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# Levels of Readability of the Texts in the 7th Grade Turkish Textbook

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#### ABSTRACT

The texts in the textbooks are one of the basic materials in terms of conveying elements such as achievement, value, and competence in the curriculum. The fact that the texts are suitable for the level of the students helps the students understand and analyze the text better. In this study, it is aimed at determining the readability levels of the texts in the 7th grade textbook and revealing their suitability for the students. In the study, the case design from the qualitative research method was preferred. The materials have been subjected to the subtractive readability process. The obtained data were analyzed by descriptive analysis. At the end of the study, it was determined that the level of the texts was at the level of anxiety; there was a differentiation between the readability scores according to the branches, and there were differences in the readability levels of the texts according to the gender variable. In this context, it is predicted that it will be more beneficial in terms of educational activities to be more careful while selecting or preparing texts for textbooks and to prefer texts according to the level of students.

Keywords:

Readability, subtractive readability formula, textbook

## 1. Introduction

The most basic teaching material for teachers in the education-teaching process is textbooks. Textbooks have an important role in the transfer of elements such as achievement, value, and competence into the curriculum. Textbooks convey these elements through texts. The fact that the texts are interesting for the students, increase the desire to read, and are suitable for their level facilitates the transfer of the mentioned elements. Readability, which provides this transfer, evaluates the suitability of the texts to the developmental levels of the students and ensures that the texts are used appropriately on this basis. Uzun and Çetinkaya (2020, p. 152) state that the texts should be legible, understandable, and readable for the reader to understand or process the text well, and that the texts with these features should be brought together with the students in order for the student to continue the reading activity with pleasure and willingness.

One of the concepts that determines whether the texts are suitable for the level of the students is readability. Although the concept of readability is very old, its real use began in the 1920s. Although the first use of readability is based on vocabulary studies and measuring readability, its main purpose is to improve the learning retention of students with simpler textbooks (Chall, 1988). There are different definitions of readability in the field literature: Dale and Chall (1949) define readability as the interaction of all elements that affect the success of a group of readers with a particular printed material. What is meant by success is the extent to which they understand the material, how interesting they find it, and read it at the most appropriate speed. Dubay (2007), on the other hand, defines readability as the ease of reading in texts designed in accordance with the reader's interest, motivation, reading skill, and prior knowledge and prepared in line with the reader's needs. With ease of reading, reading problems are avoided by preventing the student from reading

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text above his level. Ateşman (1997) defines readability as deciding whether the texts are easy or difficult to understand for the reader. Klare (1963, p. 1) mentions three definitions for readability:

- (1) To indicate the legibility of handwriting or printing (typography).
- (2) To indicate the ease of reading resulting from the internal structure of the text.
- (3) To indicate ease of understanding or comprehension due to the style of writing.

Texts can be categorized into different readability levels depending on factors such as vocabulary, sentence structure, and complexity. These levels are often used to determine the suitability of a text for a particular audience. Here are some common readability levels:

- Preschool Level (3-5 years old): Very simple language, short sentences, large font and lots of pictures, few or no complex words.
- Early Primary Level (6-8 years): Simple vocabulary and sentence structure, repetition for reinforcement, larger font and more pictures, limited use of complex words.
- Middle Elementary Level (9-11 years): More complex sentences, a wider vocabulary, fewer pictures, some use of complex words with explanations.
- Secondary School Level (12-14 Years): Longer sentences, varied vocabulary, limited drawings, increasing complexity in words and concepts.
- High School Level (15-18 years old): Complex sentence structures, broader and more sophisticated vocabulary, limited or no pictures, developed concepts and ideas,
- University Level (18+): Very complex sentences and vocabulary, few or no pictures, assumes a high level of background knowledge, may contain technical or specialized terminology.
- Professional Level (Specialities): Highly complex and technical language, highly specialised terminology, designed for professionals in a specific field.

It should not be forgotten that the readability of a text should be appropriate to the reading skills and background knowledge of the target audience. Various readability formulas and tests, such as the Flesch-Kincaid Grade Level, the Gunning Fog Index, and the Coleman-Liau Index, can help assess the reading level of a text. In addition, the use of headings, bullet points, and clear formatting can improve the readability of a text, regardless of its audience.

In this study, the second definition has been brought to the fore, and the ease of reading arising from the content elements of the text, such as the plan of the text, its subject, and language expression features, has been revealed.

Many readability formulas have been developed to determine whether texts are appropriate for readability studies. Dale-Chall readability formula, Gunning Fog Index, Fresch Reading Ease Score-Fres, Flesch-Kincaid Value, ARI-Automatic readability index, Fry readability graph, McLaughing Smog formula, Raygor formula, Colemon readability formula, Power-Summer-Kearl formula, Bormuth mean subtraction formula... While the developed formulas are useful for the languages in which they were created and served, they are not suitable for measuring the readability of Turkish texts as the number of words, sentence numbers, and sentence lengths differ from Turkish (Ulusoy, 2006). Ateşman (1997, pp. 72-73) states that the most commonly used variables of readability formulas are sentence length and word length, and that foreign formulas cannot be adapted into Turkish by stating that the average is not the same in all languages. Ateşman started readability studies for Turkish texts by producing a formula suitable for Turkish texts. Studies after Ateşman are listed as the Cetinkaya-Uzun readability formula, the Bezirci-Yılmaz readability formula, and the Sönmez formula. These formulas are frequently criticized because they examine the syntactic structure of the text in general (Talim Terbiye Board Presidency, 2021, p. 26). In this study, the subtractive readability formula called "Cloze Test", developed by Wilson Taylor, which is thought to give more accurate results among the readability formulas and emphasizes intelligibility, is used. While determining the readability level of the text, it gives more reliable results as it adds the existing reader group to the process (Talim Terbiye Board Presidency, 2021), and the subtractive readability formula can be easily applied to languages other than English (Taylor, 1956, p. 42).

Taylor (1953) defines the Cloze test as "a method of receiving a message from a 'giver' (author or speaker), attempting to break language patterns by deleting sections, thereby giving it to'receivers' (readers or

listeners) (p. 416). The working procedure of the subtractive readability process is given in Table 1 (Çepni, Gökdere, and Taş, 2001; Çetinkaya, 2010; Dubay, 2007; Board of Education and Training, 2021).

**Table 1.** Working Procedure of the Subtractive Readability Process

| Process Step                 | Descriptions   |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|
|                              | The material to be used should consist of an average of 275 words, and the participants should not have    |  |  |  |  |  |  |  |
|                              | read the material before.  |  |  |  |  |  |  |  |
|                              | Provided that the first and last sentences of the text are not touched, words are extracted according to   |  |  |  |  |  |  |  |
|                              | the education level of the student from the second sentence. One word in 15 words for primary education    |  |  |  |  |  |  |  |
| Configuration                | level, one word in 7-9 words for primary   | education second level, and one word in every 5 words for high   |  |  |  |  |  |  |
|                              | school level. Removed words are noted in a separate place. The number of deleted words must be at          |  |  |  |  |  |  |  |
|                              | least fifty for the reliability of the test.   |  |  |  |  |  |  |  |
|                              | The place of each omitted word is indica   | ted by leaving a space. It was deemed appropriate that the space |  |  |  |  |  |  |
|                              | left in the Turkish text studies should co   | onsist of twelve unit lines.                                     |  |  |  |  |  |  |
|                              | It is stated to the working group that t   | he research carried out and the text presented are for research  |  |  |  |  |  |  |
| A desimilate ation           | purposes only.   |  |  |  |  |  |  |  |
| Administration (Application) | The subtractive readability formula is mentioned, and examples are given.                                  |  |  |  |  |  |  |  |
|                              | Necessary explanations are given to the students; they are asked to fill out the consent forms, and enough |  |  |  |  |  |  |  |
|                              | time is given for the students to fill in the blanks.  |  |  |  |  |  |  |  |
|                              | As long as the word in the blank is the same as the original, it will be considered correct. Even if       |  |  |  |  |  |  |  |
|                              | synonyms give the same meaning, these answers will not be considered correct. Although the correct         |  |  |  |  |  |  |  |
|                              | acceptance of synonyms does not make a significant difference, it can cause unnecessary conflict and       |  |  |  |  |  |  |  |
| Moscuromont                  | difficulty among students.   |  |  |  |  |  |  |  |
| Wicasurement                 | An answer key will be prepared according to the words in the original example, and an evaluation will      |  |  |  |  |  |  |  |
|                              | be made accordingly. Whatever the participant writes in the blank will be accepted, and the typos will     |  |  |  |  |  |  |  |
|                              | not be changed.  |  |  |  |  |  |  |  |
|                              | Two points will be awarded to the participant for each correct answer.                                     |  |  |  |  |  |  |  |
|                              | Reading Level  | Subtractive Readability Test Score                               |  |  |  |  |  |  |
| Interpretation               | Independent Reading Level  | 60% and above  |  |  |  |  |  |  |
| Administration               | Instructional Reading Level  | 40-59%   |  |  |  |  |  |  |
|                              | Anxiety Level  | 40% and below  |  |  |  |  |  |  |

When the field literature on readability studies is scanned, there are many studies. Among the studies, readability studies on textbooks have a great majority. Tekbiyik (2006) physics textbook according to FOG and Cloze test formula, Köse (2009) biology textbook according to Flesch-Kincaid, Gunning Fog Indeks, Sönmez, Cloze test, and Ateşman formulas Mirzalar Kabapınar (2006), five chemistry textbooks according to readability criteria, Erdem (2011) language and expression textbook according to Ateşman formula, Şimşek and Çinpolat (2021) Turkish language and literature book according to Ateşman and Çetinkaya-Uzun formulas, Çakmak and Çil (2014) science and technology textbook 'Let's Travel the World of Living Things' Let's get to know the texts in the unit FOG, Flesch-Kincaid, Flesch ease of reading, Powers-Sumner-Kearl, Coleman-Liau, ARI, Linsear Write, Ateşman, and Sönmez formulas, Çelik, Çetinkaya, and Aydoğan Yenmez (2020) five mathematics books, Çetinkaya: According to Uzun's formula, Yıllar (2020) geography textbook according to FOG and Ateşman formulas, Hızarcı (2009) social studies textbook according to Cloze test formula, Ulu Kalın and Aydemir (2017) and Ulu Kalın and Koçoğlu (2017) analyzed the social studies textbook according to Flesch reading ease, SMOG, Gunning difficulty indicator, Atesman, and Cloze test formulas. Apart from the textbooks, the works of literary writers were also examined in terms of readability: Tekşan and Çinpolat (2020) Miyase Sertbarut's books; Teke (2016) Hasan Kallimci's stories; Rada (2016) Kaan Murat Yanık's stories in the Kite Seasoni book; Kayabaşı, Yılmaz, and Doyumğaç (2016) examined Mustafa Ruhi Şirin's stories; and Ziya (2019) Behiç Ak's children's novels.

It has been stated that there are many readability studies in the field literature, and the largest share belongs to the textbooks, and among the textbooks, the most studies have been done on Turkish textbooks. Temur (2002) with the Turkish textbook and the compositions he had students write on a certain subject, according to the Ateşman formula; Çiftçi, Çeçen, and Melanlıoğlu (2007) examined the texts in the 6th grade Turkish textbook according to the Ateşman formula; Zorbaz examined the fairy tale texts in Turkish textbooks recommended in the Journal of Communiqués (2007), numbered 2558, according to the formula of Ateşman. Solmaz (2009) examined the texts in the 4th and 5th grade Turkish textbooks according to word and sentence length. Demir and Çeçen (2013) examined the texts in the Turkish textbook for grades 1-5 according to the Ateşman formula; Iskender (2013) examined the texts in the 5th-8th grade Turkish textbook according to the Ateşman formula; According to the formulas of Ateşman and Çetinkaya-Uzun, Bağcı and Ünal (2013)

examined the texts of 8th grade Turkish textbook; Karatay, Bolat and Güngör (2013) examined the texts in the 6,7 and 8th grade Turkish textbooks according to Cloze test formula and teachers' opinions; Durukan (2014) examined the texts in the 7th grade Turkish textbook according to the Ateşman formula; According to the Ateşman formula, the texts in the 5th grade Turkish textbook of Mirzaoğlu and Akın (2015) are examined; according to the Ateşman formula, the texts in Baş and İnan Yıldız (2015) 2nd grade Turkish textbook are examined; according to the Bezirci-Yılmaz formula, the texts in Çakıroğlu (2015) 1st-4th grades Turkish textbook are examined; according to Bolat (2016) examined the texts in 5th-8th grades Turkish textbook with subtractive readability formula; Özdemir (2016) examined the texts in the 5th grade Turkish textbook according to the Ateşman formula; according to the Uzun-Çetinkaya formula, the texts in Bozlak (2018) 5th grade Turkish textbook are examined; according to the formulas of Ateşman, Çetinkaya-Uzun and Bezirci-Yılmaz, Bora (2019) examined the texts in 5th-8th grade Turkish textbook; according to the formulas of Ateşman, Çetinkaya-Uzun and Bezirci-Yılmaz; Özçetin and Karakuş (2020) examined the texts of 5th grade Turkish textbook; Şakiroğlu (2020) examined the texts in the Turkish textbook for grades 5-8, according to the Ateşman formula; according to Ateşman, Çetinkaya-Uzun formulas, the texts in the 5th-8th grade Turkish textbooks are examined by Çıplak and Balcı (2022); Ogur (2022) analyzed the texts in the 7th grade Turkish textbook according to Ateşman and Çetinkaya-Uzun formulas.

While scanning the field literature, studies on Turkish textbooks were examined in detail, and this research differs from other studies in the grade level of the examined texts and the readability formula applied. It is thought that by determining the readability level of the texts in the textbook, the research can prevent students from reading texts below or above their level, and it will contribute to the development of textbooks by giving ideas to the book authors.

The purpose of readability is to determine whether the text is suitable for the audience that will read it by paying attention to the word or sentence lengths of the selected text and determining the difficulty level of the text (Talim Terbiye Board Presidency, 2021, p. 4). This study, carried out in this context, was aimed at calculating the readability levels of the texts in Turkish textbooks and deciding on their suitability for students.

- For this purpose, the answer to the following problem has been sought: "What are the readability levels of the texts in the 7th grade Turkish textbook?"
- In addition to the main problem statement, the following sub-questions were also answered: "What are the readability scores of the branches in which the study group is located?" "What are the readability scores of the study group according to gender?" and "How are the readability levels of the texts according to the change in the measurement criteria?"

#### 2. Research Method

#### 2.1. Model of the Research

In this study, in which the suitability of the texts in the 7th grade Turkish textbook for students in terms of readability was investigated, the case design from the qualitative research method was used. Yin (2018) defines a case study as a qualitative research design that examines a current situation or phenomenon in depth and in its existing context, does not have definite boundaries with the context in which the examined situation or phenomenon exists, is based on multiple data sources, and brings data together in the form of triangulation.

In the study carried out, the case design was preferred because the readability level of the texts in the current textbooks was determined while determining the readability level, working with the students who read, examine, and use the texts without separating the texts from their own context, and not making generalizations by evaluating each text in its own way.

## 2.2.Examined Material

In the study, criterion sampling, one of the purposeful sampling methods, was used both in the selection of the text and in the determination of the study group. Criterion sampling, one of the purposive sampling methods, was preferred in this study, as it contributes to the transferability of the study and provides more reliable data. Merriam (2015) uses purposive sampling as "a sample selection that the researcher wants to explore, understand, gain insight from, and from which much can be learned." (p.76). The criteria to be determined in the criterion sampling within the purposive sample should reflect the purpose of the study and

guide the researchers in revealing the rich situations, and it should be stated why these criteria were chosen (Merriam, 2015). While determining the materials to be examined in the study, it was decided to work with the texts in the Turkish textbook taught in the course of the students to be included in the study group as a criterion, and the texts to be examined in the study were composed of the texts in the 7th grade Turkish textbook of their original publications (Erkal & Erkal, 2022). Examined texts:

- The First Light of the Light Bulb, Tarık USLU
- Anatolian Drum, Mehmet ÖNDER
- Some People—Yasemin YÜKSEL

While selecting the texts, an expert opinion was taken, and a number of criteria were listed in the expert opinion form: The texts to be selected should not be read by the students before; the majority of the text does not contain terminology and special expressions; there is a space in seven words; it consists of at least 375 words since it will provide fifty spaces in terms of reliability; and the texts with high coherence and consistency are chosen in order to prevent semantic disconnection.

While determining the study group, the number of students was not kept high because the research model was a qualitative research method, and since the level of understanding was proportional to age, seventh grade students were studied. Due to the criterion that the students to be included in the study group are the children of families with a middle or higher socio-cultural level, the study was conducted with seventh grade students at İnönü University Hayriye Başdemir Secondary School, whose student profile is mostly from civil servant families. A total of 30 students, 10 girls and 20 boys, participated in the study. 16 of the students study in the A branch and 14 in the B branch, and the same Turkish teacher teaches both classes.

#### 2.3. Data Collection Process

While collecting the data for the research, first of all, the ethical committee decision numbered... was taken from the Social and Human Sciences Scientific Research and Ethics Committee of İnönü University. After the ethics committee decision, research permission was obtained in MoNE institutions to work with students in accordance with the 2017/25 Circular of the General Directorate of Innovation and Educational Technologies of the Ministry of National Education. For the texts to be examined in the research, the texts in the 7th grade Turkish textbook were presented to expert opinion, and the most preferred texts were selected in the first place as a result of the feedback from the experts. The subtractive readability formula was applied to the determined texts; in this context, one space was left in seven words, provided that the first sentence remained constant, and twelve units of writing space were left for each space. The process continued until we reached fifty spaces, and after fifty spaces, the rest of the text was transferred as it was. A pre-application was made for the students to have an idea about the subtractive readability formula, and a text they had previously processed was selected to ensure that the students were motivated from the beginning. In the pre-application, the students were shown "Times New Roman" and "Calibri" fonts, and the texts were written in "Calibri" font since most of them preferred "Calibri" font. The texts whose readability level will be examined in the study were arranged as a result of the pre-application and turned into printed material. The edited texts were distributed to the students within the scope of Turkish lesson hours at Hayriye Başdemir Secondary School, where the participants studied in the first semester of the 2022-2023 academic year. Each text was applied during one lesson, and the data collection process was completed in three lesson hours.

## 2.4. Analysis of Data

In this study, deductive (descriptive) analysis was used as data analysis. Deductive analysis, in which data is analyzed according to predetermined codes (Patton, 2018, p. 453), is a type of analysis in which the data are described regularly and clearly, then interpreted and concluded in a cause-and-effect relationship (Yıldırım & Şimşek, 2021).

The deductive analysis type was used in the study, as the texts were classified according to pre-determined readability levels and examined within the framework of determined sub-questions. The collected data were first processed into evaluation forms, and each student was given a code name while processing. The readability score was calculated for each text in the data recorded in the evaluation forms and shown in Table 3 collectively.

#### 2.5. Validity and Reliability of the Research

For research to have an impact on theory and practice in any field, it must be carefully designed and implemented and provide readers, practitioners, and other researchers with true and justified statements, insights, and conclusions. Validity and reliability are important concerns regarding the stages of creating the conceptual framework of research, collecting, analyzing, and interpreting data, and presenting the findings regardless of the method (Merriam, 2015), and certain precautions were taken in the study to minimize these concerns. The measures taken are given in Table 2.

**Table 2.** Validity and Reliability Measures Taken in the Study

|                 |                   | Getting an expert opinion   |
|-----------------|-------------------|---|
|                 | Internal validity | Participant consent   |
|                 |                   | Direct quote  |
|                 |                   | Explanation of the method used and the rationale for the chosen design            |
| <b>&gt;</b>     |                   | The description of the study group and the way in which the material examined was |
| Validity        |                   | determined  |
|                 |                   | Indication of the study group and the characteristics of the material examined    |
|                 | External validity | Explaining the data collection process  |
|                 |                   | Description of the implementation process of the study                            |
|                 |                   | Description of data analysis type and process                                     |
|                 |                   | Explanation of the measures taken for reliability and validity                    |
|                 |                   | Purposeful sampling   |
| it              | Internal          | Preventing data loss and confusion with registration forms                        |
| lbill.          | reliability       | Expressing the findings without adding comments                                   |
| Reliabilit<br>y | External          | Appropriate discussion of the data in the conclusion                              |
| $\simeq$        | reliability       | Ensuring consistency and control among researchers                                |

While ensuring the internal validity of the study, expert opinions were consulted in the selection of the text, and the three texts that received the most votes were selected according to the selection of the experts over the determined criteria. Before starting the study, the consent of the people in the study group that they participated in the study voluntarily was obtained, and at the end of the study, the final version of the study was submitted to the approval of the school administration and the relevant field teacher, representing the study group. The students in the study group were informed that this activity would not have any effect on their achievement grades, that only the researchers would see the forms and results, and that the scores they received would not be shared with their teachers, school administration, or third parties against their will. Each text lasted 1 lesson hour. In the interpretation and conclusion part, descriptions were made by giving place to direct quotations. While trying to provide a high level of internal validity, the lack of data diversity and the absence of long-term interaction can limit internal validity.

While providing external validity, it was explained in detail why the preferred design was chosen in the study, the data collection process, why the type used in data analysis was preferred and how the analysis was carried out, what features the study group and the examined material had, how they were selected, and the method of selection. It is stated that the group and texts selected for the study consist of people-materials that will serve the purpose of the study and provide data in the right direction, and the number of students participating in the study is sufficient for qualitative research.

In order to ensure the internal reliability of the study, the data without comments were written directly in the findings section. In order not to lose and interfere with the data, the printed forms of the texts were processed into Word format under the supervision of two experts, while the data stored during the working process were processed into the forms.

While the external validity of the study was ensured, the findings interpreted in the conclusion part were discussed with the studies conducted, the forms evaluated separately by the researchers were compared, and the data were checked from the beginning in case of differences.

## 3.Findings

In this study, in which the readability level of the texts was determined with the subtractive readability formula, the findings were written only after filling out the forms given to the students. While writing the

findings, examples from the study forms were given. Other variables were not included in the findings section. The findings were examined under the three question titles stated in the case of the problem.

**Table 3.** The Readability Score of the Texts for Each Person in the Study Group

| Participa | nts    |              | Texts        |             |           |                |         |             |  |  |
|-----------|--------|--------------|--------------|-------------|-----------|----------------|---------|-------------|--|--|
|           |        |              | The First Li | ight of the | Anatolian | Anatolian Drum |         | Some People |  |  |
| Class     | Gender | Code<br>Name | Light Bulb   |             |           |                |         |             |  |  |
| Branch    | Branch |              | Right        | Total       | Right     | Total          | Right   | Total       |  |  |
|           |        |              | Answers      | Point       | Answers   | Point          | Answers | Point       |  |  |
| В         | Boy    | S1           | 10           | 20          | 8         | 16             | 7       | 14          |  |  |
| В         | Girl   | S2           | 3            | 6           | 5         | 10             | 1       | 2           |  |  |
| В         | Boy    | S3           | 12           | 24          | 15        | 30             | 4       | 8           |  |  |
| В         | Boy    | S4           | 8            | 16          | 2         | 4              | 1       | 2           |  |  |
| В         | Girl   | S5           | 10           | 20          | 15        | 30             | 7       | 14          |  |  |
| В         | Boy    | S6           | 2            | 4           | 3         | 6              | 3       | 6           |  |  |
| В         | Boy    | S7           | 5            | 10          | 3         | 6              | 3       | 6           |  |  |
| В         | Girl   | S8           | 10           | 20          | 9         | 18             | 3       | 6           |  |  |
| В         | Boy    | S9           | 1            | 2           | 1         | 2              | 1       | 2           |  |  |
| В         | Boy    | S10          | 23           | 46          | 15        | 30             | 9       | 18          |  |  |
| В         | Boy    | S11          | 5            | 10          | 6         | 12             | 5       | 10          |  |  |
| В         | Boy    | S12          | 1            | 2           | 2         | 4              | 2       | 4           |  |  |
| В         | Boy    | S13          | 14           | 28          | 13        | 26             | 9       | 18          |  |  |
| В         | Boy    | S14          | 4            | 8           | 8         | 16             | 1       | 2           |  |  |
| A         | Girl   | S15          | 11           | 22          | 7         | 14             | 9       | 18          |  |  |
| A         | Boy    | S16          | 11           | 22          | 10        | 20             | 5       | 10          |  |  |
| A         | Boy    | S17          | 8            | 16          | 2         | 4              | 3       | 6           |  |  |
| A         | Boy    | S18          | 4            | 8           | 1         | 2              | 5       | 10          |  |  |
| A         | Girl   | S19          | 19           | 38          | 14        | 28             | 9       | 18          |  |  |
| A         | Girl   | S20          | 10           | 20          | 12        | 24             | 6       | 12          |  |  |
| A         | Girl   | S21          | 10           | 20          | 11        | 22             | 4       | 8           |  |  |
| A         | Girl   | S22          | 10           | 20          | 11        | 22             | 8       | 16          |  |  |
| A         | Boy    | S23          | 2            | 4           | 3         | 6              | 3       | 6           |  |  |
| A         | Boy    | S24          | 20           | 40          | 16        | 32             | 10      | 20          |  |  |
| A         | Boy    | S25          | 6            | 12          | 3         | 6              | 1       | 2           |  |  |
| A         | Boy    | S26          | 5            | 10          | 7         | 14             | 2       | 4           |  |  |
| A         | Girl   | S27          | 15           | 30          | 16        | 32             | 8       | 16          |  |  |
| A         | Girl   | S28          | 3            | 6           | 6         | 12             | 4       | 8           |  |  |
| A         | Boy    | S29          | 7            | 14          | 7         | 14             | 3       | 6           |  |  |
| A         | Boy    | S30          | 8            | 16          | 1         | 2              | 3       | 6           |  |  |

Table 3 shows the readability score of the texts for each person.

**Table 4.** The Readability Score of the Texts and the Reading Levels of the Texts for Each Person in the Study Group

| Participa | ints   |       | Texts                                |                  |          |            |             |            |
|-----------|--------|-------|--------------------------------------|------------------|----------|------------|-------------|------------|
| Class     |        | C. I. | The First Light of the Light<br>Bulb |                  | Anatolia | ın Drum    | Some People |            |
| Class     | Gender | Code  | Total                                | Reading          | Total    | Reading    | Total       | Reading    |
| Branch    |        | Name  | Point                                | Level            | Point    | Level      | Point       | Level      |
| В         | Boy    | S1    | 20                                   | Anxiety L.       | 16       | Anxiety L. | 14          | Anxiety L. |
| В         | Girl   | S2    | 6                                    | Anxiety L.       | 10       | Anxiety L. | 2           | Anxiety L. |
| В         | Boy    | S3    | 24                                   | Anxiety L.       | 30       | Anxiety L. | 8           | Anxiety L. |
| В         | Boy    | S4    | 16                                   | Anxiety L.       | 4        | Anxiety L. | 2           | Anxiety L. |
| В         | Girl   | S5    | 20                                   | Anxiety L.       | 30       | Anxiety L. | 14          | Anxiety L. |
| В         | Boy    | S6    | 4                                    | Anxiety L.       | 6        | Anxiety L. | 6           | Anxiety L. |
| В         | Boy    | S7    | 10                                   | Anxiety L.       | 6        | Anxiety L. | 6           | Anxiety L. |
| В         | Girl   | S8    | 20                                   | Anxiety L.       | 18       | Anxiety L. | 6           | Anxiety L. |
| В         | Boy    | S9    | 2                                    | Anxiety L.       | 2        | Anxiety L. | 2           | Anxiety L. |
| В         | Boy    | S10   | 46                                   | Instructional L. | 30       | Anxiety L. | 18          | Anxiety L. |
| В         | Boy    | S11   | 10                                   | Anxiety L.       | 12       | Anxiety L. | 10          | Anxiety L. |

| В | Boy  | S12 | 2  | Anxiety L. | 4  | Anxiety L. | 4  | Anxiety L. |
|---|------|-----|----|------------|----|------------|----|------------|
| В | Boy  | S13 | 28 | Anxiety L. | 26 | Anxiety L. | 18 | Anxiety L. |
| В | Boy  | S14 | 8  | Anxiety L. | 16 | Anxiety L. | 2  | Anxiety L. |
| A | Girl | S15 | 22 | Anxiety L. | 14 | Anxiety L. | 18 | Anxiety L. |
| A | Boy  | S16 | 22 | Anxiety L. | 20 | Anxiety L. | 10 | Anxiety L. |
| A | Boy  | S17 | 16 | Anxiety L. | 4  | Anxiety L. | 6  | Anxiety L. |
| A | Boy  | S18 | 8  | Anxiety L. | 2  | Anxiety L. | 10 | Anxiety L. |
| A | Girl | S19 | 38 | Anxiety L. | 28 | Anxiety L. | 18 | Anxiety L. |
| A | Girl | S20 | 20 | Anxiety L. | 24 | Anxiety L. | 12 | Anxiety L. |
| A | Girl | S21 | 20 | Anxiety L. | 22 | Anxiety L. | 8  | Anxiety L. |
| A | Girl | S22 | 20 | Anxiety L. | 22 | Anxiety L. | 16 | Anxiety L. |
| A | Boy  | S23 | 4  | Anxiety L. | 6  | Anxiety L. | 6  | Anxiety L. |
| A | Boy  | S24 | 40 | Anxiety L. | 32 | Anxiety L. | 20 | Anxiety L. |
| A | Boy  | S25 | 12 | Anxiety L. | 6  | Anxiety L. | 2  | Anxiety L. |
| A | Boy  | S26 | 26 | Anxiety L. | 14 | Anxiety L. | 4  | Anxiety L. |
| A | Girl | S27 | 30 | Anxiety L. | 32 | Anxiety L. | 16 | Anxiety L. |
| A | Girl | S28 | 6  | Anxiety L. | 12 | Anxiety L. | 8  | Anxiety L. |
| A | Boy  | S29 | 14 | Anxiety L. | 14 | Anxiety L. | 6  | Anxiety L. |
| A | Boy  | S30 | 16 | Anxiety L. | 2  | Anxiety L. | 6  | Anxiety L. |

When the readability score of the texts for each branch is calculated based on Table 3, the readability scores for all texts are higher in the A section, although there is no big difference between the A section and the B section

**Table 5.** Readability Scores of Texts by Branches

|          | Texts                             |                |             |
|----------|-----------------------------------|----------------|-------------|
| Branches | The First Light of the Light Bulb | Anatolian Drum | Some People |
| A        | 18.62                             | 15.87          | 10.37       |
| В        | 15.42                             | 15             | 8           |

When each text is evaluated one by one according to student answers and the readability scores of the texts at the branch level are calculated, the order of the differences between the branches from highest to lowest is "The First Light of the Light Bulb", "Some People," and "Anatolian Drum," as expressed in Table 5.

Considering both the students' interest in the activity, the questions they asked while answering, and the results of the pre-application during the process, it is considered normal to have such a separation. In the emergence of such a separation, not only a few students in the branches but the majority of the study group are affected. In other words, some students in the same branch did not get extremely high scores, and some students did not get extremely low scores. When each branch is examined within itself, it gets similar scores, and the people with the lowest scores among 30 people receive training in branch B.

In studies on the level of understanding, it is stated that there is a distinction or no difference in understanding levels according to gender (Baştuğ & Keskin, 2012; Saracaloğlu, Dedebali & Karasakaloğlu, 2011; Sarcaloğlu & Karasakaloğlu, 2011). In addition to determining the readability levels of the texts, the subtractive readability formula also gives an idea about the comprehension levels of the students (Talim Terbiye Board Presidency, 2021, p. 26; Taylor, 1953, p. 432). In this context, the research question was asked, and the readability scores of the texts according to genders are expressed in Table 6.

Table 6. Readability Scores of Texts by Gender

| Gender | Texts                             |                |             |
|--------|-----------------------------------|----------------|-------------|
| Gender | The First Light of the Light Bulb | Anatolian Drum | Some People |
| Girl   | 20.2                              | 21.2           | 11.8        |
| Boy    | 15.6                              | 12.6           | 8           |

When Table 3 is examined, it is seen that 10 of the 30 students participating in the research are girls and 20 are boys. Although two-thirds of the study group consisted of male students, when Table 6 is examined, female students have a higher score than male students in the readability scores of three texts according to gender. However, when each student is examined individually, as can be seen in Table 3, the student who filled out the text at the level of instructional level among all students is male, and all students except this student are at

the level of anxiety. Looking at Table 4 in the same context, the first two students in the study group with the highest readability scores in all three texts are males.

It was observed that the female students were more interested in the activity during the study; they took longer to fill out the forms and paid attention, and since it was observed that the male students finished earlier and were interested in their friends during the activity, this difference between the readability scores for gender discrimination is considered normal.

When the readability level of the texts is examined, it is at the level of concern in three texts according to the reading level in the subtractive readability formula. As seen in Table 7, the readability test scores of the three texts do not even have a ratio close to the instructional level.

**Table 7.** Readability Level of Texts

| Texts                             | Average Readability Test Score | Reading Level |
|-----------------------------------|--------------------------------|---------------|
| The First Light of the Light Bulb | 17,13                          | Anxiety Level |
| Anatolian Drum                    | 15.8                           | Anxiety Level |
| Some People                       | 9,26                           | Anxiety Level |

In Table 7, it is stated that all three texts averaged according to the forms filled by the students are at the level of anxiety, while in Table 4, when each student is looked at individually, S10 answered the first text at an instructional level, and in the second text, he got a score close to the point rate of the instructional level. Again, it is seen that S19 and S24 in Table 4 could not reach the educational level with a slight difference in the first text, and in the second text, two students scored close to the instructional level.

The text "Some People", which was given to students to answer, was not answered at a high rate by any student in the study group. When Table 3 is examined, even students such as S10, S19, S24, and S27, who have high accuracy rates in other texts, have low rates in the "Some People" text. When the text is examined, as can be seen in Appendix 3, the number of words that students can be unfamiliar with is limited, and the reason may be that there are not many words and sentences that can give students an idea about before or after the gaps in the text, or that there are not many words and sentences that can be found in the text and can come into the blank.

According to Table 4, the text "The First of the Light Bulb", which is given to the students in the second place to answer, is at the instructional level for the S10 student but at the anxiety level for the other students. Since their reading levels have clear limits, students such as S24 and S19 have correct rates close to the instructional level, although they remain at the level of anxiety. While the text "First Light of the Light Bulb" has the highest readability level among all texts, as can be seen in Table 3, the number of correct answers in the text "First Light of the Light Bulb" by almost half of the students in the study group is higher than the other texts. In the formation of this redundancy, as seen in Appendix 1, the fact that the words in the text also come into the blanks is thought to help the students remove the words that will come in the blanks from the context.

When the average of all students in the study group is taken, the text "Anatolian Drum", which is given to the students in the last place to answer, is in second place, as seen in Table 7, and when Table 6 is examined, it is the text with the highest readability level among the student groups. The interpretation that can be brought to this is that, as indicated in the separation of the readability level of the texts according to gender, female students have a higher correct rate because they pay more attention to the text answering process. When Table 3 is examined, nearly half of the students have the highest correct rate in the text "First Light of the Light Bulb", while the text that the rest of the students say most correctly is "Anatolian Drum". When Appendix 2 is examined, it is thought that the text of "Anatolian Drum" can be taken out of context just like the text of "First Light of the Light Bulb" and if attention is paid to the words in the text, it will get as high rates as the text of "First Light of the Light Bulb".

In the evaluation of the texts, the words that were identical to the letter of the students' answers were accepted as correct; the differences due to affixes or spelling errors were not corrected; and they were accepted as wrong, including synonyms. While examining the text evaluation forms, it is seen that the students gave the same answers, even though some of the answers were wrong. For example, in the "Some People" text, instead of the word "as well" in the fifth place, S10, S14, S27, and S28 used the word "even"; S18, S29, and S30 used the

conjunction "de". Likewise, S14, S19, S26, and S28 used the word "drum" instead of the word "of drum", which was used in the thirty-first place in the text of "Anatolian Drum". Considering these answers and the fact that synonyms can be accepted as correct in studies conducted for educational purposes (Taylor, 1953), it was wondered how the evaluation criteria would change and the results would change. Table 8 lists the new scores and reading levels for the change in evaluation criteria. If additional errors, typos, and synonyms are accepted as correct during the evaluation phase, the readability levels of the texts can be higher.

**Table 8.** The Readability Score of the Texts for Each Person in the Study Group According to the Change of Measurement Criteria

| -            | The First Light of the Light Bulb |                  |             |                     |             | lian Drum        |                     |                  | Some People |                  |             |                  |  |
|--------------|-----------------------------------|------------------|-------------|---------------------|-------------|------------------|---------------------|------------------|-------------|------------------|-------------|------------------|--|
|              | Origin                            | Original         |             | Original Synonymous |             | Origin           | Original Synonymous |                  | Origi       | Original         |             | Synonymous       |  |
| STA          | Evalu                             | ation            | Evalu       | Evaluation          |             | Evaluation       |                     | Evaluation       |             | Evaluation       |             | Evaluation       |  |
| PARTICIPANTS | Total Point                       | Reading<br>Level | Total Point | Reading<br>Level    | Total Point | Reading<br>Level | Total Point         | Reading<br>Level | Total Point | Reading<br>Level | Total Point | Reading<br>Level |  |
| S1           | 20                                | A.L.             | 30          | A.L.                | 16          | A.L.             | 28                  | A.L.             | 14          | A.L.             | 16          | A.L.             |  |
| S2           | 6                                 | A.L.             | 10          | A.L.                | 10          | A.L.             | 12                  | A.L.             | 2           | A.L.             | 2           | A.L.             |  |
| S3           | 24                                | A.L.             | 34          | A.L.                | 30          | A.L.             | 42                  | A.L.             | 8           | A.L.             | 12          | A.L.             |  |
| S4           | 16                                | A.L.             | 20          | A.L.                | 4           | A.L.             | 4                   | A.L.             | 2           | A.L.             | 4           | A.L.             |  |
| S5           | 20                                | A.L.             | 30          | A.L.                | 30          | A.L.             | 32                  | A.L.             | 14          | A.L.             | 22          | A.L.             |  |
| S6           | 4                                 | A.L.             | 12          | A.L.                | 6           | A.L.             | 8                   | A.L.             | 6           | A.L.             | 6           | A.L.             |  |
| S7           | 10                                | A.L.             | 20          | A.L.                | 6           | A.L.             | 12                  | A.L.             | 6           | A.L.             | 6           | A.L.             |  |
| S8           | 20                                | A.L.             | 24          | A.L.                | 18          | A.L.             | 22                  | A.L.             | 6           | A.L.             | 12          | A.L.             |  |
| S9           | 2                                 | A.L.             | 6           | A.L.                | 2           | A.L.             | 4                   | A.L.             | 2           | A.L.             | 2           | A.L.             |  |
| S10          | 46                                | InsL.            | 52          | InsL.               | 30          | A.L.             | 40                  | A.L.             | 18          | A.L.             | 26          | A.L.             |  |
| S11          | 10                                | A.L.             | 18          | A.L.                | 12          | A.L.             | 16                  | A.L.             | 10          | A.L.             | 12          | A.L.             |  |
| S12          | 2                                 | A.L.             | 4           | A.L.                | 4           | A.L.             | 8                   | A.L.             | 4           | A.L.             | 8           | A.L.             |  |
| S13          | 28                                | A.L.             | 34          | A.L.                | 26          | A.L.             | 38                  | A.L.             | 18          | A.L.             | 28          | A.L.             |  |
| S14          | 8                                 | A.L.             | 14          | A.L.                | 16          | A.L.             | 24                  | A.L.             | 2           | A.L.             | 14          | A.L.             |  |
| S15          | 22                                | A.L.             | 30          | A.L.                | 14          | A.L.             | 26                  | A.L.             | 18          | A.L.             | 22          | A.L.             |  |
| S16          | 22                                | A.L.             | 28          | A.L.                | 20          | A.L.             | 32                  | A.L.             | 10          | A.L.             | 16          | A.L.             |  |
| S17          | 16                                | A.L.             | 24          | A.L.                | 4           | A.L.             | 8                   | A.L.             | 6           | A.L.             | 8           | A.L.             |  |
| S18          | 8                                 | A.L.             | 12          | A.L.                | 2           | A.L.             | 4                   | A.L.             | 10          | A.L.             | 10          | A.L.             |  |
| S19          | 38                                | A.L.             | 42          | InsL.               | 28          | A.L.             | 30                  | A.L.             | 18          | A.L.             | 28          | A.L.             |  |
| S20          | 20                                | A.L.             | 26          | A.L.                | 24          | A.L.             | 30                  | A.L.             | 12          | A.L.             | 18          | A.L.             |  |
| S21          | 20                                | A.L.             | 26          | A.L.                | 22          | A.L.             | 34                  | A.L.             | 8           | A.L.             | 14          | A.L.             |  |
| S22          | 20                                | A.L.             | 28          | A.L.                | 22          | A.L.             | 32                  | A.L.             | 16          | A.L.             | 24          | A.L.             |  |
| S23          | 4                                 | A.L.             | 10          | A.L.                | 6           | A.L.             | 12                  | A.L.             | 6           | A.L.             | 10          | A.L.             |  |
| S24          | 40                                | A.L.             | 40          | A.L.                | 32          | A.L.             | 38                  | A.L.             | 20          | A.L.             | 30          | A.L.             |  |
| S25          | 12                                | A.L.             | 14          | A.L.                | 6           | A.L.             | 10                  | A.L.             | 2           | A.L.             | 2           | A.L.             |  |
| S26          | 26                                | A.L.             | 12          | A.L.                | 14          | A.L.             | 18                  | A.L.             | 4           | A.L.             | 4           | A.L.             |  |
| S27          | 30                                | A.L.             | 34          | A.L.                | 32          | A.L.             | 42                  | InsL.            | 16          | A.L.             | 24          | A.L.             |  |
| S28          | 6                                 | A.L.             | 14          | A.L.                | 12          | A.L.             | 24                  | A.L.             | 8           | A.L.             | 10          | A.L.             |  |
| S29          | 14                                | A.L.             | 22          | A.L.                | 14          | A.L.             | 22                  | A.L.             | 6           | A.L.             | 8           | A.L.             |  |
| S30          | 16                                | A.L.             | 18          | A.L.                | 2           | A.L.             | 6                   | A.L.             | 6           | A.L.             | 8           | A.L.             |  |

<sup>\*\*</sup> A.L.: Anxiety Level, InsL.: Instructional Level, IndL.: Independent Level

When Table 8 was examined, an increase was observed in the total scores of the students. In the original assessment, only one student answered a text at an instructional level; four students answered the texts at an instructional level in the form of an assessment in which synonyms, spelling, and affix errors were accepted as correct. Two of the four texts answered at the instructional level are "The First Light of the Light Bulb" and the other two are the texts of the "Anatolian Drum". According to the second type of evaluation and the first evaluation criteria, the text that makes the most difference is the "Anatolian Drum" text.

### 4. Discussion, Conclusion and Recommendations

In this study, it was aimed to reveal the readability level of three texts in the "Secondary School and Imam Hatip Secondary School Turkish 7 Course Book" used in Hayriye Başoğlu Secondary School in the 2022-2023 academic year in Malatya province, with the subtractive readability formula. In the research, findings were obtained regarding the readability levels of the texts in terms of gender discrimination, the readability levels of the texts in terms of branches, and the general readability levels of the texts. The results section was created based on the findings obtained under these headings and supported by studies in the field literature.

According to the gender variables of the students, the readability levels of the texts differ from each other. The participation of the reader section in the subtractive readability formula applied while calculating the readability level makes the readability level of the texts unique to the reader. In this context, while the readability of a text for any reader is considered adequate, it may be considered insufficient or of a high level for another reader. While comparing the findings, since there is no study on the readability level of the texts by gender or on the gender variable in readability, studies on the level of comprehension were compared with the results of the gender variables. Baştuğ and Keskin (2012), Saracaloğlu, Dedebali, and Karasakaloğlu (2011) state that the gender variable has no effect on comprehension, while Sarcaloğlu and Karasakaloğlu (2011) agree that the gender variable has an effect on comprehension. In this study, when the answers given by male and female students are examined in detail, it is seen that the girls understand what is said better, whether their answers are right or wrong, and they analyze what they read better.

When examining the effect of the branch difference on the readability of the text, it is stated in the findings that most of the students in the same branch get close scores, but there are also students who do not fit the class in general, who score far below the class or higher than the level of the class. Considering that students have shared the same educational environment for a long time, it is normal to have differences in their speaking and understanding skills, but at close levels. Since the subtractive readability process was applied in very few of the readability studies carried out and no data could be obtained regarding the branches to which the students belonged, no comparison could be made with other studies.

According to the subtractive readability formula regarding the readability levels of the texts, all three texts are at the level of concern. While the text "First Light of the Light Bulb" had the highest readability score among the three texts, it was stated in the findings that it was at an instructional level for S10. He analyzed this text according to the Ateşman formula in his study by Şakiroğlu (2020), found the readability score to be 71.4, and expressed the readability level as easy. Ogur (2022) also analyzed the text of "First Light of the Light Bulb" according to the Ateşman formula and found a readability score of 46.149, while expressing the readability level as difficult. The researcher also examined it according to the Çetinkaya Uzun formula and found the reading score to be 24,904 and stated that the readability level was suitable for the disabled level, that is, the 10th, 11th, and 12th grade levels. Considering this study and other studies, it can be said that the text of "First Light of the Light Bulb" has a low readability level in general.

In this study, the text of "Anadolu Davulu", which ranks second among the readability levels, was examined by Ogur (2022) according to both the Ateşman and Çetinkaya Uzun formulas. The readability score of the text according to the Ateşman formula was 69.199, and it was stated that the readability level was of medium difficulty. According to Çetinkaya Uzun's formula, while the reading score was found to be 38,911, he stated that the readability level was suitable for the disabled level, namely 10th, 11th, and 12th grade levels. Considering this study and other studies, it can be said that the readability level of the "Anatolian Drum" text is in accordance with the level of the students to a certain extent.

In this study, for the text "Some People", which had the lowest readability score, Ogur (2022) found the readability score of the text according to Ateşman's formula of 26,722 and stated that the readability level was very difficult. According to Çetinkaya Uzun's formula, he found a reading score of 13,591 and stated that the readability level was suitable for the disabled level, namely the 10th, 11th, and 12th grade levels. The text in which it can be clearly stated that the readability level is not suitable for the class level according to the three formulas in the studies is the "Some People" text.

In this study, in which the readability level of the texts was determined, each text was evaluated in its own way, and it is wrong to make a generalization for the 7th grade Turkish textbook. As a result of the study, it is

stated that all kinds of elements should be taken into consideration while preparing the textbooks and that texts suitable for the level of the students should be chosen by acting more carefully.

Based on the findings and results obtained in the study, various suggestions were presented. These suggestions can be taken into consideration or benefited from in future studies on the texts in the textbooks and the readability of the textbooks:

- Before conducting the study, it is recommended that you explain the subtractive readability formula to the students in detail and make more than one preliminary application.
- -While determining the readability level of the texts with the subtractive readability formula, the comprehension levels of the students can be measured with another data tool, and the data can be compared.
- Working with texts that students do not see while doing pre-practice can be beneficial in obtaining more reliable data while collecting data from students in the next study process.

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