

Full Length Research Paper

The relationship of reading comprehension success with metacognitive awareness, motivation, and reading levels of fifth grade students

Aysel Memiş* and Metin Bozkurt

Bulent Ecevit University, Faculty of Education, Turkey.

Accepted 12 July, 2013

This research aims to investigate the relationship between meta-cognitive awareness, reading motivations, reading levels and reading comprehension success of fifth grade students using comparative relative scan model. There were 577 students. In the result of the research, in which data were collected with four scales, it was concluded that reading comprehension level of independent level readers was high and anxiety level decreases reading comprehension. There was not a differentiation in distribution according to sex and independent readers had the highest reading comprehension scores in both sexes. There is a moderately significant relation between reading comprehension and metacognitive reading comprehension, internal-external motivation and reading level. Metacognitive reading comprehension expresses 33% of total variance including internal-external motivation and reading level variables. According to standardized regression co-efficient, predictor variables on reading comprehension are reading level, metacognitive reading comprehension, external motivation and internal motivation respectively in significance order.

Key words: Reading comprehension, metacognitive awarenesses, reading motivations, reading levels.

INTRODUCTION

Interaction and comprehension stand out and it is stated that reading will be worthless without comprehension in reading definitions. For a successful academic life, reading comprehension skill stands out in every field. One of the elements emphasized is that vocabulary should be rich for comprehension that should be included in reading as a vital factor. In recent years, it is seen that several expressions accompany reading. One of these expressions is metacognition. Brown et al. argued, "metacognition plays a vital role in reading" (1986). Cognitive awareness in reading is described as conscious awareness of readers about strategic reading process and using strategies truly while understanding reading strategies repertory and high-level text (Zhang and Wu, 2009). Eilers and Pinkley (2006) suggested that comprehension

of primary school students will develop if they were taught metacognitive strategies that can be used while reading. Flavell (1979) suggested that metacognition plays an important role in reading comprehension and self-control fields and thus emphasized the relation between reading comprehension and metacognition.

Several studies have demonstrated positive relationships between the use of metacognitive and reading achievement. Successful readers monitor their reading and the state of their learning; they use strategies, adjust effort appropriately and evaluate the success of their ongoing efforts to understand (Brown et al., 1986).

Çakıroğlu (2007) emphasizes that students, who learn and use metacognitive strategies are more successful than others in reading all kinds of materials; their problem-

*Corresponding author. E-mail: ayselmemis@gmail.com

solving skills developed, they learned to organize knowledge; therefore, their academic success was affected positively. Hall et al. (1999) stated that metacognitive skill instruction developed reading and comprehension skills in nine-year-old students. Oluk and Başöncül (2009) investigated the effects of metacognitive strategies used by primary school eighth grade on academic success in Turkish Language and Science-Technology fields and concluded that reading strategy used as reading is an effective factor for students' success. Wright and Jacobs (2003) investigated the effects of the instructional method that used metacognitive strategies on reading difficulties of primary school students. In the result of the research, it was seen that instruction given to children decreased reading difficulties and developed reading performances. However Saraç's (2010) results showed that metacognitive knowledge did not contribute to students' reading comprehension; whereas metacognitive monitoring and metacognitive skills, together with general intelligence, were found to be significant factors in explaining students' reading comprehension.

Poor readers have been described as not using metacognitive strategies effectively (Campione, 1987; Cohen, 1988; Kaufman et al., 1985). It was found that the metacognitive reading comprehension instruction significantly improved the academic achievement of third-grade students in the domains of reading comprehension and vocabulary over the other instruction that was offered to the students in the comparison school. The intensity of the study and the systematic instruction of metacognitive strategies led to positive effects for understanding written text, which is the reason for reading (Boulware-Gooden et al., 2007).

According to Carrell et al. (1998), metacognitive strategies in reading may include establishing objectives in reading, evaluating reading materials, repairing miscomprehension, evaluating the ongoing understanding of the text, analyzing the text and paragraph structure to clarify the author's intention, adjusting reading speed and selective cognitive strategies accordingly, and engaging in self-questioning to determine if the objectives have been reached. Thus, reading is a metacognitive as well as a cognitive process. While cognitive strategies refer to deliberate actions that readers take in their efforts to understand texts, metacognitive strategies emphasize the monitoring and regulative mechanisms that readers consciously use to enhance comprehension. However, metacognition is considered to be a late-developing skill (Flavell, 1979).

Motivational factors should be given place as well as cognitive processes to develop reading comprehension skill. This is because motivational processes play important role in comprehending text that is read as well as cognitive processes. Reading motivation consists of internal and external processes that direct individuals to reading (Wang and Guthrie, 2004). According to Guthrie

and Wigfield (2005), readers should take interest in subject, have an internal reading desire, have a purpose for reading and have technical skills of reading so as to comprehend a text. It is very important to have these qualities that are related to motivational processes for a reader in terms of both text-reading and performing cognitive processes that are essential for reading effectively. The individuals with high internal motivation are zealous for work, believe in their own abilities, effective and successful readers. Motivation is related to the relations and activities of individual with other people and society. Readers, who like sharing and perform their own duties responsibly in learning groups, have internal motivation feelings (Akyol, 2010).

In Turkey, some researches were done: the relations among metacognitive levels, general intelligence and reading comprehension levels of fifth-grade elementary school students (Saraç, 2010), the relationship between 5th graders' reading comprehension, reading motivation and reading habits (Yıldız, 2010), effect of reading instruction activities based on cognitive awareness strategies on improvement of reading comprehension skills (Coşkun, 2011), the effect of reading comprehension strategy usage on reading comprehension skill, metacognition and attitude towards reading (Kanmaz, 2012), the efficacy level of using cognitive and compensation strategies for reading comprehension skill (Yaman, 2011).

Purpose

The purpose of the research is to investigate the relation of reading comprehension success of fifth grade students with reading motivation and reading levels.

METHODOLOGY

Study context

The New Educational System in Turkey called the 4+4+4 started in 2012-2013 academic year. This system extended mandatory schooling from 8 to 12 years. The age for starting school has been reduced to 66 months. Primary school begins at 5 years old; secondary school, 9 years-old (five grade). School attendance is compulsory. High school begins at 12 years-old; and distance education and religious high school are options.

Research design and sample

The study used relational survey model. It was conducted with 577 five-grade students, who were selected randomly in the Province of Zonguldak District of Ereğli, in 2011-2012 academic year.

Data collection tools

The reading comprehension successes of students were

Table 1. Reading comprehension levels of students according to sex and reading levels.

Reading level	Female			Male			Total		
	N	Mean	S	N	Mean	S	N	Mean	S
Anxiety level	153	15.18	4.87	200	14.46	4.97	353	14.77	4.93
Instruction level	131	20.30	4.57	75	19.73	5.17	206	20.09	4.80
Independent level	15	22.40	6.79	3	24.00	2.64	18	22.67	6.25
Total	299	17.78	5.54	278	15.99	5.58	577	16.92	5.63

Table 2. Prediction of reading comprehension with metacognitive reading comprehension, internal and external reading motivation and reading level variables.

Variable	B	Std. error	Beta	t	p	Binary r	Partial r	R	R ²
Constant	-4.959	1.693	-	-2.929	.004	-	-		
MCRCA	.172	.024	.265	7.048	.000	.435	.283		
Internal motivation	.300	.521	.035	.575	.565	.300	.024	0.576	0.332
External motivation	1.204	.569	.130	2.114	.035	.336	.088		
Reading level	3.443	.381	.338	9.044	.000	.480	.354		

F(4.572) = 70.963 p = 0.000. MCRCA: meta-cognitive reading comprehension awareness.

determined with reading comprehension success test (Kuşdemir 2007). To measure metacognitive reading comprehension awareness, "Metacognitive Reading Comprehension Awareness Scale" that was developed by Gelen and adapted by Çakıroğlu (2007) was used. To measure reading motivation, Reading Motivation Scale, which consists of 21 questions and adapted into Turkey by Yıldız (2010) was used. To determine reading levels, blank filling test (in which each seventh word of the text was erased and had totally 50 blanks) was used. Taylor has developed blank filling method to measure readability and stated that the score obtained from this test can predict reading difficulty in independent, instruction and anxiety levels (Ulusoy, 2009).

Data analysis

The means and standard deviations of each of the items measured were calculated. The differences between the means for each group were determined using a regression analysis. The value of .05 has been considered to determine significance level in the comparisons.

RESULTS

Information related to reading comprehension levels of students can be seen in Table 1.

According to Table 1, reading comprehension levels of female students are higher than that of male students. From readers that are in anxiety level (M=15,18) to readers that are in independent level (M=22,40), reading comprehension level increases significantly. There was not a significant differentiation in this distribution in terms of sex and independent readers were given highest scores for both sexes. Male students that are in independent reader level have the highest reading comprehension scores.

According to Table 2, there is a moderate relation between reading comprehension and metacognitive reading comprehension ($r=0.44$); internal ($r=0.30$) and external motivation ($r=0.34$) and reading level ($r=0.48$). Metacognitive reading comprehension gives a moderately significant relation with internal-external motivation and reading level variables. All four variables express 33% of total variance. According to standardized regression co-efficient, predictor variables on reading comprehension are reading level, metacognitive reading comprehension, external motivation and internal motivation respectively in significant order.

Based on the T-test results on the significance of regression co-efficient, it can be seen that reading level, metacognitive reading comprehension and external motivation are significant predictors of reading comprehension ($p < 0.05$). According to the research results, internal motivation has no significant effect on reading comprehension.

DISCUSSION

Reading comprehension level of female students is higher than that of male students. The readers that are in independent level have the highest reading comprehension scores. Considering sex, any differentiation was not found and independent readers had the highest reading comprehension scores in this distribution. Because it was found that good readers have high reading comprehension levels, activities should be designed and reading comprehension level should be increased developing vocabulary in order to let students reach independent reader level in the process.

Reading comprehension is moderately related with metacognitive reading comprehension, internal-external motivation and reading level. Four variables explain 33% of the variance altogether. According to standardized regression co-efficient, predictor variables on reading comprehension are reading level, metacognitive reading comprehension, external motivation, and internal motivation respectively in significant order. If T-test results are examined, it can be seen that reading level, metacognitive reading comprehension and external motivation ($p < 0.05$) are significant predictors of reading comprehension level. Similar to the research results, Jacobs and Paris (1987) asserted that third and fifth grade students that have high reading comprehension skills have also high metacognitive knowledge levels related to reading. Tice (1991) found that metacognitive skills increase reading, reading comprehension and writing skills in sixth grade. In the research conducted with third and fourth grade students by Kraayenoord and Schneider (1999), the relation of reading success with metacognitive knowledge and motivational factors was investigated. In the research that was conducted with 140 students, it was understood that upper memory level and metacognitive strategy knowledge are the best predictors of reading comprehensive success of students, using regression analysis, in which motivational factors included the model also. Rouet and Emre (2002) revealed that there is a significant relation between metacognitive knowledge and reading comprehension in elementary school, third grade and fifth grade students. The study of Roeschl-Heils et al. (2003) is a follow-up of the study conducted by Van Kraayenoord and Schneider; it tries to predict the reading success of the students of first study with meta-cognitive knowledge and motivational factors when they are seventh and eighth grade. It was seen that the most important predictor of reading success is metacognitive knowledge as it was seen in previous study, in which versions appropriate for ages of the study population of the measurement tools were used in previous study. In their research, Çetinkaya and Erkin (2002) applied reading comprehension success test and metacognitive inventory on 206 students and suggested that there was not any significant relation between metacognition and reading comprehension. Cain et al. (2004) suggested that metacognitive follow-ups of students significantly contribute to the variability of reading comprehension success. Oakhill et al. (2005) compared students, whose reading successes are high, with students whose reading successes low, and concluded that they are more successful in recognizing incoherencies and meaningless sentences in the text that are the indicators of true metacognitive follow-up. Kolic-Vehovec and Bajanski (2006) found a significant and strong relation between metacognitive follow-up and reading comprehension skill and suggested that reading comprehension level of female students were higher than that of male students. This is similar to this study. In their research that they conducted with third grade students,

Schellings et al. (2006) found that there is a significant difference between students that have low and high reading skill levels compared to both metacognitive strategy knowledge and usage. It was seen that both metacognitive strategy knowledge and strategy usage levels of the individuals that have high reading skill levels are relatively high. According to York (2006), as long as awareness of students increases, their comprehension levels increase. In the result of the study, in which Saraç (2010) investigated relation patterns between metacognition levels and reading comprehension levels of primary school five grade students, it was concluded that metacognitive knowledge does not contribute to the change of reading comprehension levels but contributes significantly to its variability.

REFERENCE

- Akyol H (2010). Türkçe ilkökuma yazma öğretimi. Pegem Akademi Yayıncılık, Ankara.
- Brown AL, Armbruster BB, Baker L (1986). The role of metacognition in reading and studying. In: Orasanu J (Ed.), Reading Comprehension: From Research to Practice. Hillsdale, NJ: Lawrence Erlbaum pp.49-75.
- Boulware-Gooden R, Carreker S, Thornhill A, Joshi RM (2007) Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *Read. Teacher* 61(1):70-77.
- Cain K, Bryant PE, Oakhill J (2004). Children's reading comprehension ability: concurrent prediction by working memory, verbal ability, and component skills. *J. Educ. Psychol.* 96(1):31-42.
- Carrell PL, Gajdusek L, Wise T (1998). Metacognition and EFL/ESL reading. *Instr. Sci.* 26(1-2):97-112.
- Coşkun S (2011). Bilişsel farkındalık stratejilerine dayalı okuma eğitimi etkinliklerinin okuduğunu anlama becerilerini geliştirmeye etkisi. Master Thesis, Abant İzzet Baysal Üniversitesi Eğitim Bilimleri Enstitüsü, Bolu.
- Çakıroğlu A (2007). Üstbilişsel Strateji Kullanımının Okuduğunu Anlama Düzeyi Düşük Öğrencilerde Erişi Artırımına Etkisi. Doctoral Thesis, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.
- Cetinkaya P, Ertkin E (2002). Assessment of metacognition and its relationship with reading comprehension, achievement, and aptitude. *Bogaziçi University J. Educ.* 19(1):1-11.
- Eilers LH, Pinkley C (2006). Metacognitive strategies help students to comprehend all text. *Read. Improvement* 43(1):13-29.
- Flavell JH (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *Am. Psychol.* 34(10):906-911.
- Guthrie JT, Wigfield A (2005). Roles of motivation and engagement in reading comprehension assessment. in Paris, S.G. and Stahl, S.A. (Eds), *Children's Reading Comprehension And Assessment*, Mahway, NJ: Lawrence Erlbaum Associates pp.187-213.
- Hall K, Bowman H, Myers J (1999). Metacognition and reading awareness among samples of nine-year-olds in two cities. *Educ. Res.* 41(1):99-107.
- Jacobs JE, Paris SG (1987). Children's metacognition about reading: issues in definition, measurement, and instruction. *Educ. Psychol.* 22(3):255-278.
- Kanmaz A (2012). Okuduğunu anlama stratejisi kullanımının, okuduğunu anlama becerisi, bilişsel farkındalık, okumaya yönelik tutum ve kalıcılığa etkisi. Doctoral Thesis, Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü, Aydın.
- Kolic-Vehovec S, Bajanski I (2006). Metacognitive strategies and reading comprehension in elementary-school students. *Eur. J. Psychol. Educ.* 21(4):439-451.
- Kuşdemir KB (2007). Çoklu zekâ kuramı destekli kubaşık öğrenme yönteminin türkçe dersine ilişkin tutum ve okuduğunu anlamaya yönelik akademik başarı üzerindeki etkisi. Master Thesis, Çukurova

- Üniversitesi Sosyal Bilimler Enstitüsü, Adana.
- Oakhill J, Hartt J, Samols D (2005). Levels of comprehension monitoring and working memory in good and poor comprehenders . *Reading and Writing: An Interdisciplinary J.* 18(7-9):657-686.
- Oluk S, Başöncül N (2009). İlköğretim 8. sınıf öğrencilerinin üstbilis okuma stratejilerini kullanma düzeyleri ile fen-teknoloji ve türkçe ders başarıları üzerine etkisi. *Kastamonu Eğitim Dergisi*, 17(1):183-194.
- Roeschl-Heils A, Schneider W, Van Kraayenoord CE (2003). Reading, metacognition and motivation: A follow-up study of German students in Grades 7 and 8. *Eur. J. Psychol. Educ.* 18(1):75-86.
- Rouet JF, Eme E (2002). The Role Of Metatextual knowledge in text comprehension, issues in development and individual differences. P. Chambres, M. Izaute & P. Marescaux (Eds.) *Metacognition: Process, Function and Use*. Norwell, Massachusetts: Kluwer pp.21-134.
- Sarac S (2010). İlköğretim beşinci sınıf öğrencilerinin üstbilis düzeyleri, genel zekâ ve okuduğunu anlama düzeyleri arasındaki ilişkinin incelenmesi. Doctoral Thesis, Marmara Üniversitesi Eğitim Bilimleri Enstitüsü, İstanbul.
- Schellings G, Aarnoutse C, Van Leeuwe J (2006). Third-grader's thinkaloud protocols: types of reading activities in reading an expository text. *Learn. Instruct.* 16(6):549-568.
- Tice TN (1991). Metacognition. *Educ. Digest* 56(9):27.
- Ulusoy M (2009). Boşluk tamamlama testinin okuma düzeyini ve okunabilirliği ölçmede kullanılması. *Türk Eğitim Bilimleri Dergisi* 7:105-126.
- Van Kraayenoord CE, Schneider WE (1999). Reading achievement, metacognition, reading self-concept and interest: a study of german students in grades 3 and 4. *Eur. J. Psychol. Educ.* 14(3):305-324.
- Wang JH, Guthrie JT (2004). Modeling the effect of intrinsic motivation, extrinsic motivation, amount of reading, and past reading achievement on text comprehension between u.s. and Chinese students. *Read. Res. Q.* 39(2):162-186.
- Wright J, Jacobs B (2003). Teaching phonological awareness and metacognitive strategies to children with reading difficulties: A comparison of the two instructional methods. *Educ. Psychol.* 23(1):17-45.
- Yaman I (2011). The efficacy level of using cognitive and compensation strategies for reading comprehension skill. Master Thesis, Ondokuz Mayıs Üniversitesi Eğitim Bilimleri Enstitüsü, Samsun.
- Yıldız M (2010). İlköğretim 5. sınıf öğrencilerinin okuduğunu anlama, okuma motivasyonu ve okuma alışkanlıkları arasındaki ilişki. Doctoral Thesis, Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.
- York KC (2006). An exploration of the relationship between metacomprehension strategy awareness and reading comprehension performance with narrative and science texts. Doctoral Thesis, University of Southern Mississippi, Mississippi.
- Zhang LJ, Wu A (2009). Chinese senior high school EFL students' metacognitive awareness and reading strategy use. *Read. Foreign Lang.* 21(1):37-59.