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Comprehension, Metacognition, Reading
Self-Efficacy Belief and Retention

Okuduğunu Anlama, Üstbiliş, Okuma
Öz Yeterlilik İnancı ve Kalıcılığı Geliştirmede
PQ4R

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The PQ4R in Developing Reading Comprehension, Metacognition, Reading Self-Efficacy Belief and Retention*

Okuduğunu Anlama, Üstbiliş, Okuma Öz Yeterlilik İnancı ve Kalıcılığı
Geliştirmede PQ4R

Tuğba OĞUZ

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Abstract: The purpose of current study is to elicit the effect of PQ4R on reading comprehension, metacognitive thinking, reading self-efficacy belief and retention. The study was conducted on 35 fourth graders in a primary school in the district of Western Black Sea region for 12 weeks during the fall term of the 2018-19 academic year. Mixed methods research design was used in the study. While the quantitative data was collected with “non-equivalent control group design”, in the qualitative part of study, case study was used. Instruments were “the reading comprehension test”, “the reading comprehension self-efficacy belief scale”, “metacognitive awareness inventory” and “focus group interview”. The results indicated that PQ4R learning strategy had a large effect on reading comprehension, metacognitive thinking, self-efficacy and retention levels. It can be recommended that the primary school teachers can use PQ4R learning strategy to increase students’ reading comprehension levels, metacognitive thinking skills related to reading strategies, reading self-efficacy beliefs and permanence of information.

Keywords: PQ4R strategy, metacognitive thinking, reading comprehension, self-efficacy belief.

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“COPE-Dergi Editörleri İçin Davranış Kuralları ve En İyi Uygulama İlkeleri” beyanları: Bu çalışma için herhangi bir çıkar çatışması bildirilmemiştir. Bu çalışma Bülent Ecevit Üniversitesi İnsan Araştırmaları Etik Kurulu’nun onayı çerçevesinde gerçekleştirilmiştir. Bu çalışma, birinci yazarın yüksek lisans tezinden üretilmiştir. Bu çalışma, İLTER Congress Amasya’da sözlü olarak sunulmuştur. Sorumlu Yazar: Tuğba OĞUZ

Öz: Bu çalışmanın amacı, PQ4R'nin okuduğunu anlama, üstbilişsel düşünme, okuma öz-yeterlik inancı ve kalıcılık üzerindeki etkisini ortaya çıkarmaktır. Araştırma, 2018-19 eğitim-öğretim yılı güz döneminde, Batı Karadeniz bölgesindeki bir ilkokulda 12 hafta boyunca 35 dördüncü sınıf öğrencisi üzerinde gerçekleştirilmiştir. Araştırmada desen olarak karma yöntemler kullanılmıştır. Nicel veriler “eşdeğer olmayan kontrol gruplu desen” ile toplanırken, çalışmanın nitel kısmında durum çalışması kullanılmıştır. Veri tolama aracı olarak okuduğunu anlama testi, okuduğunu anlama öz-yeterlik inanç ölçeği, üstbilişsel farkındalık envanteri ve odak grup görüşmesi kullanılmıştır. Araştırmanın sonuçları PQ4R öğrenme stratejisinin okuduğunu anlama, üstbilişsel düşünme, öz-yeterlik ve akılda tutma düzeyleri üzerinde büyük bir etkiye sahip olduğunu göstermiştir. İlkokul öğretmenlerinin öğrencilerin okuduğunu anlama düzeylerini, okuma stratejilerine ilişkin üstbilişsel düşünme becerilerini, okuma öz-yeterlik inançlarını ve bilginin kalıcılığını artırmak için PQ4R öğrenme stratejisini kullanmaları önerilebilir.

Anahtar Kelimeler: PQ4R stratejisi, üstbilişsel düşünme, okuduğunu anlama, öz yeterlik inancı.

Introduction

People have used different methods to transfer their feelings and thoughts to other people since ancient times. The desire of people to communicate with each other, their need to convey what they feel and think has led to the emergence of languages. In order for people to be able to communicate well with each other, they must have full command of the language they belong to. Full command of the language is possible by speaking, reading, writing and understanding the language. Mother tongue is learned before school life. Once school life begins, the development of using mother tongue starts and literacy is gained. Being literate is among the skills required for an individual's life.

Reading, which is one of the most important ways to improve knowledge, is a skill that started to be taught in the early years of schooling. Although reading seems as simple as speaking, it is a complex process which necessitates the active participation of the reader (Schoenbach et.al., 2003). Reading, which is a complex process that requires the active participation of the reader, takes place when an effective connection is established between the sensory organs and the mind (Ayçin, 2009).

Reading encompasses the seeing, remembering, vocalization and evaluation processes. It also consists of two closely related mechanisms such as seeing and thinking. Reading is communication, loading mean, learning and multi-dimensional developmental process (İnce, 2016). Reading means that individuals understand what they read, have an idea about what they read, reflect what they understand from their readings into their lives, and thereby acquire positive behaviors and develop a worldview (İnce, 2018). Reading comprehension is using the prior knowledge of the reader to

structure the thoughts that are desired to be given in the text s/he has read (Yılmaz, 2008). Reading comprehension is the main goal of reading and requires the effective, conscious cognitive efforts of the reader. The main purpose of comprehension of reading is to provide the reader with thought development (Epçaçan, 2009). Reading skills are the most basic skills for a quality education they have ignored in recent years. Students', reading strategies knowledge, positive feelings towards reading and fluent reading skills affect both their academic achievement and their social lives. Using strategy in reading makes it easier for students to achieve their reading goals. Metacognitive strategies, in which students actively take part, are built on the basis of self-planning, self-regulation and self-evaluation. This is significantly effective in acquiring reading skills. Based on these, the relations between metacognition and reading should be examined well (Keskin, 2013).

Metacognition skills used in reading affect personal self-regulatory skills that augment achievement. These skills take place in six stages. 1) Determining the purpose of reading, 2) Activating prior knowledge, 3) Identifying the important points, 4) Evaluating the content for compatibility with preliminary information, 5) Self-monitoring, 6) Testing inferences (Palincsar & Brown, 1984). Metacognitive-oriented readers can choose, use, monitor and evaluate the strategy on their own. They may notice errors related to reading comprehension and repair these errors. For this reason, the education should be qualified in such a way to enable students to choose their own strategies and activate their metacognitive skills (Schraw, 2002). Reading strategies are defined as the attempts of the reader to solve the text, understand the words, create and control the meanings of the text. When appropriate strategy is determined and applied frequently, it gets automated and reading skills are acquired. Research shows that readers can be fluent and talented readers when appropriate instructions are given on reading strategies (Zhang, 2018).

Conscious learning should be ensured for effective learning to take place. Efforts to raise students who have provided conscious and effective learning in education have revealed the concept of metacognition (Veenman et. al., 2006). Metacognition, which is defined as learning to learn, is a general expression of the individual's knowledge about his or her cognition system and his/her own work. Metacognition is also expressed in the literature with the following names. The concept of metacognition started to be studied by educational psychology researchers since 1970s. Flavell first used the term metacognition as the concept of metamemory in 1971 (Doğan, 2013). Flavell (1979) explains it as process of monitoring and self-regulation, as the individual is aware of his/her own learning, controls and evaluates his or her learning. Metacognition is thoughtful and expresses the individual's ability to understand his or her cognitive processes (Parsons vd., 2001 in Bibi, 2011). Metacognition is students' aware-

ness of their knowledge and beliefs about cognitive processes used by them, adjust these processes, necessary to learn (Ormrod, 2012). Metacognition is our knowledge about capability to employ knowledge and conduct our cognitive processes (Woolfolk, 2016). Metacognition improves one's problem-solving skills, in addition, it helps to be a good learner (Brown, 1977). Metacognition contains two main dimensions as cognitive knowledge and cognitive monitoring/regulation (Flavell, 1979). It is complex because it entails knowing when and why of applying different learning strategies to reach our goals (Moreno, 2010). While reading the book, reading and comprehension strategies have been developed by considering whether or not activities such as summarizing, underlining keywords, taking notes, discussing the main idea and similar activities have been done. Commonly used strategies are note taking, underlining, summarizing, writing to learn, outlining and mapping, SQ3R, SQ4R and PQ4R (Slavin, 2006). The use of metacognitive strategies is supported by the following articles that increase reading comprehension skills (Bibi, 2011; Tandililing, 2011; Çakıroğlu, 2007; Purnomo, 2016; Sarimanah, 2016; Fatimah, 2016; Kanmaz, 2012; Ayçin, 2009; Prasetyani, 2010; Gürbüz, 2017; Arı, 2014; Demirci, 2016; Yokuş, 2010; Wahyuningsih, 2012; Demircioğlu, 2008), metacognitive thinking (Kanmaz 2012; Demirci, 2016; Demircioğlu, 2008; Özcan, 2007; Baysal et. al., 2013; Rodli, 2015; Walt & Maree, 2007; Yokuş, 2010); and retention (Ayçin, 2009; Setiawati & Corebima, 2017; Ramdiah & Corebima, 2014). However, there is no study on the PQ4R metacognitive learning strategy. This study is the first study in which the PQ4R metacognitive learning strategy was experimentally applied at primary school level.

Students who can make sense of and interpret what they read increase their reading habits and their self-confidence in understanding what they read (Epçaçan & Demirel, 2011). Bandura's social learning theory has become widespread and self-efficacy is based on the individual's own capacity to organize and successfully perform the activities required to perform defines it as a judgment. Also, Bandura characterizes self-efficacy as people's perception about the ability to conduct any task (Bandura, 1986). Bandura (1986) claims that self-efficacy and learning are correlated concepts. Self-efficacy beliefs are effective in academic success. The extent to which cognitive ability level, previous education preparation, educational attainment, gender, and attitudes towards academic activities affect academic performance is also subject to self-efficacy beliefs (Bandura, 1997). In addition, the literature put forth the use of learning strategies increased self-efficacy beliefs (Yıldız, 2019; Gözüm, 2018; Sünbül, 2013).

PQ4R strategy is one of the most well-known techniques to support students' understanding and recall their reading, with preview, question, read, reflect, recite and review stage's (Sanacore, 2010). In the preview stage, students take note of the main idea and subtitles of the text and examine them in bold, (Acero et.al., 2004). In the ques-

tioning stage, students prepare questions about the place they are examining. In the reading stage, students read the text. In the reflecting stage, students answer their questions with their own expressions, without looking at the text (Slavin, 2006). In the reciting stage, students re-read the text, taking notes and underlining. In the review stage, students review reading material, self-assess and summarize the material (Acero et.al., 2004).

The aim of current study is to elicit the effect of PQ4R on reading comprehension, self-efficacy, metacognition and retention.

Method

Design

Since the data of the study was made to include quantitative and qualitative data, it was carried out according to "embedded design" from mixed pattern research. Quantitative data of the study were conducted with non-equivalent control group design. This model contains two already existing groups that they were not created by random assignment. One of them was identified as experimental group, the other as control group (Karasar, 2017). While PQ4R strategy was applied in experimental group, instruction based on Turkish curriculum was used in the control group. Reading comprehension test, self-efficacy scale and metacognitive awareness inventory was applied as pre-tests and post-tests to both groups. At the same time reading comprehension test was applied as a follow up test. In the qualitative part of this research, a case study was used in order to get students' opinions about PQ4R learning strategy. Case study is a research method that works on a current case within real life boundaries, where the boundaries between the case and the related content are not clearly separated and there are multiple sources of evidence and data. Since the case studies can be conducted with quantitative or qualitative approaches, the qualitative data in the study was collected through interview (Yıldırım & Şimşek, 2016).

Participants

The participants were 35 students (17 students in experimental group and 18 students in control group) studying in 4th grade of a primary school in a province of Western Black Sea region. 17 students were in experimental group while 18 students were in control group. The data was gathered in the 2018-2019 spring term. The equality of groups was identified with reading comprehension, reading self-efficacy scale and metacognitive awareness inventory pretest scores. Experimental and control group students' pre-test scores of reading comprehension test ($t_{(33)}: 1,330; p>0.05$), self-efficacy scale ($t_{(33)}: 0,670; p>0,05$) and metacognitive awareness inventory ($t_{(33)}:0,574; p>0,05$) indicated that both groups were equal before the experimental procedure.

Instruments

The data was gathered with self-efficacy scale, metacognitive awareness inventory, reading comprehension test.

Reading Comprehension Test

The test was developed by the researchers. While developing the achievement test, 40 multiple choice test questions were written in line with 4th grade Turkish lesson objectives. The trial form were presented to the expert opinion and applied to 424 students in 5th grade as pilot study. In the results of the item analysis, 12 items were eliminated from scale because their discrimination values were low. 28 questions were included in the final form.

The difficulty index mean of the 28-items, which ranged between 0,44 and 0,87, was found to be 0,69. The item discrimination indexes ranged from 0,32 to 0,66, and the discrimination index mean of items was 0,50. The internal constintency of the these items was 0,88.

The Scale of Self-Efficacy Reading Comprehension

The scale was developed by Epçaçan and Demirel (2011) to measure students' reading self-efficacy beliefs. The scale consists of 27 items. The internal constintency of these items was 0,88.

Metacognitive Awareness Inventory

Inventory was developed by Mokhtari and Reichard (2002). Translation of the inventory into Turkish culture was made by Öztürk (2012). The inventory consists of 30 items. The internal constintency of these items was 0,93.

Focus Group Interview

It was prepared in order to get the experimental group students' opinions about the experimental process. In order to ensure the continuity of the questions in the interview form, "How did it change? How did it affect it?" such questions were added during the interview. Participants in the interview were determined by maximum variation sampling. The interviews were carried out by the researcher in person and recorded with a tape recorder. The draft interview form was presented to an expert for his opinion and restructured accordingly. Before starting the interview, comprehensibility was checked by asking questions to a student in the 4th grade. The data of the interview was analyzed separately with a researcher and an expert.

Data Analysis

Kolmogorov-Smirnov was administered. Also values of skewness and kurtosis were considered to decide the analysis method. Paired samples t-test Ancova was used to analyze data. As for effect size, method eta square (η^2) value was calculated. While the value 0,01 is interpreted as small effect, 0,06 is interpreted as medium effect and 0,14 is interpreted as large effect (Green, Salkind & Akey, 2000). Descriptive analysis was used in the analysis of the data obtained from the interview, which is the qualitative data of the research.

Findings

Quantitative Findings

Paired samples t test results in table 1 and Ancova results in table 2 were presented for reading comprehension test, reading self-efficacy, metacognitive awareness inventory, and follow up test of groups.

Table 1

Paired Samples t Test

	Experimental Group					Control Group				
	Test	M	SD	t	p	Test	M	SD	t	
η^2										
Reading Comp Test	Pre-Test	18,3	3,5	8,69*	0,00	Pre-Test	16,72	3,65	0,332	0,744
	Test	5	8			Post-Test	16,50	4,40		
	Post-Test	26,1	1,7							
	Test	7	4							
Self-Efficacy Scale	Pre-Test		0,5	4,024*	0,00			0,67	0,250	0,806
	Test	3,97	1					4		
	Post-Test	4,37	0,2			Pre-Test	3,83	0,54		
	Test		8			Post-Test	3,87	7		
Metacog Awareness Inventory	Pre-Test		0,7	2,757*	0,01			0,73	1,727	0,102
	Test	3,51	5			Pre-Test	3,66	9		
	Post-Test	3,92	0,6			Post-Test	3,38	0,92		
	Test		4					8		
Follow Up	Pre-Test	26,1	1,7	0,77	0,44	Pre-Test	16,50	4,40	0,386	0,704
	Test	7	4			Post-Test	16,16	5,00		
	Post-Test	25,8	1,5							
	Test	2	9							

* $p < 0,05$

Table 2

ANCOVA Results

	Source	Sum of Squares	Df	Mean Square	F	P	Partial η^2
Reading Comprehension Test	Pre-Test	119,332	1	119,332	14,707	0,001	0,71
	Test	645,636	1	645,636	79,573*	0,000	
	Group	259,639	32	8,114			

	Error Total	16928,000	35				
Self-Efficacy Scale	Pre-Test	1,687	1	1,687	11,565	0,002	
	Test	1,690	1	1,690	11,584*	0,002	0,26
	Group	4,667	32	0,146			
	Error Total	601,503	35				
Metacognitive Awareness Inventory	Pre-Test	9,279	1	9,279	24,697	0,000	
	Test	3,518	1	3,518	9,364*	0,004	0,22
	Group	12,023	32	0,376			
	Error Total	489,723	35				
Follow Up	Pre-Test	111,542	1	111,542	10,042	0,003	
	Test	646,924	1	646,924	58,244*	0,000	0,64
	Group	355,429	32	11,107			
	Error Total	16508,000	35				

* $p < 0,05$

Reading Comprehension

Reading comprehension statistics indicate that while there is a significant difference between the experimental group students' pre-test scores and the post-test scores in favor of the post-test ($t_{(16)} = 8,69$; $p < 0,05$), there isn't significant difference in control group ($t_{(17)} = 0,33$; $p > 0,05$). The eta square (η^2) value in experimental group was 0,83. This value indicates that the PQ4R strategy has a large effect on increasing the level of students' reading comprehension. Ancova results of reading comprehension test indicates that there is significant difference between post-test means in favor of experimental group ($F_{(1,32)} = 79,573$; $p < 0,05$). This indicates that the PQ4R strategy is more effective on students' reading comprehension than the traditional method. Also eta square (η^2) value was observed as 0,71. This value equals large effect. It can also be said that the PQ4R learning strategy has a 71% larger effect on increasing students' reading comprehension than traditional instruction.

Self-Efficacy

Self-efficacy belief statistics indicate that while there is a significant difference ($t_{(16)} = 4,02$; $p < 0,05$) between the experimental group students' self-efficacy the pre-test scores and post-test score in favor of the post-test, there isn't significant difference in control group ($t_{(17)} = 0,25$; $p > 0,05$). The eta square (η^2) value in experimental group was 0,50. This value indicates that the PQ4R strategy has a large effect on students' reading self-efficacy belief. Ancova results of reading comprehension test indicates that there is significant difference between post-test means in favor of experimental group ($F_{(1,32)} = 11,584$; $p < 0,05$). This indicates that the PQ4R is more effective on the reading self-efficacy belief than the traditional method. The eta square (η^2) val-

ue was 0,26. This value shows large effect. It can also be said that the PQ4R learning strategy has a %26 more effective on increasing students' the self-efficacy belief in reading comprehension than traditional instruction.

Metacognition

Metacognition statistics indicate that while there is a significant difference between the experimental group students' pre-test scores and post-test scores in favor of the post-test ($t_{(16)} = 2,75; p < 0,05$), there isn't significant difference in control group ($t_{(17)} = 1,72; p > 0,05$) The eta square (η^2) value in experimental group was 0,32. This value indicates the PQ4R strategy has a large effect on students' metacognitive awareness. The Ancova results indicate that there was significant difference between post-test means in favor of experimental group ($F_{(1,32)} = 9,364; p < 0,05$). This indicates that the PQ4R strategy is more effective on metacognition than the traditional instruction. The eta square (η^2) value was 0,22. This value shows large effect. It can also be said that the PQ4R learning strategy has a %22 larger effect on increasing students' the metacognitive awareness in reading strategy than the traditional instruction.

Follow up Test

Follow up test statistics indicate that there is no significant difference between the the experimental ($t_{(16)} = 0,779; p > 0,05$) and control group ($t_{(17)} = 0,386; p > 0,05$) students' reading comprehension post-test scores and the follow up test scores. This indicates the PQ4R strategy and traditional instruction ensure that the level of reading comprehension of the students has not changed. Ancova results indicated that retention test means of experimental group students was significantly higher than post-tests means of control group students ($F_{(1,32)} = 58,244; p < 0,05$). The eta square (η^2) value was 0,64. This value shows large effect. This indicates that the PQ4R strategy is more effective permanent level of reading comprehension of the students than the traditional in instruction.

Qualitative Findings

The qualitative findings of the research were collected with the interview. Descriptive analysis was used to analyze the data obtained from the interview. As a result of the analysis, guessing, attention, question and reading comprehension codes were reached. Codes obtained were presented respectively.

Guessing

For the PQ4R metacognitive learning strategy, the prediction phase is very important. Before starting to read a text, it is necessary to examine the whole text. This review provides a preliminary idea of the material to be read. Therefore, this stage should be planned when using the strategy.

Ö2: *We were not making our first guess and answering the questions, and you are making our first guess I started to examine the texts now. Our teacher was making us read the story in the book, then we would answer his questions ...*

Ö4: *..... .. as we did with our teacher in our previous Turkish lessons, we did not pay attention to the places that attracted our attention, we did not examine them... .. I could not understand the text I read before with our teacher very well because we almost read the text quietly and immediately pass to the questions, so our understanding is very good. it could not be achieved I understand it makes me think better and visualize it in my mind thanks to our review thanks to the pictures.*

Ö5: *It changed my guessing skills, changed my imagination skills in my mind....*

Based on the above quotation, it can be said that the students' prediction and understanding skills improved thanks to the preview phase in the lessons taught with the PQ4R metacognitive learning strategy, unlike the traditional practice.

Attention

The prerequisite for understanding a given material is to pay attention to that material. Attention is described as focusing on a stimulus (Woolfolk, 2016).

Ö1: *For example, there were places where I had such difficulties while reading that text, my thoughts wandered , but now we read it briefly with friends like this, we both read the text carefully, examine it carefully, raise questions ourselves, and improve our social life.*

Ö3: *..... .. my teacher could not pay much attention while reading, my teacher started to draw my attention more when I designed questions from my own mind, teacher texts*

Ö4: *..... As we did with our teacher in our previous Turkish lessons, we did not attach importance to the places that attracted our attention*

When the statements of the students are examined, it can be said that the attention process occurs without reading the texts given by the students thanks to the pre-examination phase, which is the first step of the PQ4R learning strategy.

Question

The second stage of the PQ4R learning strategy, the question stage, involves creating a question about a material for which you have not had an idea, after examining it. At this stage, it is aimed to arouse interest in the material to be read. It should be planned by taking this stage into consideration in the organized practices.

Ö1: *The step I like the most is our own writing of questions the questions we draw up on our own further develop our brains like this and help us understand the text more.*

Ö3:..... *When we did it with our own teachers, we were only reading texts and we were not designing questions in our minds... .. there was a difference in the lessons we did with you, my teacher, everyone can read it, my teacher, we read it briefly and my teacher started to draw my attention more when I designed questions from my own mind in our notebook... ..*

Ö4: *I like that our students design questions from their own mind, write them and read them ... With this, we understand the text better and even get better results from the questions of the text, so I think to use it everywhere..*

Ö5: *There are differences, as an example, we were not creating questions, I could never understand the text I read. You know, we were constantly reading a text silently and going to questions. I could not understand at all but I think this application was useful to me.*

When the above quotations are examined, it can be said that the attention and comprehension levels of the students regarding the given reading material change positively thanks to the questioning stage, which is the second stage of the PQ4R learning strategy.

Reading Comprehension

Reading comprehension is to solve the thoughts in the texts by using their prior knowledge and to give meaning to the text. Reading comprehension is reaching a new idea by comparing and synthesizing what the reader has learned from the texts with their prior knowledge. After readers have read the material, they should bridge the information they have with the information presented in the text. Reading comprehension is about thinking. Readers' background information, interests and reading status are effective in understanding the material (Yılmaz, 2008).

Ö1: *How did it develop, that is, the questions we have drawn up on our own are further developing our brains like this and helping us to understand the text more.*

Ö3: *My teacher, I can understand the texts better, my teacher, I do not get stuck with the texts, my teacher, I can understand better. So much.*

Ö4: *It occurred because we understand the text better with this, even we get better results from the questions of the text scores so I think to use it everywhere.*

Ö5: *Yes, when I read a text at home, when I look at the pictures, I cannot think of anything at all, you know the title of the book, the title of the subject, I could not think of it in any way, but when I used this application while reading another text at home, it enabled me to perceive the text.*

Ö6: *I can summarize questions else, I can summarize them. I can also draw questions*

from them without reading. To better understand

When the above quotations are examined, it can be said that the PQ4R learning strategy positively enhances the students' reading comprehension ability.

Discussion, Conclusion and Recommendations

The current study investigated the effect of PQ4R on reading comprehension, awareness of metacognitive skills, reading self-efficacy and permanence of facts. The study was conducted in fourth graders for 12 weeks.

PQ4R strategy is an effective method because it implements metacognitive processes at a higher level, helps students organize and store information in texts, and provides information processing by creating an active learning environment (Rodli, 2015). As the The PQ4R metacognitive strategies-based reading learning model is an alternative model that can be used to help students overcome various difficulties in improving their reading skills. By using the metacognitive strategy-based reading learning model, the learning process is more dynamic as it actively involves students in seeking information from the text (Sarimanah, 2016). Prasetyani (2010) revealed that metacognitive strategies increase students' reading and learning success because their interest in learning grows. The findings indicated that the PQ4R strategy has a large effect in increasing the reading comprehension skills and the permanence of facts, reading self-efficacy and metacognitive awareness comparing to the traditional instruction. Literature revealed PQ4R learning strategy was more effective on school success (Ayçin, 2009; Bibi, 2011; Purnomo, 2016; Ramdiah & Corebima, 2014, Tadililing, 2011; Wahyuningsih, 2012) and reading comprehension (Başar ve Gürbüz, 2017; Fatimah, 2016; Kanmaz, 2012; Prasetyani, 2010; Purnomo, 2016; Rodli, 2015; Sarimanah, 2016; Tadililing, 2011), permanence of facts (Ayçin (2009; Ramdiah & Corebima, 2014; Setiawati & Corebima, 2017), metacognitive awareness (Kanzmaz, 2012) and Ramdiah & Corebima 2014) and self-efficacy (Gözüm, 2018) than traditional instruction. Çakıroğlu (2007) found that metacognitive strategy increased reading comprehension skills of students. PQ4R strategy strengthens students' acquisition of concepts and retention of information, and increases their reading comprehension success (Setiawati & Corebima, 2017). Logsdon (2007 cited in Rodli, 2015) stated that PQ4R is an effective strategy because it improves students' reading comprehension and recalling knowledges in these texts by as much as 70%. Özcan (2007) and Yokus (2010) stated that the use of strategy in learning facilitates the achievement of learning goals as it allows students to regulate and control their own learning.

Also findings of the current study indicated that the PQ4R strategy has a larger effect in increasing the reading self-efficacy belief compared to the traditional teaching method. Gözüm (2018) revealed that there is a significant effect of individuals' lan-

guage learning strategies on English self-efficacy perceptions.

When the qualitative findings of the research were examined, it was concluded that the students found this strategy effective, they understood the texts better thanks to this strategy. Although the students had had difficulty in guessing and answering the questions, this strategy enabled them to think and ask questions

The Limitations

The current study was conducted in 4th graders in Turkish lesson. However, the study can be conducted in different lessons and grades. This study examined the effect PQ4R strategy on the reading comprehension, self-efficacy belief, metacognitive thinking and permanence. However, it can be researched whether this strategy has an effect on other variables in addition, teachers' opinions about the PQ4R strategy could be investigated.

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