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Programme for International Student Assessment (PISA) Reading Competencies: A Study of the Factors in Academic Reading

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ABSTRACT The purpose of the present study is to identify the explanatory and predictive correlations between the awareness of meta-cognitive strategies in reading, teacher stimulation, reading attitude, and the frequency of academic reading in light of the PISA 2009 dataset. The study was based on the data in Turkey revealed by PISA, a project carried out by the OECD. The measurement models were formed by the data on a total of 3781 students after incomplete data were excluded, and an attempt was made to test the models where reading attitude served as full mediator or partial mediator. The findings suggested that the awareness of meta-cognitive strategies in reading and teacher stimulation had a positive influence on reading attitude, which, in turn, positively affected the frequency of academic reading. In addition, reading attitude served as partial mediator of the effect that teacher stimulation and the awareness of strategies had on the frequency of academic reading. It can be concluded that it will be a step in the right direction for teachers to stimulate their students during reading activities and to teach them how to use strategies. Acquired through experiences, positive reading attitude can contribute to students' academic experiences.

INTRODUCTION

Carried out by the Organization for Economic Co-operation and Development (OECD) every three years, the Programme for International Student Assessment-PISA is an international survey study intended to measure the extent to which fifteen-year-olds can use the knowledge and skills they have acquired. The project is basically focused on mathematical literacy, scientific literacy, and reading literacy (EARGED 2010; OECD 2012). The PISA 2009 dataset provides significant data, especially on the factors associated with reading performance. Although it primarily based its survey on reading, nevertheless, it is essential to know the factors in students' reading performance so that the data can be transformed into useful information. The reason for this is that high-quality learning outcomes are a prerequisite for high-quality individuals. In fact, education is a vital factor that influences the extent to which nations can get developed economically and acquire a sustainable international competitive capacity (Maya 2013). In this respect, PISA provides reliable data not only for policy-makers**,** but also for researchers in a nation (OECD 2010; OECD 2012). A review of literature indicates that studies linked with the PISA data on Turkey essentially focus on a comparison of different countries (Acar 2012; Aydin et al. 2011), mathematical literacy (Akyüz and Satici 2013), factors associated with achievement in physical sciences (Anil 2011), and criticisms over the assessment of results (Gur et al. 2012). However, reading literacy differs from other domains in that it constitutes a basic component of scientific literacy and mathematical literacy. As a matter of fact, students need to be able to fully understand what they are reading, to come with accurate deductions, and to establish meaning on a subject or problem before they can become mathematically and scientifically literate (Akyol 2008; OECD 2010).

In its 2000 test, PISA primarily focused on such variables as reading attitude, interest in reading, the habit of reading, and reading behavior as well as basic reading skills. In 2009, unlike other years, PISA incorporated certain factors like teacher stimulation, reading engagement, and meta-cognition into its reading domain, not only because it's considered "good reading skills and knowledge" insufficient on its own but also because it was necessary to take into account changing reading environments and motivational characteristics. These factors are called cognitive both because they are closely intertwined with behavioral and motivational aspects of reading and because they

have a direct influence on the process by which meaning is constructed (OECD 2010). The PISA 2009 reading framework provides a wide range of findings on motivational and meta-cognitive behaviors, which are assumed to be important in reading literacy (OECD 2013). Especially in recent years, it has been reported that reading literacy is influenced by reading motivation, reading attitude and the use of comprehension strategies more than external factors (Guthrie and Wigfield 2000). Even so, these factors are often neglected in research concerning PISA data on nations. Therefore, the path analysis for the present study deals with such variables as reading attitude, the awareness of strategies, teacher stimulation in reading, and the frequency of academic reading, since the explanatory and predictive correlations among these variables are not clear enough. All things considered, it is necessary to take a deeper look into these factors in reading literacy.

Reading Attitude

McKenna et al. (2012) define reading attitudes as "acquired predispositions to respond in a consistently favorable or unfavorable manner with respect to aspects of reading" (p. 285). To them, the formation of attitudes is influenced by direct experiences with, beliefs about and social norms concerning the object (McKenna et al. 2012).

Research has identified a positive correlation, not only between reading attitude and reading achievement (Martínez et al. 2008) but also among reading activities (Kaniuka 2010; Whittingham and Stephanie 2009) and recreational reading in free time (Stokmans 1999). Individuals need to go through positive reading experiences so that they develop a positive attitude to reading. According to McKenna et al. (1995), positive reading outcomes contribute to the development of positive attitudes to reading, whereas negative reading outcomes lead to the development of negative attitudes to reading. When children have been through positive reading experiences, they are more likely to have self-confidence in reading. In turn, reading attitudes acquired in this way will provide them with advantages in their academic life (Wang 2000).

Meta-Cognitive Strategies and Attitude

Constructivism, which has been attached with a great deal of importance, especially in recent years, has caused the focus to shift from single-type reading activities to those enriched with different methods (Günes 2013; Courtney and Gravelle 2014). In reading environments characterized by various methods in which text structure is differentiated, students need reading strategies in order to be able to understand the text in a better way. Thus, reading strategies need to be taught in the classroom, and also students should be encouraged to use them (Klapwijk 2012). Among these strategies, the primary one is meta-cognitive reading strategies. The reason for this is that they help one to better understand what he/she is reading (Dabarera et al. 2014). Those students who make use of such strategies can comprehend what they read in a better way than others, and they are different from other readers in terms of their awareness of the reading process (Koliæ-Vehovec 2006). The strategies used by such readers with advanced reading skills are essentially divided into three, namely knowing the text and learning its content, monitoring one's own reading performance, and assessing reading in different dimensions (Afflerbach and Cho 2010). Knowing the text and learning its content play a decisive role in the process by which the reader brings his/her prior knowledge into the reading environment, sets a reading objective, and assembles different parts of a text. Monitoring one's own reading performance enables him to control his comprehension, to compare his prior knowledge to what he is reading, to test his predictions, and to form mental images. A reading activity operated in this way allows one to understand a text better (Afflerbach and Cho 2010; Akyol 2008; Mokhtari and Reichard 2002). Students who use strategies are more successful in reading activities, and the positive outcomes they have acquired are considered by them as positive reading experiences. Positive experiences, in turn, help them develop a positive attitude to the object. In fact, it is asserted that attitudes acquired through direct experiences are easier to observe and they can lead to a stronger behavior-attitude relationship (Hogg and Vaughan 2011). The relationship is also the case for the reading skill. In particular, one's experiences in early home and school literacy environments have an effect on their later literacy experiences (Levitt and Red Owl 2013). It can be argued that one can develop a positive attitude in environments marked by a strong relationship between direct experi-

ences and cognitive process, as is the case for the use of strategies (Hogg and Vaughan 2011). In fact, Payne and Manning (1992) provided fourth grade students with training in meta-cognitive reading strategies and observed that the experimental group improved their comprehension, learned about reading strategies, and developed a positive attitude to reading.

Teacher Stimulation in Reading

During reading activities, teachers should talk to their students about the text and ask them to explain the text; in this way, students' attention can be maintained and they can focus on the given subject (Akyol 2008). In addition, teachers should provide their students with an opportunity to question themselves, to think about their deductions, and assess their own learning. The underlying idea is that such exercises contribute to students' higher-level learning (Gunes 2013). The frequency of such activities is measured in PISA as a separate factor, which is called teacher stimulation. Teacher stimulation is regarded as a significant factor in students' reading engagement. Without reading engagement, even normal students might have difficulty in learning how to read in school (Verhoeven 2011). PISA tests, consider the following activities as part of teacher stimulation: recommending books to students, encouraging them to explain their ideas, and enabling them to form a connection between their experiences and what they are reading (OECD 2012). Through stimulation, teachers can use text content and student activities to make it easier for students to start being interested in reading (Guthrie et al. 2006). Such stimulation also leads students to develop positive reading experiences.

Academic Reading

There is a positive correlation between reading attitude and the frequency of reading, or maintaining reading behavior (Logan and Johnston 2009). Considering the interplay between attitudes and behaviors, it is expected that a positive attitude will lead to a corresponding influence on reading behavior. In fact, attitude has a direct effect on reading intention and maintaining it (Mathewson 2004). Therefore, it can be argued that the outcomes of reading skills that are constantly used and updated will positively affect their academic experiences. In one study, Pretorius (2002) asserts that reading skills are a powerful indicator of academic performance. In PISA tests, one of the dimensions of reading literacy is the frequency of academic reading based on text interpretation. Reading activities concerning text interpretation require one to maintain his/her attention for a long time, to use strategies, and to have a certain level of reading ability. Nevertheless, it is not clear enough how much reading attitude affects the frequency of academic reading. Therefore, studying the interplay between the two in reference to data from PISA will contribute to a reorganization of national educational policies and better assessment of the factors in reading literacy.

It is one of the objectives in any curriculum to enable students to get involved in academic reading and thus to get developed both academically and socio-culturally. Considering the positive correlation between the development of a nation and high-quality educational outcomes, the importance of education becomes self-evident. In this respect, PISA provides quite reliable data. All things considered, the purpose of the present study is to identify the explanatory and predictive correlations between the awareness of meta-cognitive strategies, teacher stimulation, reading attitude, and the frequency of academic reading. The hypotheses formed in accordance with the purpose as well as model relationships are as follows (Fig. 1).

- ***H1:*** There is a positive correlation between teacher stimulation and reading attitude.
- ***H2:*** There is a positive correlation between teacher stimulation and the frequency of academic reading.
- ***H3:*** There is a positive correlation between the awareness of strategies and reading attitude.
- ***H4:*** There is a positive correlation between the awareness of strategies and the frequency of academic reading.
- ***H5:*** There is a positive correlation between reading attitude and the frequency of academic reading.
- ***H6:*** Reading attitude serves as partial moderator between teacher stimulation and the frequency of academic reading.
- ***H7:*** Reading attitude serves as partial moderator between the awareness of strategies and the frequency of academic reading.

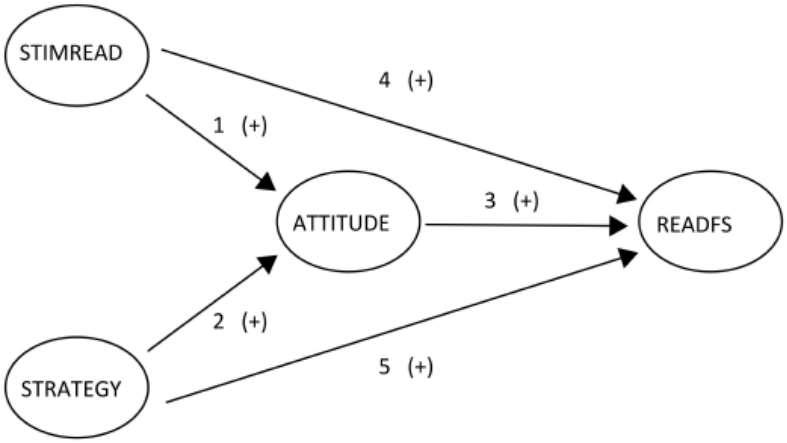

Fig. 1. The theoretical model

METHODOLOGY

Participants

The participants of the study were a total of 4996 fifteen-year-olds from Turkey who took part in the 2009 PISA test (OECD 2013). Before the data were analyzed, lost or incomplete data were excluded through listwise, and the analysis was conducted on the data of 3781 students.

Measurement Tools and Statistical Analysis

Structural equation modeling (SEM) was used in the study so as to identify the explanatory and predictive correlations among the latent variables. SEM is a statistical method that can comprehensively reveal the correlations between the structures confirmed through measurement models (Hoyle 1995; Simsek 2007). The two-step approach was adopted for the present study, considering its advantages over models in which the structural model and the measurement model are operated simultaneously. In the approach, the structural model and the measurement model were analyzed independently of one another, since they are of different natures (Simsek 2007). The study was carried out by the accessible part of the 2009 PISA data on Turkey (OECD 2013). In PISA 2009, the awareness of meta-cognitive strategies in reading (STRATEGY) was rated in six options (1=Not useful at all, to 6=Very useful); teacher stimulation (STIMREAD) in another four options (1=never or hardly ever, to 4=In all lessons); reading attitude (ATTITUDE) in four more options (1=strongly disagree, to 4=strongly agree); and the frequency of academic reading based on interpretation (READFS) in four recoded options (1=Not at all, to 4=Many times) (OECD 2012). The items used for each dimension of reading were as follows: ST41Q01-06 for the awareness of meta-cognitive strategies, ST37Q01-07 for teacher stimulation, ST24Q01-11 for reading attitude, and RFS1Q04, RFS2Q02-03 and RFS2Q05 for the frequency of academic reading based on interpretation. The following are sample items for each dimension: "After reading the text, I discuss its content with other people" for the awareness of strategies, "The teacher encourages students to express their opinion about a text" for teacher stimulation, "Reading is one of my favorite hobbies" for reading attitude, and "During last Month, how often did you have to read the following kinds of tasks for school (in classroom or for homework)? - Explain the cause of events in a text" for the frequency of academic reading (OECD 2012; OECD 2013). The data were analyzed through SPSS (2007) and LISREL (Jöreskog and Sörbom 2006).

RESULTS

Findings of the Explanatory and Confirmatory Factor Analyses

The first thing to do was to consider the reliability coefficients of the measurement models formed for the latent variables. The coefficients

for each dimension were as follows: α=0.64 for the awareness of strategies, α=0.85 for teacher stimulation, α=0.85 for reading attitude, and α=0.72 for the frequency of academic reading. Next, the Kaiser-Meyer-Olkin test and Bartlett's test of sphericity were used to determine whether the data were suitable for factor analysis (KMO=0.891; Bartlett's test of sphericity χ^2=29066.641, df=378, p<0.01). Seeing that the KMO value was higher than 0.80 and Bartlett's test of sphericity yielded a value which was significant at the level of p<0.01, the sample size was sufficient and the data were suitable for factor analysis (Hutcheson and Sofroniou 1999; Ozdamar 2011). Afterwards, an explanatory factor analysis was conducted using Varimax rotation so as to identify how much contribution would be made to the model by the latent variables to be included in the model and the components of these variables. Following the analysis, the items ST24Q06, ST24Q09, ST41Q02 and ST41Q02 were excluded, for they were loaded under other factors. The second analysis yielded four factors with eigenvalues higher than 1. The components made a significant contribution to the formation of latent variables (Table 1). The reliability coefficients for the latent variables ranged from 0.63 to 0.85, suggesting that they were reliable enough to be used in public surveys (Ozdamar 2011). After the explanatory factor analysis revealed that the latent variables were completely differentiated from each other, a confirmatory factor analysis was carried out to determine the extent to which the structures could be confirmed (Fig. 2).

A look at the standardized values for the confirmatory factor analysis suggested that all the

Table 1: The results of the explanatory factor analysis for the components

Components	*M*	*SD*	*Attitude*	*Stimread*	*Readfs*	*Strategy*	*á*
ST24Q03	2.76	.853	.729				.84
ST24Q02	2.73	.840	.711				
ST24Q07	2.90	.803	.692				
ST24Q08	2.86	.875	.656				
ST24Q04	2.85	.871	.651				
ST24Q05	2.95	.817	.642				
ST24Q11	3.00	.866	.631				
ST24Q01	3.20	.843	.581				
ST24Q10	3.15	.764	.519				
ST37Q05	2.92	.836		.759			.85
ST37Q07	2.61	.889		.739			
ST37Q06	2.56	.900		.739			
ST37Q02	3.05	.788		.728			
ST37Q03	2.96	.857		.695			
ST37Q04	2.77	.884		.688			
ST37Q01	2.98	.825		.621			
RFS2Q03	3.17	.973			.795		.72
RFS2Q02	3.23	.931			.795		
RFS2Q05	3.43	.856			.729		
RFS1Q04	3.42	.865			.537		
ST41Q05	4.85	1.387				.745	.63
ST41Q04	5.09	1.300				.699	
ST41Q06	3.93	1.735				.630	
ST41Q03	3.95	1.611				.601	

ATTITUDE=Reading attitude, STIMREAD=Teacher stimulation, READFS= Frequency of academic reading, STRATEGY= Awareness of strategy.

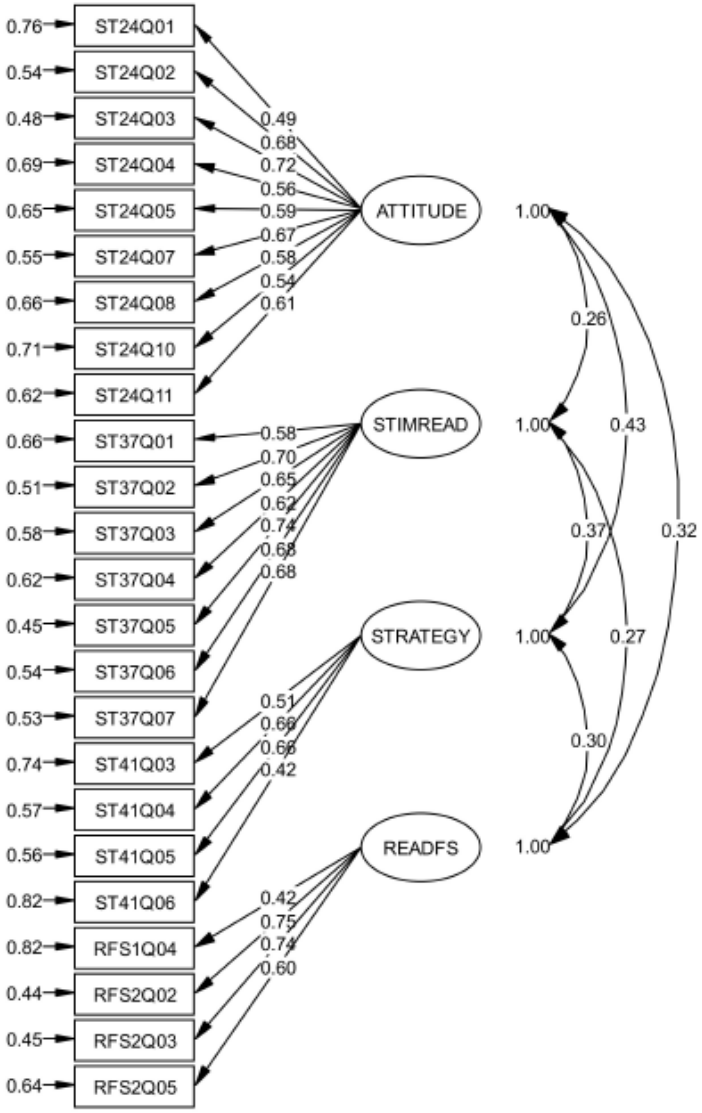

Fig. 2. The confirmatory factor analysis (Standardized values)

path coefficients between the latent variables were significant, and the components made enough contribution to the formation of the latent variables (Fig. 2). The chi-Square value for the CFA model was χ^2=2577.52, df=246, p=0.000. However, these indicators could not be used to assess the models sufficiently, due to chi-square tests being quite sensitive to sample size (Kline 2011). Therefore, it is necessary to take into account other goodness of fit indexes, namely goodness-of-fit index (GFI), root mean square error of approximation (RMSEA), normed fit index (NFI), and comparative fit index (CFI). RMSEA values lower than 0.08 stand for good fit whereas one lower than 0.05 represents perfect fit. GFI, CFI and NFI values higher than 0.90 suggest good fit while values higher than 0.95 represent perfect fit (Brown 2006; Jöreskog and Sörbom 1993; Schumacker and Lomax 2004; Tabachnick and Fidell 2001; Simsek 2007). An assess-

ment of the findings in reference to the standards above suggested that the goodness of fit indexes were perfect for the present study. (RMSEA=049, CFI=0.96, GFI=0.95, NFI=0.96).

The Findings on the Model

First, an attempt was made to test the model for which reading attitude served as full mediator. The goodness of fit indexes of the model had the following values: RMSEA=051, CFI=0.96, GFI=.094, and NFI=0.96 (Fig. 3). The correlation between teacher stimulation and reading attitude was found to be β=0.13, p<0.01; the one between the awareness of strategies and reading attitude β=0.39, p<0.01, and the one between reading attitude and the frequency of academic reading β=0.33, p<0.01. The correlations in the model where reading attitude served as full mediator were significant and positive.

For the test of mediation, the path number 4 and 5 (Fig. 1) were added to the full mediator model one by one, and the improvement in the model was assessed through the chi-square test of significance and goodness of fit indexes. First, the path number 4 (Fig. 1) was added to the model in order to determine the extent to which ATTITUDE mediated between STIMREAD and READFS. After the path was added to the model, the chi-square test yielded a positive result (102.11, p<0.05). The values for the goodness of fit indexes were as follows: RMSEA=0.050, CFI=0.96, GFI=0.95, and NFI=0.96. The coefficient of the path number 1 decreased from 0.13 to 0.12 whereas the one from the path number 3 decreased from 0.33 to 0.27. With the addition of the path number 4, there was a decrease in the coefficients of the paths number 1 and 3, and all the paths were significant. All these suggested that ATTITUDE served as partial mediator between STIMREAD and READFS. This finding confirmed Hypothesis 6.

Next, the path number 5 (Fig. 1) was added to the model to determine the extent to which ATTITUDE could mediate between STRATEGY and READFS. The process was assessed through the chi-square test of significance and goodness of fit indexes. After the path was added to the model, the chi-square test yielded a positive result (91.18, p<0.05). However, no change was observed in the other goodness of fit indexes. The path number 2 decreased from 0.39 to 0.38 whereas the path number 3 decreased from 0.33 to 0.22. All the path coefficients in the model were significant. The finding indicated that ATTITUDE served as partial mediator between STRATEGY and READFS, which confirmed Hypothesis 7. Afterwards, the path number 4 and 5 were both added to the full mediator model in Figure 3, and the structural model was tested.

The goodness of fit indexes of the model in Figure 4 had the following values: RMSEA=049, CFI=0.96, GFI=0.95, and NFI=0.96. Particular improvement was observed in RMSEA and GFI when compared to the previous models. There were significant and positive correlations be-

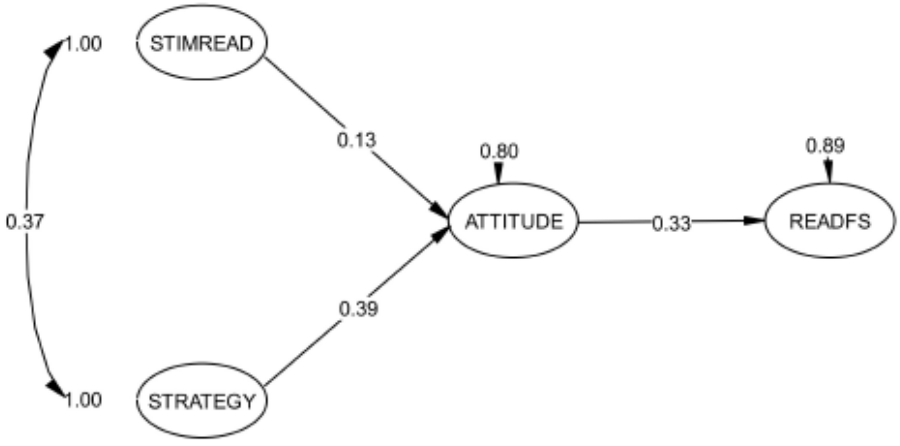

Fig. 3. The model for which reading attitude served as full mediator (Standardized values)

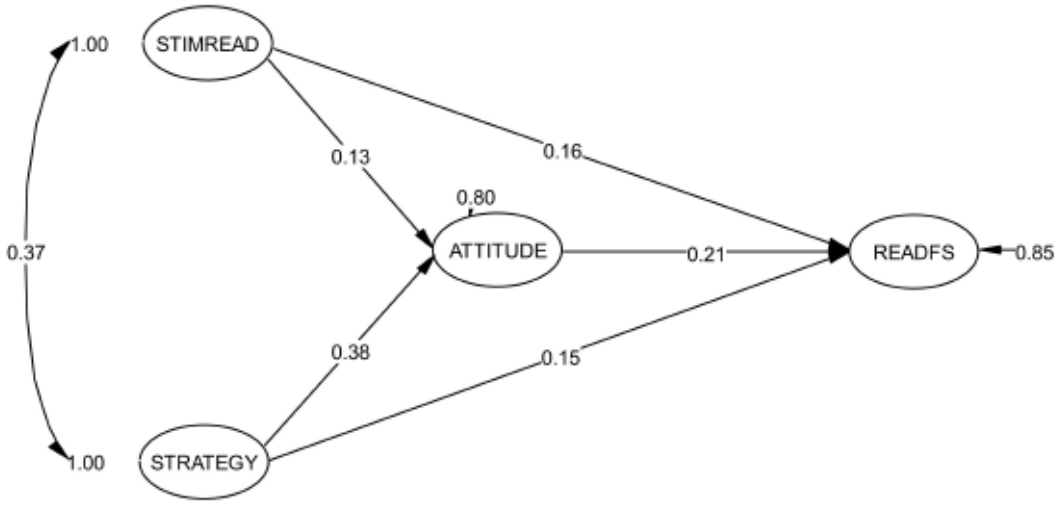

Fig. 4. The model for which reading attitude served as partial mediator (Standardized values)

tween teacher stimulation and reading attitude (β=0.13, p<0.01) and between teacher stimulation and the frequency of academic reading (β=0.16, p<0.01). The findings confirmed Hypothesis 1 and Hypothesis 2. Similarly, there were significant and positive correlations between the use of strategies and reading attitude (β=0.38, p<0.01) and between the use of strategies and the frequency of academic reading (β=0.15, p<0.01). These findings confirmed Hypothesis 3 and Hypothesis 4. Likewise, there was a significant and positive correlation between reading attitude and the frequency of academic reading (β=0.21, p<0.01). The finding also confirmed Hypothesis 5.

DISCUSSION

The purpose of the present study is to identify the explanatory and predictive correlations between the awareness of meta-cognitive strategies in reading, teacher stimulation, reading attitude, and the frequency of academic reading in light of the PISA 2009 dataset. In accordance with the purpose, the model was tested after the comparative measurement models had been obtained from the analyses. The awareness of meta-cognitive strategies in reading had a positive influence on reading attitude. The finding is in parallel with the theoretical notion that direct experiences affect the formation of attitudes (Hogg and Vaughan 2011). Similarly, Al-Tamimi (2006) reported that students who are taught how to use reading strategies develop a positive attitude to reading. In addition, Payne and Manning (1992) observed that fourth grade students who participated in their study developed a positive attitude to reading after they had been provided with training in meta-cognitive reading strategies. In their study, Chen and Intaraprasert (2014) observed that the students with stronger reading skills used reading strategies more often and had a higher strategic awareness when compared to those with weaker reading skills. Similarly, Alhaqbani and Riazi (2012) argued that meta-cognitive strategic awareness could help students not only with reading**,** but also with effective use of the acquired language. In addition, Keskin (2013) reported the use of strategies in reading as a predictor of both academic and general reading attitudes. Likewise, Courtney and Gravelle (2014) concluded from their study that the experimental group, subject to multiple strategies rather than one single strategy, got higher scores in reading skills and attitudes when compared to the control group. Hagen et al. (2014) found note-taking strategies in multiple-text reading as a significant predictor of comprehension performance. All these findings suggest that students' awareness and use of strategies affect their

reading attitudes, performance, and comprehension skills.

Better understanding, in turn, directly affects students academic achievement, and subsequent satisfaction also helps them develop a positive attitude (Martínez et al. 2008; Mathewson 2004). Considering that these effects are positive experiences in reading on the part of the individual, it can be argued that they can develop positive reading attitudes. In this respect, the finding revealed in the structural model that students with awareness of reading strategies have positive reading attitudes is supported by previous research in the literature. The finding also seems to suggest that individuals who acquire more attainments concerning their reading objective through the use of strategies are more likely to develop a positive attitude to reading when compared to those who do not get such attainments. Therefore, students should be taught about meta-cognitive strategies in reading and encouraged to use them in order to have positive experiences and, in this way, develop a positive attitude to reading.

Another relationship identified in the model is the effect of teacher stimulation on students' reading attitude. In other words, the findings revealed by the present study suggest that the development of reading attitude is influenced by teacher stimulation. PISA 2009 considers the following activities as parts of teacher stimulation: asking students to explain the meaning conveyed by the text, recommending books to them, and encouraging them to explain their ideas about the subject in question. According to Akyol (2008), such stimulating activities enable students to interact with the text and turn students into active participants. In their study, Guthrie and Cox (2001) recommend that particular conditions, environments and activities for reading should be prepared for a time period that could last for one year so that students can be enabled to acquire reading engagement. They believe that the development of affective characteristics like motivation in reading does not happen overnight**,** but are acquired over a particular time period. Considering that positive and constant experiences are a prerequisite for the development of attitudes, teacher stimulation can help students develop positive attitudes. In fact, the finding of the present study suggests a correlation between teacher stimulation and positive attitudes to reading.

Another finding of the present study is that reading attitude influences the frequency of academic reading. The finding is essentially and theoretically supported by Mathewson's (2004) idea in his reading attitude model that reading attitude plays a decisive role in reading intention and behavior. Similarly, Stokmans (1999) reports that general reading attitude has an effect on recreational, or non-academic, reading activities. Although Stokmans's finding does not directly support the findings of the present study, nevertheless, it shows, to some extent, the effect of reading attitude on the frequency of reading.

Seeing that the measurement tools used by PISA are a result of long research and comprehensive tests, it seems even more important to translate such data into information. In this respect, an assessment of PISA data and incorporation of practices and activities into curriculum in accordance with the results of the assessment are also useful for preparing students for PISA tests. Furthermore, schools and teachers are among the components of students' immediate social circle. In fact, Broeder and Stokmans (2013) have reported earlier that one's social circle and reading attitude are direct factors in his/her reading behavior. However, these factors change from one society to another. These two authors reported different findings on reading behavior from a sample that included Beijing, the Netherlands and Cape Town. In this regard, it may be essential to collectively consider both Broder and Stokmans' (2013) warnings about social circle and Guthrie and Cox's (2001) suggestion that sustainable environments should be taken into account for reading engagement. Such a collective consideration is likely to provide implications for reorganization of reading environments**,** especially in underdeveloped or developing societies, where individuals are involved in less reading.

CONCLUSION

The present study concludes that teaching students how to use meta-cognitive strategies in reading contributes to their development of a positive attitude to reading, in the process provides them with direct experiences. The acquired reading attitude, in turn, plays a decisive role in the frequency of academic reading. In addition, the frequency of academic reading is also directly influenced by the awareness of strategies. Sim-

ilarly, teacher stimulation is instrumental for not only reading attitude**,** but also for the frequency of academic reading. Considering the model used in the study, the fact that reading attitude serves as a partial mediator actually presents three basic things that students should be provided with. These are the awareness of meta-cognitive strategies, teacher stimulation, and reading attitude. The frequency at which students are involved in academic reading gets increased when they are taught about these and encouraged to use them.

RECOMMENDATIONS

For future studies, since the data analyzed in the present study were on fifteen-year-old students, different results can be revealed by studies on different age groups. Accordingly, future research could use the same model or different ones for different age groups and grades. Furthermore, further studies could test different models in which the use of strategies and social environment are used as stimulants for recreational reading attitude. Alternatively, they could attempt to verify similar models through data on other countries.

On the basis of the general trend in the literature and the results of the present study, it can be asserted that enabling students to have positive experiences in reading activities can contribute to their development of positive attitudes. Therefore, particular importance should be attached to ensuring that students will have positive experiences in reading. Moreover, they can be encouraged to develop positive attitudes to reading if they are stimulated by their teachers as regards to reading. Similarly, teaching meta-cognitive strategies in reading and having students use them are just as important as the reading skill. Hence, students should be explained as to what strategies that should be learnt in academic texts and why they should be learned, thus enabling them to gain awareness of such strategies.

LIMITATIONS

The study had several limitations. Firstly, the study was based on the PISA 2009 data on Turkey. Secondly, all the data were collected by PISA through likert-type scales, which might have prevented students from fully expressing their ideas or emotions. Finally, it may sometimes be impossible to achieve cultural equivalence for questions used in such international examinations.

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