

## The Comparison of Artificial Intelligence Generated Texts with Textbook in Teaching Idioms and Proverbs<sup>1</sup>

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**Research Article**

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### **Abstract**

In this study, the contextual appropriateness of idioms and proverbs in six texts selected from a 5th-grade Turkish textbook and six texts produced by artificial intelligence (ChatGPT 3.5) were compared. Designed as a document analysis, the study identified a total of 36 idioms and 14 proverbs in the texts and activities in the textbook, while 48 idioms and proverbs were identified in the texts produced by artificial intelligence. However, it was found that all idioms and proverbs in the textbook were contextually appropriate, whereas the artificial intelligence texts contained various errors. The most striking findings were that the artificial intelligence presented English proverbs as Turkish, used idioms and proverbs that did not exist, and misused existing idioms and proverbs in ways that were not contextually appropriate. Despite this, 27 out of the 48 idioms and proverbs used by the artificial intelligence were correct and contextually appropriate. The study's findings suggest that teachers should exercise caution when using texts produced by artificial intelligence for teaching idioms and proverbs.

**Keywords:** Artificial intelligence, proverbs, idioms, ChatGPT, chatbot

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## Introduction

One of the main objectives of native language courses is to develop students' vocabulary and transfer the culture and values of society to them. One of the most important tools for realizing this aim is the textbooks used in language classes. These textbooks aim to convey vocabulary and societal values to students through the texts they present.

One of the most important tools in developing students' vocabulary and conveying the values of society are idioms and proverbs. Studies show that proverbs have the potential to convey values to students (Girmen, 2013) because proverbs function as the common mind of society (Güzel & Karadağ, 2013). Idioms are also very important for transferring the use of figurative language to students (Karadağ, 2013). It is necessary to be careful in the teaching of idioms, especially because they are used to convey figurative meanings and are frequently encountered in language. However, studies show that students' ability to know, understand, and use idioms and proverbs is not at the desired level (İpek Eğilmez, 2010; Murat, 2014).

One of the many possible reasons why students cannot understand idioms and proverbs sufficiently is that the textbooks, which are the basic materials in native language courses, sometimes do not include proverbs at all or include them in very limited numbers (İpek Eğilmez, 2010; Kargin, 2019; Yavuz, 2020). Although idioms are included relatively more frequently, studies in textbooks suggest that relying solely on texts is not sufficient to teach proverbs and idioms effectively. Considering that repetition is necessary in vocabulary teaching (National Reading Panel, 2000), it is understood that students should encounter proverbs and idioms repeatedly in different contexts.

In this study, the texts containing activities related to idioms and proverbs in the 5th grade Turkish textbook and the texts mentioned in the activities were analyzed. In addition, it was aimed at determining to what extent ChatGPT (3.5), one of the artificial intelligence applications, can use Turkish idioms and proverbs by generating texts similar to the texts in the textbook, and thus to what extent it can help teachers in teaching idioms and proverbs. In line with this aim, answers to the following research questions were sought:

1. Which idioms and proverbs are included in the texts aiming to teach idioms and proverbs in the Grade 5 Turkish Textbook? Are these used in accordance with their context?
2. Which Turkish idioms and proverbs are included in the texts created using artificial intelligence? Are these used in accordance with their context?

## Literature Review

The place of vocabulary in native language teaching is very important. There are many different elements aimed at being taught within the vocabulary: words, idioms, proverbs, phrases, etc. (Karadağ, 2013). Proverbs and idioms are distinguished among these elements due to their unique features, such as having figurative meanings and giving advice. Proverbs and idioms come to the fore in strengthening expression, understanding what is being conveyed correctly, and in the transfer of cultural elements and values in education.

It is recommended to teach proverbs and idioms from the first level of primary school (M. Bulut, 2013) because proverbs and idioms have an important place in value transfer. Firstly, proverbs reflect the common heritage and views of society (Güzel & Karadağ, 2013). They, therefore, have an implicit function in the acquisition of some of the objectives in the curriculum. For instance, it is known that some values in the curriculum, such as honesty, friendship, and respect, are included in Turkish proverbs (Girmen, 2013; Kemiksiz, 2021).

It is also possible to develop critical thinking skills through proverbs (Batur & Soyuçok, 2019). In addition, the variety of words in proverbs and idioms can also help students deepen their vocabulary (Güzel & Karadağ, 2013). Idioms also help to develop both comprehension and expression skills as they show different areas of language use to students (Karadağ, 2013).

The use of proverbs and idioms in the Turkish curriculum starts in the 1st grade. According to the curriculum, proverbs and idioms can be included in the textbooks in the first grade. However, it is

included for the first time in the third grade as an explanation of a learning outcome. Under the title of "Vocabulary Treasure", in the learning outcome "Predicts the meanings of unfamiliar words based on visuals/visuals.", it is stated that "Picture dictionary, concept map, dictionary, dictionary, dictionary of idioms and proverbs and similar tools are used.". Here, the relevant item is not a direct outcome but an explanation of an outcome. As a direct outcome, it is mentioned for the first time in the fourth grade under the title "Vocabulary" as "comprehending the contribution of idioms and proverbs to the meaning of the text." In the fourth grade, idioms and proverbs are included in the learning outcomes to be included in the receptive vocabulary. In the 5th grade, the same acquisition in the fourth grade is also included, and under a different acquisition, the statement "Students are enabled to use visuals, dictionaries, dictionaries of proverbs and idioms, etc. to learn the words and word groups they guess." is included. However, for the first time in the fifth grade, the statement "Students use proverbs, idioms, and maxims to enrich their writings" is mentioned about students' use of proverbs and idioms. From this grade onwards, the same outcomes and explanations about proverbs and idioms are repeated at all levels (Ministry of National Education, 2019).

Textbooks are the primary resource that assist teachers in achieving the aforementioned objectives within the scope of Turkish lessons. Texts and activities in textbooks are seen as the most important tools for students to acquire vocabulary (Kuzey, 2021). However, studies on the usage of proverbs and idioms in textbooks reveal striking results. There are nearly 19,000 proverbs in Turkish (Güzel & Karadağ, 2013). Although Turkish teaching programs aim to teach proverbs and idioms, the fact that some textbooks do not include any proverbs (Apaydın, 2010; İpek Eğilmez, 2010; Uludağ, 2010) shows that these textbooks are insufficient in teaching a significant portion of the 19,000 proverbs. In some Turkish textbooks, proverbs are mentioned only a few times. For example, studies have found that proverbs are mentioned very few times: once (Turhan, 2010), twice (Apaydın, 2010), three times (Uludağ, 2010), or seven times (Eren, 2022). These findings are supported by many other studies (Aldık, 2018; Altaş, 2023; Batur & Erkek, 2017; K. Bulut & Tekin, 2023; Büyükhellaç, 2014; Kargın, 2019; Sayın & Doğan, 2023; Uluçay, 2011). This suggests that reading texts in Turkish textbooks includes very few proverbs. Similarly, it was found that 14 different proverbs were mentioned 16 times in 100 children's theater plays written between 1980 and 2008 (Şen, 2009), while a total of 23 proverbs were mentioned 26 times in the 100 Basic Works recommended to students by Ministry of National Education of Türkiye [M.N.E.] (Tozoğlu, 2009). In another study analyzing 106 different works of children's literature, it was found that 63 different proverbs were mentioned 67 times, while 72 books did not include any proverbs (Aytan, 2016).

The inclusion of idioms in the texts in Turkish textbooks was also analyzed in the studies. It is noteworthy that idioms appear in textbooks more frequently than proverbs. In the studies conducted on the comparison of Turkish textbooks, it was determined that there were 151 (Turhan, 2010), 243 (Eren, 2022), and 304 idioms (Uluçay, 2011) in reading texts. In other studies, it can be seen that idioms are frequently found in textbooks (Aldık, 2018; Altaş, 2023; Apaydın, 2010; K. Bulut & Tekin, 2023; Büyükhellaç, 2014; Sayın & Doğan, 2023). In two studies examining children's theater and 100 Basic Literary Works (Şen, 2009; Tozoğlu, 2009), idioms were frequently used, as well.

Based on these studies, it is understood that neither textbooks nor works of children's literature alone can be sufficient for students to learn proverbs. For this reason, it can be stated that additional opportunities should be offered to students. Although idioms are mentioned sufficiently in the related studies, studies stating that both proverbs and idioms are not sufficiently understood by students (Ceran & Çoban, 2017; İpek Eğilmez, 2010; Murat, 2014) and that it is more difficult for students to identify idioms (Aydın et al., 2017) show that teachers may need to provide additional opportunities in this regard.

### **Teaching Proverbs and Idioms**

Although developing vocabulary is one of the common goals of all courses, it is mainly accepted as the goal of Turkish courses (Ceran & Çoban, 2017). However, especially when it comes to proverbs, it is revealed that students do not have enough opportunities to improve their vocabulary. In this context, studies have been conducted on how much students know about proverbs and idioms. In one study, 8th grade students were found to know 11 of the 52 idioms targeted to be taught in the 6th and 7th grade

Turkish textbooks between 0 and 30%, while 18 of them knew between 69 and 31%. 23 idioms were known by 70% or more students (Murat, 2014). In another study, it was determined that proverbs with literal meaning, partially figurative meaning, and completely figurative meaning were less understood by students in grades 5-8, especially by students at lower socioeconomic levels (Keklik, 2015). Based on these studies, it is understood that there are deficiencies in students' ability to learn idioms and proverbs.

Experiments have also been conducted to teach proverbs and idioms. It is noteworthy that these studies started in pre-school. In a study conducted with preschool students, it was observed that students were able to learn proverbs and idioms, but there were still unlearned proverbs and idioms (Kaban & Bulut, 2020). In a study in which second-grade students tried to teach proverbs with drama, drama was found to be effective in teaching proverbs (Batur & Yavaşca, 2018).

In another study comparing the direct teaching of the meanings of idioms (traditional method) and the idiom teaching method supported by pictures and stories, a significant difference was found in favor of the experimental group. In the follow-up study conducted two months later, it was observed that the retention in the experimental group was higher (Bayraktar & Yaşar, 2005).

In the study in which the effects of three different methods (traditional, story, and cartoon) on teaching idioms in 7th grade students were compared, it was determined that the average of the group taught in the traditional way was the lowest, the group taught with a story was second, and the group taught with a cartoon was first. In the follow-up test conducted 3 weeks later, it was seen that the average of those who learned with the traditional method decreased by 2 points, those who learned with the story decreased by 5 points, and those who learned with the cartoon decreased by 7 points, but the ranking was still the same. In the analyses, there was a significant difference between the follow-up test and the post-test of each group, and the scores decreased significantly in the same follow-up test. According to the results of the study, it was determined that the best method for long-term memory retention was transfer with cartoons (Metem, 2014).

In a study aiming to teach 8th graders proverbs and idioms with digital stories, a significant difference was found between the experimental and control groups in learning proverbs and idioms (Atatekin et al., 2023). In another study, an experiment was conducted with two different sixth grade students in three different schools. In each school, one class was taught proverbs with visuals and the other with texts. In the study, which was conducted for one hour a week for five weeks, significant differences were found between the pre- and post-tests when both text and visuals were used in all three groups. However, in the post-tests, only in the first group was the visual group significantly higher. There was no significant difference in the post-test between the other two groups. However, when the groups were considered together, a significant difference was found in favor of visual in text and visual (Akyıldız, 2019).

Based on the studies in the literature, it is understood that out-of-the-ordinary methods such as the use of stories are more effective in teaching proverbs and idioms. In the teaching of proverbs and idioms, repetitions should be made rather than just giving the meaning (Bayraktar & Yaşar, 2005). However, it is certain that it would be more useful to give proverbs and idioms in contexts rather than without context. Therefore, it is inevitable that teachers need texts for teaching proverbs and idioms in a more permanent way. However, since it is challenging to find the targeted proverbs and idioms in printed books, magazines, and similar sources, evaluating how well AI-generated texts incorporate these elements will provide crucial information for teachers.

### **Method**

The research is a qualitative study. Qualitative research involves using qualitative information collection methods such as observation, interviews, and document analysis. It follows a qualitative process to reveal perceptions and events in a realistic and holistic way in a natural environment (Yıldırım, 1999).

In this study, the Turkish 5th grade textbook and the texts generated by the artificial intelligence robot ChatGPT were examined using the document analysis method. Document analysis involves acquiring

and examining documents used in the study within a specific system (Karasar, 2008; Yıldırım & Şimşek, 2011).

### Data Collection Tools

The objects of the study consist of the Turkish 5th grade textbook (Sevim, 2023) prepared according to the Turkish Language Curriculum (Ministry of National Education, 2019) and the texts generated by the artificial intelligence robot ChatGPT in accordance with the purpose of the study.

### Collection and Analysis of Data

Researchers conducted content analysis to obtain data from texts created by the Turkish textbook and the artificial intelligence system ChatGPT. Content analysis is used to identify and quantify words, concepts, themes, idioms or sentences in one or many texts (Kızıltepe, 2015).

The Turkish 5th grade textbook (Sevim, 2023) was analyzed to determine how idioms and proverbs were taught. Not all idioms and proverbs in the book were included in the analysis; only the texts and activities specifically aimed at teaching idioms and proverbs and those that included related activities were analyzed. As a result of the analyses, the idioms and proverbs used in the texts and activities were listed, and their usage in context was evaluated. The collected data are presented in tables.

Table 1

Information about the texts analyzed in the Turkish 5th Grade Textbook

Name of the Analyzed Text	Theme of the Analyzed Text	Word Counts of the Text
Aile-Toplum-Dünya İlişkisi [Family-Society-World Relationship]	Birey ve Toplum [Individual and Society]	307
Dostluğun Türleri [Types of Friendship]	Erdemler [Virtues]	197
Küçük Çam Ağacı [Little Pine Tree]	Doğa ve Evren [Nature and Universe]	776
Mavi Eşofmanlı Adam [Man in Blue Tracksuit]	Sağlık ve Spor [Health and Sports]	434
Bir Bilim İnsanı Neler Yapar? [What Does a Scientist Do?]	Bilim ve Teknoloji [Science and Technology]	251
Ünlü Ressam [Famous Painter]	Sanat [Art]	243

Artificial intelligence was asked to create texts similar to the texts in the textbooks. In the creation of the texts, the constraints of the subjects of the texts in the textbooks, the number of words, the themes in which they are included, whether they are informative or narrative, and whether they contain idioms and proverbs as much as possible were used. Below are the commands given for the creation of the texts:

Text 1: Write an informative text of 320 words about the place of the family in society and the world, including as many Turkish idioms and proverbs as possible.

Text 2: Write a 200-word informative text on the types of friendship, using as many Turkish idioms and proverbs as possible.

Text 3: Write a 775-word narrative text about the events that happen to a small pine tree, using as many Turkish idioms and proverbs as possible.

Text 4: Write a 430-word narrative text that emphasizes the importance of sport in a healthy life, including as many Turkish idioms and proverbs as possible.

Text 5: Write an informative text of 250 words on "What does a scientist do?" including as many Turkish idioms and proverbs as possible.

Text 6: Write an informative text of 250 words about the art of a painter, including as many Turkish idioms and proverbs as possible.

The commands were fulfilled by the artificial intelligence in a very functional way. However, the word counts of the generated texts are quite different from the desired ones. Although the artificial intelligence was asked to correct the word counts again in accordance with the given commands, it was decided to use the first texts when similar problems were found in the following trials. In addition, the artificial intelligence did not give titles to the texts it generated. Therefore, these texts are numbered as Text 1, Text 2, etc. in the study. The word counts of the texts created by artificial intelligence are given below:

Table 2  
Word Counts of Texts Generated by Artificial Intelligence

Generated Text	Word counts
1. text	171
2. text	166
3. text	323
4. text	314
5. text	204
6. text	196

The idioms and proverbs identified within the scope of the study and their frequencies are presented in the tables. In addition, examples of idioms and proverbs in the texts generated by artificial intelligence are also included in the findings section.

The accuracy of the idioms and proverbs in the examined textbook and the texts created by artificial intelligence was determined on the basis of the idioms and proverbs on the website of the Turkish Language Association's dictionary (2024), while whether they were used in accordance with the context was determined by the researchers. In terms of contextual appropriateness, a form with two criteria, "appropriate" and "not appropriate," was created by the researchers. It was determined that there was 100% agreement in the decisions of two researchers on contextual appropriateness.

### Findings

In this section, the result of the document analysis is provided.

#### Idioms and Proverbs Used in Texts Aiming to Teach Idioms and Proverbs in Grade Turkish Textbook

Table 3 shows the proverbs and idioms in the 5<sup>th</sup> grade Turkish textbook.

Table 3  
5th Grade Turkish Textbook: Idioms and Proverbs Used in Texts Aiming to Teach Idioms and Proverbs

Name of the texts	Idioms and Proverbs	<i>f</i>
Aile-Toplum-Dünya [Family-Society-World Relationship]	İlişkisi elinden gelmek, meydana gelmek, çaba göstermek, özen göstermek, tedbir almak	5
Dostluğun Türleri [Types of Friendship]	ayak uydurmak, çok görmek	2
Küçük Çam Ağacı [Little Pine Tree]	keyif sürmek, söz etmek, burnunun direği sızlamak, gün ağarmak, tir tir titremek, omuz silmek, siper olmak	7
Mavi Eşofmanlı Adam [Man in Blue Tracksuit]	leb demeden leblebiyi anlamak, ipucu vermek, bir kulağından girip öbür kulağından çıkmak, akılda tutmak, davet etmek, sözünü tutmak, pes etmek	7
Bir Bilim İnsanı Neler Yapar? [What Does a Scientist Do?]	İlgi duymak, yön vermek, elde etmek, not etmek, sonuç çıkarmak, ortaya koymak, ortaya çıkmak	7
Ünlü Ressam [Famous Painter]	sesini yükseltmek, canını sıkamak	2

According to Table 3 above, there are six texts aiming to teach idioms and proverbs in the 5<sup>th</sup> grade Turkish Textbook. There are 5 idioms in the text titled Family-Society-World Relationship, 2 idioms

in Types of Friendship, 7 idioms in Little Pine Tree, 7 idioms in Man in Blue Tracksuit, 7 idioms in What a Scientist Does, and 2 idioms in the text titled Famous Painter, totaling 30 idioms. Proverbs were not used in any of the texts. It was also determined that all of the idioms used were used in accordance with their context.

Below are examples of idioms used in accordance with their context in the 5<sup>th</sup> grade Turkish Textbook:

- Aileler neslin yeniden üretildiği merkezlerdir. İyi bir nesil de ancak iyi oluşturulmuş ailelerden *meydana gelir*. [Families are the centers where the generation is reproduced. A good generation can only *come from* well-formed families.]

- Bunlardan birisi çok titiz davranıyor, bebeğini iyi bir insana dönüştürmek için gereken tüm *özeni gösteriyor*, tüm imkânları kullanıyor ve bu amaçla gerekli *tedbirleri alıyor*. [One of them is very meticulous, *takes* all the *care*, uses all the means and *takes* all the necessary *measures* to turn his baby into a good person.]

- Zorunlu dostluklar vardır, pazar ile pazartesinin dostluğu gibi. Pazar ağır bir gündür, pazartesi hızlı bir gün. *Ayak uyduramazlar* birbirlerine. [There are obligatory friendships, like the friendship between Sunday and Monday. Sunday is a slow day, Monday is a fast day. They cannot *keep up with each other*.]

- Onlar hasretle geldikleri ormandan söz ederken küçük çam ağacının *burnunun direği hasretten sızlamış*. [While they were talking about the forest they had come to with longing, the little pine tree *long for* the foresty].

- *İpucu vermek* için durduğu yerde koşarmış gibi yaylandı. [To *give a clue*, it sprang up as if it was running.].

- *Canımı sıkan* bir şey daha var, bazıları resmi önce kurşun kalemle yapıp sonra boyayla üstünden gidiyorlar. [Another thing that *bothers* me is that some of them first draw the picture with pencil and then go over it with paint.].

Table 4 shows the idioms and proverbs in the activities in the textbook and targeted to be taught.

Table 4

5<sup>th</sup> Grade Turkish Textbook: Idioms and Proverbs Used in the Activities of Texts Aiming to Teach Idioms and Proverbs

Name of the text	Idioms and proverbs	f
Aile-Toplum-Dünya İlişkisi [Family-Society-World Relationship]	etle tırnak arasına girilmez, iyiliğe iyilik her kişinin kârı kötülüğe iyilik er kişinin kârı, yavru kuş yuvada gördüğünü yapar, biz kırk kişiyiz birbirimizi biliriz, işleyen demir pas tutmaz, akıl yaşta değil baştadır, cana gelecek mala gelsin	7
Dostluğun Türleri [Types of Friendship]	ayak uydurmak, çok görmek	2
Küçük Çam Ağacı [Little Pine Tree]	burnunun direği sızlamak, siper olmak	2
Mavi Eşofmanlı Adam [Man in Blue Tracksuit]	güneş girmeyen eve doktor girer, sağlam kafa sağlam vücutta bulunur, ne ekersen onu biçersin, emek olmadan yemek olmaz	4
Bir Bilim İnsanı Neler Yapar? [What Does a Scientist Do?]	geceyi gündüze katmak, pabuç bırakmamak	2
Ünlü Ressam [Famous Painter]	sanatına hor bakan (sanatını hor gören) boğazına torba takar, sanat altın bileziktir, sanatı ustadan görmeyen (öğrenmeyen) öğrenmez	3

According to Table 4, in the activities of the aforementioned texts in 5<sup>th</sup> grade Turkish Textbook, which aims to teach idioms and proverbs, 7 proverbs were used in Family-Society-World

Relationship, 2 idioms in Types of Friendship, 2 idioms in Little Pine Tree, 4 proverbs in Man in Blue Tracksuit, 2 idioms in What a Scientist Does, and 3 proverbs in Famous Painter.

### Idioms and Proverbs in Texts Generated Using Artificial Intelligence

Table 5 shows the idioms and proverbs in the texts produced by artificial intelligence.

Table 5

#### Idioms and Proverbs in Texts Generated Using Artificial Intelligence

Name of the texts	Idioms and Proverbs Used by Artificial Intelligence	f
1. text	İşgal etmek, rol oynamak, baba evi bacayı alev alev yakar, damlaya damlaya göl olur, komşu komşunun külüne muhtaçtır, aile bağları kopunca nehir yatağı kurur	6
2. text	Yer tutmak, dost kara günde belli olur, birlikte gülmek birlikte ağlamaktan daha değerlidir, ifade etmek, bir elin nesi var iki elin sesi var, gönülden gönle yol vardır, rol oynamak	7
3. text	Yüksek ağaçlar rüzgârı daha iyi hisseder, ayakta kalmak, akıllı ağaç köklerini sağlam salar, kök salmak, büyüdükçe gövde büyür, dost kara günde belli olur, sabreden derviş muradına ermiş, büyük başın derdi büyük olur, destek almak	9
4. text	Keyfini çıkarmak, yer edinmek, ilham almak, karar vermek, ağaç yaşken eğilir, fark etmek, 11 insanlar yürüdükçe dünya döner, davet etmek, demir tavında dövülür, destek olmak, dolup taşmak	11
5. text	Akıl olmadan ilim kanadı olmayan kuş gibidir, ifade etmek, rol oynamak, bilgi dağarcığını artırmak için canla başla çalışmak, acele işe şeytan karışır, kendi göbeğini kendi kesmek	6
6. text	İfade etmek, kendi yağında kavrulmak, dilin kemiği yoktur, resim bir bakıma aynada yüz göstermektir, resim bin kelimeye bedeldir, sanat herkesin harcı değildir, öne çıkmak, iyi ressam iyi gören iyi dinleyen gibidir, fark etmek	9

According to table 5, in texts created using artificial intelligence, AI has produced a total of 48 idioms and proverbs, including 6 in the 1<sup>st</sup> text, 7 in the 2<sup>nd</sup> text, 9 in the 3<sup>rd</sup> text, 11 in the 4<sup>th</sup> text, 6 in the 5<sup>th</sup> text, and 9 in the 6<sup>th</sup> text. Some of these are as follows:

“Baba evi bacayı alev alev yakar.” [Father's house burns a flame of fire], Aile bağları kopunca nehir yatağı kurur, [When family bonds break, the river bed dries up], “Birlikte gülmek birlikte ağlamaktan daha değerlidir. [Laughing together is more valuable than crying together], Yüksek ağaçlar rüzgârı daha iyi hisseder. [High trees feel the wind better], Akıllı ağaç köklerini sağlam salar [Smart tree releases its roots firmly], Büyüdükçe gövde büyür [As you grow up, the body grows], İnsanlar yürüdükçe dünya döner [As people walk, the world turns], Akıl olmadan ilim kanadı olmayan kuş gibidir [Without mind, knowledge is like a bird without a wing], bilgi dağarcığını artırmak için canla başla çalışmak [working vividly to enhance the scale of knowledge], Resim bir bakıma aynada yüz göstermektir [picture is, in a way, showing a face in the mirror] Resim bin kelimeye bedeldir [A picture is worth a thousand words], Sanat herkesin harcı değildir [Art isn't everybody's money], and İyi ressam iyi gören, iyi dinleyen gibidir [A good painter is like one who sees well, hears well]. Although they were used as a idiom or proverb, it has been found that they are not idiom or proverb. Moreover, the following idioms and proverbs have not been used in the context of the text: Damlaya damlaya göl olur [many a little makes a mickle], Gönülden gönüle yol vardır [There is a way from heart to heart], Dost kara günde belli olur [A friend in need is a friend indeed], Sabreden derviş muradına ermiş [Patience leads to salvation], Ağaç yaşken eğilir [As the twig is bent, so grows the tree], Demir tavında dövülür [Strike while the iron is hot], kendi yağında kavrulmak [off one's own bat], and dilin kemiği yoktur [the tongue has no bones]. Thus, it has been found that 13 of the 48 idioms and proverbs created by artificial intelligence in 6 texts are not actually idioms or proverbs, and 8 were not used in the appropriate context in the text. Twenty-seven idioms and proverbs are used appropriately in the texts.

Below are examples of groups of words used as idioms and proverbs by artificial intelligence, but which are not idioms or proverbs:

- “Türk kültüründe sıkça kullanılan deyimlerden biri olan “*Baba evi bacayı alev alev yakar.*” sözü, aile bağlarının gücünü ve içindeki ilişkilerin kıymetini vurgular.” [One of the frequently used expressions



in Turkish culture is *Father's house sets the chimney aflame*. The phrase emphasizes the strength of family ties and the value of the relationships within them.]

- "*Aile bağları kopunca nehir yatağı kurur.*" deyimini ise aile ilişkilerinin kopmaması gerektiğini, aksi hâlde toplumsal denge açısından sıkıntılar doğabileceğini anlatır. [The expression "*When family ties are broken, the river bed dries up*" means that family relations should not be severed; otherwise, problems may arise in terms of social balance.]

- İkinci tür, "*eğlence dostluğu*"dur. Bu dostluklar birlikte keyifli zaman geçirmek ve gülmek için kullanılır. "*Birlikte gülmek, birlikte ağlamaktan daha değerlidir.*" deyimini, bu tür dostlukların önemini ifade eder. [The second type is "*fun friendship*." These friendships are used to have fun and laugh together. *Laughing together is more valuable than crying together*". The phrase expresses the importance of such friendships.]

- Bilim insanları, "*Akıl olmadan ilim kanadı olmayan kuş gibidir.*" deyiminde ifade edildiği gibi, akıl ve düşünce gücünü kullanarak bilgiye ulaşma sürecinde öncü rol oynarlar. [Scientists say, "*Knowledge without wisdom is like a bird without wings*". As expressed in the expression, they play a leading role in the process of reaching knowledge by using the power of mind and thought.]

- Her bir eser, ressamın içinde biriken duyguların bir yansımasıdır ve "*Resim bin kelimeye bedeldir.*" atasözüyle ifade edildiği gibi bir resimde anlatılan, anlatılmak istenen duygu ve düşünceler çok daha etkili bir şekilde iletilir. [Each work is a reflection of the emotions accumulated within the painter and "*A picture is worth a thousand words*". As stated in the proverb, the emotions and thoughts expressed in a picture are conveyed much more effectively.]

Below are examples of idioms and proverbs that are given correctly as idioms and proverbs by artificial intelligence, but are not used in accordance with their context or meaning:

- "*Damlaya damlaya göl olur.*" atasözü, ailenin zamanla güçlenen bir birliktelik olduğunu anlatır. [*Many a little makes a mickle* explains that family is a unity that grows stronger over time.]

- Bir gün, yaşlı bir meşe ağacıyla karşılaştı. Meşe ağacı, yaşamındaki zorluklara rağmen dimdik ayakta duruyordu. Onunla sohbet eden çam ağacı, "*Ağaç yaşken eğilir.*" deyimini hatırladı ve hayatındaki değişimi anlattı. [One day, he came across an old oak tree. The oak tree stood tall despite the difficulties in its life. The pine tree chatting with him said, *as the twig is bent, so grows the tree*. He remembered his expression and explained the change in his life.]

- Bir gün ormanda dolaşan diğer ağaçlara da sporun faydalarını anlatan çam ağacı, onları da sağlıklı yaşama davet etti. "*Demir tavında dövülür.*" deyimini kullanarak, zorlukların üstesinden gelmek için düzenli sporun kaçınılmaz olduğunu vurguladı. Diğer ağaçlar da çam ağacının önerisini dinledi ve spor yapmaya başladılar. [One day, the pine tree explained the benefits of sports to other trees walking in the forest and invited them to a healthy life. Usind the idiom *strike while the iron is hot*, he emphasized that regular exercise is inevitable to overcome difficulties. Other trees also listened to the pine tree's suggestion and started exercising.]

- Bir ressam tuvalin karşısında adeta bir bozkurt gibi düşer ve duygularını, düşüncelerini resimleri aracılığıyla ifade eder. İşte bu noktada "*Dilin kemiği yoktur.*" deyiminiyle ressamın kullandığı dilin resim olduğunu söyleyebiliriz. [A painter falls in front of the canvas like a gray wolf and expresses his feelings and thoughts through his paintings. At this point, the idiom "*The tongue has no bones.*" express that the language used by the painter is painting.]

Below are examples of idioms and proverbs used by artificial intelligence in accordance with their context:

- "*Komşu komşunun külüne muhtaçtır.*" sözü komşuluk ilişkilerinin aile bağları gibi kıymetli olduğunu ifade eder. [The saying "*even in the smallest matters, one neighbor can help another*" expresses that neighborly relations are as valuable as family ties.]

- Üçüncü tür, çalışma dostluğu olarak adlandırılır. Ortak projelerde bir araya gelen insanlar arasında gelişen bu dostluklar, işbirliği ve dayanışma ruhunu yansıtır. "*Bir elin nesi var, iki elin sesi var.*" sözü bu tür dostlukların güçlü yanlarını vurgular. [The third type is called work friendship. These

friendships that develop between people who come together in common projects reflect the spirit of cooperation and solidarity. *Two heads are better than one* emphasizes the strengths of such friendships.]

- Bilim insanlarının sorumlulukları “*Herkes kendi göbeğini kendi keser.*” sözündeki gibi kendi alanında uzmanlaşıp bilgi üretme sürecinde kendi sorumluluklarını üstlenmeyi gerektirir. [Responsibilities of scientists require specializing in their own field and assuming their own responsibilities in the process of producing knowledge, as in the saying “*Everyone does his own work.*”.]

- Artık orman, sağlıklı yaşamın temsilcisi olan güçlü ve dayanıklı ağaçlarla *dolup taşıyordu*. [Now the forest was *full of* strong and durable trees that were representatives of healthy life.]

### Discussion

The aim of this study is to determine which idioms and proverbs are included in the texts aiming to teach idioms and proverbs in the 5<sup>th</sup> grade Turkish textbook and to examine their appropriateness within the context. Similarly, the study examines which Turkish idioms and proverbs were included in the texts generated by ChatGPT (3.5) and evaluates their contextual suitability. In this document analysis, six texts were selected from the Turkish course book, and six texts on the same subjects were generated by artificial intelligence. The discussions regarding the findings of the study are presented below.

According to the findings of the study, while a total of 30 idioms were used in the texts of the textbook, no proverbs were mentioned. In the activities of the texts, six idioms and 14 proverbs were mentioned. All of these idioms and proverbs are used in accordance with their context. Interesting findings have been identified in the texts produced by artificial intelligence. It was found that artificial intelligence has made up idioms and proverbs that do not exist in Turkish. For instance, “One of the frequently used expressions in Turkish culture is “*Father's house sets the chimney aflame.*” The phrase emphasizes the strength of family ties and the value of the relationships within them.” In Turkish, there is no such proverb or idiom as “*Baba evi bacayı alev alev yakar [Father's house sets the chimney aflame]*” It is interesting that it uses an expression that does not exist in Turkish as an idiom.

Similarly, “each work is a reflection of the emotions accumulated within the painter, and “*a picture is worth a thousand words.*” As stated in the proverb, the emotions and thoughts expressed in a picture are conveyed much more effectively” was generated by ChatGPT. This is another made-up proverb. When English proverbs were examined, it was determined that this proverb was taken from proverbs in English. Therefore, it is noteworthy that artificial intelligence is quite weak at correctly detecting and using Turkish and English proverbs and idioms. Additionally, expressions such as “*Damlaya damlaya göl olur [Many a little makes a mickle]*”, “*Gönülden gönüle yol vardır [There is a path from heart to heart]*”, “*Dost kara günde belli olur [a friend in need is a friend indeed]*”, “*Sabreden derviş muradına ermiş [patience leads to salvation]*”, “*Ağaç yaşken eğilir [as the twig is bent, so grows the tree]*”, “*Demir tavında dövülür [Iron is forged while it is hot]*”, “*kendi yağında kavrulmak [off one's own bat]*”, and “*Dilin kemiği yoktur [The tongue has no bones]*” are not used in the text in accordance with their context. Therefore, it was determined that 13 of the 48 idioms and proverbs used by artificial intelligence in 6 texts were not actually idioms or proverbs, and 8 of them were not used in the appropriate context in the text. However, 27 idioms and proverbs were used appropriately in the texts. Therefore, it can be said that artificial intelligence fails almost half of the time in writing a text containing Turkish proverbs and idioms.

Artificial intelligence is weak in terms of idioms and proverbs because, although it is good at the mechanical aspects of language, it is very weak at cultural and literary issues. Many studies on this subject have identified similar situations—at least in the Turkish context. In some studies where artificial intelligence was asked to write poems on certain themes, it was determined that although artificial intelligence could imitate shape-based elements, it was insufficient in terms of style (Yazbahar, 2023). In another study where artificial intelligence was asked to write different types of poetry, it was found that the mechanical texture of the texts was apparent and the produced work

lacked figurative language (Aydođdu elik, 2023). The lack of figurative language here supports the findings of this study because idioms and proverbs mostly use the figurative aspect of the language.

In a study where artificial intelligence was asked to translate between Arabic and Turkish (Őenyaman, 2023), the influence of English was seen in the translations, and its inability to fully translate some idioms showed that artificial intelligence is significantly affected by English and has not yet advanced sufficiently in understanding figurative meanings such as idioms. This study's finding, where artificial intelligence used the English proverb "a picture is worth a thousand words" despite being asked to use Turkish proverbs and idioms, aligns with Őenyaman's (2023) findings. Additionally, its frequent inability to use idioms and proverbs in the appropriate context can be seen as a sign that it does not yet have a deep understanding of the language. Similarly, in a study where artificial intelligence was used for Turkish-Persian translation, it was observed that artificial intelligence made more mistakes in literary texts and could not accurately reflect cultural nuances in translation (Yıkar, 2023). This indicates that it is currently challenging for artificial intelligence to appropriately use vocabulary elements specific to each culture, such as proverbs and idioms.

In addition, it is known that ChatGPT has not yet mastered all language-related issues. For example, it did not comply with the rules of politeness in conversation (such as not thanking the person who thanked it) (ınar Yađcı & Aydın Yıldız, 2023); it can be seen that it cannot detect even the simplest context error (Zileli, 2023). These findings reveal the linguistic limits of artificial intelligence. Therefore, there is still a long way to go in presenting idioms and proverbs through texts produced by artificial intelligence.

### **Implications**

This study shows how teachers can benefit from artificial intelligence in teaching idioms and proverbs by using texts produced by artificial intelligence. There are many studies examining text production by artificial intelligence, but this study examines how accurately and effectively idioms and proverbs that show more specific and deep structures of the language are used by artificial intelligence.

The study concludes that while it may be possible for artificial intelligence applications to write appropriate texts for primary school students by correctly using idioms and proverbs specific to each culture, teachers should not fully trust artificial intelligence in this regard for now. Artificial intelligence is considered a suitable tool for creating content tailored to the target audience (Güzeldemirci, 2024). Teachers and principals believe that artificial intelligence will save time in their work (Demir Dölger & Gümüşeli, 2023). One of the most important purposes of using artificial intelligence in education is its potential to provide personalized learning guidance (Küçükali & Coşkun, 2021). In this regard, artificial intelligence is expected to assist teachers (Alkayış, 2021). Thus, teachers, especially those who teach native language courses, might use artificial intelligence for tasks such as finding texts and creating context. However, artificial intelligence robots need to be used carefully, as it is known that artificial intelligence can provide false information (Yalçın-elik & oban, 2023).

In this study, the fact that it made up idioms and proverbs that do not exist in Turkish, that it translated proverbs from English, and that it could not use idioms and proverbs in accordance with their context, shows the limits of artificial intelligence. Hence, it seems difficult for artificial intelligence to produce cultural texts. Instead, it is possible for the person who writes a text to use it to strengthen his narrative (Anadolu, 2019). Therefore, instead of using artificial intelligence to generate contexts to teach idioms and proverbs, it is possible for teachers to use artificial intelligence to generate texts and make changes in the relevant text to be sure that the idioms and proverbs in the texts are appropriate in the context. Thus, it is possible to generate appropriate texts in artificial intelligence robots rather than finding texts from printed sources and present them to students by spending less time, thanks to some corrections.

### **Limitations**

This study should be evaluated, taking into account various limitations. The first limitation of the study is that the results were interpreted based on the outputs of one artificial intelligence robot (ChatGPT 3.5) rather than several. Another limitation of the study is that the texts examined were



prepared for 5th grade students. Different results can be obtained in texts written by artificial intelligence programs for different grade levels. Finally, four of the texts generated are informative, and two are narrative. Another limitation is that inferences cannot be made for different text types.

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