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Research Article

Evaluation of Secondary School Students' Writing Fluency Skills*

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Abstract

Developed to evaluate secondary school students' writing fluency skills, this study is descriptive in nature and uses a mixed method approach. During the research, the researcher attempted to identify students' abilities to write in terms of quantity and complexity, on the one hand, and also attempted to identify findings on accuracy, the organization of ideas, and the obstacles to fluent writing using qualitative data collection tools. The research population consisted of 379 secondary school students in the city center of Hatay, Turkey. Students were given 5 minutes to write, with most texts reaching between 91 and 125 syllables. Students' texts scored 5 points, 19-36 points, and 3 points on the "Accuracy," "Syntactic Complexity," and "Organization of Ideas" dimensions, respectively. Students' lexical diversity was found to be 17.48% when taking polysemy into account, however, the lexical diversity ratios of the students are 20.9%. The lexical density percentage of students was found to be 86.01%

Keywords

Fluent writing • Secondary school students • Organization of ideas • Lexical complexity • Syntactic complexity

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A work that expresses itself well has specific characteristics. Not only do such works include proper grammar, spelling, punctuation, and syntax rules, their ideas are organized in a rational and cohesive manner (Demiray, 1973; Ertan, 1968; Kavcar & Kantemir, 1986). Complex, yet still understandable, sentence structures (Kavcar & Kantemir, 1986) and a multitude of vocabulary items are used in the text. A person with good expression skills organizes his/her text taking these characteristics into consideration, does not have difficulty in organizing cohesive ideas, and does not waste much time writing. The more a person's writing level develops, the more his/her skill in fulfilling the requirements of written expression improves. This lays the groundwork for fluency.

The word fluent is defined as having the characteristic of being fluid, easily understood, readable, clear in terms of meaning, and being cohesive. Fluency is defined as being fluent, the characteristic of a word, writing, and expression's being fluent in the Turkish Dictionary (2005). According to Schmidt (1992), the words fluent and fluency have been generally used in a non-technical manner. We can state that the situation in question applies to us as well. We can describe a film that we have watched or a text that we have read as being fluent in daily language. Just as we can describe body movements or a psychomotor performance, like a dance, as being fluent based on body coordination, so can we describe language skills, like speaking, and reading, as being fluent depending on how well they convey the performer or speaker's intended message. When we say, "The last film I watched was so fluent that I couldn't understand where the time went," "It was such a fluent and absorbing book that I finished it right away," or "My friend speaks English very fluently," we actually touch upon some common characteristics related to the concept of fluency. Therefore, the word fluent has a very broad area of use, from how it is used in daily language to how it is used as an academic term. The common denominator of the concept of fluency includes such meanings as "being fluid, being cohesive, and not losing the characteristic of being whole."

Although fluency is used frequently in daily language, it varies in terms of its technical definition and how it is measured. This variability is also reflected in literature in which numerous perspectives have been formed about it. Researchers have stated that fluency is the amount obtained at a certain extent in a given time (Chenoweth & Hayes, 2001; Lannin, 2007; Wolfe-Quintero & Kim, 1998) without putting in too much effort, without experiencing difficulties (Brand & Brand, 2006; Schmidt, 1992; Zutell & Rasinski, 1991), without stopping for a long time or being interrupted (Casanave, 2004; Fillmore, 1979; Shekan, 2009), and is related to the consistency and coherence of the created written or oral product (Fillmore, 1979; Lannin, 2007).

There is a close relationship with fluency and language skills. For instance, reading is a language skill closely related to fluency. According to researchers (Başaran, 2003; Baştuğ, 2012; Keskin, 2012; Kuhn, Schwanenflugel, & Meisinger, 2010; Rasinski, 1989), the criteria on which fluent reading is based are generally accuracy (word recognition), automaticity (speed), and prosody. According to Akyol (2006), fluent reading may be defined as that which is done while paying attention to punctuation marks, emphasis, and intonations, without needing to repetition sentences or words, without syllabication and unnecessary pauses, without paying attention to meaning units, and reading as if one were speaking. In line with this definition, we can say that fluent reading skill is related to both quantitative and qualitative measurements. In terms of quantity, fluent reading skills consist of the amount of words read per minute, while quality is related to accuracy and prosody.

Researchers (Ellis, 2009) have identified fluent reading skills as the number of repetitions made while speaking (Elder & Iwashita, 2005; Foster, 1996; Kawauchi, 1995) and the sounds, syllables, or words produced per minute (Gilbert, 2007; Mehnert, 1998; Mendel, 1997; Tavokoli & Shekan, 2005), the duration of pauses (Foster, 1996; Mehnert, 1998; Mendel, 1997; Tajima, 2003), and organizations (Elder & Iwashita, 2005; Guara –Tavares, 2008; Sangarun, 2005; Yuan & Ellis, 2003). We can therefore state that fluent speaking consists of three sub-dimensions: quantity, error, and organization. As such, while the concept of automaticity (speed) in fluent reading corresponds to quantity in fluent writing, the concept of prosody, which is a characteristic unique to oral reading, corresponds to complexity, which is unique to writing.

Fluent Writing

Writing is the act of communicating what we hear, think, plan, see, and live through writing (Sever, 2004, p. 24), on the one hand, and the description of feelings, ideas, desires, and events with a certain number of symbols in accordance with certain rules (Özbay, 2007, p. 115), on the other. Writing does not mean simply compiling words or sentences on top of each other haphazardly. Writing is to express one's feelings, wishes, opinions, and ideas in a certain order, discipline, and harmony (Avcı, 2006, p. 32). This perspective brings into question those characteristics that must be present in a good written expression.

The language and style characteristics of how the text is expressed, as well as the subject chosen, the subject's limitation, and both the writer's purpose and perspective play a role in whether a text may be defined as good in terms of expression. In a well-organized text, words must be used in the right place with the right meaning, and no

error causing the reader to misunderstand the text must be allowed. In the same vein, attention must be paid to the succinct expression of feelings and ideas, the existence of harmony, and the purging of unnecessary words and sentences from the text. In addition, importance must be attached to such characteristics as clarity, clearness, consistency, and fluency in order for a text to be considered having good expression (Avcı, 2006; Kantemir, 1995; Kıbrıs, 2010).

One of the most important characteristics of an orderly, effective, and understandable text is fluency. Fluency can be defined as writing the text in an easy-to-read manner in which no element exists causing the reader to pause while reading. Taking the literature into consideration, it is possible to state two perspectives that have been developed on the definition of fluent writing. These perspectives can be expressed as “automaticity” and “ratio/time.” According to those who have developed the automaticity perspective (Brand & Brand, 2006; Schmidt, 1992), fluent writing is defined as a skill which is carried out automatically in which the text is both cohesive and the reader does not waste an excessive amount of time thinking about the writer’s intended meaning. According to those who have developed the second perspective (Chenoweth & Hayes, 2001; Ong & Zhan, 2010; Wolfe-Quintero et al., 1998), quantity and time are considered important in addition to automaticity in fluent writing. Writers able to use the maximum number of syllables, words, sentences, and grammar structures within the time allotted are considered to be fluent writers.

Brand and Brand (2006) address fluency mainly in terms of automaticity. According to them, fluency can be defined as students’ ability to carry out activities or tasks in an automatic, quick, and accurate manner. While a writer is considered fluent when s/he is able not only to put words on paper without exerting excessive effort, but is also able to establish relationships between ideas. According to this point of view, fluency in writing is ensured when ideas are organized in line with an order in writing when they are described in words known by all and can be uttered easily, and when sentences are short and structurally accurate. In addition, words composed of the same or similar sounds that are not easy on the ear and which negatively effect flow during reading should not be used; words, sentences, and ideas should not merge with one another; ideas and feelings should be well-organized and presented in a coherent manner so as to ensure fluency. Schmidt (1992) defines fluency as an “automatic operative process” and tries to support his point of view with speaking skills. According to him, fluent speech is automatic and does not require much attention or effort whereas non-fluent speech requires considerable effort and attention in order to be understood by one listening. Because fluent writers have gained substantial experience in writing, fluent writing is thus based on an automatic process that does not require much effort. Such writers do not waste time pondering over words, sentences, ideas, or their organization within the text. These processes have become automatic in fluent

writers. On the other hand, non-fluent writers have to ponder over not only what to write, but also where, when, and how to write it. The writing processes of non-fluent writers are frequently interrupted and require considerable revision. Texts lacking harmony emerge as a result. In order to avoid this, a substantial language experience is required.

The second perspective on fluent writing is the rate/time approach. According to this perspective, writers must obtain the highest rate possible in terms of writing quantity within the time allotted. Wolfe-Quintero et al. (1998) are those who first adopted this approach. According to them, the definition of fluency should be limited to rate and time. Fluency means to construe more words and structures in a limited amount of time whereas non-fluency means to construe only a few words or structures in a limited time. Fluency is not a measurement related to how complex or accurate words or structures are, it is a measurement related to the number of coherent words and/or structures that a writer is able to string together in a certain time frame. Chenowith and Hayes (2001) continued to develop this approach, defining fluent writing as text production rate within a certain period of time. According to Lannin (2007), writing fluency is a concept related to the number of words written per minute and the degree of harmony and cohesion of ideas. Therefore, according to some researchers (Chenowith & Hayes, 2001; Isaacson, 1988; Kaufer, Hayes, & Flower, 1986), those with fluent writing skills produce more texts in a short period of time.

The most significant criticism directed against the rate/time approach is that it overlooks such key factors as lexical complexity and text comprehensibility. According to this criticism, writers aim to reach the maximum amount of words within the time given without paying attention either to the difference or density of the words used while composing a text or to its comprehensibility in terms of accuracy and organization of ideas. According to Fellner and Apple (2006), if a text's lexical complexity and comprehensibility are not taken into consideration, students may appear to have developed fluent writing skills by repeating the same simple sentences within the time they are given. However, this does not reflect the truth and does not show that students have obtained fluent writing skills. So as not to encounter such a result, the concept of fluent writing must be defined as "the amount of words written in a certain time and the frequency of these words" and the applications to be carried out within this context must be realized and evaluated in line with this definition. Van Gelderen and Oostdam (2005) also support this perspective, stating that one of the fundamental characteristics of fluent writing is producing various word combinations and sentence structures.

Two perspectives developed for fluent writing and a third perspective that attempts to combine these two perspectives have been mentioned above. Even though three

perspectives exist, it would be more accurate to address these as perspectives that support one another instead of discussing them separately, to provide a better definition of fluent writing, and to establish clearer writing applications and assessments.

Based on the above, we can define fluent writing as “the act of writing the maximum number of language units in a short period of time while also paying attention to accuracy, the coherent and consistent organization of ideas within the text, and the usage of words and sentences in a complex manner.” Producing such a definition that includes all fluent writing skills is also associated with the approaches on the measurement of these skills. Since the rate/time and automaticity approaches emphasized in the definition of fluent writing manifest themselves when measuring fluent writing skills, two approaches focusing on the writing process and its assessment make themselves apparent. In the approach focusing on the written product, fluent writing skills have been generally defined as composing a text of high quality that contains a high quantity of words in a short time. While the dimension related to quantity consists of the amount of words written within a certain period of time, the dimension related to quality consists of accuracy, complexity, and how well the writer has organized his/her ideas. Some researchers ([Chenowith & Hayes, 2001](#); [Lennon, 1990](#); [Wolfe-Quintero et al., 1998](#)) have addressed writing fluency merely in terms of text production quantity, focusing on the quantitative dimension of fluent writing. On the other hand, numerous researchers ([Armstrong, 2010](#); [Dengub, 2012](#); [Ellis & Yuan, 2004](#); [Larsen-Freeman, 2006](#); [Johnson, Mercado, & Acevedo, 2012](#)) have assessed writing quantity, writing accuracy and writing complexity together while also addressing fluent writing in terms of both quantity and quality. In this study, two dimensions of fluent writing skills will be discussed: quantity and quality. The dimension of quantity will consist of the amount of words written per minute while the dimension of quality will consist of the following three sub-dimensions: (1) text accuracy, (2) word and sentence complexity, and (3) the organization of ideas.

Problem Statement

The problem statement is expressed as “What is the fluent writing skills level of secondary school students?”

Sub-Problems

Answers to the following sub-problems have been solicited in light of the study’s problem statement.

1. How many words are secondary school students able to write in the time allotted?
2. How accurately are secondary school students able to compose texts?
3. How well do secondary school students organize their thoughts while writing?
4. How different are secondary school students' lexicons and to what degree can they make use of lexical items in their writings?
5. How complex are secondary school students' syntactic constructions in their writings?
6. What obstacles do secondary school students face while developing and making use of fluent writing skills?

Research Aim

This study aims to evaluate secondary school students' writing skills in terms of fluency.

Method

This study is of a descriptive nature patterned as a mixed method study. Mixed method studies are defined as studies carried out utilizing qualitative and quantitative methods together in order to comprehensively analyze the research problem in a multidimensional manner. Conducted in order to evaluate the fluent writing skills of secondary school students, this study made heavy use of quantitative data collection techniques, and the data obtained through qualitative methods were organized in order to support the study's findings. In this context, the findings belonging to the phases of writing quantity, lexical and syntactic complexity constituting the quantity dimension of fluent writing have been established through quantitative data collection tools. For the study's qualitative data, the researcher attempted to identify how accurately students wrote, how well they organized their ideas, and those elements constituting an obstacle to fluent writing by utilizing qualitative data collection tools.

Population and Sample

The study's population consists of secondary school students in the city center of Hatay, Turkey. During the determination of the research's sample, "stratified sampling," which is one of the sampling methods based on probability, was followed

first and then “simple random sampling” was utilized. First, one school from upper, middle, and lower socio-economic levels each was identified via stratified sampling and then one for each of the 5th, 6th, 7th, and 8th grades of each school were included in the sample randomly. The study’s sample consists of a total of 379 secondary school students, 104 5th grade students, 90 6th grade students, 91 7th grade students, and 94 8th grade students.

Data Collection Tools

Both qualitative and quantitative data collection tools were utilized to measure the qualitative and quantitative dimensions of fluent writing. Explanations related to the development processes of these data collection tools and their validity and reliability stages are presented below.

Writing Quantity Formula. The “number of syllables written per minute” formula developed by [Ellis and Yuan \(2004\)](#) was used to identify writing quantity. Although there are formulae asserting that writing quantity can be measured by the number of words written per minute, the fact that every word has a different length has revealed the measurement of writing quantity via the number of syllables written per minute as a more objective criterion.

Language Accuracy Holistic Scale. [Hamp-Lyons and Henning’s \(1991\)](#) “Language Accuracy Holistic Scale” was used in the evaluation of the texts in terms of accuracy. This scale consists of 10 categories ranging from 0 to 9. Each category indicates a different level from 0 to 10 in terms of spelling, punctuation, and grammar. The reliability coefficient between the encoders was taken as the basis to test the reliability of the scale. For this purpose, 30 texts were evaluated by two encoders independent of each other. The reliability coefficient between the encoders was identified as $r = 0.877$ ($p < .01$) in the Pearson Correlation Analysis conducted on the results. This indicates that the scale is reliable.

Lexical Diversity Formula. The different number of words/total number of words $\times 100$ formula used in numerous studies ([Laufer & Notion, 1995](#); [Li, 1999](#); [Vaezi & Kafshgar, 2012](#)) for the evaluation of lexical diversity, which constitutes the first aspect of lexical complexity, was utilized. During the calculation of lexical diversity, the total number of words and the number of different words utilized were identified first. In this study, unlike the previous studies ([Baş, 2006, 2013](#); [Ensar & Doğan, 2014](#); [İpek Eğilmez 2010](#); [Karadağ, 2005](#); [Karadağ & Kurudayıoğlu, 2010](#); [Karakaya, 2011](#); [Kurudayıoğlu, 2005, 2011](#); [Öz, 2012](#); [Özbay, Büyükkiz, & Uyar, 2011](#); [Pilav, 2008](#); [Temur, 2006](#); [Tülü, 2012](#)) polysemy was taken into account while calculating the number of different words and was disregarded when attempting to

identify what kind of difference would emerge when polysemy is taken and not taken into account.

Lexical Density Formula. The types of words needing to be eliminated in order to accurately evaluate the lexical density in students' texts were identified by taking the related literature into consideration (Ergin, 1986; Halliday, 1989; Harris, 1993; Johansson, 2008). It was decided that these word groups should be prepositions, conjunctions, exclamations, and specific adverbs based on the related literature. Then a joint list was created from the prepositions, conjunctions, exclamations, and adverbs included in four Turkish grammar books which are most frequently used in the field of grammar (Ergin, 1989; Gencan, 2007; Karaağaç, 2012; Korkmaz, 2007). Students' texts were analyzed after the draft list was composed. The prepositions, conjunctions, exclamations, and adverbs included in students' texts but not in the joint list created after the analysis of grammar books were identified. The researcher and a field expert created a "Lexical Density Evaluation List" after the analysis of both grammar books and students' texts. The words in this list were subtracted from the total number of words included in students' texts so as to calculate texts' lexical density. The number of content words/total number of words $\times$ 100 formula first developed by Ure (1971) was used to evaluate lexical density.

Syntactic Complexity Scale. In order to determine the syntactic complexity scale, the "D Level Scale," first developed by Rosenberg and Abbeduto (1987) and then organized by Covington, He, Brown, Naçi, and Brown (2006), was utilized in the research after adapting it into Turkish. After analyzing this scale, the researcher attempted to determine syntactic complexity according to "the sentence's grammatical structure and the elements which give meaning to the sentence." Taking these elements into consideration, an evaluation was carried out for Turkish.

In order to ensure the validity of the scale, the classifications and definitions of Turkish sentence structures were examined by reviewing the related literature (Ergin, 1989; Gencan, 2007; Karaağaç, 2012; Korkmaz, 2007). As a result of the review, possible Turkish sentence structures were determined to be either (1) Simple Sentence or (2) Compound Sentence (Compound sentences using "as," conditional compound sentences, conjoint sentences, sequential sentences, and intertwined sentences).

After determining Turkish sentences' grammatical structures, the researcher attempted to identify those elements that give meaning to the sentence. To this end, texts were selected randomly from one textbook for each level (grades 5-8) and were analyzed in terms of their grammar structure and those elements that give meaning to the sentence. A total of 886 sentences were evaluated. Of this total, 193 sentences were gleaned from the 5th Grade Turkish Coursebook by Ada Publication, 306

sentences from the 6th Grade Turkish Coursebook by Doku Publication, 97 sentences from the 7th Grade Turkish Coursebook by Pasifik Publication, and 290 sentences from the 8th Grade Turkish Coursebook by Koza Publication. Upon evaluation, those elements that give meaning to the sentence were identified as “intermediary sentence, cause-effect, purpose-effect, comparison, gerundial, elliptical structure, expressions stating contrast, and antecedency-recency expressions.” As a result, the “Syntactic Complexity Scale” on Turkish sentence structure was developed by the researcher. The scale was made operational after taking into consideration the opinion of an expert in the related field.

Organization of Ideas Grading Scale. The “Organization of Ideas Grading Scale” developed by the researcher to determine the layout of ideas in students’ texts was used. This grading scale consists of six categories ranging from 0 to 5. Experts opinions were solicited to test the scale’s validity and it took its final shape based on said experts’ suggestions. The reliability coefficient between the encoders was taken as a basis to test the reliability of the scale. For this purpose, 30 texts were evaluated by two encoders independent of each other. The reliability coefficient between the encoders was identified as $r = 0.86$ ($p < .01$) in the Pearson Correlation Analysis conducted on the results. This indicates that the scale is reliable.

Table of Specifications on the Obstacles to Fluent Writing

The “Table of Specifications on the Obstacles to Fluent Writing” was developed to analyze the quantitatively-collected data thoroughly and to demonstrate obstacles to fluent writing. This table consists of two dimensions, “Accuracy” and “Organization of Ideas.” The accuracy dimension is divided into 4 categories itself, these being “Fluency Obstacles Related to Grammar” (17 items), “Fluency Obstacles Related to Ambiguity Errors” (6 items), “Fluency Obstacles Related to Punctuation” (15 items), and “Fluency Obstacles Related to Spelling Rules” (11 items). The organization of ideas dimension consists of one category, “Planning” (16 items). After preparing the table, it was presented to Turkish education experts for assessment so as to ensure validity and was then organized in line with the obtained comments and suggestions.

Procedure

Research data were collected between 05.01.2015 and 09.01.2015 in the schools designated as sample schools. During the application phase of the study, students were made to carry out written expression activities to determine their writing fluency skills. Students were given the subjects below to write about as per experts’ opinions.

- a. Write an essay describing the positive and negative aspects of internet usage.
- b. Write an essay describing the benefits of reading books.
- c. Write an essay describing the things you like doing most.
- d. Write an essay describing the advantages of exercising.
- e. What do you think of blood donation? Write an essay describing your views on this issue.
- f. Write an essay describing the points which need to be taken into consideration when selecting what programs we watch on TV.
- g. Write an essay describing neighborhoods and modern neighborhood relations.
- h. Write an essay on the subject of your choice.

Students were told to think for a few minutes on what they could write after deciding which subjects to write about. They were also told that they would be given a informed when the five minutes allotted to them had finished. The time started after all students decided on which subject to write about and and noted it on paper. Following the warning, they were given 5 minutes to write and students were asked to note the section that they had written within those five minutes. Students were told they could continue writing until the end of the one-hour lesson.

Data Analysis Techniques

Collected data were analyzed in 7 dimensions: (1) writing quantity, (2) accuracy, (3) organization of ideas, (4) lexical diversity, (5) lexical density, (6) syntactic complexity. After obtaining the research data, the “Table of Specifications on the Obstacles to Fluent Writing” was utilized to analyze the data more thoroughly and to demonstrate obstacles impeding fluent writing.

A number of standards were developed during the data analysis related to writing quantity. For instance, numbers carrying a meaning in the text written as numerals and abbreviations were evaluated as a single syllable regardless of with how many digits or letters they were composed of. Another standard developed was that lexical entry numbers with no meaning, titles of the texts, expressions like “the end” and “acknowledgements” included at the end of the texts were excluded from evaluation.

The data on the accuracy dimension were evaluated using a holistic view according to the language accuracy holistic scale. As a result, a point in terms of the accuracy

dimension for each text emerged. The researcher transferred these points to the SPSS statistical program and tried to analyze them by conducting specific analyses, namely frequency, percentage, arithmetic mean analyses.

The Simple Concordance 4.07 software was utilized in the analysis of the data related to lexical diversity. Students' texts were first computerized so that the program would be able to analyze the data after which total word and different word ratios were determined.

A joint list was created from the prepositions, conjunctions, exclamations, and adverbs included in [Ergin \(1989\)](#), [Korkmaz \(2007\)](#), [Gencan \(2007\)](#), and [Karaağaç \(2012\)](#) with the aim of analyzing the data related to the lexical density dimension. Texts' lexical density was calculated by subtracting the words listed from the total number of words included in students' texts.

In the analysis of the data related to the syntactic complexity dimension, "grammar structure of the sentence and elements giving meaning to the sentence" were taken into consideration. Taking the sentence structure into account, simple sentences were deemed to be composed of a single conclusion while compound sentences were deemed to be composed of multiple conclusions, and were evaluated as 1 point and 2 points, respectively. Gerundials, another element in the grammar structure of the sentence, were evaluated as "one gerundial equals 1 point, multiple gerundials equal 2 points." Each element giving meaning to the sentence equated to 1 point. While calculating the total points of the sentence, the abovementioned elements were first identified after which total points were calculated by adding points together.

The data analysis related to the dimension "organization of ideas" was conducted holistically using the "Organization of Ideas Grading Scale." As a result, a point for idea organization was given to each text. These points were transferred to the SPSS statistical program and were analyzed by means of frequency, percentage, and arithmetic mean analyses.

The data analysis related to the obstacles to fluent writing was conducted in line with the "Table of Specifications on the Obstacles to Fluent Writing." In this context, students' texts were evaluated in terms of the basic dimensions of "Accuracy" and "Organization of Ideas" and their related sub-dimensions. The data obtained from the examination was digitized in the last phase and has been presented in the findings sections together with their examples.

Findings

The findings obtained from the research are included in this section. The findings on writing quantity are presented according to students' grade level. Findings on accuracy, complexity, and organization of ideas, all of which constitute the quality dimension of fluent writing, are also demonstrated.

Table 1

Percentage and Frequency Values of the Quantity Dimension of Fluent Writing According to Grade Levels

Categories	5th Grade		6th Grade		7th Grade		8th Grade	
	f	%	f	%	f	%	f	%
1 (syllable number between 0-60)	15	14,4	25	27,8	19	20,9	13	13,8
2 (syllable number between 61-90)	33	31,7	19	21,1	15	16,5	19	20,2
3 (syllable number between 91-125)	38	36,5	22	24,4	31	34,1	24	25,5
4 (syllable number between 126-160)	17	16,3	12	13,3	18	19,8	24	25,5
5 (syllable number 161 and above)	1	1,0	7	7,8	5	5,5	14	14,9
Papers excluded from evaluation	0	0	5	5,6	3	3,3	0	0
Total	104	100	90	100,0	91	100,0	94	100,0

According to Table 1, 14.4% of fifth grade students, 27.8% of sixth grade students, 20.9% of seventh grade students, and 13.8% of eighth grade students produced a text between 0-60 syllables within the 5 minutes allotted to them. By contrast, the ratio of students who produced a text with 161 or more syllables was 1% of fifth graders, 7.8% of sixth graders, 5.5% of seventh graders, and 14.9% of eighth graders. The table also reveals all grades were most likely to produce a text ranging between 91 and 125 syllable within the 5 minutes allotted to them.

According to Table 2, all students in the sample participated in the activity. 17.2% of the students did not create a writing sequence able to be evaluated. In addition, the ratio of students whose works included no indication in terms of organization of words, spelling, punctuation, or grammar was 0% of fifth graders, 1.1% of sixth graders, 2.1% of seventh graders, and 5.3% of eighth graders. A text falling into the category of "The reader does not see any word, spelling, punctuation, or grammar error" was not observed in any grade level. The majority of students' works fell into the category "Reader sees frequent errors in words, spelling, punctuation or grammar." The ratio of students whose texts fell into this category were 27.9% of fifth graders, 35.5% of sixth graders, 35.1% of seventh graders, and 30.8% of eighth graders.

Table 2

Percentage and Frequency Values of the Accuracy Dimension of Fluent Writing According to Grade Levels

Categories	Content	5th Grade		6th Grade		7th Grade		8th Grade	
		f	%	f	%	f	%	f	%
0	This point is used only when the student does not participate in the activity.	0	0	0	0	0	0	0	0
1	The student did not create a writing sequence which could be evaluated.	1	1,0	7	7,7	5	5,4	3	3,1
2	The reader does not see any indication of the organization of words, spelling, punctuation, or grammar.	0	0	1	1,1	2	2,1	5	5,3
3	The reader sees clear deficiencies in words, spelling, punctuation, or grammar.	4	3,8	5	5,5	1	1,0	9	9,5
4	The reader sees deficiencies in the organization of words, spelling, punctuation, or grammar.	5	4,8	14	15,5	5	5,4	14	14,8
5	The reader sees frequent errors in words, spelling, punctuation, or grammar.	29	27,9	32	35,5	32	35,1	29	30,8
6	The reader rarely sees errors in words, spelling, punctuation, or grammar.	32	30,8	17	18,8	21	23,0	12	12,7
7	The reader rarely sees errors in words, spelling, punctuation, or grammar, but these errors do not constitute a problem.	18	17,3	11	12,2	16	17,5	9	9,5
8	The reader does not see a significant word, spelling, punctuation, or grammar error.	15	14,4	3	3,3	9	9,8	13	13,8
9	The reader does not see any word, spelling, punctuation, or grammar error.	0	0	0	0	0	0	0	0

Table 3

Distribution of Data on the Lexical Diversity Sub-Dimension of the Lexical Complexity Dimension of Fluent Writing According to Grade Levels

Categories	5th Grade		6th Grade		7th Grade		8th Grade	
	According to Polysemy	Without Polysemy	According to Polysemy	Without Polysemy	According to Polysemy	Without Polysemy	According to Polysemy	Without Polysemy
Total Number of Words	10,928	10,928	6,712	6,712	9,315	9,315	9,755	9,755
Number of Different Words	2,148	1,794	1,587	1,379	1,874	1,573	1,982	1,634
Ratio of Lexical Diversity	19.6%	16.4%	23.6%	20.5%	20.1%	16.8%	20.3%	16.7%

According to Table 3, 5th grade students composed a total of 10,928 words, 6th grade students composed a total of 6,712 words, 7th grade students composed a total of 9,315 words, and 8th grade students composed a total of 9,755 words.

The ratio of different words composed by students was evaluated both by taking polysemy and without taking polysemy into account in the table. In the evaluation conducted while taking polysemy into consideration, the ratio of different words used by the 5th grade students was 19.6%, the ratio 23.6% for 6th graders 20.1% for 7th graders, and 20.3% for 8th graders.

In the evaluation conducted without taking polysemy into consideration, the ratio of different words used by 5th graders was 16.4%, 20.5% for 6th graders, 16.8% for 7th graders, and 16.7% for 8th graders.

Table 4
Distribution of Data on the Lexical Density Sub-Dimension of the Lexical Complexity Dimension of Fluent Writing According to Grade Levels

Grade Levels	5th Grade	6th Grade	7th Grade	8th Grade
Total Number of Words	10,928	6,712	9,315	9,755
Number of Function Words	1,752	1,075	1,717	1,754
Ratio of Lexical Density	83.96%	83.98%	81.56%	82.01%

The lexical density ratios of student texts are included in Table 4. According to this table, 5th graders' lexical density was 83.96%, 83.98% for 6th graders 81.56% for 7th graders, and 82.01% for 8th graders.

Table 5
Percentage and Frequency Values of the Syntactic Complexity Dimension of Fluent Writing According to Grade Levels

Categories	5th Grade		6th Grade		7th Grade		8th Grade	
	F	%	f	%	f	%	F	%
1 (0-18)	17	16.3	31	34.4	15	16.5	25	26.6
2 (19-36)	62	59.6	46	51.1	54	59.3	41	43.6
3 (37-54)	18	17.3	5	5.6	12	13.2	16	17.0
4 (55-72)	5	4.8	1	1.1	5	5.5	5	5.3
5 (73-92)	2	1.9	0	0	0	0	1	1.1
Total	104	100.0	7	7.8	5	5.5	6	6.4

The points scored by secondary school students in the syntactic complexity dimension of fluent writing are included in Table 5. According to this table, 16.3% of 5th grade students, 34.4% of 6th grade students, 16.5% of 7th grade students, and 26.6% of 8th grade students wrote a text ranging between 0-18 points. By contrast, the ratio of students whose text scored between 73 and 92 points was 19% of 5th graders, 0% of 6th graders, 0% of 7th graders, and 1.1% of 8th graders. The majority of the secondary school students composed a text scoring between 19 and 36 points. The ratio of students whose texts' score fell between this point range was 59.6% of 5th graders, 51.1% of 6th graders, 59.3% of 7th graders, and 43.6% of 8th graders.

Table 6

Percentage and Frequency Values of the Organization of Ideas Dimension of Fluent Writing According to Grade Levels

Categories	Content	5th Grade		6th Grade		7th Grade		8th Grade	
		f	%	F	%	f	%	f	%
0	The student did not create a writing sequence which could be evaluated. The main idea is not clear. Multiple ideas were included in paragraphs.	0	0	5	5,5	3	3,2	1	1,0
1	Unnecessary idea repetitions are present in the text. Ideas digressed from the topic. Supplementary ideas were not utilized. The main idea is not easily detectable.	1	1,0	6	6,6	5	5,4	7	7,4
2	Multiple ideas were generally included in paragraphs. Unnecessary repetitions are present in the text. The link between ideas and the topic is weak. The text is quite weak in terms of utilizing supplementary ideas.	17	16,3	36	40	19	20,8	24	25,5
3	The students attempted to establish the main idea. Unnecessary idea repetitions are not widespread. A link was attempted to be established between ideas and the topic. An effort to utilize supplementary ideas is detected.	56	53,8	36	40	38	41,7	33	35,1
4	The main idea is clear. The placement of ideas in paragraphs is appropriate. Repetition of unnecessary ideas is scarce. There is a good link between ideas and the topic. Supplementary ideas were utilized.	24	23,1	7	7,7	22	24,1	23	24,4
5	The main idea is clear. Multiple ideas were not included in paragraphs. Unnecessary idea repetitions are not present in the text. Ideas did not digress from the topic. Supplementary ideas were utilized.	6	5,8	0	0	4	4,3	6	6,3
Total		104	100	90	100	91	100	94	100

Secondary school students' scores concerning the organization of ideas dimension of fluent writing are included in Table 6. According to this table, 9.7% of the students did not create a writing sequence which could be evaluated. In addition, 1% of 5th grade students, 6.6% of 6th grade students, 5.7% of 7th grade students, and 7.4% of 8th grade students produced a text scoring 1 point in this category. The ratio of students whose texts scored 5 points was 5.8% of 5th graders, 0% of 6th graders, 4.3% of 7th graders, and 6.3% of 8th graders. The majority of secondary school students wrote a text scoring 3 points. The ratio of students whose text scored 3 points was 53.8% of 5th graders, 40% of 6th graders, 41.7% of 7th graders, and 35.1% of 8th graders.

Table 7

"Accuracy" Dimension Values of the Table of Specifications on Obstacles to Fluent Writing

Sub-Dimensions	f	%	Mean
Spelling Rules	2267	41,6	6,11
Punctuation Marks	1390	25,5	3,74
Grammar	816	14,9	2,19
Ambiguity Errors	973	17,8	2,62
Total	5446	100	14,66

The accuracy dimension includes 4 sub-dimensions: (1) spelling rules, (2) punctuation marks, (3) grammar, and (4) ambiguity errors in Table 7. According to this table, students made a total of 5,446 accuracy errors in the 371 total texts included in the sample. Of the total number of errors, 2,267 related to spelling rules, 1,390 related to punctuation marks, 816 related to grammar rules, and 973 related to ambiguity. Grammar rules, punctuation marks, grammar, and ambiguity errors have a share of 41.6%, 25.5%, 14.9%, and 17.8%, respectively, in the total number of errors.

Table 8

The "Organization of Ideas" Dimension Values of the Table of Specifications on Obstacles to Fluent Writing

Organization of Ideas	f	%	Mean
Unclarity of the main idea	104	12,1	,28
Existence of multiple ideas in paragraphs	277	32,4	,74
Unnecessary repetition of ideas	184	21,5	,49
Digression of ideas from the topic	85	9,9	,22
Insufficiency of supplementary ideas	203	23,7	,54
Total	853	100	2,27

As observed in Table 8, students' texts contain a total of 833 *organization of ideas* errors. Of this total, 104, 277, 184, 85, and 203 errors fell into the categories of unclarity of the main idea, existence of multiple ideas in paragraphs, unnecessary repetition of ideas, digression of ideas from the topic, and insufficiency of supplementary ideas, respectively. Unclarity of the main idea, existence of multiple ideas in the paragraphs, unnecessary repetition of ideas, digression of ideas from the topic and insufficiency of supplementary ideas represent 12.1%, 32.4%, 21.5%, 9.9%, and 23% of errors, respectively.

According to Table 9, students made a total of 712 *planning of ideas* errors. Of this total, 152, 11, 44, 57, 40, 54, 88, 45, 12, 6, and 203 errors fell into the categories of non-use of titles, non-use of titles containing the main idea, disorganization of the introduction section, expression of the main idea in introduction, composition of the introduction in a single sentence, non-existence of body paragraphs, non-existence of the conclusion paragraph, inability of the text to reach a conclusion, unclarity of the ideas in the conclusion section, contradiction of the conclusion with the rest of the text, and composition of the text in a single paragraph items, respectively. Non-use of titles, non-use of titles containing the main idea, disorganization of the

introduction section, expression of the main idea in introduction, composition of the introduction in a single sentence, non-existence of body paragraphs, non-existence of the conclusion paragraph, inability of the text to reach a conclusion, unclarity of the ideas in the conclusion section, contradiction of the conclusion with the rest of the text, and composition of the text in a single paragraph items represent 21.3%, 1.5%, 6.1%, 8.0%, 5.6%, 7.5%, 12.3%, 6.3%, 1.6%, 0.8%, and 28.5%, respectively.

Table 9

The "Planning of Ideas" Dimension Values of the Table of Specifications on Obstacles to Fluent Writing

Planning of Ideas	f	%	Mean
Non-use of titles	152	21.3	.40
Non-use of titles containing the main idea	11	1.5	.02
Disorganization of the introduction section	44	6.1	.11
Expression of the main idea in introduction	57	8.0	.15
Composition of the introduction in a single sentence	40	5.6	.10
Non-existence of body paragraphs	54	7.5	.14
Non-existence of the conclusion paragraph	88	12.3	.23
Inability of the text to reach a conclusion	45	6.3	.12
Unclarity of the ideas in the conclusion section	12	1.6	.03
Contradiction of the conclusion with the rest of the text	6	0.8	.01
Composition of the text in a single paragraph	203	28.5	.54
Total	712	100	1.85

Conclusion and Discussion

In this section of the study, the data obtained in relation with the dimensions of fluent writing have been interpreted and evaluated in comparison with the results of similar researches.

When we examine the results related to the quantity dimension of fluent writing, we encounter the following: 6th and 7th graders had the highest percentage of students whose texts contained between 0 and 60 syllables after 5 minutes of writing (the lowest syllable range possible on the scale) at 27.8% and 20.09%, respectively. The lowest percentage of students whose texts contained 161 or more syllables (the highest syllable range on the scale) was observed among 5th grade students, and highest among 8th grade students, at 1% and 14.9%, respectively. Most texts contained between 91 and 125 syllables in all grade levels participating in the study. The percentage of students whose texts contained between 91 and 125 syllable was 36.5%, of 5th grade students and 24.4% of 6th grade students. We are able to estimate the number of words students wrote per minute by using the amount of syllables they wrote in 5 minutes. Assuming that most words in Turkish are composed of 2-2.5 syllables, the ratio of syllable amount/2.5 gives us the amount of syllables written in 5 minutes. When we divide the obtained result by 5, we arrive at an estimate number of

words written per minute. In this case, the majority of 5th grade students with 36.5% write 9 words per minute, the majority of the 6th grade students with 27.8% write 3 words per minute, the majority of 7th grade students with 34.1% write 9 words per minute and one portion of the 8th grade students with 25.5% write 9 words per minute while the other portion of the 8th grade students with 25.5% write 22 words per minute.

According to researchers (Chenowith & Hayes, 2001; Isaacson, 1988; Kaufer et al., 1986), a more experienced writer produces longer language units. According to Kaufer et al. (1986), this length is 10-12 words for experienced writers and 5-6 words for inexperienced writers. The results of the study conducted by Chenowith and Hayes (2001) indicate that university students write 17.2 words per minute in their mother tongue and 10.75 words per minute in a second language tht they learn as a foreign language. According to the conclusion of the research, this difference is significant. The average number of words third term students write in their mother tongue is 20.1 per minute while this number is 10.61 in the language they learn later as a second language. The average number of words fifth term students write in their mother tongue is 13.8 per minute and 10.91 in the language they learn later as a second language.

According to the results on the accuracy dimension of fluent writing, the accuracy level of texts written by students was 5.92 for 5th graders, 4.86 for 6th graders, 5.48 for 7th graders, and 5.10 for 8th graders. In line with this result, the grade levels with the highest average in terms of accuracy were 5th, 7th, 8th, and 6th grade, respectively. The skills of composing accurate texts are expected to develop as students' progress through grades. The results of the current research demonstrate that this expectation is not met. The results of our research also indicate that no student was able to compose a text falling into the 9th category level, meaning that the reader does not see any word, spelling, punctuation, or grammar errors. On the other hand, 30.8% of students produced a text falling into the 6th category level, meaning that tThe reader rarely sees errors in words, spelling, punctuation, or grammar. Moreover, 35.5% of 6th grade students, 35.1% of 7th grade students, and 30.8% of 8th grade students produced a text falling into the 5th category level, meaning that the reader sees frequent errors in words, spelling, punctuation, or grammar. As such, we can state that, in general, students composed texts at an average accuracy level.

Numerous studies have been carried out with the aim of determining the accuracy levels of students' written texts. It has been concluded in similar researches that the most frequent errors detected in students' texts arise from their inability to use punctuation marks, non-compliance with spelling rules, not composing structurally accurate sentences, and their inability to choose the right words (Arıcı & Ungan,

2008; Avcı, 2006; Özbay, 1995; Pekaz, 2007; Sarıkaya, 2013; Temizkan, 2003). Our research also indicates that the most frequent errors detected in student texts occur in spelling, at 41.6%, and in punctuation, at 25.5%. According to this result, important deficiencies exist in students' writing skills in terms of accuracy. Particular consideration must be given to spelling and punctuation errors, as they are unique to writing and fall into a different category of language skills entirely. Since spelling and punctuation constitute the very basic skills of writing, the fact that frequent spelling and punctuation errors are made demonstrates that students experience serious problems in implementing the very basic rules of writing.

According to the results on the lexical diversity sub-dimension of the lexical complexity dimension of fluent writing, the number of different words in all the texts is 7,591 when polysemy is taken into account and 6,380 when polysemy is overlooked. Thus, there is a difference of 1,211 words in the determination of the number of different words when polysemy is taken and is not taken into account. In that case, a differentiation of 3-4% is observed in the percentage of different words used when polysemy is taken and is not taken into account. It is normally expected that a higher percentage of change would occur in the number of different words included in students' texts when polysemy is taken into account. Because in Turkish, almost all words have at least two meanings. Moreover, frequently-used verbs like "do, be, open" have approximately 30 (thirty) and the verb "take" has approximately forty (40) meanings. Therefore, we can state that the students who participated in the study did not use the words included in the texts in a complex manner and that they usually used them with the same meanings.

It has been concluded in similar studies aiming to determine the diversity of words included by students in their written texts that the lexical diversity of 5th grade students generally varies between 7.6 and 14.2% (Başpınar, 2008; Ceylan, 2013; Çabaz, 2007; Çıplak, 2005; Duru, 2007; Hancı, 2007; Karadağ, 2005; Karahan, 2007; Öztekin, 2008; Tülü, 2012; Türkyılmaz, 2013). The lexical diversity of 8th grade students was found to vary between 7.7 and 12.6% (Çıplak, 2005; Karakaya, 2011; Kurudayıoğlu, 2005; Tüysüz, 2007). By contrast to these study results, Temur (2006) found the lexical diversity of 5th grade students to be 22.6%, Kurudayıoğlu (2005) found the lexical diversity of 6th and 7th grade students to be 8.02% and İpekçi (2005) found the lexical diversity of 7th grade students to be 31.2% in his study that took polysemy into account. Our research results are similar to those of related studies. According to researchers (Karakaya, 2011; Öztekin, 2008; Tülü, 2012; Türkyılmaz, 2013), students do not have an extensive vocabulary, instead trying to express a myriad of feelings and ideas with the same words. This is one of the obstacles preventing the rate of lexical diversity from reaching desired levels. According to researchers (Johansson, 2008), as writing skills improve so does word diversity.

Vocabulary is defined in three dimensions: depth (knowing the various meanings of words), width (knowing words on different subjects), and weight (knowing many words on a subject) (Göğüş, 1978). According to the results of our study, in which an increase of 3-4 % occurred in lexical diversity when polysemy is taken into account, we can state that vocabulary depth is not at a sufficient level in students' vocabulary students have. Yet, depth, i.e. polysemy, is one of the most important features of Turkish ensuring lexical complexity.

According to the lexical intensity dimension of our research, the total number of words included in the 371 student texts is 36,710, and the number of content words is 6,298. This indicates that the lexical intensity rate in studies on secondary school students' written expression is 82.84%. In other words, approximately 83 of every 100 words are composed of meaningful words and 17 are composed of content words.

To date, no research has been conducted on lexical diversity or any criterion developed aiming to evaluate lexical intensity. Nevertheless, lexical diversity rates may provide insight for researchers to make a number of conclusions on lexical density in students' texts. According to the results of our study, the total number of words included in the 371 student texts evaluated is 36,710 and the number of different words used by students is 6,380 when not taking polysemy into account. According to these numbers, the ratio of different words used by student to the total number of words is approximately 17%. In other words, 17 words are used differently in a 100-word text and the remaining 83 are repeated. This ratio is the same with lexical density. The fact that an average of 17 content words are used in a text whose vocabulary is heavily composed of repeated words is not a positive sign for students' fluent writing skills.

One of the reasons that the lexical density of student texts is so poor is due to the sentence structures preferred by students. Students usually prefer using compound sentence structures when describing their ideas. This leads to the use of unnecessary conjunctions and adverbs at the beginning, middle, and end of the sentence. Thus, the ratio of content words in the sentence increase unnecessarily, thereby leading to the decrease in lexical density.

According to researchers (Halliday, 1989; Harris, 1993; Johansson, 2008), a distinguishing feature of written and oral language is the lexical density in written and oral products. Whereas meaningful words are denser in written products, content words are denser in oral products. Ure (1971, as cited in Johansson, 2008) has established that lexical density in the majority of speech texts is below 40% and lexical density in the majority of written texts is above 40%. In her study which examined 66 written texts, Cheryl (1995) reached the conclusion that 15% of the student texts are just below 40% whereas 36% of texts are above 45%, 73% of texts are

above 42%, and 85% of texts are above 40%. As such, students possess the necessary skills to express their ideas on the subjects given to them. In their study examining the lexical density and readability of four texts at the beginner, pre-intermediate, intermediate, and upper-intermediate levels, [To, Fan, and Thomas \(2013\)](#) identified that the most readable texts according to the Flesch formula is those whose lexical density is 52.2% ratio according to Ure's lexical density calculation level method.

According to the results of our study on the organization of ideas dimension, significant differences exist between grade levels in terms of their ability to organize ideas. The average points scored by 5th, 6th, 7th, and 8th grade students on the "Organization of Ideas Grading Key" were 3.16, 2.37, 2.91, and 2.93, respectively. We can thus state that 5th graders had the greatest ability to compose a planned and consistent text, followed by 8th, 7th, and finally 6th graders.

It has been concluded in similar studies aiming to determine students' abilities to organize ideas while writing that on a scale ranging from 1 to 5, 5th graders scored 2.96 points for consistency ([Coşkun, 2005](#)), 7th graders scored 3.13 and 3.19 ([Çeçen, 2011](#); [Çoban, 2012](#)), and 8th graders scored 3.25 ([Coşkun, 2005](#)). In a study conducted on high school students by [Keklik and Yılmaz \(2013\)](#), 11th graders were found to score 1.87 for consistency.

In his study conducted on 8th grade students, [Erbilen \(2014\)](#) found that not only were students unable to demonstrate an adequate level of success in their writings, but that for more than 50% of participants, students' writing skills were either "inadequate" or "very inadequate" in the following seven dimensions: (1) title, (2) subject, (3) main and supplementary ideas, (4) expression types and methods of developing ideas, (5) introduction, (6) body, and (7) conclusion. In his study conducted on 5th grade students, [Alkan \(2007\)](#) reached the conclusion that more than 30% of the students were unable to explain what needs to be explained by dividing it into paragraphs without interrupting subject's integrity, did not passing from an idea to another in a natural and logical manner, and did not organize what needs to be explained in the text according to their degree of interest and importance. It was stated in the same research that 37.2% of the participating students had difficulties in describing feelings and ideas in an orderly and gripping manner and that 34.6% did not create a logical whole in which feelings, ideas, or events were described in the text. [Avcı \(2006\)](#) found that one of the three most common errors in writing made by 8th grade students was their inability to write about the subject according to paragraph awareness.. In his study examining 400 7th grade students' texts, [Temizkan \(2003\)](#) concluded that 35% of the essays lacked any paragraphs and that 40.7% contained an unclear main idea.

According to researchers ([Alkan, 2007](#); [Avcı, 2006](#); [Coşkun, 2005](#); [Çeçen, 2011](#); [Ülper, 2011](#)), secondary school students experience serious difficulties in organizing

the ideas included in their texts. The conclusion of our research also supports this. The classification, sorting, and limitation skills of students are quite inadequate. This is one of the obstacles to gaining fluent writing skills. We cannot deem texts as having been written fluently when they contain unclear main ideas, disconnected sentences, and/or are not composed in a meaningful and logical manner.

The highest percentage of accuracy related errors on the table of specifications developed to identify obstacles to fluent writing occurred in spelling rules, at 41.5%. The highest percentage of organization related errors occurred in the existence of multiple ideas in paragraphs, at 32.4%. Finally, the highest percentage of planning related errors were manifested in the composition being written in a single paragraph, at 28.5%. This conclusion demonstrates that the findings established via quantitative data collection techniques in the study are consistent with those established using the table of specifications.

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