Croatian Journal of Education
Vol.25; No.2, pages: 491-525
Original research paper
Paper submitted: 28th November 2021
Paper accepted: 12th April 2022
https://doi.org/10.15516/cje.v25i2.4671

The Variation in Turkish Students' Reading Skills Based on PISA 2018: The Effects of the Teaching and Learning Process

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Abstract

Revealing the effect of the learning-teaching process on reading literacy is essential as it can undergo intervention and as it is one of the essential elements of the curriculum development process. The purpose of this study is to investigate the differences between low and high-performing schools in Turkey concerning the teaching and learning process using PISA 2018 data set. The PISA 2018 reading literacy test and student questionnaire were used as data collection tools. Descriptive analysis and Binary Logistic Regression were performed. Regression analysis indicated that disciplined classes, transfer of knowledge, mental readiness, and limitation of mental effort positively affected students' reading skills. On the other hand, adequate support had adverse effects on students' reading skills.

Key words*: PISA2018, reading literacy, the learning-teaching process.*

Introduction

The factor that makes societies stronger has been 'knowledge' with the replacement of 'Industrial Society,' where production processes are at the forefront and industrial products constitute the economy's basis, with 'Information Society' (Saygılı, 2013). The information society has turned the individual into one who researches, thinks critically, has problem-solving skills, is creative, can quickly adapt to change, and more importantly, can be the subject of change (Kültekin, 2006). It has become a requirement for countries to adopt education systems for economic, political, and social development. Societies that do not fulfil this requirement remain outside the modern world and lose their privilege of having a say in shaping the ongoing formation in the contemporary world (Saygılı, 2013). For this reason, it is thought that countries

should be in continuous education reform to keep up with this age where information and technology are rapidly produced and consumed. For these reforms to achieve their goals, they should evaluate their education systems both at the national and international level, to have the opportunity to compare themselves.

The most recognized international exams in which countries participate widely are International Reading Skills Development Project (PIRLS), International Science and Mathematics Study (TIMSS), and International Student Assessment Program (PISA). In these exams, besides large-scale academic achievement tests, student, parent, and school questionnaires are applied, and the country's profile of specific variables is revealed. Therefore, it can be said that the data obtained from these tests and surveys guide countries in increasing student competencies and improving education systems.

PISA is an international survey conducted at three-year intervals to evaluate the knowledge and skills of 15-year-old students in Mathematics, Science, and Reading. The comparable information provided in this study provides a comprehensive assessment of the situation of preparing 15-year-old students for life, and the information included in student, parent, and school questionnaires have an essential place in conducting scientific research in terms of determining the factors affecting success and the differences in implementation between countries (Anıl, 2009). The PISA project was first implemented in 32 countries in 2000, focusing on reading literacy in this practice. The emphasis was placed on mathematics literacy and science literacy in the next three years, respectively. Finally, in the evaluation conducted with the participation of 79 countries in 2018, the field of reading literacy was emphasized.

Reading literacy

For individuals living in a rapidly changing information society, it is important that they possess reading literacy, and that they adapt to this change, which is one of the four basic language skills, is increasing to adapt to this change (Coşkun, 2002). Coşkun (2002) emphasized the importance of reading with the sentence "the developing and leading societies are the societies created by reading people" (p.5). By reading, individuals learn about what is happening all over the world, how other people live, and about places they will never see; They can develop their feelings and thoughts, learn to look tolerantly towards people and nature, and increase their knowledge and manners (Aslanoğlu, 2007; Kuzu, 2004, Obalı, 2009).

It should not be forgotten that having the skill to readdoes not mean being literate, rather it is having the mental activity that includes understanding, interpreting, synthesizing, and evaluating words perceived through the senses (Çiftçi, 2007). If an individual does not have linguistic and textual structure knowledge while reading, they cannot use appropriate strategies while analyzing the text, cannot perform reading effectively for a specific purpose and task (Çiftçi, 2007; Dökmen, 1994; Ülper, 2010), cannot understand the text while reading it at a certain speed (Arıcı, 2008); reading cannot go beyond a passive activity where only words that make up the written text

are recognized (Altın, Ekiz, & Odabaşı, 2011). The reading skill, in a nutshell, is a multifaceted process that includes research, learning, interpretation, discussion, and critical thinking (Batur & Alevli, 2015).

Factors associated with reading literacy

The studies conducted show that the success of reading literacy was affected by the socio-economic level of the family (Anılan, 1998; Arıkan, Vijver, & Yağmur, 2017; Aslanoğlu, 2007; Aydın, Erdağ, & Taş, 2011; Bradshaw, Burge, & Wheater, 2010; Bölükbaşı, 2010; Coşkun, 2003; Çalışkan, 2000; Çoban, 2020; Dämmricha & Triventib, 2018; Kahraman & Çelik, 2017; Kaldan, 2007; Krashen, Lee, & McQuillan, 2010; Linnakyla, Malin, & Taube, 2004; Maslowski, Scheerens & Lutyen, 2007; National Foundation for Educational Research, 2003; Öztürk, 2010; Rowe, 1995; Jehangir, Glas & Berg, 2015; Willms, 2001); teacher-student relationship (Kayır, 2012; Lee, 2012; Yıldırım, 2002), teachers'attitudes towards students (Chang & Bangsri, 2020; Çoban, 2020; Yıldırım, 2002), the size of the school (Çelik & Yurdakul, 2020), teachers' education level (Çelik & Yurdakul, 2020), classroom climate (Kayır, 2012; OECD, 2010), students' gender (Kasapoğlu, 2014; Linnakyla, Malin, & Taube, 2004; Marks, 2008; Maslowski, Scheerens, & Lutyen, 2007; Torppa, Eklund, Sulkunen, Niemi, & Ahonen, 2018), the teaching strategy used by the teacher (Kayır, 2012), the learning strategies used by the students (Chai & Zhu, 2017), and the reading strategies used by the students (Kayır, 2012; Yıldırım, 2002). On the other hand, it was not affected by the school starting age (Suggate, 2009) and academic pressure (Lee, 2012).

Learning-teaching process

The learning-teaching process constitutes the process dimension of educational programs (Demirel, 2019); it is the stage where all plans turn into practice. OECD (2019) characterizes this process as the heart of education. It can be said that the effectiveness of this process is the crucial point in achieving or not reaching the goals of the curriculum. OECD (2019) defined the learning-teaching process as classroom practices and teacher behaviours that shape the learning experience and support children's cognitive and socio-affective development and handle them under three headings: teacher qualifications and professional development, teaching practices, and learning time.

Under the '*Teacher Qualifications and Professional Development*' heading the following was examined: whether the teacher is a permanent teacher, how many schools s/he is working at the same time, whether s/he needs to take on an additional job, her/his economic status, the school s/he graduated from, her/his teaching experience, the in-service training s/he attended, the teaching strategies s/he used in the classroom, her/his attitude towards the profession. Participation in teacher surveys was voluntary, and 19 countries volunteered (OECD, 2019). Since the countries included in this study did not participate in the teacher survey, teacher qualifications were excluded. However, questions examining teacher qualifications are included in the teacher questionnaire.

'*Teaching Practices*' comprises three fundamental dimensions: class climate, teacher support, and cognitive challenge. Under the *'Class Climate'* heading, classroom management and the teacher's willingness were evaluated. Classroom management has been addressed to provide a suitable environment for students to learn. The student questionnaires had related questions, i.e. whether the classroom environment was quiet enough, whether there was a suitable environment for students to focus on the lesson, whether the students listened to the teachers or not. Questions in the student questionnaire evaluating the teachers' enthusiasm focused on whether the teacher was enthusiastic while lecturing and the impression s/he had on the students during the lecture. '*Teacher Support*' includes the full cognitive and affective support teachers provide to students during the course. '*Cognitive Challenge*' stands for how teachers deal with the factors that make it difficult for students to learn. Chew and Cerbin (2021) reported nine cognitive difficulties affecting students' learning (students' attitude towards the lesson, metacognition, and self-control, students' fear, and lack of trust towards the teacher, insufficient prior knowledge, misconceptions, ineffective learning strategies, inability to convey what has been learned, Selective attention restrictions and mental effort). To cope with these difficulties, teachers can explain the importance of the lesson, give reflective assignments, use brilliant feedback, respect students' ideas, not discriminate between students, give digital exams and activities before the lesson, deal with incomplete prior knowledge, and focus on strategy teaching.

To determine the '*Learning Time*,' the number of hours per week for native language, mathematics, science, and foreign language lessons, open-ended questions were included in student questionnaires.

Purpose of study and research questions

The purpose of the study is to investigate the differences between the low and high-performing schools in Turkey concerning the teaching and learning process using PISA 2018 data set. The following questions were asked to reach the aim of the study:

1 What is related to the learning-teaching process that predicts the reading literacy achievement of low and high-performing schools according to PISA 2018?
2 How do the relationships between learning-teaching process factors and reading literacy differ in low- and high-performing schools?

The importance of study

Available literature indicates that a lot of studies have revealed that parents' economic level, education levels, such as school factors, gender, and strategy, affect reading literacy success but very few studies attempt to explore the role of the learning-teaching process in predicting students' reading achievement based on PISA 2018 findings. Since the learning-teaching process and reading achievement with respect to the PISA 2018 data set have not been widely present in the research literature so far, this paper attempts to explore the role of the learning-teaching factors in predicting

students' reading achievement based on the PISA 2018 Turkish data set and thus to fill that gap in the literature.

It is much more difficult to intervene in socio-economic factors than the learning-teaching process. Because of that, revealing the effect of learning-teaching processes on reading literacy is essential in not only being intervenable but also a necessary element of curriculum development processes. Policy makers and stakeholders may consider the results of this study in designing curriculum. In addition to this, school principals and teachers may consider the results of this study in designing learning environment. In this sense, the results will provide several implications to regular and continuous curriculum development studies. What is more, data were obtained from a large-scale application to increase the generalizability of the results, thus increasing the significance of the study.

Research methods

The simple comparative research design investigated the differences between low and high-performing schools in Turkey concerning the teaching and learning process based on PISA 2018 data set. This research design compares at least two groups of variables to reveal the factors influencing the outcome (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2010; Gay, Mills & Airasian, 2006).

Sample

Students participating in PISA 2018 constitute the universe of this study. The target population of PISA 2018 is 15-year-old students, and 710,000 students participated in the exam, representing approximately 31 million students in the 15-year-old age group continuing their education in 79 participating countries (OECD, 2019). Seven hundred ten thousand students who took the exam were selected using the two-stage stratified sampling method. At least 150 schools from each country were selected among the schools where 15-year-old students studied first. UPon selecting the schools, lists of 15-year-old students were prepared for each of them, and 42 students were selected from each school using the random sampling method; this number may have dropped below 42 in some schools in parallel with the number of students studying but not below 20 (OECD, 2019).

This study's sample comprises 6890 15-year-old students from Turkey who participated in PISA 2018. The demographic features of the sample are presented in Table 1.

Table 1
Demographic features

		Turkey	
		f	%
Participants	Female	3396	49.3
	Male	3494	50.7
	Total	6890	100

For the present study, low and high-performing schools in the PISA reading test were selected through several steps, resulting in 6890 students. These steps are presented in Figure 1.

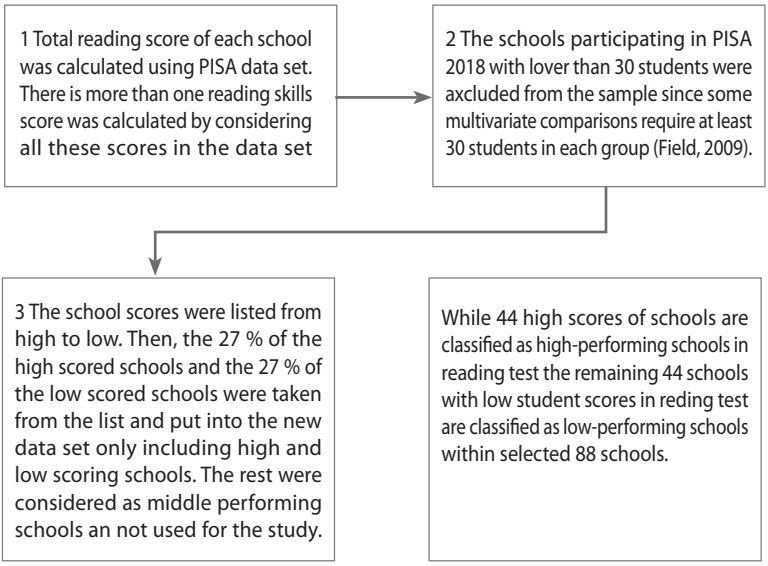

Figure 1. Steps of Selecting the Low and High Performing Schools

Table 2 shows the classification of 88 schools.

Table 2
Classification of 88 schools according to reading skills (n=3357)

	School		Student	
	f	%	f	%
Low performing	44	50	1551	46.2
High performing	44	50	1806	53.8

Instrument

In the PISA 2018 evaluation process, achievement tests (Reading - Mathematics - Science), Student Questionnaire, School Questionnaire, and Teacher and Parent Questionnaire were used to reveal the profile of students' knowledge and skills. While 70 of the 79 participating countries participated in computer-based cognitive tests and questionnaires, the remaining nine countries participated in the paper-pencil test (OECD, 2019). The present study considered reading test scores and some student questionnaire parts for the research questions.

Reading test

In PISA 2018, unlike the fixed test application administered in previous years, an individualized test application was conducted; in other words, the students' question

booklets did not have a fixed structure. However, this computer-based application was carried out in 70 countries, and the fixed booklet application adopted in last years was implemented in the other nine countries (OECD, 2019). The subsequent question changes with respect to the student's answer to the previous question. While some of the questions are prepared as multiple-choice, some of them are open-ended questions. The cognitive process distributions of the questions are shown in Table 3.

Table 3
Distribution of Reading Test Questions

Cognitive Processes	Sub-Cognitive Processes	%
Accessing Information	Browse and find information in a text	15
	Selecting relevant texts	10
Understanding	Real meaning	15
	Making inferences	30
Evaluation/ Reflection	Assessing quality	20
	Identifying and dealing with conflicts	10

(source: T.R. Ministry of Education, 2019)

Reading levels start from the simplest, i.e. 1a and 1b levels. At level 1a, the information from the text is clearly stated, and the reader is expected to understand the main idea of the text, its purpose and relate it to daily life. At the 1b level, rather than written texts, information is presented in form of lists, figures, and graphics, and the reader is expected to establish superficial relationships based on this information. At the second level, the reader is expected to determine the main idea, establish a connection between different parts of the text, associate similarities, or differences with daily life by adding personal experiences depending on the features of the text. At the third level, readers are expected to find and classify similarities and differences in different texts. Students are expected to create a new fiction at the fourth level depending on the question asked. The fifth level requires that the reader makes makes a critical evaluation considering detailed information in the text. At the 6th level, it is expected that the student interprets abstract concepts, critically evaluates uncommon issues, and forms hypotheses. The number of students reaching the fifth and sixth levels is deficient (Aşıcı, Baysal, Erkan, Tezcan, & Aydemir, 2019).

Each student's reading literacy success score was given as ten different points in the data set as 'PV1READ, PV2READ, PV3READ, PV4READ, PV5READ, PV6READ PV7READ, PV8READ, PV9READ, PV10READ'. In the present study, each student's reading literacy success score was calculated using the arithmetic mean of the scores.

Student questionnaire

The PISA 2018 Student Questionnaire consists of 49 items containing questions about general characteristics of students (class, age, gender, etc.), students' family background (parents' education and work status, family assets, number of books at home, etc.), students' views on reading (attitude towards reading, reading activities in daily life,

reading self-efficacy, use of the library, etc.), the exercises used in the school's reading environment and teaching, school libraries, the school's technological equipment, etc. The questionnaire was administered immediately after the achievement test, and each student was given 35 minutes to complete it (OECD, 2019).

As stated before, in the present study, the learning-teaching process variable will be examined under two headings: teaching practices and learning time. For the present study, eight items (ST97, ST100, ST102, ST104, ST152, ST211, ST212, and ST213) were related to the teaching practices, and an open-ended item (ST059) was found to be related to learning time.

The selected eight items related to teaching practices consist of 30 sub-items, and all of them were prepared in a 4-point Likert type. The selected 30 items were subjected to exploratory factor analysis (EFA) using principal component analysis (PCA) to examine the teaching practices' factor structure. The initial solution of EFA showed eight dimensions having Eigenvalues higher than 1. The eigenvalues of the determined factors, respectively; 9.655; 2.770; 2.434; 1.699; 1.426; 1.126; 1.106 and 1.002. A Scree Plot Chart (Slope Deposition Plot) was examined to confirm the number of factors. The Scree Plot Chart reached is given below;

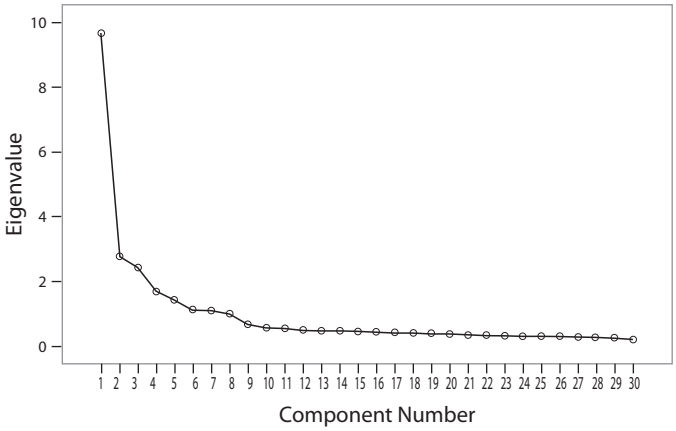

Figure 2. Screen Plot Chart

The Scree Plot Chart also shows that eight factors are in sharp descent, confirming the eight dimensions. The contribution of these factors to the total variance is 70.72 %. EFA was rerun with 30 items for eight factors using the Direct Oblimin rotation method, which assumes the correlation among the factors to observe item factor loadings and the items corresponding to these factors. All the items were considered for further analysis since their factor loadings were higher than .40 (Abell, Springer, & Kamata,2009). Table 4 presents factor loadings and factor structures based on EFA.

Table 4

Factor structures and loadings of selected items

Item codes and names	Components							
	1	2	3	4	5	6	7	8
ST213- The teacher showed enjoyment in teaching.	.923							
ST213- It was clear that the teacher likes to deal with the topic	.891							
ST213- It was clear to me that the teacher liked teaching us.	.863							
ST213- The enthusiasm of the teacher inspired me.	.829							
ST097-There is noise and disorder.		.822						
ST097-Students don't start working for a long time.		.798						
ST097-Students cannot work well.		.795						
ST097-The teacher has to wait for students to quiet down.		.788						
ST097-Students don't listen to what the teacher says.		.767						
ST100- The teacher shows an interest in students' learning.			.863					
ST100- The teacher gives extra help when students need it.			.861					
ST100- The teacher helps students with their learning.			.790					
ST100- The teacher continues until the students understand.			.722					
ST104- The teacher tells me in which areas I can improve.				.905				
ST104- The teacher tells me how I can improve myself.				.841				
ST104- The teacher gives me feedback on my strengths.				.777				
ST211- The teacher listened to my view on how to do things.					.911			
ST211- I felt that my teacher understood me.					.884			
ST211- The teacher made me feel confident in my ability.					.861			
ST152- The teacher helps students relate the stories they read to their lives.						.873		
ST152- The teacher shows students how the information in texts builds on the prior knowledge.						.844		
ST152- The teacher encourages students.						.825		
ST152- The teacher poses questions that motivate students to participate actively.						.690		

Item codes and names	Components							
	1	2	3	4	5	6	7	8
ST102- The teacher presents a short summary.							.842	
ST102- The teacher asks questions to check whether we have understood what was taught.							.779	
ST102- The teacher tells us what we have to learn.							.766	
ST102- The teacher sets clear goals for our learning.							.647	
ST212- The teacher changes the lesson's structure to a topic most students don't understand.								.800
ST212- The teacher adapts the lesson to my class's needs and knowledge.								.790
ST212- The teacher provides individual help when a student has difficulties understanding a subject.								.773

The factors are later named according to the typical characteristics of the items loaded on the same factor and based on the PISA 2018 report (OECD, 2019). Factor names, distribution of items to factors, and properties of items are presented in Table 5.

Table 5
Factor Names and Characteristics

		Factor name	Factor number	Item number	Sub-items	Characteristics of items
1. Teaching Practices	1.1. Class Climate	1.1.a Teacher's Enthusiasm	1	ST213	4	4-point Likert
		1.1.b. Classroom Management	2	ST97	5	
	1.2. Teacher Support	1.2.a Cognitive Support	3	ST100	4	4-point Likert
		1.2.b Affective Support	4	ST104	3	
	1.3. Cognitive Challenge	1.3.a Student's Fear and Lack of Confidence	5	ST211	3	4 point Likert
		1.3.b Transfer of Knowledge	6	ST152	4	
		1.3.c Mental Readiness	7	ST102	4	
		1.3.d. Limitation of Mental Effort	8	ST212	3	

As shown in Table 5; The *Enthusiasm of the Teacher* variable addressed in the Classroom Climate sub-dimension was measured with ST213, consisting of 4 sub-items. The teacher's enthusiasm decreases as the value approaches one and increases as it approaches four. On the other hand, the *Classroom Management* variable was measured with ST97, consisting of 5 sub-items. It is concluded that there is an undisciplined environment in the classroom as it approaches one, and class discipline increases as it comes four.

The *Cognitive Support* variable addressed in the Teacher Support was measured with ST100, consisting of 4 sub-items. However, in this variable, the coding was reversed, i.e. 'Every Lesson = 1'… 'None = 4'. Since the increased score is expected to be interpreted positively during the analysis phase, the coding was reversed to avoid any misunderstanding. After reversing, the teacher's support decreases as the score approaches one and increases as the score approaches four. The variable *Affective Support* was measured with ST104, consisting of 3 sub-items. As the score approaches 1, the teacher's affective support decreases and increases as the score approaches four.

In the domain of *Cognitive Challenge,* the teacher's precautions to cope with the students' fears and lack of confidence were measured in ST211, consisting of 3 sub-items. Teachers' precautions to cope with the students' fear and lack of confidence decrease as the score nears one and increases as it reaches four. The *Transfer of Knowledge* variable was measured with ST152, consisting of 4 sub-items. The methods used by the teacher to enable the students to transfer their knowledge decrease as the score approaches one and increases as it reaches four. The student's *Mental Readiness* variable was measured with ST102, consisting of 4 sub-items. However, this variable is coded as 'Every Lesson = 1'… 'None = 4'. Since the increased score is expected to be interpreted positively during the analysis, the coding was reversed to avoid any misunderstanding. After reversing, the teacher's contribution to the students' mental readiness decreases as the score approaches one and increases as it approaches four. ST212, consisting of 3 sub-items, measures the teacher's measures to deal with mental effort limitation. Teachers' actions to cope with the students' mental effort increase as the score approaches one; the decrease comes four.

Validity and reliability of data collection tools

A consortium of participants from each country prepared the questions to ensure the study's scope validity (OECD,2019). The prepared items were sent to a group of field experts including assessment and evaluation experts, and expert opinion was obtained. Each country commented on the suitability of the items prepared for their culture and program and the questions' difficulty. After making sure that the questions had scope validity for each country, the translation process started. Translations were done based on the reverse translation method to avoid inequality between national tests. The surveys and questions were first translated into the native language. The surveys and questions translated into the native language were translated back into the primary language, and the first text and the last translated text were compared (OECD,2019).

In this study, reliability analysis was performed separately in the countries' data sets for each factor emerging in the factor analysis. Cronbach's alpha reliability coefficients of the dimensions were calculated. Cronbach's alpha reliability coefficients of each sub-dimension are presented in Table 6.

Table 6
Factors' Cronbach's Alpha values

Factor number	Factor name	Turkey α
1	Teacher's Enthusiasm	.91
2	Classroom Management	.85
3	Cognitive Support	.85
4	Affective Support	.85
5	Student's Fear and Lack of Confidence	.87
6	Transfer of Knowledge	.85
7	Mental Readiness	.79
8	Limitation of Mental Effort	.75

As shown in Table 6, Cronbach's alpha coefficients are between.75 and .91 in Turkey.

Data analysis

The data analysis process was carried out in two stages: descriptive analysis and procedural analysis. First, data from Turkey were extracted from the collective data set comprising data from all the countries participating in PISA. Data was first subjected to descriptive analysis in order to recognize the data sets, clean them, and prepare for further analysis. Upon completion of the descriptive analysis, the data set were subjected to Binary Logistic Regression.

Findings

The findings are discussed under two headings: descriptive analysis findings and procedural analysis findings.

Descriptive analysis findings

According to the descriptive analysis results, since the missing data rate for each sub-dimension is not more than 5 %, the 'replace with mean' procedure was applied (Çokluk, Şekercioğlu, & Büyüköztürk, 2009). After the missing data analysis, standardization of independent variables was performed for outlier analysis. Considering the '-4, +4' range of Z score, no extreme point was found in the data sets (Hair, Black, Rabin, Anderson, & Tahtam, 2006). In addition to these, the percentage and frequency values of the students' answers to the questions were examined in the descriptive analysis phase.

Procedural analysis findings

During the procedural analysis, firstly, Binary Logistic Regression assumptions were tested. As mentioned in the descriptive analysis results, since the missing data rate for each sub-dimension is not more than 5 %, the 'replace with the mean' procedure was applied (Çokluk et al., 2009). The sample sizes provide at least 20 people for each independent variable and 50 people for each dependent variable.

To test multicollinearity and singularity, multiple correlation analysis was performed. The results are given in Table 7.

Table 7
Correlation coefficients

	Teacher's Enthusiasm	Classroom Management	Cognitive Support	Affective Support	Fear and Lack of Confidence	Transfer of Knowledge	Mental Readiness	Limitation of Mental Effort
Teacher's Enthusiasm	-	.32	-.33	.44	.50	.51	-.34	.45
Classroom Management		-	-.21	.22	.23	.31	-.20	.28
Cognitive Support			-	-.31	-.27	-.36	.58	-.38
Affective Support				-	.42	.52	-.38	.51
Fear and Lack of Confidence					-	.38	-.27	.41
Transfer of Knowledge						-	-.43	.51
Mental Readiness							-	-.39
Limitation of Mental Effort								-

As shown in Table 7, the correlation values among the variables ranged from .21 and .58. Neither multicollinearity according to .80 criteria nor singularity according to 1 criterion (Tabarknic and Fidel, 2002) were observed.

The omnibus test of model coefficients which represents the change in the amount of information explained by the model was significant [$\chi 2$ (11) = 328.856, p<.001]. This result indicated that a list of independent variables associated with the teaching and learning process were predictors which significantly differentiate the low and high-performing schools in reading skills. Hosmer & Lemeshow test results were insignificant, [p = .496], which implies that observed data were not significantly different from the predicted values from the model (Field, 2009). Being insignificant in this result means that model has good harmony. The classification table indicated that 63.8 % of the cases in low and high performed groups were classified correctly using a series of teaching and learning processes. Nagelkerke R2 value indicating how much variances can be accounted for by the lists of variables given in the model was .125. This result proved that predictor variables explain the 12.5 % of the variance of the predicted variable, reading skills.

Wald statistics of the factors in the equation were significant, which means that each factor contributed significantly to the discrimination of low and high performed groups (p< .01). Table 8 presents the test statistics of the factors entered in the equation.

Table 8
Factors in the equation

Factors (Abbreviation)	β	S.E.	Wald	df	Sig.	Exp(β)
Teacher's Enthusiasm (T.E.)	,071	,059	1,429	1	,232	1,073
Classroom Management (CM)	-,593	,060	96,345	1	,000	,553
Cognitive Support (CS)	,047	,060	,616	1	,432	1,049
Affective Support (AS)	,559	,058	92,861	1	,000	1,749
Fear and Lack of Confidence (FLC)	,016	,054	,092	1	,761	1,016
Transfer of Knowledge (TK)	-,511	,067	58,730	1	,000	,600
Mental Readiness (MR)	-,508	,067	56,650	1	,000	,602
Limitation of Mental Effort (LME)	-,282	,061	21,208	1	,000	,754
Constant	2,966	,306	93,942	1	,000	19,417

The equation of the model based on the table above is; Predicted logit of (Reading Skills) = *2.966 + 0.71*(TE) – 0.593*(CM) + 0.047*(CS) + 0.559*(AS) + 0.016*(FLC) – 0.511*(TK) – 0.508*(MR) – 0.282 *(LME)*

As shown in Table 8, the factors *Teacher's Enthusiasm* (T.E.), *Cognitive Support* (C.S.) and *Fear and Lack of Confidence* (FLC) are not significant (p> .01). Based on the equation and their contribution to the discrimination of low and high-performing schools, the following table (Table 9) was created.

Table 9
Characteristics of high-performing and low-performing schools

	High-performing schools	Low-performing schools
Factors	1. Classroom Management	1. Affective Support
	2. Transfer of Knowledge	
	3. Mental Readiness	
	4. Limitation of Mental Effort	

As presented in the Table 8 above, in high-performing schools, classrooms are more disciplined, there is no limitation of mental effort, and students can not only transfer their knowledge in a better way but are also more ready mentally. On the other hand, the teachers of low-performing schools give much more effective support to their students.

Odds ratio [(1- Exp(β))*100] could be used to interpret the coefficients of significant variables in logistic regression (Çokluk et al., 2010). Classroom Management occurred more commonly in high-performing schools, and a one-unit increase in the odds ratio of classroom management causes an increase in the possibility of being successful in reading skills at the rate of 44.7 % [(1-.553)*100]. Affective Support occurred more commonly in low-performing schools, and a one-unit increase in the odds ratio of affective support causes a decrease in the possibility of success in reading skills at the rate of 74,9 % [(1-.1.74)*100]. Transfer of Knowledge occurred more commonly in high-performing schools, and a one-unit increase in the odds ratio of transfer of knowledge causes an increase in the possibility of success in reading skills at the rate of 40 % [(1-.6)*100]. Mental Readiness occurred more commonly in high-performing schools, and a one-unit increase in the odds ratio of Mental eadiness causes an increase

in the possibility of success in reading skills at the rate of 40 % [(1-.6)*100]. Limitation of Mental Effort occurred more commonly in high-performing schools, and a one-unit increase in the odds ratio of limitation of mental effort causes an increase in the possibility of success in reading skills at the rate of 25 % [(1-.75)*100].

Discussion

The learning-teaching process is a significant and medium-level predictor of reading literacy success in Turkey. Considering that the learning-teaching process is the heart of the education process, the prediction rate would be expected to be high, but reading is not viewed as a separate course such as Science and Mathematics. It is acquired as a side gain in the native language and foreign language lessons. It reduces the effect of the learning-teaching process on reading literacy. To increase the effectiveness of the learning-teaching process on reading literacy, including the Reading Literacy course in their curricula can be recommended to countries. In this way, the effect of the socioeconomic level factor, (Anılan,1998; Arıkan, Vijver ve Yağmur, 2017; Aslanoğlu, 2007; Aydın, Erdağ ve Taş, 2011; Bradshaw, Burge ve Wheater, 2010; Bölükbaşı, 2010; Coşkun, 2003; Çalışkan, 2000; Çoban, 2020; Dämmricha ve Triventib,2018; Kahraman ve Çelik, 2017; Kaldan, 2007; Krashen, Lee ve McQuillan, 2010; Linnakyla, Malin ve Taube, 2004; Maslowski, Scheerens ve Lutyen, 2007; National Foundation for Educational Research, 2003; Öztürk, 2010; Rowe, 1995; Jehangir, Glas ve Berg, 2015; Willms,2001) which affects the reading skill to a great extent but is very difficult to intervene in, can be reduced and students' reading success can be increased.

Teacher's Enthusiasm was found to be an insignificant predictor of reading literacy. In other words, the Teacher's Enthusiasm in the classroom does not affect students' reading success. This result is similar to the results of many studies (Frenzel, Goetz, Lüdtke, Pekrun & Sutten, 2009; Keller, Hoy, Goetz & Frenzel, 2015; Keller, Neumann & Fischer, 2013; Lazarides, Gaspard & Dicke, 2019; Mitchel, 2013; Sheppard, Hurley, & Dibbon, 2010; Patrick, Hisley, & Kempler, 2010). Conversely, MahlerI, Großschedl, and Ute Harms (2018) revealed a statistically significant and positive relationship between eachers' enthusiasm and students' achievement. Moreover, they explained this result as follows; '*Firstly, teachers' enthusiastic behavior may increase students' attention because elements of enthusiastic behaviour (e.g., gestures and body movements reportedly catch students' attention more effectively than other external factors, as disturbances or objects in the classroom. Secondly, students may adopt the enthusiastic behaviours of their teachers. In other words, an enthusiastic teacher may serve as a role model. Thirdly, in the concept of emotional contagion, it is rooted that students may be "infected" by their teachers' enthusiastic behaviour and subsequently feel enthusiastic themselves.*' It can be said that this difference is due to the fact that MahlerI, Großschedl, and Ute Harms (2018) investigate general student achievement while the other studies investigatedonly reading literacy achievement.

Upon examination of the Class Management variable, students' reading success in disciplined classes is significantly higher than among students studying in less disciplined classes. This result is parallel with the OECD (2010) report and some studies (Baker, Lang, & Lawson, 2002; Bondy, Ross, Gollingane, & Hambacher, 2007;

Burden, 2020; Çengel, 2013; Kayır, 2012; Zuckerman, 2007). At this point, it should not be thought of as a classroom in which the phenomenon meant by the disciplined classroom environment is the teacher's role as a narrator in a quiet environment while the student is in the position of listening quietly. What is meant by disciplined class is an environment where students are not interested in extracurricular activities, the teacher and the student can communicate well, and their minds are not distracted by extracurricular noises.

The analysis of the Cognitive Support variable, within the Teacher Support variable's sub-dimension, showed that it was not a significant reading literacy predictor. It is also evidentthat reading literacy is not included as a separate course, as mentioned before. Upon examination of the Affective Support variable, it was concluded that this variable affects reading literacy negatively. Affective Support involves the teacher emphasizing which areas the students are good at and providing guidance on how they can improve. Adolescents may perceive this situation as excessive anticipation and cause them to feel pressured. As Zelyurt (2010) stated, having excessive expectations from students can be a reason for failure. For this reason, for effective support teachers should consider balance by encouraging them and preventing them from feeling the pressure of success.

With respect to the Fear and Lack of Confidence variable, a sub-dimension of the Cognitive Difficulty variable the results show that it is it is not a significant predictor of reading literacy. In other words, whether the students experience fear while entering the lesson and whether the teacher arouses confidence in the classroom, whether he/she holds a supportive attitude or not, does not have any effect on reading literacy. We can say that this result supports the affective support result. A study conducted by Gregersen (2003), revealed that students with high anxiety levels were less successful than other students because they were afraid to try.

When the transfer of knowledge variable is examined, this variable is a significant predictor of reading literacy. This result shows that if teachers do activities that stimulate students' previous knowledge, reading literacy success increases. In parallel with this result, many educational scientists argued that using prior knowledge during the phase of learning new knowledge makes learning easier (Daugfous, 2004; Fadiran, Biljon, & Schoeman, 2018; Sönmez, 2010). Based on this result, it can be said that it is essential to activate students' prior knowledge by using the right strategies in order to increase student success. Thanks to the students' questions to activate their prior knowledge and the activities they do,the teacher can also have the chance to detect missing information and adequately complete it. . Thus, it reduces the possibility of experiencing cognitive difficulties due to incomplete information (Chew & Cerbin, 2020).

When the Mental Readiness variable is examined, this variable is a significant predictor of reading literacy. It supposes that the teacher sets clear goals at the beginning of the lesson and explains what learning it will serve. It enables the students to develop a positive attitude and belief towards the class and set expections from the course. The positive effect of this situation on success is inevitable. Güven (2004) states that good organization of activities can guide students to what they should learn before the

lesson starts. These arrangements set the status of the activity and provide students with links that they can understand and make connections between features of what will be presented by teachers or in the text. This form of organization helps students focus on the subject's essence and organize their thoughts effectively. For this reason, before the lesson begins, teachers should explain what students will learn, what this learning means for students, and why it is essential.

When the Limitation of Mental Effort variable is examined, this variable is a significant predictor of reading literacy. The biggest obstacle to learning is the cognitive overload that occurs, and when students encounter information well above their mental capacity, little knowledge occurs (Chadler & Sweller, 1991). It is concluded that if the teacher realizes this situation and takes measures such as reorganizing the subject following the students' levels to overcome this cognitive difficulty, their success increases. However, mental effort is always a cognitive resource that can be taken to the next level (Chew and Cerbin, 2020). The teacher can directly contribute to this development and thus increase success by providing individual assistance to the students during the lesson and / or by changing the lesson's lecture style.

Suggestions

a) for policymakers and curriculum developers;

1 Reading skills courses should be included in the curriculum.
2 Curriculum should be prepared in a way that does not exceed the students' cognitive levels.

b) for teachers;

1 Teachers should create a disciplined class environment where students are not interested in extracurricular activities, the teacher and the student can communicate well, and their minds are not distracted by extracurricular noises.
2 Teachers should offer balanced support for support to be effective. They should encourage them and prevent them from feeling the pressure of success.
3 Teachers should activate students' prior knowledge by using the right strategies to increase student success.
4 Teachers should set clear goals at the beginning of the lesson and explain what learning will serve.
5 Teachers can increase success by providing individual assistance to the students during the lesson and / or by changing the lesson's lecture style when students have cognitive difficulties.

c) for further research;

1 This study only revealed the association among the selected factors and reading skills but did not focus on the reasons behind these associations. Qualitative investigations seeking reasons and addressing the why question could be planned in future studies.
2 In this study, only data from Turkey were considered. Larger-scale comparison studies can be carried out.

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Razlike u čitalačkoj pismenosti kod turskih učenika prema istraživanju PISA 2018: Utjecaj procesa učenja i poučavanja

Sažetak

Otkrivanje utjecaja procesa učenja i poučavanja na čitalačku pismenost je neophodno jer sam proces podliježe intervenciji s obzirom da je jedan od osnovnih elemenata procesa razvoja kurikula. Svrha je ovoga istraživanja proučiti razlike između škola s visokim i škola s niskim postignućima u Turskoj, a vezano uz proces učenja i poučavanja koristeći se se podatcima iz PISA istraživanja 2018. Rezultati PISA istraživanja 2018. testa čitalačke pismenosti i upitnik za učenike korišteni su kao instrumenti za prikupljanje podataka. Provedene su deskriptivna analiza i binarna logistička regresija. Regresijska analiza ukazala je na to da disciplinirani razredi, transfer znanja, mentalna spremnost i ograničenje mentalnoga napora pozitivno utječu na čitalačku pismenost učenika. S druge strane, odgovarajuća podrška imala je nepovoljan utjecaj na čitalačku pismenost učenika.

Ključne riječi*: čitalačka pismenost; PISA 2018; proces učenja i poučavanja.*

Uvod

Faktor koji čini društvo jakim jest *znanje*, a ono je zamijenilo *industrijsko društvo*, u kojemu su proizvodni procesi na čelu, a industrijski proizvodi čine osnovu ekonomije, s *informacijskim društvom* (Saygılı, 2013). Informacijsko društvo pretvorilo je pojedinca u osobu koja proučava, kritički promišlja, posjeduje vještine rješavanja problema, kreativna je, brzo se prilagođava promjenama i, što je najvažnije, podložna je promjenama (Kültekin, 2006). U današnjim je državama jedan od uvjeta, usvojiti sustav obrazovanja za ekonomski, politički i društveni razvoj. Društva koja ne ispune taj uvjet, ostaju izvan modernoga svijeta i gube povlastice utjecaja ili prava glasa u neprestanom kreiranju suvremenoga svijeta (Saygılı, 2013). Iz toga razloga, smatra se da bi zemlje trebale biti u stalnoj obrazovnoj reformi kako bi išle u korak s vremenom u kojemu se informacija i tehnologija ubrzano stvaraju i koriste. Da bi te reforme ostvarile svoje ciljeve, moralo bi se uspostaviti vrednovanje obrazovnoga sustava na državnoj i međudržavnoj razini kako bi bile podložne usporedbi.

Jedni od najpriznatijih međunarodnih ispita u kojima sudjeluje mnoštvo država spadaju projekti Međunarodno istraživanje čitalačke pismenosti (PIRLS), Međunarodno

istraživanje trendova u znanju matematike i prirodoslovlja (TIMSS) i Program za međunarodnu procjenu učenika (PISA). U ovim se ispitima, osim opsežnih ispita akademskoga postignuća, primjenjuju i upitnici za roditelje i škole, a profil države izrađuje se na osnovi specifičnih varijabli. Stoga se može reći da podatci dobiveni iz tih testova i upitnika usmjeravaju države prema povećanju učeničkih kompetencija i poboljšanju obrazovnih sustava.

PISA je međunarodno istraživanje koje se provodi u intervalima od tri godine da bi se procijenilo znanje i vještine 15-godišnjaka u matematici, prirodoslovlju i čitanju. Usporedbom informacija koje spomenuto istraživanje omogućuje daje cjelovitu procjenu situacije pripreme 15-godišnjaka za život, a informacije dobivene od učenika, roditelja i škole imaju važnu ulogu u provođenju znanstvenih istraživanja s obzirom na određivanje faktora koji utječu na uspješnost i razlike u primjeni među državama (Anıl, 2009). PISA projekt prvi je put primijenjen u 2000. godini u 32 države, a bio je usmjeren na čitalačku pismenost. U naredne tri godine, naglasak je bio stavljen na matematičku pismenost i prirodoslovnu pismenost. Konačno, u vrednovanju 2018. godine u kojemu je sudjelovalo 79 država, naglašeno je bilo područje čitalačke pismenosti.

Čitalačka pismenost

Za pojedince koji žive u informacijskome društvu sklonom brzim promjenama, važno je imati razvijenu čitalačku pismenost i sposobnost prilagodbe brzoj promjeni, što je jedna od četiriju osnovnih jezičnih vještina (Coşkun, 2002). Coşkun (2002) naglašava važnost čitanja rečenicom: „društva koja se razvijaju i koja su predvodnice su ona društva koja su kreirali ljudi koji čitaju (str. 5). Čitanjem pojedinci uče o onome što se događa u cijelome svijetu, kako drugi ljudi žive te o mjestima koja nikada neće vidjeti. Čitanjem ljudi razvijaju osjećaje i mišljenja, uče se toleranciji prema ljudima i prirodi te obogaćuju svoje znanje (Aslanoğlu, 2007; Kuzu, 2004; Obalı, 2009).

Ne treba zaboraviti da razvijene vještine čitanja ne podrazumijevaju pismenost, štoviše, podrazumijevaju razvijene mentalne aktivnosti koje uključuju razumijevanje, interpretaciju, sintezu i evaluaciju riječi koje percipiramo kroz osjetila (Çiftçi, 2007). Ako pojedinac nema znanje jezične strukture i strukture teksta dok čita, ne može koristiti odgovarajuće strategije dok analizira sam tekst, nije učinkovit u određivanju svrhe i zadatka čitanja (Çiftçi, 2007; Dökmen, 1994; Ülper, 2010), također ne može razumjeti tekst koji se čita određenom brzinom (Arıcı, 2008); čitanje ne može prijeći u nešto više od pasivne aktivnosti u kojoj se prepoznaju samo riječi koje čine pisani tekst (Altın, Ekiz, i Odabaşı, 2011). Ukratko, vještina je čitanja višedimenzionalni proces koji uključuje istraživanje, učenje, interpretaciju, diskusiju i kritičko mišljenje (Batur i Alevli, 2015).

Čimbenici povezani s čitalačkom pismenosti

Provedena istraživanja pokazuju da je uspjeh u čitalačkoj pismenosti podliježe utjecaju društveno-ekonomskoga statusa obitelji (Anılan, 1998; Arıkan, Vijver, i Yağmur, 2017; Aslanoğlu, 2007; Aydın, Erdağ, i Taş, 2011; Bradshaw, Burge, i Wheater, 2010; Bölükbaşı, 2010; Coşkun, 2003; Çalışkan, 2000; Çoban, 2020; Dämmricha i Triventib,

2018; Kahraman i Çelik, 2017; Kaldan, 2007; Krashen, Lee, i McQuillan, 2010; Linnakyla, Malin, i Taube, 2004; Maslowski, Scheerens i Lutyen, 2007; National Foundation for Educational Research, 2003; Öztürk, 2010; Rowe, 1995; Jehangir, Glas i Berg, 2015; Willms, 2001); odnosa učitelja i učenika (Kayır, 2012; Lee, 2012; Yıldırım, 2002), stava učitelja prema učenicima (Chang i Bangsri, 2020; Çoban, 2020; Yıldırım, 2002), veličine škole (Çelik i Yurdakul, 2020), razine obrazovanja učitelja (Çelik i Yurdakul, 2020), razrednoga okružja (Kayır, 2012; OECD, 2010), spola učenika (Kasapoğlu, 2014; Linnakyla, Malin, i Taube, 2004; Marks, 2008; Maslowski, Scheerens, i Lutyen, 2007; Torppa, Eklund, Sulkunen, Niemi, i Ahonen, 2018), strategija poučavanja koju koristi učitelj (Kayır, 2012), strategija učenja kojom se koriste učenici (Chai i Zhu, 2017) i strategija čitanja kojima se koriste učenici (Kayır, 2012; Yıldırım, 2002). S druge strane, na nju ne utječe dob učenika pri polasku u školu (Suggate, 2009) i akademski pritisak (Lee, 2012).

Proces učenja i poučavanja

Proces učenja i poučavanja sastavnica je dimenzije procesa obrazovnih programa (Demirel, 2019); to je stupanj u kojemu se svi planovi pretvaraju u praksu. OECD (2019) opisuje ovaj proces kao srž obrazovanja. Može se reći da je učinkovitost toga procesa ključna točka u dostizanju ili nedostizanju ciljeva zadanih u kurikulu. OECD (2019) definira proces učenja i poučavanja kao razrednu praksu i ponašanje učitelja koji kreiraju iskustvo učenja i daju podršku kognitivnom i društveno-afektivnom razvoju djeteta svrstano pod tri naziva: kvalifikacije učitelja i stručno usavršavanje, nastavna praksa i vrijeme učenja.

Pod nazivom *kvalifikacije nastavnika i stručno usavršavanje*, proučava se sljedeće: je li učitelj u stalnom radnom odnosu, broj škola u kojoj učitelj radi istovremeno, postoji li potreba za dodatnim poslom, ekonomski status, škola u kojoj je dobivena diploma, iskustvo poučavanja, stručno usavršavanje, strategije poučavanja kojima se koristi u razredu, stav prema profesiji. Sudjelovanje u anketama za učitelje bilo je dobrovoljno, a sudjelovalo je 19 država (OECD, 2019). S obzirom na to da države koje su bile uključene u ovo istraživanje nisu sudjelovale u anketi za učitelje, kvalifikacija nastavnika bila je izostavljena. Međutim, pitanja vezana uz kvalifikaciju učitelja uvrštena su u upitnik za učitelje.

Nastavna praksa sadrži tri osnovne dimenzije: razredno okružje, podrška učitelja, i kognitivni izazov. *Razredno okružje* procjenjuje upravljanje razredom i volju učitelja. Upravljanje razredom proučava se zbog potrebe za adekvatnim okružjem za učenjem. Upitnici za učenike imali su slična pitanja, na primjer je li razredno okružje bilo dovoljno tiho, je li razredno okružje odgovarajuće za usredotočenost na poučavanje, jesu li učenici slušali učitelja ili ne. Pitanja u upitniku za učenike kojima se procjenjivao entuzijazam učitelja bila su usmjerena na to je li učitelj entuzijastičan za vrijeme poučavanja te kakav dojam ostavlja na učenike tijekom poučavanja. *Podrška učitelja* podrazumijeva potpunu kognitivnu i afektivnu podršku koju učitelji pružaju učenicima tijekom nastave. *Kognitivni izazov* označava kako se učitelji suočavaju s čimbenicima koji učenicima

otežavaju učenje. Chew i Cerbin (2021) ukazali su na devet kognitivnih poteškoća koje utječu na učenje učenika (stav učenika prema lekciji, metakognicija, samokontrola, učenikov strah, nedostatak povjerenja u učitelja, nedostatno predznanje, zablude, neučinkovite strategije učenja, nesposobnost prenošenja onoga što se naučilo, selektivno ograničenje pozornosti i mentalni napor). Kako bi se suočili s ovim poteškoćama, učitelji mogu objasniti važnost lekcije, zadati zadatke za provjeru, koristiti povratnu informaciju, poštovati ideje učenika, ne diskriminirati učenike, davati digitalne ispite i aktivnosti prije lekcije, suočiti se s nedostatnim predznanjem i usredotočiti se na strategije poučavanja.

Za određivanje *vremena učenja*, uzima se broj tjednih sati za materinski jezik, matematiku, prirodoslovlje i strane jezike, a u upitnik za učenike uključena su pitanja otvorenoga tipa.

Svrha istraživanja i istraživačka pitanja

Svrha ovoga istraživanja bila je proučiti razlike među visokouspješnim i manje uspješnim školama u Turskoj vezano uz proces učenja i poučavanja koristeći se PISA 2018 skupovima podataka. Da bi se ostvario cilj istraživanja, postavljena su sljedeća istraživačka pitanja:

1. Što povezano s procesom učenja i poučavanja jest prediktor uspjeha u čitalačkoj pismenosti u školama s visokim postignućima i školama s niskim postignućima prema PISA 2018.?
2. Kako se odnosi između čimbenika procesa učenja i poučavanja i čitalačke pismenosti razlikuju u visokouspješnim i manje uspješnim školama?

Važnost istraživanja

Dostupna literatura ukazuje na to da je mnoštvo istraživanja prepoznalo ekonomski status roditelja, razinu obrazovanja, školski faktor, spol i strategije kao čimbenike koji utječu na uspješnost u čitalačkoj pismenosti, ali vrlo je malo istraživanja pokušalo pronaći ulogu procesa učenja i poučavanja u predviđanju uspješnosti učenika u čitanju na osnovi nalaza PISA 2018. S obzirom na to da proces učenja i poučavanja i uspješnost učenja prema podatcima iz PISA 2018 istraživanja nije sveprisutna u literaturi, ovim radom pokušat će se istražiti uloga čimbenika učenja i poučavanja u predviđanju uspjeha učenika u čitanju na osnovi PISA 2018 podataka vezanih za Tursku i tako popuniti nedostatne podatke u literaturi.

Puno je teže intervenirati u društveno-ekonomske faktore nego u proces učenja i poučavanja. Upravo je zbog toga otkrivanje učinka koji procesi učenja i poučavanja imaju na čitalačku pismenost ključno ne samo zato što se u njih može intervenirati nego zato što je to nužan element u razvoju kurikula. Tvorci politike i dionici mogu uzeti ove rezultate u obzir pri kreiranju kurikula. Nadalje, ravnatelji škola i učitelji mogu se koristiti rezultatim ovoga istraživanja u kreiranju okružja za učenje. U tom **će** smislu ovi rezultati imati nekoliko implikacija na istraživanja vezana uz redovni i

stalni razvoj kurikula. Štoviše, podatci dobiveni iz ovako velikoga uzorka pojačavaju općenitost rezultata i povećavaju važnost istraživanja.

Metode istraživanja

Jednostavnim usporednim pristupom istraživanju proučene su razlike među školama s visokim i niskim postignućima u Turskoj, a vezano uz proces učenja i poučavanja zasnovan PISA 2018 skupovima podataka. Ovakav pristup istraživanju uspoređuje najmanje dvije skupine varijabli u svrhu otkrivanja faktora koji utječu na ishod (Büyüköztürk, Çakmak, Akgün, Karadeniz i Demirel, 2010; Gay, Mills i Airasian, 2006).

Uzorak

Učenici koji su sudjelovali u PISA 2018 procjeni čine uzorak ispitanika ovoga istraživanja. Ciljna populacija PISA 2018 su 15-godišnji učenici, njih 710 000 sudjelovalo je u ispitu što predstavlja otprilike 31 milijun učenika u dobi od 15 godina koji nastavljaju svoje obrazovanje u 79 država sudionica (OECD, 2019). Primjenom dvostupanjske stratificirane metode uzorkovanja odabrano je 710 000 učenika koji su pristupili ispitu. Barem 150 škola iz svake države odabrano je među školama u kojima su učenici petnaestogodišnjaci. Nakon odabira škola, popisi petnaestogodišnjaka pripremljeni su za svaku školu te je 42 učenika iz svake škole odabrano metodom nasumičnoga odabira. Ovaj broj je u nekim školama možda bio ispod 42 što odgovara broju učenika u školi, međutim on nije niži od 20 (OECD, 2019).

Uzorak ispitanika u ovome istraživanju sastoji se od 6 890 petnaestogodišnjaka iz Turske koji su sudjelovali u PISA 2018 ispitivanju. Demografske karakteristike uzorka prikazane su u Tablici 1.

Tablica 1.

Za ovo istraživanje, škole s visokim i škole s niskim postignućima na PISA testu čitanja odabrane su u nekoliko koraka što je rezultiralo brojkom od 6 890 učenika. Ti se koraci prikazani su na Slici 1.

Slika 1.

Tablica 2. prikazuje klasifikaciju 88 škola.

Tablica 2

Instrument

U PISA 2018 procesu vrednovanja postignuća (Čitanje - Matematika – Prirodoslovlje), za dobivanje profila znanja i vještina učenika korišteni su Upitnik za učenike te Upitnik za učitelje i roditelje. Dok je 70 od 79 država sudionica pristupilo računalnim kognitivnim testovima i upitnicima, ostale države sudjelovale su putem pisanoga ispita – papir i olovka (OECD, 2019). Ovim istraživanjem uzeli su u obzir rezultate na testu čitanja i neke dijelove Upitnika za učenike.

Test čitanja

Kod PISA 2018 ispitivanja, za razliku od prijašnjih godina kada je test bio zadan i nepromjenjiv, u ovoj je godini test primijenjen individualizirano. Drugim riječima, knjižica s ispitnim pitanjima nije imala fiksnu strukturu. Međutim, računalna primjena bila je provedena u 70 država, a u prijašnjim godinama korištena fiksna struktura kroz knjižicu s pitanjima bila je primijenjena u ostalih devet država (OECD, 2019). Potonja pitanja mijenjaju se s obzirom na odgovore učenika u prethodnom pitanju. Neka su pitanja pripremljena kao pitanja višestrukoga izbora, neka su pitanja otvorenoga tipa. Distribucija pitanja s obzirom na kognitivni proces prikazana je u Tablici 3.

Tablica 3.

Razine čitanja započinju s najjednostavnijim, odnosno razinama 1a i 1b. Na razini 1a, informacija iz teksta jasno je naznačena, a čitatelj treba razumjeti glavnu misao teksta, svrhu teksta i povezati ju sa svakodnevnim životom. Na razini 1b, umjesto pisanoga teksta, informacija je prikazana u obliku popisa, slika, grafičkih prikaza, a čitatelj mora uspostaviti odnose među informacijama na osnovi danih prikaza. Na drugoj razini, čitatelj mora odrediti glavnu temu, odrediti povezanost između različitih dijelova teksta, povezati sličnosti ili razlike sa svakodnevnim životom, dodajući osobno iskustvo ovisno o karakteristikama navedenima u tekstu. Na trećoj razini, od čitatelja se očekuje da u različitim tekstovima pronađu sličnosti i razlike te ih klasificiraju. Od učenika se na četvrtoj razini očekuje stvaranje novoga sadržaja ovisno o zadanim pitanjima. Peta razina zahtijeva od čitatelja kritičku procjenu pročitanoga s obzirom na detaljne informacije navedene u tekstu. Na šestoj se razini od čitatelja očekuje interpretacija apstraktnih termina, kritička procjena neuobičajenih pitanja i izrada hipoteza. Mali je broj učenika koji dosegnu petu i šestu razinu (Aşıcı, Baysal, Erkan, Tezcan i Aydemir, 2019).

Svaki uspješan rezultat učenika na testu čitalačke pismenosti dobiva deset različitih bodova u sustavu podataka prema sljedećem: 'PV1READ, PV2READ, PV3READ, PV4READ, PV5READ, PV6READ PV7READ, PV8READ, PV9READ, PV10READ'. U našem istraživanju, svaki uspješan rezultat učenika na testu čitalačke pismenosti izračunat je korištenjem aritmetičke sredine bodova.

Upitnik za učenike

PISA 2018 Upitnik za učenike sastoji se od 49 čestica s pitanjima o općim karakteristikama učenika (razred, dob, spol i dr.), obiteljskim uvjetima učenika (obrazovanje roditelja i radno stanje, obiteljska imovina, broj knjiga u domu i dr.), stavovi učenika o čitanju (stavovi prema čitanju, čitalačke aktivnosti u svakodnevnom životu, čitalačka samoučinkovitost, korištenje knjižnice i dr.), vježbe koje se koriste u čitalačkom okružju u školi i na nastavi, školske knjižnice, informacijsko-komunikacijska tehnologija u školi i dr. Upitnik je primijenjen neposredno nakon testa postignuća i svaki je učenik imao na raspolaganju 35 minuta za popunjavanje (OECD, 2019).

Kao što je ranije navedeno, u ovome istraživanju varijabla proces učenja i poučavanja istraživana je u dva segmenta: *nastavna praksa* i *vrijeme učenja*. Za ovo je istraživanje osam čestica (ST97, ST100, ST102, ST104, ST152, ST211, ST212, i ST213) bilo povezano s nastavnom praksom, a čestica otvorenoga tipa (ST059) povezana je s *vremenom učenja*.

Osam odabranih čestica povezanih s nastavnom praksom sastoji se od 30 podčestica i sve su pripremljene na skali Likertova tipa od četiri stupnja. Odabranih 30 čestica podvrgnuto je eksplorativnoj faktorskoj analizi (EFA) korištenjem analize bitnih komponenti (PCA) da bi se proučila faktorska struktura nastavne prakse. Inicijalni rezultat faktorske analize ukazao je na osam dimenzija koje su imale vlastite vrijednosti više od 1. Vlastite vrijednosti određenih faktora, su za svaku pojedinačno: 9,655; 2,770; 2,434; 1,699; 1,426; 1,126; 1,106 i 1002. *Scree plot* dijagram (*Slope Deposition Plot*) proučen je kako bi se potvrdio broj faktora. Dobiveni *Scree plot* dijagram prikazan je u slici niže.

Slika 2.

Dijagram *Scree Plot* također pokazuje da je osam faktora u oštrom padu, što potvrđuje osam dimenzija. Doprinos ovih faktora ukupnoj varijanci je 70,72 %. Eksplorativna faktorska analiza ponovljena je s 30 čestica za osam faktora upotrebom metode izravne Oblimin rotacije koja pretpostavlja korelaciju među faktorima da bi se uočili faktori opterećenja i čestice koje odgovaraju tim faktorima. Sve su čestice uzete u obzir za daljnju analizu s obzirom da je opterećenje faktora bilo veće od .40 (Abell, Springer i Kamata,2009). Tablica 4 prikazuje opterećenja faktora i faktorsku strukturu na osnovi eksplorativne faktorske analize.

Tablica 4

Faktori su imenovani prema tipičnim karakteristikama čestica koje su se vezale uz isti faktor i na osnovi PISA 2018 izvješća (OECD, 2019). Nazivi faktora, distribucija čestica prema faktorima i karakteristike čestica prikazani su u Tablici 5.

Tablica 5.

Kao što je prikazano u Tablici 5, varijabla *entuzijazam* učitelja koja je dio poddimenzije *razredno okružje*, ispitana je česticom ST213 koja se sastoji od četiri podčestice. Entuzijazam učitelja smanjuje se kako se vrijednost približava broju jedan, a povećava kako se bliži broju četiri. S druge strane, varijabla *upravljanje razredom* mjerena je česticom ST97 i sadrži pet podčestica. Zaključujemo da je disciplina u razredu smanjena kako se približava broju jedan, a povećava kako se bliži broju četiri.

Varijabla *kognitivna podrška,* kao dio podrške učitelja, mjerena je česticom ST100 koja se sastoji od četiri podčestice. Međutim, kod ove varijable kodiranje je bilo obrnuto, točnije:… Svaki nastavni sat = 1, … Nimalo = 4. S obzirom na to da je povećani rezultat očekivano interpretiran kao pozitivan tijekom analize, kodiranje je napravljeno da bi se izbjegli nesporazumi. Nakon obrata, *podrška učitelja* se smanjila kako se rezultat bližio broju jedan, a povećala kako se približavao broju četiri. Varijabla *afektivna podrška* mjerena je česticom ST104 koja se sastoji od tri podčestice. Kako

se rezultat bližio broju jedan, afektivna se podrška učitelja smanjivala, a povećavala kada se rezultat bližio broju četiri.

U domeni *kognitivni izazov*, oprez kod učitelja da se suoče sa strahovima učenika i nedostatak samopouzdanja mjereni su česticom ST211 koja se sastojala od tri podčestice. Oprez učitelja da se suoče sa strahom učenika i njihov nedostatak samopouzdanja smanjuje se kako se rezultat bliži rezultatu jedan, a povećava kako se bliži rezultatu četiri. Varijabla *transfer znanja* mjerena je česticom ST152, a sastojala se od četiri podčestice. Metode koje su koristili učitelji, a koje su omogućile učenicima transfer znanja, smanjuje se kako se rezultat približava broju jedan, a povećava kako se približava broju četiri. Varijabla *mentalna spremnost* učenika mjerena je česticom ST102, a sastojala se od četiri podčestice. Međutim, ova varijabla kodirana je prema sljedećem: Svaki nastavni sat = 1; … Nikada = 4. S obzirom na to da se očekuje da će veći rezultat biti interpretiran pozitivno tijekom analize, kodiranje je obrnuto ne bi li se izbjegli nesporazumi. Nakon promjene, doprinos učitelja mentalnoj spremnosti učenika smanjuje se kako se rezultati bliže broju jedan, a povećava kako se bliži broju četiri. Čestica ST212 koja se sastoji od tri podčestice mjeri načine na koji se učitelji za suočavanje s ograničenjem kod mentalnoga napora. Postupci učitelja u nošenju s mentalnim naporom učenika povećavaju se kako se rezultat bliži broju jedan, a smanjuju kako se bliži broju četiri.

Valjanost i pouzdanost instrumenata za prikupljanje podataka

Skupina ispitanika iz svake države pripremila je pitanja da bi se osigurala valjanost opsega istraživanja (OECD,2019). Pripremljene čestice poslane su skupini stručnjaka koja uključuje stručnjake u praćenju i vrednovanju te je dobiveno stručno mišljenje. Svaka država komentirala je prikladnost čestica u odnosu na vlastitu kulturu i program te težinu pitanja. Nakon što je ustanovljena valjanost za svaku državu, započeo je proces prevođenja. Prijevodi su napravljeni metodom obrnutoga prevođenja da bi se izbjegle nejednakosti među nacionalnim testovima. Upitnici i pitanja prvo su prevedeni na materinske jezike, a zatim su upitnici i pitanja ponovno prevedeni na izvorni jezik kada su se mogli usporediti izvorni tekst i prevedeni tekst (OECD,2019).

U ovome istraživanju, pouzdanost je napravljena odvojeno za skupove podataka iz svake države za svaki od faktora koji je nastao faktorskom analizom. Cronbachov alpha koeficijent pouzdanosti je izračunat. Cronbachov alpha koeficijent pouzdanosti za svaku od poddimenzija prikazan je u Tablici 6.

Tablica 6.

Kao što je prikazano u Tablici 6, Cronbachov alpha koeficijenti za Tursku su između .75 i .91.

Analiza podataka

Proces analize podataka izvodio se u dvije faze: deskriptivna analiza i proceduralna analiza. U prvoj su fazi podatci za Tursku izdvojeni iz cjelokupnoga skupa podataka za sve države sudionice u PISA vrednovanju. Podatci su prvo podvrgnuti deskriptivnoj

analizi da bi se prepoznali skupovi podataka, očistili i pripremili za daljnju analizu. Po završetku deskriptivne analize, skup podataka podvrgnut je binarnoj logističkoj regresiji.

Rezultati

Rezultati su objašnjeni u dva podnaslova: rezultati deskriptivne analize i rezultati proceduralne analize.

Rezultati deskriptivne analize

Prema rezultatima deskriptivne analize, s obzirom da udio podataka koji nedostaje u svakoj poddimenziji nije veći od 5 %, primijenjena je procedura „zamijeni sa srednjom vrijednošću" (Çokluk, Şekercioğlu i Büyüköztürk, 2009). Nakon analize podataka koji su nedostajali, napravljena je standardizacija nezavisnih varijabli za netipičnu analizu. S obzirom na '-4, +4' raspon vrijednosti Z, u skupovima podataka nije uočena točka krajnosti (Hair, Black, Rabin, Anderson i Tahtam, 2006). Uz navedeno, u fazi deskriptivne analize proučeni su postotci i učestalost vrijednosti učeničkih odgovora na pitanja.

Rezultati proceduralne analize

Tijekom proceduralne analize prvo su testirane pretpostavke binarne logističke regresije Kao što je spomenuto u rezultatima deskriptivne analize, s obzirom na to da udio podataka koji nedostaju u svakoj poddimenziji nije veći od 5 %, primijenjena je procedura „zamijeni sa srednjom vrijednošću" (Çokluk, Şekercioğlu i Büyüköztürk, 2009). Veličina uzorka osigurala je barem 20 osoba za svaku nezavisnu varijablu i 50 osoba za svaku zavisnu varijablu.

Za testiranje multikolinearnosti i singularnosti, provedena je višestruka korelacijska analiza. Rezultati su prikazani u Tablici 7.

Tablica 7.

Kao što je prikazano u Tablici 7, vrijednosti korelacije među varijablama bile su u rasponu od .21 i .58. Ni multikolinearnost, prema kriteriju .80, ni singularnost prema kriteriju 1 (Tabarknic i Fidel, 2002) nisu uočeni.

Omnibus test koeficijenta modela koji predstavljaju promjene u opsegu informacija koje objašnjava model je značajan [χ^2 (11) = 328,856, p < .001]. Ovaj rezultat ukazuje na to da je popis nezavisnih varijabli povezan s procesom učenja i poučavanja prediktor koji značajno razlikuje škole visokim postignućima od škola s niskim postignućima u vještini čitanja. Rezultati testa Hosmer i Lemeshow bili su značajni, [p = .496], što podrazumijeva da se promatrani podatci nisu značajno razlikovali od predviđenih vrijednosti modela (Field, 2009). Ovakav neznačajan rezultat ukazuje na to da je model skladan. Tablica klasifikacije pokazuje da je 63 8 % slučajeva u skupinama s niskim i visokim postignućima dobro klasificirano koristeći niz procesa poučavanja i učenja. Nagelkerke R2 vrijednost koja pokazuje koliko iznosi varijanca za popise varijabli u modelu bila je .125. Takav rezultat dokazuje da varijable prediktori objašnjavaju 12,5 % varijance predviđene varijable, vještine čitanja.

Wald statistika faktora u jednadžbi bila je značajna što znači da svaki faktor značajno doprinosi diskriminaciji skupina s visokim i niskim postignućima ($p < .01$). Tablica 8 prikazuje statistike testa faktora uvrštenih u jednadžbu.

Tablica 8.

Kao što je prikazano u Tablici 8, faktori *entuzijazam nastavnika* (T.E.), *kognitivna podrška* (C.S.) i *strah i nedostatak samopouzdanja* (FLC) nisu značajni ($p > .01$). Na osnovi jednadžbe i njihovih doprinosa razlici između škola s niskim i visokim postignućima izrađena je Tablica 9.

Tablica 9.

Kao što je prikazano u Tablici 8, u školama s visokim postignućima, razredi su discipliniraniji, ne postoji ograničenje vezano uz mentalni napor, učenici ne samo da mogu bolje prenijeti svoje znanje, nego su i mentalno spremniji. S druge strane, podrška koju učitelji u školama s niskim postignućima nude svojim učenicima je učinkovitija.

Omjer izgleda [(1- Exp(β))*100] može se koristiti u interpretaciji koeficijenata značajnih varijabli u logističkoj regresiji (Çokluk i dr., 2010). *Upravljanje razredom* ima veću pojavnost u školama s visokim postignućima, a povećanje od jednoga stupnja u omjeru izgleda upravljanja razredom stvara veću mogućnost za uspjeh u vještini čitanja po stopi od 44,7 % [(1-.553)*100]. *Afektivna podrška* učestalija je u školama s niskim postignućima, a povećanje od jednoga stupnja u omjeru izgleda afektivne podrške stvara smanjenu mogućnost za uspjeh u vještini čitanja po stopi od 74,9 % [(1-.1.74)*100]. *Transfer znanja* učestaliji je u školama s visokim postignućima, a povećanje od jednoga stupnja u omjeru izgleda transfera znanja stvara povećanu mogućnost za uspjeh u vještini čitanja po stopi od 40 % [(1-.6)*100]. *Mentalna spremnost* učestalija je u školama s visokim postignućima, a povećanje od jednoga stupnja u omjeru izgleda mentalna spremnost stvara povećanu mogućnost za uspjeh u vještini čitanja po stopi od 40 % [(1-.6)*100]. *Ograničenje mentalnoga napora* učestalije je u školama s visokim postignućima, a povećanje od jednoga stupnja u omjeru izgleda ograničenje mentalnoga napora stvara povećanu mogućnost za uspjeh u vještini čitanja po stopi od 25 % [(1-.75)*100].

Diskusija

Proces učenja i poučavanja značajan je prediktor, na srednjoj razini, uspješnosti u čitalačkoj pismenosti u Turskoj. S obzirom na to da je proces učenja i poučavanja središte obrazovnoga procesa, može se očekivati i da je stopa predviđanja visoka, ali čitanje se ne promatra kao zasebni predmet poput Prirodoslovlja ili Matematike. Čitanje se usvaja neizravno u nastavi materinskoga jezika i stranoga jezika. Tako se smanjuje učinak procesa učenja i poučavanja na čitalačku pismenost. Za veću učinkovitost procesa učenja i poučavanja na čitalačku pismenost, državama se može preporučiti uvođenje predmeta Čitalačka pismenost. Na taj se način učinak društveno-

ekonomskoga faktora, (Anılan,1998; Arıkan, Vijver ve Yağmur, 2017; Aslanoğlu, 2007; Aydın, Erdağ ve Taş, 2011; Bradshaw, Burge ve Wheater, 2010; Bölükbaşı, 2010; Coşkun, 2003; Çalışkan, 2000; Çoban, 2020; Dämmricha ve Triventib,2018; Kahraman ve Çelik, 2017; Kaldan, 2007; Krashen, Lee ve McQuillan, 2010; Linnakyla, Malin ve Taube, 2004; Maslowski, Scheerens ve Lutyen, 2007; National Foundation for Educational Research, 2003; Öztürk, 2010; Rowe, 1995; Jehangir, Glas ve Berg, 2015; Willms,2001) koji uvelike utječe na vještinu čitanja, ali u koji se teško može intervenirati, može smanjiti, a uspješnost učenika u čitanju povećati.

Entuzijazam učitelja neznačajan je prediktor čitalačke pismenosti. Drugim riječima, entuzijazam učitelja u razredu ne utječe na uspjeh učenika u čitanju. Ovaj rezultat sličan je rezultatima mnogih drugih istraživanja (Frenzel, Goetz, Lüdtke, Pekrun i Sutten, 2009; Keller, Hoy, Goetz i Frenzel, 2015; Keller, Neumann i Fischer, 2013; Lazarides, Gaspard i Dicke, 2019; Mitchel, 2013; Sheppard, Hurley, i Dibbon, 2010; Patrick, Hisley, i Kempler, 2010). Suprotno tome, MahlerI, Großschedl i Ute Harms (2018) otkrili su statistički značajnu i pozitivnu povezanost između entuzijazma učitelja i učeničkih postignuća. Štoviše, objasnili su svoje rezultate na sljedeći način:

Kao prvo, entuzijazam učitelja može povećati pozornost učenika jer su elementi entuzijastičnoga ponašanja (npr. geste i govor tijela navodno privlače pažnju učenika učinkovitije od vanjskih faktora poput ometanja ili predmeta u razredu). Drugo, učenici mogu usvojiti entuzijastično ponašanje svojih učitelja. Drugim riječima, entuzijastični učitelj može biti svojevrsni uzor. Treće, koncept mentalne zaraze podrazumijeva da se učenici mogu „zaraziti" entuzijastičnim ponašanjem svojih učitelja i posljedično sami osjećati entuzijastično.

Može se reći da je uzrok ove razlike činjenica da su MahlerI, Großschedl i Ute Harms (2018) istraživali opći uspjeh učenika dok su druga istraživanja bila usredotočena samo na uspjeh u čitalačkoj pismenosti.

Analizom varijable *upravljanje razredom*, uspjeh učenika u čitanju u discipliniranim razredima značajno je veći nego kod učenika koji uče u manje discipliniranim razredima. Ovaj nalaz u skladu je s OECD (2010) izvješćem i drugim istraživanjima (Baker, Lang, i Lawson, 2002; Bondy, Ross, Gollingane i Hambacher, 2007; Burden, 2020; Çengel, 2013; Kayır, 2012; Zuckerman, 2007). Uputno je reći da se pod discipliniranim razredom ne podrazumijeva razred u kojemu je učitelj predavač u okružju koje je tiho i u kojemu učenici slušaju u tišini. Disciplinirani razred smatra se razrednim okružjem u kojemu učenici nisu zainteresirani za izvannastavne aktivnosti, u kojemu učitelj i učenici ostvaruju dobru komunikaciju, a njihovi umovi nisu podložni distrakciji šumova koji nisu vezani uz nastavu.

Analizom varijable *kognitivna podrška* unutar poddimenzije *podrška učitelja*, pokazala se neznačajnom kao prediktor čitalačke pismenosti. Razvidno je i da čitalačka pismenost nije zaseban nastavni predmet. Analizom varijable *afektivna podrška*, zaključeno je da ta varijabla negativno utječe na čitalačku pismenost. *Afektivna podrška* uključuje nastavnika koji naglašava područja u kojima je učenik dobar i nudi smjernice za

poboljšanje. Adolescenti ovu situaciju mogu doživjeti kao prekomjerno očekivanje i zbog toga mogu osjećati pritisak. Kao što napominje Zelyurt (2010), prekomjerna očekivanja od učenika mogu biti uzrok neuspjehu. Zbog toga, učinkovita podrška učitelja treba biti uravnotežena, odnosno mora poticati učenike, ali i spriječiti pojavu pritiska zbog uspjeha.

S obzirom na varijablu *strah i nedostatak samopouzdanja*, kao poddimenzije varijable *kognitivne poteškoće*, rezultati pokazuju da ona nije značajan prediktor čitalačkoj pismenosti. Drugim riječima, ako učenik iskusi strah tijekom nastave i ako učitelj pobudi samopouzdanje u razredu, ako ima ili nema podržavajući stav, ne utječe na čitalačku pismenost. Možemo reći da je ovaj rezultat u skladu s rezultatom afektivne podrške. Istraživanje koje je proveo Gregersen (2003), pokazalo je da su učenici s visokim razinama anksioznosti bili manje uspješni od ostalih učenika jer su se bojali pokušaja.

Nakon analize varijable *transfer znanja*, uočeno je da je ona značajan prediktor čitalačke pismenosti. Ovaj rezultat pokazuje da ukoliko učitelji koriste aktivnosti koje stimuliraju predznanja učenika, utoliko se uspjeh u čitalačkoj pismenosti povećava. U skladu s tim rezultatom, mnogi su stručnjaci u obrazovnim znanostima ukazali na činjenicu da aktiviranje predznanja učenika tijekom faze učenja novih znanja čini učenje lakšim (Daugfous, 2004; Fadiran, Biljon, i Schoeman, 2018; Sönmez, 2010). Na osnovi tih rezultata, može se reći da je ključno aktivirati predznanja učenika koristeći se valjanim strategijama i tako povećati uspjeh učenika. Zahvaljujući upitima kojima učenici aktiviraju svoja znanja i upotrebom raznih primjerenih aktivnosti, učitelji također mogu iskoristiti priliku i otkriti informaciju koja nedostaje te ju odgovarajuće ju upotpuniti. Na taj se način smanjuje mogućnost iskustva kognitivnih poteškoća zbog nepotpune informacije (Chew i Cerbin, 2020).

Što se tiče varijable *mentalna spremnost*, ona je značajan prediktor čitalačke pismenosti. Ona podrazumijeva da učitelj određuje jasne ciljeve na početku nastavnoga sata i objašnjava čemu ciljevi služe. Omogućuje učenicima razvijanje pozitivnoga stava i vjerovanja u razred te određivanje očekivanja od nastavnoga predmeta. Pozitivan učinak ove situacije na uspjeh je neminovan. Güven (2004) tvrdi da je dobra organizacija aktivnosti koje će voditi učenike prema onome što moraju učiti prije početka nastavnoga sata. Ovakav raspored postavlja status aktivnosti i nudi učenicima poveznice putem kojih će lakše razumjeti i povezati sadržaje koje prikazuju učitelji ili neki tekst. Takva organizacija pomaže učenicima da ostanu fokusirani na suštinu predmeta i učinkovito organiziraju vlastite misli. Zbog toga bi učitelji, prije početka nastavnoga sata, trebali objasniti što će učenici učiti, što to učenje znači učenicima i zašto je neophodno.

Vezano uz varijablu *ograničenje mentalnoga napora*, varijabla je značajan prediktor čitalačke pismenosti. Najveća prepreka učenju je kognitivno preopterećenje, i kada se učenici suoče s informacijom koja je iznad njihovih mentalnih mogućnosti. U tom slučaju nema puno učenja (Chadler i Sweller, 1991). Zaključeno je da ako učitelj uoči takvu situaciju i poduzme mjere poput reorganizacije predmeta koja prati razine učenika, ta se poteškoća može savladati. Međutim, mentalni je napor uvijek kognitivni

izvor koji može biti usmjeren na višu razinu (Chew i Cerbin, 2020). Učitelj može izravno doprinijeti ovome razvoju i povećati uspjeh ako ponudi individualnu podršku učenicima tijekom nastavnoga sata i/ili promjenom načina poučavanja.

Prijedlozi

a) za tvorce politika i razvoj kurikula

1. Predmeti vezani uz vještinu čitanja trebali bi biti uključeni u kurikul.
2. Kurikul bi trebao biti pripremljen tako da ne nadilazi kognitivne razine učenika.

b) za učitelje

1. Učitelji bi trebali kreirati disciplinirano razredno okružje u kojemu učenici neće biti zainteresirani za nenastavne aktivnosti, u kojoj učitelj i učenici mogu ostvariti dobru komunikaciju i u kojoj učenici neće biti podložni vanjskim distraktorima.
2. Učitelji bi trebali ponuditi uravnoteženu podršku kako bi ona bila učinkovita. Trebali bi potaknuti učenike i spriječiti pritisak za uspjehom.
3. Učitelji bi trebali aktivirati predznanje učenika koristeći se primjerenim strategijama i tako povećati uspjeh učenika.
4. Učitelji bi trebali postaviti jasne ciljeve na početku nastavnoga sata i objasniti svrhu istih.
5. Učitelji mogu povećati uspjeh dajući individualnu podršku učenicima tijekom nastave i/ili promjenom stila poučavanja kada učenici imaju kognitivne poteškoće.

c) za daljnja istraživanja

1. Ovo istraživanje otkrilo je povezanost između odabranih faktora i vještine čitanja ali nije se usmjerila na razloge u pozadini tih povezanosti. Kvalitativna istraživanja koja će biti usmjerena na razloge i koja će pokušati odgovoriti na pitanje zašto? trebala bi biti dio budućih planova.
2. U ovome istraživanju korišteni su isključivo podatci za Tursku. Usporedna istraživanja većih razmjera također bi se mogla provoditi.