Examination of the Mistakes Made by Primary School Students in Writing and Their Literacy Levels[*]

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Article Information	ABSTRACT
	The purpose of this research is to examine the writing mistakes and writing skill levels of primary school students. The sample of the research in the descriptive survey model consisted of 232 students studying at the lower, middle, upper and lower socio-economic levels in the Nizip and Karkamış districts of Gaziantep in 2016-2017 academic year. The data are collected using by 'Writing Mistakes Evaluation Scale', 'Multidimensional Legibility Scale' and dictation text. As a result of the research, it is determined that there are mistakes in the writing of the letters in the direction of writing, in a right-angled manner and in line with the lines; the sufficiency of the letters in the word, in the legibility of words, in finding missing or unnecessary letters in words, in forgetting the points in words. When examined according to sentences; at the beginning of the line, the distance between the sentences and the use of punctuation marks have been found to be mistaken. When the manuscripts are examined as a whole, it has been seen that the error has been made in preserving the oblique in the writing, writing the written text obliquely, finding a general aesthetics of the writing. At the literacy level of the students' writing; there is a significant difference in favor of female students in the second and fourth grade; there is no significant difference between the first and third grade students. In addition, according to the socio-economic level, there is a significant difference in the first, third, and fourth grades in favor of students with good socio-economic level. **Keywords:** Writing skills, writing mistakes, legibility in writing

1. INTRODUCTION

One of the most basic needs of mankind since its existence is self-expression. The shortest way to express yourself is through language. Oral expression is one aspect of self-expression and written expression is the other. At the heart of the development of written expression is accurate and legible writing.

Writing is defined by the Turkish Language Institution as "detection of thought with certain signs, the way of writing letters"; writing is defined as "writing work" (TDK, 2011). According to Akyol (2005, p.47), writing; is to be able to produce the necessary symbols motorically to express our thoughts and feelings. According to Güneş (2007); it is the process of writing down the information configured in the brain. Writing, an important form of communication and intermediary, has been used by the whole world for centuries. The writing process begins in the mind and ends with the expression of thoughts with symbols. The use of effective writing in writing allows emotions and thoughts to be more properly understood by the recipient.

People use writing in line with their needs and social environment because the individual dominates the writing that exists in the measure of his life and in his own culture, social circle. Mankind has reached today's level of science and culture by carrying their experiences to future generations through writing (Karatay, 2011, p.21). The progress and development of the

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attained level of science and culture is also possible through writing. Writing is the most important communication tool that enables students to express and record their feelings and thoughts during the educational process (Dennis & Swinth, 2001).

Writing is one of the basic language skills and plays an important role in the Turkish curriculum (MEB, 2017). The first step to writing begins from the moment the child starts holding the pen. The child makes various doodle without realizing his writing. But the ability to write systematically and in accordance with the rules is tried to be gained in schools, especially in courses aimed at language skills. Although these courses are called differently, they start with the preschool period and continue until university. From first to eighth grade, this course is called Turkish lesson. According to the Turkish Course Curriculum (MEB, 2017), writing, which is the basis of Turkish teaching, requires skills and these skills are gained through various activities. Writing is as important as speech for the individual to express himself clearly.

With the Turkish Curriculum, it is aimed for students; to gain basic language skills (listening, speaking, reading, and writing); to enable them to develop cognitively, socially, and emotionally with the help of these skills; improve communication skills; with love of Turkish, to gain the habit of reading and writing willingly. With this program, it is aimed to have a society who are using Turkish correctly and effectively; expressing themselves, communicating, cooperating, entrepreneurial and problem solving; scientific thinking, understanding, researching, examining, criticizing, questioning, interpreting; knowing their rights and responsibilities, being compatible with their environment, being sensitive to conditioning; enjoying reading and learning; a society consisting of individuals who use, produce and guide information technologies (MEB, 2017). Individuals with these characteristics are expected to have gained all their language skills as well as the ability to write effectively. At the heart of an effective writing skill, there is accurate and legible writing.

1.1. Statement of the Problem

Learning what letters, syllables, words, and sentences are and how to write are very important for an effective written expression for writing, which continues to maintain its importance in personal and social aspects even as we enter the twenty-first century (Akyol, 2014). In the healthy execution of the writing process; it is important for a student to write quickly and effectively. However, this alone is not enough. It is also important to have the ability to write legibly in this process. Thus, the academic success increases and writing skills develop (Tseng and Cermak, 1993; Amundson and Weil, 1996; Tseng and Hsueh, 1997). Legibility indicates the adequacy of the letters in the text. It has an important place in handwriting. When deciding whether an article is legible; criteria such as slope, space, size, format, line tracking, line quality and cleanliness of writing should be considered (Ediger, 2001). Legibility is the correct perception of the text by the reader. Good writing is not the same as being legible. Because a good writing can be legible; legible writing may not be good writing (Arslan Özer & Bağcı, 2018). When the literature on this subject is examined, it is seen that the studies on cursive italic writing are quite intense. In this context, students, classroom and/or branch teachers (Kadıoğlu, 2012; Arslan & Ilgın, 2010; Turan, 2010; Karaman & Yurduseven, 2008; Kanmaz, 2007; Gün, 2006; Uğuz, 2006) as well as parents and teachers (Coşkun, 2011); there were studies in which the opinions of pre-service teachers and/or teachers (Duran, 2009; Yıldız & Ateş, 2010) about cursive italic writing were taken. Among these studies, there are also studies that determine the difficulties faced by classroom teachers in teaching cursive italic writing (Şahin, 2012; Yıldırım, 2008; Özsoy, 2006; Ünüvar, 2006) and examine their teachers' writing teaching practices (Arslan, 2012).

In some of the studies on cursive italic writing, it is focused on the examination of spelling mistakes made by the students (Yıldırım, 2008; Balkan, 2015; Memiş & Harmankaya, 2012; Bay, 2010; Bayraktar, 2006; Bektaş, 2007), in addition to the spelling errors, cursive italic writing skill levels and writing speed (Kadıoğlu, 2012; Temur, Aksoy, & Tabak, 2012; Temur, Aksoy, & Tabak, 2011; Coşkun, 2011) and in one study, the reasons for students not writing cursive italic (Akkaya 2013). In addition, related to the subject, studies examining the success/development levels of students and/or teachers in writing skills (Bayat & Çelenk, 2015; Erdoğan, 2012; Bay, 2010; Kanmaz, 2007) and comparing students' cursive italic writing skills according to the school starting age and a study that examines the legibility features of students' writings were encountered (Kuşdemir, Katrancı, & Arslan, 2018). In the related literature, studies in which typographical errors are discussed in general (Erden, Kurdoğlu, & Uslu, 2002; Demir, 2003; İnce, 2006) and a study that classifies spelling mistakes as phonological, morphological, orthographic, orthographic image, displacement (Terziyan and Demirel, 2020) are also included. In addition, Okatan and Arslan Özer (2020) and Gök and Baş (2020) also examined the legibility of first year students' vertical basic writing; Babayiğit (2018), on the other hand, examined letter spelling errors in vertical basic writing. Considering the current situation, no study has been found that addresses both socio-economic level and gender variables as well as the legibility dimension; covers the entire primary school process (1, 2, 3 and 4th grade) regarding the mistakes seen in 'writing'. In addition, in these previous studies on cursive italic writing, while the spelling errors and difficulties encountered by the students in terms of variables like preschool education level, school starting age, etc. had been examined according to the opinions of teachers, students, and parents; in this study, spelling errors made with cursive italic writing were examined according to the class level; and legibility was examined according to both class level and gender and socio-economic level variables. When determining spelling errors in the studies, the letter groups determined according to the sound-based sentence method and the letter groups used during the collection of this study data also differ. For these reasons, these research findings are expected to shed light on the increasing effectiveness of cursive italic writing education, especially when giving writing training. It is thought that this study will be useful in knowing the possible error sources in cursive italic writing

and taking necessary precautions, based on the research findings, when it is desired to give students the ability to write in different styles in addition to the writing education that starts with vertical basic letters.

1.2. Purpose of the Study

The aim of this research is to examine the spelling mistakes of primary school students according to their grade levels and their legibility levels in terms of grade level, socio-economic level and gender. Within the framework of this main purpose, answers to the following questions were sought:

1. What is the distribution of spelling mistakes (letter, word, sentence writing and in general text) made by primary school students according to grade levels?
2. Does the writing legibility levels of primary school students vary according to
        2.1. their grade levels,
        2.2. their genders,
        2.3. their socio-economic levels?

2. METHODOLOGY

This study, which examines the spelling errors and legibility levels of primary school students according to grade level, in terms of various variables (class level, gender, socio-economic level), is research in descriptive scanning model. Scanning research is a recommended model when the need to determine individuals' attitudes, actions, thoughts, and beliefs arises (Christensen, Johnson, and Turner, 2015). The descriptive survey model is a research approach that aims to describe a past or present level in its current form. The subject, person or object of the research is tried to be defined within the framework of its own conditions and as it is (Karasar, 2009, p.77).

2.1. Participants

The study population of the research consists of 1st, 2nd, 3rd, and 4th grade students studying in Nizip and Karkamış districts of Gaziantep in the 2016-2017 academic year. According to socio-economic level, two from Nizip; one from Karkamış district, a total of three schools were included to the scope of the research. These schools, which are the sample of the research, were selected by stratified sampling from the universe and consist of 232 students studying in schools at lower-middle-upper socio-economic level in Nizip and Karkamış districts. The schools were randomly selected from the list separated according to their socio-economic levels, with the information obtained from the Provincial Directorate of National Education. However, not only the region the school found was accepted as a final indicator, but also the socio-economic levels of the students studying in the sampled schools were determined based on the opinions of the teachers on the basis of school enrollment information and analyzes were carried out. Socio-economic levels (SEL) and gender distribution of the selected sample by classes are shown in Table 1.

Table 1.
Classification of Student Numbers by Class Level, SEL, and Gender

Grade Level	Number of Students	SEL			Gender	
		Lower	Middle	Upper	Female	Male
1st Class	64	19	25	20	36	28
2nd Class	64	19	20	25	30	34
3rd Class	58	11	37	10	34	24
4th Class	46	14	20	12	27	19

When Table 1 is examined, 64 of the selected sample are in the first grade, 64 in the second, 58 in the third and 46 in the fourth grade. It is seen that the distribution according to the number of students in the lower-middle-upper socio-economic level and gender in all four grade levels is balanced.

2.2. Data Collection Tools

As data collection tools, spelling errors evaluation scale, multidimensional legibility scale and dictation text were used.

2.2.1. Spelling errors rating scale

In order to examine the spelling mistakes of primary school students, the "Spelling Errors Evaluation Scale" developed by Balkan (2015) was used. The scale, which consists of four parts: "evaluation according to the spelling of letters", "evaluation according to words", "evaluation according to sentences", "evaluation of the writing as a whole"; It has a triple rating of "Yes, Partially, No". The scale was developed in line with expert opinions. Since the total score was not taken, it was not subjected to a factorial analysis. While deciding the suitability of this scale for the purpose; opinions of three field experts and experts in measurement-evaluation faculty members working in Gaziantep University Basic Education and Training Programs and

Instruction USA, were taken. The scale was also presented to two classroom teachers and two Turkish teachers, and it was decided that the scale could serve the research purpose in line with expert opinions.

When filling the scale; dictation worksheets that have students written were examined; the students' writings were evaluated by the researcher in accordance with the rating. In addition, in order to ensure the reliability of the scoring, a second rater also scored the papers on which the students worked on dictation. The encoder reliability between the two encoders was calculated as .91 using the formula "Encoder Reliability Coefficient=Consensus / (Consensus Disagreement X 100)" (Miles and Huberman, 1994).

2.2.2. Multidimensional legibility scale

The "Multidimensional Legibility Scale" developed by Yıldız and Ateş (2010) was used to determine the legibility level of primary school students. Legibility on a scale prepared according to the analytical evaluation approach is evaluated on five criteria: slope, space, size, shape, and line tracking. Each criterion was rated as completely adequate (3), partially adequate (2), and not adequate (1). Considering that the minimum score to be taken from this scale is 5 and the highest score is 15, the writings of the students with a total score of 5-8.3 are not legible, the writings of the students with a total score of 8.4–11.7 are moderately legible and the writings of the students with a total score of 11.8–15 are evaluated as legible. Cronbach's Alpha coefficient was calculated to determine the reliability of the scale. The Cronbach's Alpha value calculated in the research sample of the scale is .82.

While filling the scale; After examining the dictation worksheets made by the students before, the researcher filled in the students' writings in accordance with the grading and the total score was calculated. In addition, in order to ensure validity and reliability, a different scorer from the researcher evaluated the papers in which the students did dictation work and calculated the total score. The encoder reliability between the two encoders was calculated as .89 using the formula "Encoder Reliability Coefficient=Consensus / (Consensus Disagreement X 100)" (Miles and Huberman, 1994).

2.2.3.Dictation text

In order to determine the writing skill levels of the students, three different examples of dictation texts called "Mete's Snow Joy, Eda's Day, City Mouse and Field Mouse" were determined. When deciding on the most appropriate dictation text, eight first-year teachers were asked, "If you were going to do dictation work in your classroom, which text would you prefer?" Five of the eight teachers preferred the text "Mete's Snow Joy". In line with the opinions received from the teachers and also by consulting the opinions of experts working in Gaziantep University, Department of Basic Education Classroom Education USA, Turkish Education Department and Curriculum and Instruction USA, the text named "Mete's Snow Joy" was decided. The text was chosen in accordance with the purpose of examining the students' level of writing letters and evaluating the word, sentence, and text as a whole. The text, which contains both uppercase and lowercase letters, consists of approximately 20 sentences and 95 words suitable for the age and interest levels of the students.

2.3. Collection and Analysis of Data

In the study, the data was collected by one of the text researchers named "Mete's Snow Joy" by going to the students' classrooms one-on-one and dictating the text. Blank lined papers were distributed to the students on which they could write the text, then the text was read at a pace that all students could follow, and enough time was given for them to write. While the 4th grade students complete the text in one class hour depending on their writing speed, this time is spread over two lesson hours for the 1st year students. For 2nd and 3rd year students, it was completed within 1.5 hours. In order to identify spelling errors student's papers have been evaluated using "The Spelling Errors Evaluation Scale" and to determine the legibility of the text, "Multidimensional Legibility Scale" has been used. Percentage and frequency distributions of the data obtained from the papers were calculated using the Spelling Errors Evaluation Scale. The scores obtained using the Multidimensional Legibility Scale were compared according to gender and socio-economic level, and independent groups were tested with t-test and one-way analysis of variance. The compliance of the data obtained before the analysis was checked with the Skewness and Kurtosis test and the Skewness value was .570 to .160, while kurtosis was .058 to .318. These values were between -1.5 and +1.5 (Tabachnick & Fidell, 2001), and it was concluded that the data showed a normal distribution. The data were analyzed with the SPSS 20 package program. The significance level was accepted as .05 in the interpretation of the results.

3. FINDINGS

In this section, the findings obtained by the analysis of the data are listed in accordance with the sub-objectives.

3.1. Findings Regarding Spelling Errors Made by Primary School Students by Grade Level

In this section, spelling mistakes made by primary school students according to their grade levels were examined. Findings regarding the spelling of letters, words, sentences, and spelling mistakes made in the text are given respectively.

3.1.1. Findings Regarding the Spelling of Letters

The percentages of the findings regarding the spelling mistakes made by the students according to the grade level and the spelling of the letters are shown in Table 2.

Table 2.
Findings Obtained Regarding the Spelling of Letters by Grade Level

Items	Grade Level	Yes (%)	Partly (%)	No (%)
1. The writing direction of the letters is correct.	1.	45.3	34.4	20.3
	2.	46.9	34.4	18.8
	3.	32.8	48.3	19
	4.	30.4	56.5	13
2. Letters are readable.	1.	45.3	32.8	21.9
	2.	42.2	42.2	16.6
	3.	22.4	51.7	25.9
	4.	30.4	54.3	15.2
3. Does not add unnecessary lines and dots to the letters.	1.	31.2	25	43.8
	2.	21.9	14.1	64.1
	3.	17.2	25.9	56.9
	4.	23.9	13	63
4. The letters are right slanted.	1.	65.6	23.4	10.9
	2.	79.7	15.6	4.7
	3.	82.8	12.1	5.2
	4.	80.4	13	6.5
5. Letters are written in accordance with the lines.	1.	67.2	21.9	10.9
	2.	87.5	17.4	6.5
	3.	84.5	10.3	5.2
	4.	76.1	17.4	6.5
6. Letters that should not be merged do not merge.	1.	-	-	-
	2.	-	-	-
	3.	-	-	-
	4.	-	-	-
7. The letters are connected accordingly.	1.	45.3	39.1	15.6
	2.	48.4	40.6	10.9
	3.	31	55.2	13.8
	4.	30.4	58.7	10.9
8. The letters merge in the way they should.	1.	45.3	39.1	15.6
	2.	48.3	40.6	10.9
	3.	31	55.2	13.8
	4.	31.4	58.7	10.9
9. The starting places of the letters are correct.	1.	59.4	31.2	9.4
	2.	75	23.4	1.6
	3.	74.1	19	6.9
	4.	65.2	26.1	8.7
10. The endings of the letters are correct.	1.	59.4	28.1	12.5
	2.	70.3	28.1	1.6
	3.	67.2	20.7	12.1
	4.	58.7	28.3	13
11. The transition from letter to letter is correct.	1.	45.3	39.1	15.6
	2.	48.4	43.8	7.8
	3.	29,3	55.2	15.5
	4.	30.4	58.7	10.9
12. It has uppercase and lowercase letters harmony.	1.	12.5	21.9	65.6
	2.	4.74	23.4	71.9
	3.	6.9	6.9	86.2
	4.	6.5	21.7	71.7
13. The extensions of the letters are as long as they should be.	1.	70.3	18.8	10.9
	2.	93.8	6.2	0
	3.	86.2	8.6	5.2
	4.	76.1	17.4	6.5
14. The letters are shaped according to the student.	1.	6.2	0	93.8
	2.	1.6	1.6	96.9
	3.	5.2	3.4	91.4
	4.	2.2	2.2	95.7

In Table 2, it is seen that about half of the 1st and 2nd graders wrote the direction and the readability of letters correctly, merged the letters as it should be, transitioned from letter to letter correctly; about half of the 3rd and 4th graders wrote 'partially' correctly, merged the letters as it should be, transitioned from letter to letter correctly. In all groups, it is seen that about half of the students did not add unnecessary lines and dots to the letters; connected the letters 'partially' accordingly, the vast majority wrote right slanted, letters are in accordance with lines, the starting and endings are correct, the extensions of the letters are as long as they should be; there is no uppercase and lowercase letters harmony in most of them and the letters are not shaped according to student. Since there is no word starting with letters that should not be merged in the text used, no finding regarding the sixth item could be obtained. When the spelling of the letters according to the grade level was evaluated in general, it was determined that the majority of them wrote the letters in accordance with the rules.

3.1.2. Findings Regarding Spelling of Words

The percentages of the findings regarding the spelling mistakes made by the students according to the grade level and the spelling of the words are shown in Table 3.

Table 3.
Findings Obtained Regarding the Spelling of Words by Grade Level

Items	Grade Level	Yes %	Partially %	No %
1. The letter spacing in the word is sufficient.	1.	54.7	28.1	17.2
	2.	57.8	32.8	9.4
	3.	37.9	43.1	19
	4.	34.8	41.3	23.9
2. Words are legible.	1.	46.9	34.4	18.8
	2.	42.2	48.4	9.4
	3.	20.7	60.3	19
	4.	30.4	58.7	10.9
3. There are no missing letters in the word.	1.	78.1	17.2	4.7
	2.	54.7	31.2	14.1
	3.	32.8	34.5	32.8
	4.	56.5	13	30.4
4. There are no unnecessary letters in the word.	1.	73.4	20.3	6.2
	2.	53.1	25	21.9
	3.	31	29.3	39.7
	4.	56.5	13	30.4
5. The word is divided correctly at the end of the line.	1.	53.1	18.8	28.1
	2.	43.8	9.4	46.9
	3.	19	19	62.1
	4.	43.5	19.6	37
6. The dots in the word are not forgotten.	1.	67.2	15.6	17.2
	2.	53.1	31.2	15.6
	3.	36.2	27.6	36.2
	4.	54.3	21.7	23.9
7. There are lines in the word that should be.	1.	67.2	17.2	15.6
	2.	51.6	31.2	17.2
	3.	36.2	31	32.8
	4.	56.5	19.6	23.5

When the table 3 is examined, it is seen that more than half of the 1st and 2nd grade students have done the letter spacing in the word sufficiently, contained neither missing or unnecessary letters in words and haven't forgotten dots in the word, used lines that there should be in the words. Again, the words of about half of the 1st and 2nd grade students are legible. In the 3rd grades, it is seen that the number of students who fit, partially and do not fit in the situations of not having missing or unnecessary letters in the word, forgetting the dots in the word, and having the lines that should be in the word are close to each other. Again, more than half of the 3rd graders write the words legibly and divide them correctly at the end of the line. On the other hand, more than half of the 4th graders write the words legibly, do not have missing or unnecessary letters in the word, have the dots in the word and the lines that should be. When the spelling of the words according to the grade level is evaluated in general, it is seen that the majority of them write the words in accordance with the rules.

3.1.3. Findings Regarding the Spelling of Sentences

The percentages of the findings regarding the spelling mistakes made by the students regarding the writing of the sentences according to their grade levels are shown in Table 4.

Table 4.
Findings Related to the Spelling of Sentences According to Grade Level

Items	Grade Level	Yes %	Partially %	No %
1. There is a carriage return.	1.	67.2	3.1	29.7
	2.	37.5	4.7	57.8
	3.	27.6	3.4	69
	4.	60.9	6.5	32.6
2. Carriage return begins with a capital letter.	1.	51.6	20.3	28.1
	2.	28.1	17.2	54.7
	3.	12.1	15.5	72.4
	4.	30.4	26.1	43.5
3. The distance between sentences is sufficient.	1.	65.6	26.6	7.8
	2.	56.2	17.2	26.6
	3.	32.8	34.5	32.8
	4.	56.5	21.7	21.7
4. The words in the sentence are not missing.	1.	64.1	25	10.9
	2.	26.6	26.6	46.9
	3.	27.6	13.8	58.6
	4.	39.1	21.7	39.1
5. There are no extra words in the sentence.	1.	57.8	15.6	26.6
	2.	21.9	18.8	59.4
	3.	20.7	6.9	72.4
	4.	34.8	17.4	47.8
6. Punctuation marks are used correctly and appropriately.	1.	59.4	20.3	20.3
	2.	35.9	29.7	34.4
	3.	22.4	17.2	60.3
	4.	43.5	28.3	28.3

When Table 4 is examined; it is seen that the first-grade students obey the rules regarding the writing of the sentences the most. In the 2nd grades, while the distance between the sentences was sufficient, there were cases of making a carriage return, beginning a carriage return with a capital letter, and writing missing or excess words in the sentences. In the 3rd grades, it is seen that the majority of the students do not comply with the spelling of the sentences in all cases, except for leaving sufficient distance between sentences. In the 4th grades, it is seen that about half of them comply with the situations of making carriage returns, leaving sufficient distance between sentences, using punctuation marks correctly and appropriately. When all groups are examined, it can be said that the number of people who made mistakes in the writing of sentences is higher than the first-grade students.

3.1.4. Findings Regarding the Evaluation of the Writing as a Whole

The percentages of the findings related to the spelling mistakes made by the students in the whole writing according to their grade levels are shown in Table 5.

Table 5.
Findings regarding the Evaluation of Writing as a Whole by Grade Level

Items	Grade Level	Yes %	Partially %	No %
1. The writing is placed on the page correctly.	1.	48.4	37.5	14.1
	2.	35.9	50	14.1
	3.	24.1	37.9	37.9
	4.	32.6	47.8	19.6
2. The slant has been preserved throughout the writing.	1.	62.5	28.1	9.4
	2.	87.5	9.4	1.6
	3.	81	15.5	3.4
	4.	63	30.4	6.5
3. The entire writing is legible.	1.	45.3	37.5	17.2
	2.	40.6	48.4	10.9
	3.	24.1	53.4	22.4
	4.	30.4	58.7	10.9
4. The student was able to write the text that was read, in italic.	1.	51.6	39.1	9.4
	2.	50	45.3	4.7
	3.	4.5	62.1	3.4
	4.	39.1	58.7	2.2
5. Has developed a style of his own.	1.	93.8	0	6.2
	2.	100	0	0
	3.	96.6	3.4	0
	4.	100	0	0
6. The writing has a general aesthetic.	1.	78.1	12.5	9.4
	2.	76.7	23.4	0
	3.	67.2	24.1	8.6
	4.	5.3	16.45	78.25

As shown in Table 5, it is seen that the number of mistakes made is less when the writings of the students in all groups are evaluated as a whole in the papers examined by the research process. While it is seen that the students in all groups maintain the italic style of the text in general, develop a style of their own, and have a general aesthetics in their writing, it is seen that they can partially correctly place their writings on the page and arrange legibility of the entire text.

3.2. Findings Concerning the Legibility Levels of Students' Writings According to Grade Levels

One-way analysis of variance was performed to determine whether the averages of the students from the "Multidimensional Legibility Scale" differ according to their grade levels, and the results are shown in Table 6.

Table 6.
One-Way Analysis of Variance Results on the Legibility Levels of Their Writings According to Grade Levels

Grade Level	N	$\overline{X}$	S	F	P
1st Grade	64	7.65	2.96		
2nd Grade	64	7.26	1.95	1.87	.14
3rd Grade	58	8.17	1.96		
4th Grade	46	8.08	2.36		

When the table 6 is examined, it is seen that legibility averages according to the grade levels are in order, 7.65; 7.26; 8.17 and 8.08. According to the one-way variance analysis, this difference between averages is not statistically significant [F (3, 228)= 1.87, p>.05]. In other words, it was determined that there was no statistically significant difference between the legibility levels of primary school students' writings according to their grade levels.

3.3. Findings Regarding the Legibility Levels of the Writings of the Students by Gender

The results of the independent groups t-test on the legibility levels of the writings of the students according to their gender are shown in Table 7.

Table 7.
The t-Test Results of the Legibility Level of Their Writings According to Gender

Grade Level	Gender	N	$\overline{X}$	S	df	t	p
1st Grade	Female	36	8.25	3.23	62	1.86	.07
	Male	28	6.89	2.41			
2nd Grade	Female	30	7.86	1.87	62	2.41	.02*
	Male	34	6.73	1.88			
3rd Grade	Female	34	7.76	1.50	56	.35	.73
	Male	24	7.62	1.53			
4th Grade	Female	27	8.92	2.04	44	3.14	.00*
	Male	19	6.89	2.33			

*p<.05

According to Table 7, it is seen that the average of legibility scores of female students is higher than the average of male students at all grade levels. However, this difference between the means is statistically significant in the 2nd and 4th grades [t (62) = 2.41, p<.05); t (44) = 3.14, p<.01)]; in the 1st and 3rd grades, the difference was not significant [t (62) = 1.86, p>.05); t (56) = .35, p>.05)]. For an eta square that indicates the extent to which the argument has an effect on the dependent variable, 0.01 is interpreted as a large effect if it is small, 0.06 is medium, and 0.14 is a large effect (Cohen, 1992). It was determined that the effect size (η^2 = .09) for the 2nd grades among the grade levels with a significant difference was found to be medium and the effect size calculated for the 4th grades (η^2 = .18) was found to be large.

3.3. Findings Concerning the Legibility Levels of the Students' Writings According to their Socio-Economic Levels

The results of the one-way analysis of variance regarding the legibility levels of the students' writings according to their socio-economic levels are shown in Table 8.

Table 8.
ANOVA Results on Legibility Levels of Writings by Socio-Economic Level

Grade Level	SEL	N	$\overline{X}$	S	F	P	Statistically Significant Difference (Scheffe-f)
1st Grade	Lower	19	6.26	2.33	4.29	.02*	Upper>Lower
	Middle	25	7.72	2.69			
	Upper	20	8.90	3.34			
2nd Grade	Lower	19	7.05	1.92	.33	.72	-
	Middle	20	7.55	1.88			
	Upper	25	7.19	2.06			
3rd Grade	Lower	11	6.68	1.13	11.91	.00*	Upper>Lower
	Middle	37	7.61	1.53			
	Upper	10	8.87	.88			
4th Grade	Lower	14	6.26	2.33	4.29	.02*	Upper>Lower
	Middle	37	7.72	2.69			
	Upper	12	8.90	3.34			

* p<.05

According to Table 8, in the total scores of 1st, 3rd and 4th grade students' writing legibility; it is seen that the success averages of the students from the lower and middle socio-economic level are lower than the average of the students from the upper socio-economic level. According to the results of the one-way analysis of variance performed to determine whether there is a statistically significant difference between the means, it has been seen that there was a significant difference between the 1st, 3rd and 4th grade students from the upper socio-economic level and the students from the lower socio-economic level in favor of the students from the upper socio-economic level F (2, 61)= 4.29, p<.05]; [F (2, 55)= 11.91, p<.05]; [F (2, 43)= 4.29, p<.05]. In the 2nd grades, it was observed that the averages were quite close to each other, and it was observed that the legibility scores did not differ statistically [F (2, 61)= .33, p>.05]. Among the grade levels with a significant difference, it was determined that the effect size was small for the 1st grades (η^2 = .01) and 3rd grades (η^2 = .01), and the effect size (η^2 = .06) calculated for the 4th grades was at a medium level.

4. RESULTS, DISCUSSION AND RECOMMENDATIONS

In this section, the discussion and results are given under two headings: spelling errors and legibility level of the texts.

4.1. Discussion on Spelling Mistakes Made by Students by Grade Level

When the findings of the spelling mistakes made by primary school students were examined, it was observed that there were albeit partially similar errors in the spelling of the letters, in making the spelling direction correctly, in the readability, in the appropriate connection of the letters, in the ways in which they should merge the letters, in the starting and ending places of the letters, in the transition from letter to letter, in the uppercase and lowercase letters harmony according to the class levels. Regarding the spelling of words, it has been observed that there are similar errors according to grade levels, albeit partially, in the adequate letter spacing in the word, its legibility, the presence of missing or unnecessary letters in the words, dividing the word correctly at the end of the line, forgetting the dots in the words. When the mistakes made according to the spelling of the sentences are examined, it is remarkable that the 1st grade students have made fewer mistakes. In general, it has been determined that there are partial errors in using carriage return, beginning with a capital letter, missing or excess words in the sentence, correct and appropriate use of punctuation marks, and these error rates differ according to grade levels. In the examination of the writing as a whole, it was determined that fewer mistakes were made in preserving the slant of the text, developing a style of its own and finding a general aesthetic of the writing, and similar errors were made in the legibility of the writing, albeit partially, according to grade levels.

As a result of the literature review, Demir (2003) also determined in their research that most of the primary school students made the mistake of writing the letters wrong. Acat and Özsoy (2006), Çiftçi (2006), Engin (2006), Gün (2006) concluded in their research that students generally have difficulties in placing their writings in the notebook, they have problems in maintaining the inclination in the writing, and they make mistakes in maintaining the slant throughout the text. Similarly, Kuşdemir, Katrancı ve Arslan (2018) found that the cursive italic writings of the students were moderately sufficient in terms of space, size, and form, but not enough in terms of line tracking. Başaran (2006) stated that students have the most difficulty writing letters italic, at appropriate height and width, and have the least difficulty in leaving gaps between words. In the study of Bayat and Çelenk (2015), it was determined that the students' scores for writing italic and legible, leaving spaces between words, and writing without breaking words were relatively low. Bektaş (2007) and Yurduseven (2007) also determined in their research that there are problems in maintaining obliquity in cursive italic handwriting, writing legibly, and writing letters in appropriate sizes. According to the research of Turan, Güher, Sahin (2008), teachers stated that the students had the most difficulty in the places of letter mergence. Also, in the research that was conducted by Sidekli, Coşkun, and Gökbulut (2008) found that students make errors at their writing skill levels in subjects like letter mistakes such as lower-upper body connections, writing direction, and mergence styles, and they make mistakes in preserving the slant in their writing, creating aesthetic appreciation, placing them in accordance with the page, and developing a style suitable for them. Bayraktar (2006) also tried to determine what kind of spelling mistakes first grade students made in cursive italic handwriting and as a result concluded that students have made a high rate of mistakes in writing clearly and legibly, writing letters obliquely, in beginning and ending places of letters, merging the letters, passing from letter to letter, writing the size of the letters according to the line spacing, writing the letters according to their own style, adjusting the spacing of the letters in the word, forgetting the letters in the word, in putting words, letters and their lines after the word is finished, making carriage return, leaving appropriate spaces between words, and using punctuation marks appropriately. In addition, Balkan (2015) and Yıldırım (2018) found that first grade students also have made mistakes in making the directions of letters correctly, adding unnecessary lines or dots to letters, writing letters in a right slant, writing letters in accordance with lines, making beginning and ending places of letters correctly, transitioning from letter to letter, forgetting the dots in the word and drawing the lines that should be in the words, having a carriage return, leaving sufficient distances between sentences, and using punctuation marks correctly and appropriately. In fact, while Ulu (2019) found that first-year students made the most writing mistakes in spelling mistakes in vertical basic writings such as letter skipping/adding, syllable skipping/adding, letter confusing, word skipping/adding, end-of-line syllable allocation, typing words cursively/separately, misspelled word, writing reversely; Babayiğit (2018), on the other hand, determined that the letters haven't been written in the appropriate size for the line spacing, that there have been problems with verticality, that the circle has not completely closed in the letters containing the roundness, and the letters have not written in accordance with the baseline. The findings obtained from the research show parallelism with the results in the literature. Thus, it can be said that students can make similar mistakes when writing with vertical basic letters and cursive italic letters, and the resulting errors can be independent of the type style used. For example, Kurtlu and Korucu's (2015) study in which they discussed whether different writing styles affect the student's writing performance; with the determination of common mistakes, it was determined that students made fewer spelling mistakes when writing in cursive italic. The reason for these common mistakes while writing can be attributed to the deficiencies in the readiness level of the students, their inability to fully acquire the writing skill yet, and the inadequacy of the activities carried out to gain the writing skill.

One of the remarkable results of the research is that the error rates made are close to each other according to the grade levels, but the rate of errors made in the first grade is relatively low compared to the other grades. Farris (1997) noted that drawings of simple basic lines can be made at the age of three, noting that children aged six to seven years old can easily write vertical and horizontal lines. This shows that first-year students can have good writing skills. Making relatively fewer spelling mistakes in younger age groups can be explained by the possibility of focusing more on writing according to the rules while gaining the writing skill, and the attention towards writing in accordance with the rules in the upper grades, where this skill is thought to be acquired, is directed towards the skill of written expression. Similarly, Korkmazlar (1990) stated that children who have reached the first-grade level of primary school have reached the maturity of writing.

4.2. Discussion on the Legibility Level of Students' Writings

When the legibility levels of the students' writings were analyzed according to their grade levels, it was seen that there was no significant difference between grade levels. In the study conducted by Arslan, Özer, and Bağcı (2018), it was determined that the legibility scores did not change significantly according to the grades of the students. Graham, Berninger, Weintraub, and Schafer (1998) also stated in their study that the relationship between grade and legibility is not linear. Although the 3rd grades have the highest legibility scores, when the legibility of the students' writings is evaluated in general, it is seen that the legibility levels are low. As the reason for this; it can be attributed to the inability to acquire the literacy skill that is envisaged to be acquired by the students in the curriculum, the failure to develop the aesthetic perspectives of the students, the lack of importance given to the teaching of the teachers' writing skills, the deficiencies seen in the level of writing skills, the failure of the teachers to examine in detail the mistakes seen in the writing assignments given in the primary school period and not to give adequate feedback. Similarly, Kuşdemir et al. (2018) also determined that the cursive italic handwritings of primary school sophomores were more legible and understandable than those of fourth grade students. According to Erden, Kurdoğlu and Uslu (2002), the period in which legible writing and writing maturity are acquired dates back to the first three years of primary education. According to Mojet (1991), the legibility level of the writings is shaped in the fourth grade. However, it should be kept in mind that writing skills develop with age and school (Graham & Weintraub, 1996).

Considering from this point of view; In the first years of primary education, teachers have important duties in terms of the quality of writing teaching in schools and the acquisition of correct and legible writing skills. It is seen that the period in which writing teaching gains weight in Turkey is the primary reading and writing teaching process. However, in the following school years, students encounter more than one writing process. The intensity of this process encourages students to write casually. However, immediate intervention by teachers and giving feedback and corrections will prevent students from learning and writing incorrectly (Yıldız & Ateş, 2010). When the results obtained as a result of the literature study are examined; in a study conducted by Yıldız and Ateş (2010) to compare the legibility level and spelling errors of students' writing, it was concluded that the writings of more than half of the students were not legible. In addition, Arslan and Ilgın (2010) reached the conclusion that students think that they do not write legibly, in their study investigating the opinions of teachers and students about cursive italic handwriting. Ulu (2019) also evaluated the first-year students' vertical basic writing as moderately legible in terms of spacing, size, shape, and line tracking. These results also support the results of the research.

When the total mean scores obtained by gender regarding the legibility levels of the students' writings were analyzed, it was determined that the average of the legibility scores of the female students was higher than the average of the male students, but this difference between the averages was statistically significant only in the 2nd and 4th grades. As the reason for this, it can be attributed to the fact that the biological development of female students is faster than that of male students, the fine motor skills of female students are developed, and the aesthetic feelings of female students are developed. The result of the research; Gök and Baş (2020), Arslan Özer and Bağcı (2018), Graham et al. (1998) and Duncan's (1982) studies also draw parallels with the result in favor of legibility scores of female students, and the scores of Obalar's (2009) literacy skills scales coincide with Demiroğlu Memiş's (2018) research, which found that the tendency to write differed significantly in favor of female students by gender.

The writing legibility of the students is in their total scores; it is seen that the success averages of students at the lower and middle socioeconomic level are lower than the success averages of students at the upper socio-economic level. According to the results of the one-way analysis of variance performed to determine whether there is a statistically significant difference between the means, it was found out that there was a significant difference between the 1st, 3rd and 4th grade students from the upper socio-economic level and the students from the lower socio-economic level in favor of the students from the upper socio-economic level. In this case, it can be said that as the socio-economic level increases, the legibility level of the students' writings increases. Similarly, in the studies of Gök and Baş (2020) and Kuşdemir et al. (2018), the average of legibility of students from upper socio-economic levels was found to be higher. Alyıldız (2011) also found that students who grew up in families with low incomes encountered many types of errors at a high rate. According to Ahioğlu (2006), due to families with low socio-economic status have lower education, lower income level and generally higher environmental tension, they are less interested in their children and take less part in the school process. This situation has a negative impact on the child's reading and writing success. These results are consistent with the results of the research. Changes in language development, the limit of the vocabulary, the correct use of language and the ability to express develop as the child grows. However, children of families with good socio-economic status speak early and properly (Calp, 2010). As with speech, writing and other language skills can improve better thanks to the enriched environmental factors that socio-economic level can provide and family members who can be better models. Based on the findings obtained from the research;, it can be suggested to primary school teachers starting from the first grade to have their students work on writing the letters, making the connections between the letters, the extensions of the letters correctly, paying attention to the size of the letters, inclination, the spacing between the words and the baselines, and to make them work appropriate and sufficient in order to improve their students' writing in terms of legibility. In-service seminars can be organized to support the professional development of teachers in this regard. According to the results obtained; it may be recommended to evaluate the writing skill academically throughout the student's entire education life with both legibility and content dimension and to develop standard evaluation methods for the evaluation of this skill. Considering the mistakes made here while teaching writing to the students, it can be predicted what mistakes can be made in particular, so that the occurrence of built-in mistakes can be prevented. Similar studies can also be

conducted with different student groups in terms of variables such as getting pre-school education, class size, and the hand used by the student while writing. Research can be designed on the factors affecting legibility in writing. In the same subject, qualitative research based on techniques such as observation, interview or document analysis can be carried out and more detailed information can be collected about the cause and solution of the mistakes made. Writing training programs can be designed to reduce writing errors and improve writing legibility of primary school students. This study is limited to the data in the process of using cursive italic writing in primary reading and writing teaching. The work can be repeated with vertical basic letters.

Research and Publication Ethics Statement

It was stated that no ethical violations were detected in the decision no. 06 taken at the Meeting of the Commission dated 06.7.2020 and numbered 11 regarding the study evaluated by Gaziantep University Social and Human Sciences Ethics Committee Commission. The study was planned as an original study and was carried out with primary school students attending the 1st, 2nd, 3rd, and 4th grades of the selected schools. The data were collected in a way that would not disrupt the educational activities. The reporting process was carried out in accordance with the rules of research ethics, so as not to harm the students participating in the study.

Contribution Rates of Authors to the Article

This study is a part of the master's thesis completed by the first author under the supervision of the second author. The second author guided the entire process of the study and the researchers contributed equally by working together during the transformation of the thesis into an article.

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Statement of Interest

There is no conflict of interest between the authors.

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