Full Length Research Paper

The relationships between dimensions of writing motivation and reading comprehension

Hasan Kağan KESKİN

Düzce University, Faculty of Education, Elementary School Department, Konuralp Campus / Düzce, Turkey.

The purpose of the present study is to identify to what extent writing motivation can classify readers as good or poor comprehenders. The study was conducted on a total of 156 fourth graders studying at a state-run primary school in the center of Duzce, Turkey. The data were collected through the Writing Motivation Scale and the Mistake Analysis Inventory for Reading Comprehension. The participants' writing motivation and reading comprehension scores were subject to a logistic regression analysis. According to the logistic regression model, the students were less likely to be good comprehenders when they viewed themselves unsuccessful in writing. The findings suggest that reinforcement of their writing motivation will help students to construct meaning in a better way, or to become good comprehenders.

Key words: Writing motivation, reading comprehension.

INTRODUCTION

Students are taught how to read and write two crucial skills of the modern age, during their primary education. Therefore, numerous studies have been conducted on the connection between reading and writing, two skills that are taught simultaneously. Different variables have been the focus of such studies, including writing motivation (Troia et al., 2013; Troia et al., 2012), levels of reading and writing motivation (Mata, 2011), the correlation between reading comprehension and summarizing (Bensoussan and Kreindler, 1990; Gao, 2013), special practices for reading and writing development (Barackman et al., 1995), and writing achievement as well as the use of reading comprehension strategies (Kirmizi, 2009). A review of literature suggests that most of these studies on writing, reading comprehension,

motivation, and the use of strategies are descriptive and explore potential correlations.

Motivation involves one's beliefs, values, and objectives, and it directs his/her behaviors (Guthrie et al., 2012). It is significant that motivation could trigger action, as stated by Ryan and Deci (2000) in the following words: "To be motivated means to be moved to do something." Motivated students exhibit strong perseverance to overcome difficulties they may encounter during their school lives. When faced with a difficult situation, they do not get frustrated; instead, they are able to find out certain strategies or different types of support to handle it (Troia et al., 2012). Lowly- motivated ones, on the other hand, are reluctant to take action, and their intrinsic motives are weak (Ryan and Deci, 2000). Academic life

E-mail: kagankeskin@yahoo.com. Tel: 0 380 542 13 55 / 2442.

is no exception in this respect. In fact, it is known that motivation has a great impact on student performance, particularly during reading-writing activities (Guthrie et al., 2012; Lam and Law, 2007). Students with high motivation to write generally have correspondingly high motivation to read (Mata, 2011). Research has demonstrated a close connection between reading motivation and reading comprehension (Lin et al., 2012; Schiefele et al., 2012; Yildiz and Akyol, 2011). According to Greene (1988), writing activities have a positive influence on reading comprehension. Similarly, Bensoussan and Kreindler (1990) argued that summarizing improves reading comprehension. All these suggest a circular relationship among reading, writing, and comprehension. Seeing that these three skills are intensively driven by motivational factors, it is significant to identify whether there is a predictive correlation between writing motivation and reading comprehension.

Reading comprehension, which constitutes the dependent variable for the present study, is of vital importance for students. Duke and Carlisle (2011) describe comprehension as the process by which meaning is constructed through written language and oral language. Nevertheless, writing is considerably different from reading and comprehension. The main difference between reading and writing is that the former involves constructing meaning out of a text whereas the latter is the expression of constructed meaning. In other words, a student cannot write about a given subject before he/she has constructed it as a meaningful whole in his/her mind. In addition to this cognitive aspect, writing also requires psychomotor and affective characteristics. Writing is decisively influenced, in particular, by such motivational factors as value placed on writing and the objective of writing (Mata, 2011). In reading, on the other hand, meaning construction is directly obtained from the text (Williams, 2005). However, the implication here is to derive a meaning out of the text which has a very large perspective since the concept of "text" also includes different elements such as writings, pictures and graphics. Moreover, readers also use their prior knowledge to derive a meaning (Akyol, 2006). Inasmuch as meaning stems from meaning construction out of writing or speaking (Duke and Carlisle, 2011), students need to activate the process of meaning construction for writing and then to write about constructed meaning. In this respect, writing requires more cognitive efforts when compared to reading.

The discussion above leads to the question as to the role played by writing motivation in reading comprehension. In other words, it is not clear enough whether writing motivation can be used for classifying students as good or poor comprehenders. Therefore, this work aimed at identifying the extent to which writing motivation can help classify students by their comprehension levels in the present study.

METHODOLOGY

This is a descriptive and explanatory survey. The dependent variable of this study has a binary/categorical value; therefore, the authors preferred to use Logistic Regression Analysis (LRA). LRA is a method that provides an estimated value of the response variable based on the explanatory variables/risk factors and that facilitates classification and assignment operations. LRA also provides the classification of the units based on the categories of the dependent variable regarding the effects of the explanatory variables and without asserting any assumptions of distribution (Özdamar, 2011, p. 571).

Participants

The sample comprised 156 fourth graders who were aged between 10 and 12. They studied at a state-run primary school located in the center of Duzce, Turkey. Written consent was granted for data collection by the Provincial Directorate for National Education. In addition, informed consent was obtained from the students, and the data were based only on the volunteering students. Those students who did not agree to participate in the study were not included in the sample.

Data collection and tools

The data were collected under the supervision of the classroom teachers. The teachers had already been informed as to the scale and the reading comprehension questions. The data collection tools were administered to the participants by the teachers. The students were told that this was not an exam but an ordinary procedure.

The students' writing motivation was measured through the Writing Motivation Scale, which was developed by Ozturk (2013). The scale contained five sub-dimensions, namely *positive attitude towards writing*, possessed objective, *loading failure to writing*, *sharing of writing*, and *effort to writing*. The instrument was measured with a five-point Likert type scale (options ranging from "Does not apply to me at all=1" to "Very much applies to me =5"). The factors of the original scale accounted for 54.27% of the total variance, and the original scale had a reliability coefficient of 0.81. The reliability coefficients of the sub-dimensions in the original scale are $\alpha=79$ for positive attitude towards writing; $\alpha=80$ for possessed objective; $\alpha=82$ for loading failure to writing; $\alpha=8$ for sharing of writing and $\alpha=82$ for effort to writing.

The students' reading comprehension levels were measured via "Tolerance and Peace", a text suitable for fourth graders (Gumus, 2002). The text was accompanied by six open-ended questions that were intended for the collective measurement of literal and inferential comprehension. The responses to the comprehension questions were assessed through an Mistake Analysis Inventory (Akyol, 2006, p. 233). According to the inventory, the grading of the responses to the literal questions was as follows: 2 points for full answers, 1 point for incomplete answers, and 0 point for unanswered questions. As for the responses to the inferential questions, 3 points were awarded for full answers, 2 points for slightly incomplete answers covering much of the answer, 1 point for incomplete answers, and 0 point for unanswered questions.

The scores assigned to the answers to the literal and inferential comprehension questions were added together in order to generate an overall comprehension score for the students. The comprehension scores were listed in descending order. The classification of the students as good or poor comprehenders was based on the median, a value commonly used for such classification (Lau & Chan, 2003). The median for the present study was 6. Whereas those students with a score above the median were called good comprehenders, those with a lower score than the median were named poor comprehenders. The classification procedure yielded 88 good comprehenders and 68 poor comprehenders, and their data were analyzed.

FINDINGS

First, descriptive statistics were revealed concerning the sub-dimensions of writing motivation. The statistics for the sub-dimension Positive Attitude towards Writing indicated that the students had high attitudes towards writing (m=4.04, sd=0.79, and $range$ from 1.00 to 5.00). As for Possessed Objective, the range was less wide, suggesting that the students had a clear objective of writing (m=4.52, sd=0.54, and $range$ from 2.50 to 5.00). The scores for Loading Failure to Writing were considerably low (m=2.28, sd=0.98, and $range$ from 1.00 to 5.00). The students did not view themselves as unsuccessful in writing, which positively contributed to their writing motivation. The scores for Effort to Writing implied that the students did make efforts (m=4.42, sd=0.64, and $range$ from 1.67 to 5.00). Finally, their scores for Sharing of Writing suggested that the students had an above-average tendency to sharing (m=3.68, sd=0.93, and $range$ from 1.00 to 5.00). The mean comprehension score was 5.63 (sd=2.24 and $range$ from 0 to 11).

Within the scope of the logistic regression analysis, the first thing to do was to look at the iteration history for the initial model, and the -2 Log likelihood value was 213.691 whereas the constant was 0.258. According to the classification data for the initial model, which did not include the predictive variables, the classification was correct by 56.4%. The chi-square statistic in the initial model, which only included the constant term, was significant ($\chi^2\beta_o$=20.461, p<0.05). This suggested that the coefficients for the predictive variables excluded from the model were significantly different than zero. In other words, the incorporation of the predictive variables into the model would enhance the predictive power of the model.

The next step was to look at the iteration history for the model into which the predictive variables were incorporated, and the -2LL value was 192.297. When the predictive variables were added to the model with the constant term, the -2LL discrepancy was 21.393 (213.691-192.297). This was a significant change. The connection between the predictive and predicted variables was also supported by the omnibus test (χ^2=21.393, df=5,p=0.001). In the summary of the objective model, the Cox and Snell R^2 was 0.128 whereas the Nagelkerke R^2 was 0.172.The former value indicated that the incorporation of the predictive variables into the model would account for approximately 12.80% of the variance for the dependent variable. Afterwards, a Hosmer and Lemeshow test was performed, and the finding was as follows, χ^2=10.016, df=8, sig=.264 (p>0.05). This insignificant value suggested that the model had acceptable fit; in other words, the model-data fit was satisfactory. Table 1 presents the subsequent classification.

The results of the analysis of the classification through the logistic regression analysis revealed that 37 of the poor comprehenders (n=68) had been correctly classified while the remaining 31 had been wrongly classified. In other words, the students had been correctly classified by 54.4%. On the other hand, 19 of the good comprehenders (n=88) had been wrongly classified whereas the remaining 69 had been correctly classified. In other words, the rate of correct classification for the good comprehenders was 78.4%. The rate of correct classification was 56.4% in the initial model. As for objected model the rate is 67.9%.

According to Table 2 one unit of increase in the predictive variable loading failure to writing led to a 50% reduction in the odds of being a good comprehender. The other predictive variables, on the other hand, did not have a significant influence on the dependent variable.

DISCUSSION AND CONCLUSION

The present study attempted to identify the extent to which variables in writing motivation could classify students as good or poor comprehenders. The results of the analysis revealed that the students viewing themselves as unsuccessful in writing, or loading failure to writing, were less likely to be good comprehenders. When viewed in combination with the results of the similar correlative studies in the literature, the finding explains the predictive correlation between the two variables. Loading failure to writing suggests that the student has low writing motivation. This is considerably risky for students and could cause them to write less. Troia et al. (2013) also pointed out this, arguing for a positive correlation between writing activities and motivational beliefs.

Carretti et al. (2013) compared expressive writing of good and poor comprehenders in reference to different variables. They observed that poor comprehenders made more spelling mistakes. Furthermore, poor comprehenders were at a disadvantage in their efforts to write

Table 1. The classification table for the objected model.

	Observed	Predicted		
		Poor comprehender	Good comprehender	Percentage Correct
Step 1	Poor comprehender	37	31	54.4
	Good comprehender	19	69	78.4
	Overall Percentage			67.9

Table 2. Estimated coefficients for the variables in the objective model.

		β	S.E.	Wald	df	Sig.	Exp(β)
	Attitudes towards writing	.156	.296	.277	1	.599	1.168
	Possessed objective	-.084	.409	.042	1	.837	.919
Step 1	Loading failure to writing	-.696	.197	12.488	1	.000	.499
	Effort to writing	.286	.331	.747	1	.387	1.331
	Sharing of writing	.028	.219	.016	1	.898	1.028
	Constant	.257	1.832	.020	1	.888	1.293

narrative texts. These findings suggest that writing is directly proportional to comprehension. This relationship is supported by the results of the present study as well as those of Carretti et al. (2013).

The correlation between writing motivation and comprehension, revealed by the present study, has one more aspect: reading. That is because comprehension entails effective reading. To explain this, Gao (2013) holds that meaning construction relies on an effective use of the cognitive processes of reading and writing. This idea of Gao's makes one better understand the finding of the present study that viewing themselves unsuccessful in writing may cause students to be less likely to be good comprehenders. On closer inspection, meaning construction appears to form the essence of both skills.

Lam and Law (2007) said that writing motivation influenced the writing performance. If this argument is generalized, it is found that motivational processes influence the professional performances of individuals. Then, the influence of writing motivation on reading comprehension can be demonstrated more clearly in the relation between writing and reading-understanding; since both of them include active cognitive processes along with regeneration. In reading context, "regeneration" is comprehending through meaning derivation while it is to sum up the proposition in the mind meaningfully and putting it into words in writing context. This kind of an approach to the relation between writing and comprehension might be helpful to understand it better.

Another aspect of the link between writing motivation and comprehension is observable in the process of setting objectives. According to Mata (2011), if students

have an objective for a given writing procedure, they will be able to maintain their writing motivation. Similarly, Swanborn and de Glopper (2002) maintain that having an objective for reading is a crucial factor in reading comprehension. Therefore, it can be argued that inability to set an objective for writing and reading could have a negative influence on students' attempts to construct meaning.

In conclusion, the findings of the present study actually point out two significant and direct factors in meaning construction, namely ability to sustain motivation and to set an objective. That is because highly-motivated children also have an objective. Therefore, students should be encouraged to move towards an objective not only at school but also at home. That is because, as mentioned above, it is easier to construct meaning out of purposeful reading comprehension and writing activities. In other words, it is almost impossible for students to construct meaning when they are faced with a reading comprehension or writing activity for which they do not have an objective. Furthermore, students should be enabled to keep their writing motivation dynamic through various writing activities.

In addition, if individuals see themselves unsuccessful at a practice or have this kind of expectations, their interaction with that practice will probably get weaker. Thus, if students get distant from writing and develop a negative attitude towards writing, they will possibly have a limited interaction with writing practice. Another meaning of this situation is that the skill of "regenerating thoughts and structuring through meaning derivation", which is created by writing activity, will be used less. Any

skill that is rarely used will get weaker in time. This situation implies the "Matthew effect" in reading suggested by Stanovich (1986). Is this effect also seen in writing, too? If our answer is "yes" it is necessary that students are positively motivated all the time to prevent them from considering themselves unsuccessful.

This study has some limitations. First of all, the study sample included only the fourth grade students. Secondly, the reading comprehension scores are limited to those obtained from the texts used in the study. Moreover, the collected data are limited to the writing motivation levels of the participant students since their motivational characteristics easily vary according to their individual traits. Therefore, the generalization of this study's outcomes needs special attention. Further studies considering different variables related to students such as age, gender, socio-economic and socio-cultural variables will be helpful for attaining more generalizable outcomes.

Conflict of Interests

The author(s) have not declared any conflict of interests.

REFERENCES

Akyol H (2006). Türkçe ilkokuma yazma öğretimi (5 ed.). Ankara: PegemA Publishing.

Barackman L, Brown L, Drilling S, Morgan B (1995). Improving Reading through Writing Xavier University (ED 392 028 ed., Vol. ED 392 028): Xavier University, Illionis.

Bensoussan M, Kreindler I (1990). Improving advanced reading comprehension in a foreign language: summaries vs. short-answer questions. J. Res. Reading. 13(1):55-68. doi: 10.1111/j.1467-9817.1990.tb00322.x

Carretti B, Re AM, Arfè B (2013). Reading Comprehension and Expressive Writing: A Comparison Between Good and Poor Comprehenders. J. Learning Disabilities. 46(1):87-96. doi: 10.1177/0022219411417876

Duke NK, Carlisle J (2011). The development of comprehension. In M. L. Kamil, P. D. Pearson, E. B. Moje & P. P. Afflerbach (Eds.), Handbook of reading research (Vol. IV, pp. 199-227). New York: Routledge.

Gao Y (2013). The Effect of Summary Writing on Reading Comprehension: The Role of Mediation in EFL Classroom. Reading Improvement, 50(2):43-47.

Greene CM (1988). Using a literature-based reading writing program in a grade 11 classroom to improve children's reading achievement, self-concept, and attitudes towards reading and writing. (Master dissertation). Available from Memorial University of Newfoundland Library (5195).

Gumus A (2002). Ilkogretim Türkçe 4 Ders Kitabi. Istanbul: Altin Kitaplar Publishing.

Guthrie JT, Wigfield A, You W (2012). Instructional Contexts for Engagement and Achievement in Reading. In S. L. Christenson, A. L. Reschly & C. Wylie (Eds.), Handbook of Research on Student Engagement. New York: Springer.

Kirmizi FS (2009). The relationship between writing achievement and the use of reading comprehension strategies in the 4th and 5th grades of primary schools. Procedia - Social and Behavioral Sci. 1(1):230-234. doi: 10.1016/j.sbspro.2009.01.042

Lam SF, Law YK (2007). The Roles of Instructional Practices and Motivation in Writing Performance. J. Experimental Educ. 75(2):145-164. doi: 10.3200/JEXE.75.2.145-164.

Lau K, Chan DW (2003). Reading strategy use and motivation among Chinese good and poor readers in Hong Kong. J. Res. Read. 26(2):177-190. doi: 10.1111/1467-9817.00195.

Lin D, Wong K, McBride-Chang C (2012). Reading motivation and reading comprehension in Chinese and English among bilingual students. Reading Writing, 25(3):717-737. doi: 10.1007/s11145-011-9297-8.

Mata L (2011). Motivation for Reading and Writing in Kindergarten Children. Reading Psychology, 32(3), 272-299. doi: 10.1080/02702711.2010.545268.

Ozturk E (2013). The Psychometric Properties of the Writing Motivation Scale. Int. Online J. Educ. Sci. 5(2), 351-360.

Özdamar K (2011). Paket Programlar ile İstatistiksel Veri Analizi (Vol. 1). Eskişehir: Kaan Kitabevi.

Ryan RM, Deci EL (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. Contemporary Educ. Psychol. (25):54-67. doi: 10.1006/ceps.1999.1020

Schiefele U, Schaffner E, Moller J, Wigfield A (2012). Dimensions of Reading Motivation and Their Relation to Reading Behavior and Competence. Read. Res. Q. 47(4):427-463. doi: 10.1002/RRQ.030

Stanovich KE (1986). Mathew effects in reading: Some consequences of individual differences in the acquisition of literacy. Read. Res. Q. 21:360-407.

Swanborn MSL, de Glopper K (2002). Impact of Reading Purpose on Incidental Word Learning From Context. Language Learning. 52(1):95-117. doi: 10.1111/1467-9922.00178

Troia GA, Harbaugh AG, Shankland RK, Wolbers KA, Lawrence AM (2013). Relationships between Writing Motivation, Writing Activity, and Writing Performance: Effects of Grade, Sex, and Ability. Reading and Writing: An Interdisciplinary J. 26(1):17-44. doi: 10.1007/s11145-012-9379-2

Troia GA, Shankland RK, Wolbers KA (2012). Motivation Research in Writing: Theoretical and Empirical Considerations. Reading Writing Q. 28(1):5-28. doi: 10.1080/10573569.2012.632729.

Williams JP (2005). Instruction in Reading Comprehension for Primary-Grade Students: A Focus on Text Structure. J. Special Educ. 39(1):6-18. doi: 10.1177/00224669050390010201

Yildiz M, Akyol H (2011). The Relationship Between 5th Graders' Reading Comprehension, Reading Motivation and Reading Habits. Gazi University J. Gazi Educ. Faculty. 31(3):793.