysing and interpreting the knowledge in a text and do not provide permanent learnings. Additionally, they can introduce effective learning strategies to students, use those strategies during the lessons and scaffold students until they learn to use them effectively.

Furthermore, teachers can stimulate students through implementing active learning techniques, asking challenging questions during processing a text and they can promote active involvement of students in evaluating the text and reconstructing its meaning as it was implemented and proved to be effective in Finnish and Korean language and literature courses (Çobanoğlu & Kasapoğlu, 2010; Bozkurt, 2014).

Finally, school principals should make cooperation with language and literature teachers in implementing an effective school-wide reading instruction programme and they should find financial resource to establish a school library.

Implications for further research

The present study investigated differences between school types in terms of some selected variables. In nature, this study employed a causal comparative design. Designing some experimental studies to investigate the cause and effect relationship between reading related variables and reading literacy is recommended. Also some qualitative studies can be useful to gather in-depth information from students and

teacher about reading. In this study, reading literacy strata were defined using different school types. However, defining reading literacy using a more objective way is also recommended. Another suggestion may be a study in which the relationship between reading literacy and reading-related variables are more directly defined. In this study, schools were used as strata which showed variation in reading literacy.

Limitations

In this study, reading related information was collected from students via questionnaires including close ended items. Therefore, these semi-structured questions may limit students' options about the answers. If students were asked open-ended questions about reading related items then their answers and the results may be different. Also, the information collected was limited to students' perspectives. Number of school types included in the present sudy can also be considered as a limitation.

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