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THE IMPACT OF ELLIPSES ON READING COMPREHENSION

Research Article

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Abstract

This study aimed to detect the extent to which comprehending elliptical structures predicted reading comprehension. The study utilized a correlational survey model, and participants involved a total of 173 middle school students. Data were collected through two different tools based on the same text in 2019. The ellipsis comprehension test consisted of 40 items that included various types of elliptical structures present in the text. These items were in the form of fill-in-the-blanks. The reading comprehension test that was developed based on the same text comprised 21 items in the form of multiple-choice items. The tests were administered to the participants every other day. During the data analysis, a simple linear regression analysis was performed to reveal the extent to which the ellipsis comprehension ability predicted reading comprehension, and a multiple linear regression analysis was employed to reveal the extent to which the sub-dimensions of ellipsis comprehension ability predicted reading comprehension. Enter method was used in the regression analysis. Findings showed that ellipsis comprehension was a significant predictor of reading comprehension. The elliptical sub-dimensions predicting reading comprehension the best appeared to be the ellipses in the form of verb, object and determinative units. However, it was also found that ellipses in the form of subject and indirect object did not significantly predict reading comprehension.

Keywords: Ellipsis, reading, comprehension, cohesion, narrative.

1. Introduction

There are a wide range of variables affecting comprehension ability and achievement. However, reading in essence depends on the nature and quality of interaction between the reader and the text (Cohen and Cowen, 2008; Larson and Marsh, 2005). While the reader performs reading using his/her repertoire of skills alongside his/her language and world knowledge, the text offers an encoded content owing to its structural characteristics. The discourse used in the text content is structured through the connection of sentences in semantic and grammatical aspects (Crystal, 1992). The achievement in reading act depends on the analysis of these connections.

One of the operations in reading comprehension is decoding the grammatical relations of the text. Grammatical relations ensure the cohesion of the texts, turn it into a coherent system and reflect the path through which signification will take. They also help the reader to correlate the pieces of information and thereby facilitate the comprehension (Gernsbacher, 1990; McNamara et al., 2014). The relations constituting the cohesiveness emerge with the tools under two main categories: lexical and grammatical (Halliday and Hasan, 1976). The text, which is the object of the comprehension act, becomes cohesive with the grammatical relations and transforms into a discourse that creates a semantic system (Martin, 2001). Tools such as anaphor, ellipsis, substitution, and conjunctions are employed for grammatical cohesion. Ellipses constitute just a type of these cohesion tools that create the discourse.

Text and reading

Although reading is an act of making sense of the context, this does not necessarily mean that every reading would result in quality comprehension. The transformation of the information provided in the text to the coherent mental representation of the individual is dependent on many components such as the reader, text, reading act, context etc. *Reader and text*, among the other components affecting reading, are more prominent compared to others (Duke, 2003; McNamara and Magliano, 2009). The skills possessed by the reader, as the subject of the comprehension act, and the structural characteristics of the text determine the level at which comprehension will take place.

Comprehension occurs by relating two or more pieces of information (Kintsch, 1999). The information in the reader's memory and the text constitute the source of sense-making. The relevant body of information in the reader's memory and the information coming from the text are held in the working memory and processed (Baddeley, 1986). The information coming from the text while reading updates the schematic knowledge in the memory and thus ensures comprehension (Kintsch, 1999; Johnson-Laird, 1983). The reader tries to make sense of the content by processing the language in various ways while decoding the text. Therefore, reading comprehension is also described as the act of generating meaning through the text (Kintsch, 1998; van Dijk and Kintsch, 1983). Reading process is completed with the mental representation of the textual meaning that is integrated with the prior knowledge of the reader.

The reader is expected to have certain skills and abilities to ensure that the act of reading results in coherent sense-making with the text. One such skill is the ability of decoding. Whilst reading, the reader performs decoding. Decoding is the ability to make a semantic value out of the input coming from the text (Hoover and Gough, 1990). Comprehension is a product of the decoding act (Gough and Tunmer, 1986). Another skill a reader should have is fluency and use of strategy. Fluency affects the capacity of the working memory during reading and thereby accelerates the speed of lexical recognition (Kuhn and Stahl, 2003) while strategies play a facilitating role in the reader's comprehension processes if the text is lengthy and complex. The strategies that are informed and goal-directed (Kirby, 1988) can be considered as different techniques that are processed based on the reader and the quality of the text. A reader having such qualities can be more successful in making sense of the text.

Besides the characteristics the reader has, the qualities of a text also play an important role in the success of sense-making. For a text to be of certain quality, it needs to be sufficient in terms of its textual features. Beaugrande and Dressler (1981) address the textual criteria as external and internal phenomena. External criteria are determined based on the principles of intentionality, situationality, acceptability, informativity, and intertextuality while internal criteria depend on the principles of coherence and cohesion. Coherence ensures the logical-semantic relation between the propositions while cohesion focuses on grammatical and lexical linkages between utterances (Uzun, 2011). In other words, coherence is related to macrostructure while cohesion pertains to microstructure. In the construction of the text, coherence and cohesion mutually affect one another.

If the text is cohesive in terms of grammar, this would support the reader in the sense-making process. While a text with a high level of cohesion has a positive effect on the reader, a text with a low level of cohesion may cause the reader to make more inferences in order to grasp the message of the text (McNamara et al., 2010). This might lead to the misinterpretation of the text content. In addition, previous research showed that texts with a clear use of cohesive devices can be understood better (Beck et al., 1991; Graesser et al., 2003; Ozuru el at., 2009). Cohesion has a positive effect on the comprehension of the text (Beck et al., 1984;

Linderholmet al., 2000). Therefore, it could be safe to say that cohesive devices are among important components for comprehending the texts with a written language code.

Cohesive devices guide the reader in realizing the relations between textual segments during the reading process. While grammatical relations between words and utterances turn the text into a connected discourse, they also establish the lexical and semantic relations that are necessary for sense-making (Kennedy, 1998). Reading comprehension is performed by taking these relations as a basis. In this sense, cohesive devices are principal textual components not only because they ensure the arrangement of the text, but also because they describe the content to the reader meaningfully (Hinkel, 2001). Owing to the cohesive devices, the text is no longer a pile of sentences but a system in which each unit interacts with each other in certain ways.

In the description of cohesion that is enacted with different devices in the text, interpretation of an element in the discourse is highlighted to depend on the accurate interpretation of another element (Halliday and Hasan, 1976). Consistency relations that make up the microstructure of the text offer ways of reaching the deep structure of lexical relations. In this way, each element becomes a reference point for making sense of other elements. These relations between units are ensured with references, connectors, commutations and ellipses (Halliday and Hasan, 1976; Halliday and Mathiessen, 2014; Keçik and Uzun, 2003). Each of these contributes to the sense-making in line with their own qualities. References, connectors and substitutions existing in the text with clear lexical segments are processed similarly by the reader. However, ellipses do not exist with the clear presence of a lexical segment. They are ellipted from the surface of the text, and therefore require a different type of processing. Correctly processing the ellipses that determine the intensity of the text may significantly affect comprehension.

Ellipsis and elliptical structure

Ellipsis is omitting an element that was previously present in the text from the surface structure (Uzun, 2011). Units that are not tangibly found in the oral or written narrations but the meanings of which are easily grasped are processed as ellipted elements. For instance, in the utterance "*Man likes walking, so does the woman*" the second proposition's verb is ellipted; however, although this unit is not used in the text, it still can be sensed. That is why Halliday and Hassan (1976) argue that ellipsis is a thing that is not said out loud and yet is understood. Ellipsis is a cohesive device that is applicable to only units that can be re-added to the utterance (Quirk et al., 1972). The ellipted unit is not seen in the surface structure but assumes a semantic role in the utterance.

Depending on the quality of the ellipted element, there are three types of elliptical structures. *Nominal ellipsis* is the omission of the head noun within the nominal group. *Verbal ellipsis* is the omission of the verb, and *clausal ellipsis i*s the omission of a clause (Halliday and Hassan, 1976). The way the elliptical element is omitted may vary by the language structure.

There are different approaches to the way an elliptical element is understood in an utterance. One of them is based on the syntactic parallelism principle. Based on this approach, the elliptical element is understood by comparing the utterance, in which the relevant element is present, and the structure of the unpronounced constructions (Fiengo & May, 1994; Merchant, 2001). According to this approach, the blanks in the sentence "*The woman […] to stay home in […]*" is interpreted and comprehended as "*The woman likes to stay home at her leisure*" as a result of the inference made from the structure of the sentence "*The man likes to walk at his leisure*". As for the semantic approach, this approach argues that syntactic structure has no effect in ellipses, and that this is related to semantic quality (Dalrymple, Shieber, & Pereira, 1991; Hardt, 1993). Kehler (2000) states that only when syntactic parallelism exists between two utterances in elliptical structures, this can serve as a means in inferencing of an elliptical

element. The functionality of these approaches compared to each other can be revealed from the nature of the context in which ellipses are present.

There are three types of analytical approaches for elliptical structures besides syntactic and semantic approaches (Aelbrecht, 2010). Among them is nonstructural approach according to which syntax is coherent with the vocalic realization and there is no syntactic structure related to the utterance apart from the heard utterance (Ginzburg & Sag, 2000; Culicover & Jackendoff, 2005). Besides this, null proform assumes that there is a null element in the syntax and it substitutes the elliptical element. This proform does not possess a syntactic structure; its meaning is inferred from the antecedent unit. According to some researchers, this operation is similar to making inferences from pronouns (Hardt,1999; Lobeck, 1995 and Depiante, 2000); however, there are those who advocate that this operation is done by copying the structure in the antecedent to the elliptical site (Fiengo & May 1994; Chung et al., 1995; Wilder, 1997; Beavers & Sag, 2004; Fortin, 2007). The third approach being PF-deletion asserts that there is no such thing as syntactic structure, and that it is only possible to remove the unpronounced content because there exists an antecedent that complement an elided clause (Merchant, 2001). A reader performs one of these operations when s/he encounters an ellipsis in the text.

In order to use an elliptical structure, there are two conditions that must be met. The first condition is the principle of recoverability. Accordingly, a structure can only be ellipted if there is an antecedent. The second condition is the principle that ellipsis can be realized only in correct syntactic structures that allow ellipsis (Aelbrecht, 2010). In the absence of these, it is not possible to use an elliptical structure.

The ellipsis is mostly made between the units in the sentences forming structural connections on the surface of the text. The exact form of the structure is specified before the sentence in which ellipsis is present, and based on this, the common unit in the next sentence is omitted (Beaugrande and Dressler, 1981). To set an example to such use; "A*: I like cinema very much*. B:"*Me too…*".

In written or spoken texts, ellipsis is generally used for reasons of economy in the language and of emphasizing the style (Crystal, 1980). The use of ellipsis provides benefits such as reducing the size of the text, word saving and economy, and eliminating unnecessary recursive. Thus, the texts become more comprehensible. In addition to this, rhetorical beauty can be created through ellipsis. The resulting style can make the text denser and more comprehensible. Narrative gains originality in this way. The reader's or addressee's perception of the ellipses depends on their inference from the given items. Inferences to be made will remove the semantic disconnection between the units of the text.

The ellipsis must be used moderately in the text. When used excessively, the principle of *adequacy* reflecting the organizing functions may not be achieved and textuality may be eliminated relatively (Beaugrande and Dressler, 1981). In order to avoid semantic problems that may occur due to ellipsis, it is necessary to take into account the prior information of the addresser and the addressee. In this regard, it can be said that ellipted structures have a relation with the world knowledge in addition to language knowledge.

Relation between ellipsis and reading

Elliptical structures are an integral part of natural language. It is not related to a particular language, but a universal feature in all languages (McCarthy, 1996). Wherever linguistic processing exists, elliptical structures can be used in oral or written language or in different forms and qualities between different languages (Parrott, 2000). The contribution of ellipses to sense-making during reading depends on whether they have been used sufficiently or on the contrary, used more than necessary. If information that should be ellipted are not ellipted, such

information becomes excessive (Grand-Davie, 1995). Repeating the information that the reader already has during the reading process creates interference with the sense-making process. On the other hand, excessive use of ellipses will negatively affect reading as it will prevent the unpronounced unit from being understood.

The effect of ellipses on reading comprehension is addressed in two points. The first point is that the reader has sufficient prior knowledge for the inference of the ellipted unit. If the reader has sufficient prior information, elliptical structures support reading comprehension. The second point is that the ellipses guide the reader to make inferences (Grand-Davie, 1995). Inference is one of the important components of reading comprehension (Garnham and Oakhill, 1996; Graesser et al., 1994; Singer, 1994). Elliptical structures enable the reader to infer, making him/her a more effective decoder and ensure the creation of common assumptions between the writer and the reader. However, readers who do not have prior information to complement the ellipted units by inference, or who cannot transfer the antecedents in the text to the elliptical site, may experience various problems in comprehension.

Reading comprehension is a process that includes many sub-components. Elliptical structures constitute only one of such components but constitute an important one. The purpose of this study is to determine the extent to which reading comprehension abilities of individuals, who correctly process and make sense of elliptical structures, differ from those of the others. To this end, the study sought an answer to the following question: "*To what extent do elliptical structures predict reading comprehension*?"

2. Method

This research adopted the correlational survey model. This model tries to determine the existence or degree of co-variation among variables (Karasar, 2003). The variables taken into consideration in the research are the level of understanding elliptical structures and the success in reading comprehension. Since the study is conducted to determine to what extent elliptical structures predict reading comprehension, the correlational survey model was employed.

2.1. Participants

The participants of the research are 173 middle school students who continue their education in the center of Antalya province. 44 students from 5th grade, 44 from 6th grade, 43 from 7th grade and 42 from 8th grade participated in the study, which included students from all grade levels. 90 of the participants are female and 83 of them are male students.

2.2. Data collection tools

The data were collected using two different tools: Ellipsis Comprehension Test and Reading Comprehension Test. Both of these tools were developed based on the same story. The reason as to why the same story was chosen for both tests is the idea that in this way, more realistic results can be achieved regarding in terms of the extent to which the level of comprehending ellipses predicted the level of reading comprehension success. For this, Yaşar Kemal's story, *Avcı* (Hunter), was chosen in line with the expert opinion. Four different experts noted that the story was appropriate for the level of middle school students.

While developing the Ellipsis Comprehension Test, all the ellipses in the story were removed. Then they were classified according to their types and one of the elliptical structures that were similar to each other and made reference to the same unit was taken and the others were eliminated. In this way, a total of 40 elliptical structures was determined. Of these elliptical structures, 16 of them were referring to the subject, 7 to the verb, 10 to the determinative, 5 to the object and 2 to the indirect object. All of these units were included in

the test and presented as fill-in-the-blanks questions in the story. One of the questions in the Ellipsis Comprehension Test is:

> *It is a wide flat plain between the Hemite mountain and Anavarza. Savrun stream mixes into the Ceyhan river right at the end of Anavarza. A reeds stretch from where the stream mixes into Ceyhan to the village of Vayvaylı. At the time of day, grizzly smoke falls across Akcasaz, Mount Hemite, Anavarza and Vayvayli. More precisely, it fumes like a smoke rather than a fine mist [1. What's the smoking thing? .....].*

The Reading Comprehension Test was also prepared based on the same story. The test included a total of 21 questions. The questions were created taking into account Bloom's revised taxonomy. In the test consisting of multiple-choice items, each item has four options. After the draft form of the test was developed, expert opinion was received from four different experts and necessary revisions were made in line with their feedback. Then, a pilot study was conducted with a group of 20 people and updates were made regarding the language problems encountered.

After administering the test to the participants, statistical analyzes were carried out. The missing values and outliers were examined before starting the analysis. No missing value was found in the dataset. However, there were 3 outliers (subjects 2, 111 and 124) and these were excluded from the dataset. Then, the item and test statistics of the Reading Comprehension Test were calculated. For item statistics, high-low 27 percent (46 persons each) groups were formed. The test statistics of the Reading Comprehension Test are presented in Table 1.

Table 1. *Reading Comprehension Test statistics*

Statistics related to Total Scores	Value
N	170
Mean	9.871
Median	10.000
Mode	9.000
Std. Deviation	3.257
Skewness	0.069
Kurtosis	-0.443
Minimum	2.000
Maximum	18.000

When Table 1 is analyzed, it is seen that the averagesuccess of the 170-people group is 9.87. The lowest score on the 21-question test is 2, the highest score is 18. The mean, mode and median being close to each other indicates normal distribution of data. Half of the points are greater than 10 and half are less than 10. The skewness and kurtosis coefficients in the range of ± 1 indicate that the dataset follows normal distribution.

The item statistics of the items in the Reading Comprehension Test are shown in Table 2.

Table 2. *Reading Comprehension Test item statistics*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
Difficulty	0.478	0.696	0.457	0.587	0.446	0.565	0.565	0.250	0.696	0.402	
Discrimination	0.478	0.478	0.391	0.435	0.326	0.609	0.391	0.196	0.304	0.543	
Mean	0.488	0.735	0.465	0.582	0.429	0.665	0.647	0.218	0.700	0.376	
Std. Deviation	0.501	0.442	0.500	0.495	0.496	0.473	0.479	0.414	0.460	0.486	
Skewness	0.047	-1.076	0.143	-0.337	0.288	-0.704	-0.621	1.381	-0.881	0.514	
Kurtosis	-2.022	-0.852	-2.003	-1.909	-1.940	-1.522	-1.634	-0.095	-1.239	-1.756	
	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Difficulty	0.674	0.239	0.370	0.446	0.457	0.098	0.478	0.272	0.543	0.467	0.772
Discrimination	0.391	0.304	0.391	0.587	0.197	0.022	0.435	0.065	0.652	0.543	0.283
Mean	0.671	0.218	0.312	0.459	0.435	0.129	0.459	0.265	0.412	0.418	0.788
Std. Deviation	0.471	0.414	0.465	0.500	0.497	0.337	0.500	0.442	0.494	0.495	0.410
Skewness	-0.732	1.381	0.820	0.167	0.263	2.228	0.167	1.076	0.362	0.337	-1.424
Kurtosis	-1.481	-0.095	-1.344	-1.996	-1.954	2.998	-1.996	-0.852	-1.892	-1.909	0.027

When Table 2 is analyzed, it can be seen that item difficulty indices change in the range of 0.098-0.772. As the item difficulty index approaches 0, the item becomes more difficult and as it gets closer to 1 it becomes easier. For item difficulty, the range of 0.00-0.40 indicates that the item is difficult, the range of 0.41-0.60 indicates that the item is of medium difficulty, and the range of 0.61-1.00 indicates that the item is easy (Frankel and Wallen, 2000; Wiersma and Jurs, 2005). It is seen that 4 items in this study are easy, 12 items are of medium difficulty and 5 items are difficult.

The item discrimination is the degree to which the item distinguishes between those who are knowledgeable and those who are not and varies within ± 1. For item discrimination, items that range between 0.40 and above are very good discriminators, those that range between 0.30-0.40 are good discriminators and the ones that range between 0.20-0.30 are moderate discriminators, and finally items with values below 0.20 as well as negative values should not be used (Wiersma and Jurs, 2005). In this study, 9 items were very good discriminators, 7 items were good discriminators and 1 item was a medium discriminator. 4 items (items 8, 15, 16 and 18) were determined to be very low discriminators for this study group and thus needed be removed. For this reason, these items were excluded from the analysis.

The split-half reliability of the test was calculated as 0.641. Although the recommended threshold value is 0.70 and above, values of 0.60 and above are also acceptable (Hair et al., 2014). One reason for the reliability coefficient to be below 0.70 is thought to be related to having prepared all items based on the same story. Despite this limitation, for the reliability of the findings, it was compulsory to determine the success in ellipsis comprehension and the reading comprehension level using data based on the same foundation.

2.3. Data collection and analysis

The data were collected in two different sessions. The participants were first given the ellipsis test and asked to respond to the questions within 30 minutes. A Reading Comprehension Test was given one day after this application. The application time of the test was again limited to 30 minutes. Participants who received only one of the tests were not included in the study. A total of 173 participants attended both sessions, but three were excluded from the study because they were outliers. Thus, the data were obtained from 170 participants.

A simple linear regression was conducted for the extent to which the success in comprehending ellipses predicted reading comprehension, and a multiple linear regression analysis was conducted for the extent to which the sub-dimensions of the success in comprehending ellipses predicted reading comprehension. Enter method was used in regression analysis.

3. Findings

Simple linear regression was conducted for the extent to which the success in comprehending ellipses predicted reading comprehension. The results of the regression analysis are presented in Table 3 and Table 4.

Table 3. *Model summary and ANOVA results*

	Sum of squares	sd	R	R^2	F	p
Regression	515.216	1	.557	.310	75.563	.000
Residuals	1145.490	168				
Total	1660.706	169				

As seen in Table 3, the relationship between the predictor (independent) variable and the dependent variable was calculated as 0.557. This relationship is at a medium level. The success of individuals in comprehending the ellipses explained 31% of the variance related to their reading comprehension success. When the results of the analysis were examined, it was seen that the model established for individuals to determine how their success in comprehending ellipses predicted their reading comprehension was significant, $F(1, 168) = 75.563$, $p < 0.05$.

Table 4. *Regression model*

Variable	*Coefficient*	*Std. Mistake*	β	t	p
Fixed	3.265	.670		4.873	.000
Ellipsis	.229	.026	.557	8.693	.000

According to the t-test results related to the significance of the regression coefficient presented in Table 4, the success in comprehending ellipses was a significant predictor of reading comprehension achievements.

According to the results of the analysis, the regression equation regarding predicting the success in reading comprehension is as follows:

Success in reading comprehension = 3.265+ 0.229 success in comprehending ellipses

When the model was examined, an increase of 1 unit in the success in comprehending ellipsis resulted in an increase of 0.229 unit in the reading comprehension success. In other words, the student who gets 10 points more from the Ellipsis Comprehension Test will get 2.29 points more in the Reading Comprehension Test. In this case, the score the student who gets 100 points from the Ellipsis Comprehension Test is expected to increase by 22.9 in the Reading Comprehension Test.

In the multiple linear regression analysis conducted to determine the extent to which sub-dimensions related to elliptical structures predict reading comprehension success, subject and indirect object sub-dimensions were not found to be significant predictors. The analysis was repeated for the remaining sub-dimensions. Multiple linear regression analysis results are presented in Table 5 and Table 6.

Table 5. *Model summary and ANOVA results*

	Sum of squares	sd	R	R^2	F	p
Regression	560.182	3	.581	.337	28.165	.000
Residuals	1100.524	166				
Total	1660.706	169				

The correlation between the predictor variables and the dependent variable was calculated as 0.581. This correlation is at a medium level. The verb, determinative and object sub-dimensions scores of individuals in terms of their success in comprehending ellipses explained 33.7% of the variance related to their reading comprehension achievements. When the results of the analysis were examined, it was seen that the model established for individuals to determine how their verb, determinative and object sub-dimension scores in terms of success in comprehending ellipses predicted their reading comprehension was significant, F (3, 166) = 28,165, p <0.05.

Table 6. *Regression model*

Variable	*Coefficient*	*Std. Mistake*	β	t	p	$r_{bivariate}$	$r_{partial}$
Fixed	3.120	.758		4.114	.000		
Ellipsis_Verb	.203	.122	.112	1.671	.097	.293	.129
Ellipsis_Determinative	.473	.126	.319	3.755	.000	.528	.280
Ellipsis_Object	.616	.200	.264	3.073	.002	.513	.232

When the bivariate and partial correlations presented in Table 6 were analyzed, there appeared a low positive ($r_{bivariate}$ = 0.293) relationship between the verb sub-dimension of success for comprehending ellipses and reading comprehension success, and it was seen that this relationship decreased ($r_{bivariate}$= 0.129) when the head and object sub-dimensions of success for comprehending ellipsis were controlled. It was seen that there was a medium level relationship ($r_{bivariate}$ = 0.528) between the determinative sub-dimension of success for comprehending ellipses and reading comprehension success, and it was found that this relationship decreased ($r_{partial}$ = 0.280) when the verb and object sub-dimensions of success for comprehending ellipsis were controlled. A medium level relationship ($r_{bivariate}$ = 0.513) was observed between the object sub-dimension of success for comprehending ellipses and reading comprehension success, and it was seen that this relationship decreased ($r_{partial}$ = 0.232) when the verb and determinative sub-dimensions of success for comprehending ellipsis were controlled.

According to the standardized regression coefficients (β), relative importance sequence of predictor variables for the success in reading comprehension was determinative, object and verb respectively. According to the t-test results related to the significance of the regression coefficient presented in Table 6, verb, determinative and object sub-dimensions of success in comprehending ellipses were significant predictors of reading comprehension.

According to the results of the analysis, the regression equation with regard to predicting the success in reading comprehension is as follows:

Reading comprehension success = 3.120 + 0.203 Verb + 0.473 Determinative + 0.616 Object

When the model was examined, it was seen that a 1-unit increase in the verb sub-dimension of the success in comprehending ellipses resulted in an increase of 0.203 in the success in reading comprehension. It was seen that a 1-unit increase in the determinative sub-dimension

of the success in comprehending ellipses resulted in an increase of 0.473 in the success in reading comprehension. It was found that a 1-unit increase in the object sub-dimension of the success in comprehending ellipses resulted in an increase of 0.616 in the success in reading comprehension.

4. Conclusion and Discussion

Findings obtained from the research revealed that correct processing of elliptical structures support reading comprehension. Reading takes place through the semantic analysis of a text that is decoded in writing. The interpretation of the text is based on understanding the sentences that make up it. The ellipses are decoding units processed at the sentence level (Lappin, 1996; Fiengo & May, 1994). While the grammatical system of the sentences that compose the text is decoded, a mental process is carried out in order to reach the sentential and textual meaning as a requirement of the act of reading. Therefore, correct processing of ellipses is the equivalent of performing one of the multiple processes carried out to understand the text that is being read.

Written texts consist of linking sentences in semantic and grammatical terms. The ellipses constitute one of the processes that ensure the structuring of sentences (Chomsky, 1971). The reason for applying ellipses in the structure of the sentence is to avoid recursion. On the other hand, elliptical structures are not found in every sentence; they can be used only if there is no change in the sense of the sentence when an element in that sentence is omitted from syntax (Swan, 1996). Therefore, even though the ellipses are omitted from the surface of the text, they are the units that continue to play a role in the content of the text. Only the physical existence of the ellipted unit is omitted from the sentence, not its semantic presence. Since the holistic meaning of the text is reached through sentences during the reading process, the ellipted units must be processed and interpreted in the same way as the explicitly used units. This is thought to be another reason for ellipses reinforcing the reading.

It is possible to make sense of the ellipses of a written text scattered in different sites during reading by reversely thinking its way of formation. Elliptical structures have two basic elements: *antecedent and ellipted unit* (Hardt, 1993; Lascarides & Asher, 1993; Kehler, 2000). During the reading, the relevant processing takes place first by detecting the ellipted unit and then establishing its correlation with the antecedent. Prior to the process of creating the text, the antecedent is first structured and then a suitable unit is eliminated from the surface of the structure. Successful reading in terms of elliptical structures is based on linking the antecedent to the ellipted unit through appropriate operations. Reading and comprehension are relatively unsuccessful when the necessary linking is not established.

With regard to the conditions about the correct processing of the ellipses, two different approaches can be seen in the literature. In studies based on the semantic approach, the relation between the ellipted unit and the antecedent is based on the semantic partnership (Webber, 1979; Lappin, 1984; Gawron & Peters, 1990). In contrast, approaches based on syntax link the same partnership to syntactic structures (Reinhart, 1991; Fiengo & May, 1994). However, in some studies, it was determined that the readers can understand the ellipses to some extent even when there is no syntactic antecedent (Arregui et al., 2006; Kim et al., 2011; Kim & Runner, 2018). Therefore, it is suggested that the relation that provides understanding of ellipses may not be established with semantic or syntactic structures alone, but it may be better to look at the context and nature of ellipsis instead (Arregui et al., 2006; Frazier & Clifton, 2006; Kehler, 2002; Kertz, 2010). Comprehension can be enhanced by the reader's reaction through an operational response appropriate to the type of the ellipses in the sentences in order to obtain overall meaning of the text during reading.

Reading comprehension requires structuring the message of the text accurately and effectively. The units that play a role in the realization of the comprehension are reader, text, process and sociocultural context (Sweet & Snow, 2002). These units are interactive during reading. The subject of the interpretation in reading is the reader, and the object is the text. The reader establishes a mental connection with various linguistic situations in the text and creates a conceptual structure related to the content of the text (Kendeou et al., 2007). The success of the reader in his interaction with the text is based on his ability to decode the system including the ellipses, establishing the connections between the units of the text and interpreting the content in a consistent manner with the sociocultural context (Grabe, 1988; Eskey, 1988; Zhenyu, 1997). Although linking of the antecedent that constitutes the ellipses to elliptical site is only one of the actions performed in the cohesion dimension of the text, this process significantly affects the reading comprehension success.

It is also important that the reader has a good semantic and syntactic skill since reading comprehension involves making sense through text. Research has revealed that readers with insufficient semantic and syntactic skills cannot make sense of sentences and phrases (Nation and Norbury, 2005; Nation and Snowling, 2000). On the other hand, individuals who are inadequate in terms of inference ability, which plays an important role in the processing of ellipses, also have problems in comprehension (Cain & Oakhill, 2007). The ability to clearly monitor the effect of ellipses in reading depends on the fact that other sub-skills affecting reading are sufficient.

In addition, remarkable results regarding elliptical sub-dimensions in Turkish language were obtained from the study. According to this, it was determined that ellipses in the form of especially verb, determinative and object are significant predictors of reading comprehension whereas ellipses in the form of subject and indirect object are not significant predictors of reading comprehension. These findings should be examined primarily in relation to the structure of Turkish language. Turkish is a language that works with suffixes, and since the constituent units are connected to the verb through suffixes, there is syntactic flexibility. In this study, elliptical structures are handled through the structural constituents of the sentence. It is thought that the ellipses in the text used follow a distribution compatible with the structural features of Turkish, and that this determines the level of comprehension to a certain extent.

Ellipses are generally addressed in three terms as noun, verb and clause ellipsis (Halliday and Hasan, 1976; Merchant, 2012). From the aspect of the constituent units of the sentences, verb corresponds to verbal ellipsis and the other units to the noun ellipsis. The clausal ellipses are formed by omitting the non-restrictive and prescriptive phrases. Each of these ellipses requires complementing the ellipted units with different linguistic elements. The verb, object and determinative which are significant predictors of reading comprehension are of verb and noun ellipses. On the other hand, subject and indirect object that are not significant predictors of reading are of the noun type. Based on this, it can be said that the types of the ellipses are not decisive in terms of predicting reading comprehension within the bounds of the findings of this research.

The difference between the types of ellipsis that predict and do not predict reading may be related to the fact that the type of the text used in the research was narrative. Altman (2008) considers the narratives a series of successive events arranged. Successive phrases require the continuity of certain elements in the same context. For this reason, the units known by the reader can be ellipted in various situations depending on the style created. Style is a primary element in narratives (Simpson, 2004). The style that constitutes the literacy is structured by the use of language, which may cause elliptical structures to be used differently than in natural language for communicative purposes. Verbs that describe events in narratives, objects

affected by verbs, and a word belonging to a part of a determinative can often be ellipted in the flow of a text. The use of such a language draws the reader more into the world of the text in accordance with the nature of the narrative. The sub-dimensions of elliptical structure that predict comprehension in the research can be explained by this fact.

It can be said that the subject and indirect object ellipses that do not predict reading show a different appearance within the structure of Turkish language when compared to other types in terms of the distance between the antecedent and the ellipted unit. In this sense, even if the subject in Turkish, which has a structure working with suffixes, is ellipted from the syntax, its presence can be seen in the verb with the relevant suffix attached to it. Therefore, it is difficult to talk about a complete ellipsis when it comes to the subject. The subject is generally used with a half elliptical structure in Turkish. Similarly, in ellipsis with regards to indirect objects, this type of ellipsis may have been more easily understood in this research, since the distance between the antecedent and the ellipted unit is less than the others. This is because the ellipted unit is complemented with the closest unit to it (Rosyidah, 2019). A process in which the reader has no difficulty in reading may not predict comprehension.

As a result, the ellipses, which are one of the cohesive devices that make up the text, are a significant predictor of meaning. The quality of the ellipted unit related to the sub-dimensions affects reading at different levels. Elliptical structures in narrative texts make individuals more effective in carrying out operations in reading. Apart from these findings, it is suggested to investigate to what extent other cohesive devices predict reading comprehension and how these differ according to the individual characteristics of the readers.

5. Conflict of Interest

The author declares that there is no conflict of interest.

6. Ethics Committee Approval

The author confirms that the study does not need ethics committee approval according to the research integrity rules in their country.

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