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Investigating Reading Comprehension Questions and Student-Generated Questions in Language Lessons in terms of Level*

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Abstract
Reading comprehension questions scaffold deeper comprehension, help students to analyze texts, improve students' thinking skills, and help them realize permanent and meaningful learning. By comparing reading comprehension questions used in Turkish lessons with student-generated comprehension questions in terms of level, this study aimed to determine question resources' capacity to affect students' questions. Using a multiple-case study research method, this study examined Turkish textbooks' reading comprehension questions, teachers' questions generated during lessons and teachers' questions produced for the text provided, and student-generated questions. Data were collected using the Demographic Information Form, Teacher In-Term Question Collection Form, Teacher Questions Collection Form, and Student Question Collection Form. In addition, textbooks were used as another data source. The data were analyzed using content analysis. The results revealed that the textbook questions were mainly of a low level require remembering and understanding information. Similar results were obtained for those teachers' questions. However, it was determined that the teachers' questions produced based on the texts were at a higher level than those produced during the lessons. Comparatively, it was also revealed that the rate of low-level questions produced by students was higher than those in textbooks and teacher questions. Furthermore, high-level critical questions were found to be limited in all resources. When students' questions and questions produced by other resources were compared, the closest relationship was found between the students' questions and questions produced by teachers during lessons.

Keywords: Student Questions, Teacher Questions, Textbook Questions, Question Levels

1. Introduction

One of the primary purposes of language education is to improve students' reading skills and enhance their understanding levels (Beerwinkle & McKeown, 2021; Blything et al., 2020). It is therefore essential, particularly as a necessity of today's global economic system, to provide students with the means to use their high-level thinking skills, such as reasoning, making inferences, questioning, synthesizing information obtained, and critical,

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creative, and reflective thinking (Ezberci Çevik, 2021; Stevens et al., 2020). Questions are one of the most effective and practical tools by which teachers can help students attain these goals. Questions have been used in classrooms for different purposes, such as attracting attention, raising curiosity, encouraging student participation, providing students with an active learning experience, identifying barriers to student learning, facilitating teacher–student interaction, and creating climates in which discussions can take place (Bowker, 2010; Cotton, 1988; Dillon, 1981). Many studies in the literature concerning reading education focus on using questions to deepen understanding, improve higher-order thinking skills, and enrich the reading experience among students from the preschool level to the university level (Blything et al., 2020; Brown et al., 2016; Martin & Kim, 2022; Massey et al., 2008; Spencer et al., 2019; Yüceer et al., 2022). Moreover, questioning and generating questions as a strategy (Harvey & Goudvis, 2007) is used in many teaching methods, and is employed as a particular approach to reading education, such as in dialogical reading within reading education (Deshmukh et al., 2019; Yüceer et al., 2022; Zibulsky et al., 2018), reciprocal teaching (Palinscar & Brown, 1984; Stevens et al., 2020), and guided reading (Blything et al., 2020; Martin & Kim, 2022).

Many studies show a significant relationship between posing questions, reading comprehension, and high-level thinking skills (Ateş et al., 2016; Dillon, 1981; Eyüp, 2012; Taboada & Guthrie, 2006). These studies have found that generating high-level questions or answering them before, during, or after reading is effective in deepening comprehension (Blything et al., 2020; Degener & Berne, 2016), thereby improving metacognitive observation skills (Griffith & Ruan, 2005; McKeown & Beck, 2009; Otero, 2009; Otero & Graesser, 2001, Palinscar & Brown, 1984), and increasing teacher–student interaction time (Magnusson, 2022). Furthermore, high-level questions were found to have a higher relationship with reading comprehension than low-level questions (Cano et al., 2014). Based on the effectiveness of questions in in-class activities, recent researchers have investigated questions in readings made with families in terms of different perspectives. These studies reported that questions used in readings made with families shape interaction and sharing within the reading processes (Gómez et al., 2021; Zibulsky et al., 2019).

Educational settings are a leading environment in which questions are used effectively. Questions used in reading activities undertaken in classrooms vary in terms of type (text-dependent vs. non-text-dependent) and also vary in terms of resources. It is convenient to assert here that there are three different resources that generate most questions, with students and teachers generating the leading resources. Furthermore, even though teaching activities change from one country to another, textbooks designed to systematically carry out educational activities are included in these resources since they include questions prepared for reading texts. Regardless of the source, every qualified question contributes to the development of understanding. Furthermore, good readers are expected to answer questions posed and generate questions themselves to improve their own understanding (Griffith & Ruan, 2005; Palinscar & Brown, 1984). Students reading texts in light of questions they pose themselves is effective in deepening their understanding (Cameron, et al., 2017; Cano et al., 2014; Otero & Graesser, 2001; Ness, 2016; Taboada & Guthrie, 2006), which furthermore supports the reading process in a metacognitive way (Ishiwa et al., 2013). Student-generated questions, whereby students are supported to develop appropriate examples, are more effective than those posed in the literature almost four decades ago (Singer, 1978; Nolte & Singer, 1985). However, other studies have determined that, in the classroom, students produce fewer questions than teachers do (Almeida, 2011; Arslan, 2006), that these questions are primarily low-level questions (Çakıcı et al., 2012; Keray & Güden, 2013; Yılmaz & Keray, 2013), and that students need educational support in developing quality questions (Cameron et al., 2017). However, it is known that in many schools, and even in the educational system of many countries, education generates high-quality questions read by students. In these circumstances, students are expected to produce questions independently when they encounter a problem in reading and/or comprehension, and when generating such questions in line with a particular purpose (Ishiwa et al., 2013). In the classroom, these student-generated questions are thought to be similar in terms of the respective student's level; in other words, the question relates to the individual student's level in each incidence.

Teacher-generated questions come first among the questions that students encounter in the classroom. Since ancient times, researchers have focused on teacher-generated questions (Stevens, 1912). It was determined that these questions constitute a considerable part of those used in the classroom (Almeida, 2011; Arslan, 2006; Udi et al., 2013). Posing students with well-prepared questions by teachers positively affects students' reading

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motivation, helping them to make sense of the text, and activates high-level thinking skills (Sezgin & Özilhan, 2019). Furthermore, increasing the level of teacher-generated questions enables students to be more efficient (Degener & Berne, 2016). Moreover, as the level of teacher-generated questions increases, the duration of teacher–student interaction increases in parallel (Magnusson, 2022). However, the literature reports different results concerning the levels of questions used by teachers in reading education. Massey et al. (2008) determined that only 32.5% of the questions used in the preschool period cognitively challenge students. Magnusson (2022) reports that only a small portion of the questions used by teachers in Norway were questions about remembering and obtaining surface meaning; a significant portion of these were inference questions. The same study also stated that critical questions had a very low rate of occurrence (Magnusson, 2022). Comparatively, some researchers found that teacher-generated questions for understanding the text could not reach the desired level. More importantly, teachers generally followed textbook questions instead of generating questions themselves (Akyol et al., 2013; Ateş, 2011). However, teachers do not only help students understand a certain text through the questions they pose but also serve as a model for their students in both asking questions and in regard to how they work with the texts themselves (Magnusson, 2022; Singer, 1978). Teachers' modeling becomes much more valuable, especially when students are not provided question-based education.

Textbooks are another example of a resource that can affect students in classrooms in terms of students' generating and/or answering questions. As previously mentioned, students are expected to answer and generate high-level questions. Lee (2015) emphasizes that to achieve this, the quality of questions in materials used in reading education, especially in textbooks, should be of a level that will help students develop high-level and high-level thinking skills. However, studies in the literature mostly report that questions in the textbooks are not qualified to improve students' comprehension and higher-order thinking skills (Benzer, 2019; Barutçu & Açık, 2018). Beerwinkle and McKeown (2021) recently reviewed English textbooks used in Kenya, and found that the rate of recognition/remembering questions comprised approximately 58% and 49% among those questions posed by fifth- and fourth-grade textbooks, respectively. They reported that the rate of questions that corresponded to levels 2a and 2b, per the levels used in their study, was around 46% for both grade levels. Furthermore, questions requiring criticism and evaluation were not included in the taxonomy of the researchers in the aforementioned study and were not reported in the examples outside of that taxonomy (Beerwinkle & McKeown, 2021). Lee (2015) reported that the rates of the lower-level questions in the two textbooks in their study were almost around 57% and 46% for each textbook. Benzer (2019) examined 5th–8th-grade textbooks in Turkey according to PISA evaluation levels and determined that over 80% of the questions in the four textbooks belonged to levels one and two within the six-stage structure. It is clear that unqualified questions in textbooks, which are the primary source within the educational process, will negatively affect teachers and students. It can even be proposed that the skills of those students who have experienced long-term education through the use of pertinent textbooks regarding such questions remain limited.

Based on the evaluations made so far, it can be said that the students who are expected to produce their own questions have difficulty producing questions themselves and that the questions they produce are generally of lower-cognitive levels, according to their findings and remembering current information. The same situation seems to hold true for teacher questions and those questions presented in textbooks. These results are obtained from studies that address each source individually. However, it is clear that the literature is lacking in terms of those studies wherein questions produced by all resources for reading comprehension are examined together. Such studies are needed in order to better determine those question resources that can potentially affect students in a more beneficial way than is currently the case; this is especially significant in regard to providing students with education that encourages them to pose questions within the scope of their understanding, something that is not currently widely provided. Due to this lack in the literature, the present study aimed to examine and compare all reading comprehension questions and student-generated questions used in the classroom in terms of students' understanding concerning the generating and answering of such questions. For this purpose, two international exam frameworks, the Programme for International Student Assessment [PISA] (OECD, 2019) and the Progress in International Reading Literacy Study [PIRLS] (IEA, 2021), were investigated in terms of question levels. These frameworks were also used to create a three-level classification: (1) questions whose answers are evidently stated in the text, (2) questions that require inference and interpretation, and (3) criticism and evaluation questions. The second level is separated into two sub-levels: (2a) simple inference and interpretation, and (2b) higher-level

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inference and interpretation (Appendix 1). Using this classification, the present study investigated the following: reading-comprehension questions of seventh-grade Turkish textbooks; teacher-generated questions posed in those classrooms in which the aforementioned textbooks were used; and, student-generated questions that concerned the same texts provided in the aforementioned classrooms. As teachers mostly adhere to textbook questions, teachers in the present study were asked to prepare their own questions for their students. As a result of applying this procedure, an answer was sought to the following research questions:

1) What is the distribution of comprehension questions among seventh-grade textbooks according to level?
2) What is the distribution of the teacher-generated questions during lessons according to level?
3) What is the distribution of the comprehension questions that the teachers produce for a text given according to level?
4) What is the distribution of the student-generated questions during lessons according to level?
5) What is the level of similarity among student questions, textbook questions, and teacher questions?

2. Method

2.1 Study Model

This study that aimed to investigate the reading comprehension questions used in classrooms and student-generated questions in terms of level was designed as a multiple-case study using a qualitative research design (Creswell, 2012). The textbook investigated in this study, teacher questions, and student questions can be considered as separate cases; specific common results will be obtained from the analysis of the aforementioned cases, which indicates that the multiple-case study design is appropriate for the present study (Fraenkel et al., 2012).

2.2 Participant (Subject) Characteristics

The study group comprised 17 teachers, from 10 different middle schools, and 197 seventh-grade students; all students were pupils of the aforementioned teachers. The teachers and students who participated in the lesson were selected using the maximum variation sampling method—a purposeful sampling technique used in qualitative studies. Accordingly, particular attention was paid regarding the selection of students from different reading levels and socioeconomic statuses, and in selecting teachers with different professional experiences. Some information regarding the teachers and students is given below.

Of the teachers who participated in the study, nine were female, and eight were male. The teachers' professional experience ranged between one and 15 years and displayed a balanced distribution. All of the teachers graduated from a faculty of education, of which three worked in schools with low socioeconomic conditions, seven in schools with mid-socioeconomic conditions, and seven in high schools with high socioeconomic conditions. Four teachers indicated that they taught students with low reading skills, eight indicated that they taught students with mid-reading levels, and five indicated that they taught students with high reading skills.

Of the students who participated in the study, 100 were female, and 97 were male. Accordingly, a balance was achieved between participants in terms of gender. Students' reading performance levels were not determined using a measurement tool, but rather by using forms distributed by the researcher to the participating students. Based on the information obtained from the teachers, it was concluded that 24 of the students displayed low-level reading skills, 135 mid-level reading skills, and 38 high-level reading skills.

2.3 Textbooks Examined

Overall, 338 reading comprehension questions from 64 reading texts used by participating schools during the data-collection period were investigated in this study. All three reading texts were taken from the three textbooks, two of which were published by the Ministry of National Education and one of which was published by a private publisher. In the study, the questions prepared for the listening texts were excluded from the analysis because they did not aim to improve reading skills.

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2.4 Data Collection Tools

This study used a single data collection tool to collect data from participating students. This tool included a text used in an international exam; students were asked to write reading comprehension questions on this text. Three different data collection tools were used to collect data from the teachers. The first tool included questions on teachers' demographics, classroom sizes, the school's general socioeconomic status, and students' general reading skills. The second tool was an in-term question record form, which was used by the teachers to record all the questions the teachers had produced themselves and that they had posed to students over the course of six months. Some participating teachers indicated that they only posed those questions included in the textbooks. Therefore, the text given to all participating students was also given to all participating teachers; the teachers were then asked to generate questions they might use while teaching the aforementioned text. Some study data were obtained by investigating those questions posed in the previously mentioned textbooks. Table 1 presents the data collection tools distributed to the participants and the intended purpose of each tool.

Table 1: Data collection tools and their intended purposes

Data Collection Tool	Intended Purpose
Teacher Data Collection Form	To obtain information regarding teachers' demographics such as age, gender, socioeconomic status, the school in which they work, and the general characteristics of their students.
Teacher In-Term Question Record Form	To collect the reading comprehension questions the teachers asked their students between December 2020 and May 2021.
Teacher Text-Based Question Collection Form	To collect information regarding teachers' competency in generating questions they formed based on the text provided by the researchers.
Student Question Collection Form	To collect information regarding the students' competency in generating questions they formed based on the text given to them by the researchers.

2.1 Data Analysis

Content analysis was used to analyze the study data. The question levels were determined by the researcher based on two international exam frameworks (PISA, PIRLS) were accepted as themes. Qualities that questions should possess at given level were thereby identified for each theme. Subsequently, all questions were examined and codes were created according to the definitions of the related levels; the appropriate codes were produced for the previously determined themes during the data analysis. Themes, codes, and exemplary questions, which show the classification used in the study, are presented in Appendix 1.

To ensure validity and reliability, the coding process was carried out by the researcher and by another field expert. The results of the researcher's coding process and the results of the field expert's coding were subsequently compared. Different coding results were found for very few questions. The researcher and the field expert then exchanged ideas regarding the aforementioned questions and their justifications for each disparity were investigated accordingly. Consequently, the coders reached an agreement on these questions through collective evaluation.

3. Results

3.1 Findings on Questions in Turkish Textbooks

Within the scope of the study, a total of 338 questions from three different textbooks were investigated in terms of the levels determined in the previous section. The results are presented in Table 2.

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Table 2: Distribution of textbook questions according to level

Level	Expected Cognitive Process	*f*	%
1 (Low Level)	Recognizing and remembering information	214	55.15
2a (Mid-Level)	Understanding based on simple inference	30	7.73
2b (Mid-Level)	Understanding based on high-level inference and interpretation	129	33.24
3 (High Level)	Evaluation, criticism, and deeper thinking	15	3.86
Total		388	100

As seen in Table 2, of 338 comprehension questions investigated, 214 (55.15%) were at the low level: recognizing and remembering information. At this level, students are expected to recall and find information that is evidently stated in the text and select the relevant information accordingly. A total of 30 (7.73%) questions were at the level of understanding based on simple inference; at this level, students are expected to make reasonable predictions comparing their prior knowledge with the information provided in a limited part of the text, put forward cause-and-effect relationships that require inference, and identify the traits of the characters in the text through one of the the supporting ideas or the inference of emotions. The mid-level second stage includes questions requiring high-level inferences and interpretation. With these questions, students are expected to have a solid understanding of the text in general, think more complicatedly and more profoundly than at other levels, build hypotheses, interpret the text by relating it to their daily lives, and generate meanings from the text through inferences. Of the questions investigated, 129 (33.24%) were found to be at the higher level; this high number is thought to stem from the fact that certain question types were constantly repeated for the questions of each text. Evaluation, criticism, and deeper thinking questions, which are of the highest level, require students to move beyond the comprehension of the text itself. Questions at this level make it necessary for students to comprehend the text completely, to analyze and evaluate the presentation style and order of information given in the text, the wording, purpose and perspective of the author, to make a criticism, and to make judgments. Of the questions investigated, only 15 (3.86%) were at this level. Therefore, the least number of questions was encountered at this level.

3.2 Findings on Questions Generated by Teachers During Lessons

The distribution according to the level of 73 reading comprehension questions that the teachers used in classrooms are presented in Table 3.

Table 3: Distribution of questions generated by teachers during lessons according to level

Level	Expected Cognitive Process	*f*	%
1 (Low Level)	Recognizing and remembering information	41	56.16
2a (Mid-Level)	Understanding based on simple inference	8	10.95
2b (Mid-Level)	Understanding based on high-level inference and interpretation	23	31.50
3 (High Level)	Evaluation, criticism, and deeper thinking	1	1.36
Total		73	100

As seen in Table 3, of the 73 questions that the teachers generated and used during the lessons, 41(56.16%) were at the low level. Notably, more than half of the questions are at this level; this is because teachers tend to employ questions of a low cognitive level. A total of 8 (10.95%) questions were at the understanding based on simple inferences level. Comparatively, 23 (31.50%) were of an understanding based on the high-level inference and interpretation level. The cause of this finding might be attributable to the fact that teachers repeated certain question types, as was the case for the textbook questions; alternatively, the finding might stem from the fact that teachers were affected by the textbook as part of the teaching processes. Only one (1.36%) of the teacher-generated questions was of the highest level. Based on this table, it can be concluded that either the comprehension education delivered to the students was limited or that the teachers did not effectively use questions in the comprehension education.

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3.3 Findings on Questions Generated by Teachers for the Text Provided

The distribution of the 85 questions, which were also given to the students, generated for the texts previously used in international exams according to level is presented in Table 4.

Table 4: Distribution of questions generated by teachers for the text provided according to level

Level	Expected Cognitive Process	*f*	%
1 (Low Level)	Recognizing and remembering information	34	40.00
2a (Mid-Level)	Understanding based on simple inference	17	20.00
2b (Mid-Level)	Understanding based on high-level inference and interpretation	33	38.83
3 (High Level)	Evaluation, criticism, and deeper thinking	1	1.17
Total		85	100

As can be seen from Table 4, of the 85 reading comprehension questions that the teachers generated based on the text, 34 (40%) were at the low level: recognizing and remembering. Concerning the mid-level, 17 of the questions concerned understanding based on simple inference, while 33 (38.83%) concerned understanding based on high-level inference and interpretation. Among those text-based questions generated by teachers, only one question (1.17%) was of the highest level: evaluation, criticism, and deeper thinking. This finding underlines an important problem for teachers: it is possible that teachers unintendedly ignore the questions of the highest level during the natural flow of a lesson. However, it is thought-provoking in that they did not include high-level questions concerning a text that was given to them. In this case, it can be suggested that students and teachers require education in generating and using questions in order to deepen their understanding. In fact, it is possible to read this as teachers being unable to generate questions at the aforementioned level; moreover, teachers were expected to create questions of the highest level when trying to focus on creating questions rather than teaching.

3.4 Findings on Questions Generated by Students for the Text Provided

The distribution, according to level, of the 985 questions generated by students for a text previously used in an international exam is presented in Table 5.

Table 5: Distribution of questions generated by students for the text provided according to level

Level	Expected Cognitive Process	*f*	%
1 (Low Level)	Recognizing and remembering information	654	66.39
2a (Mid-Level)	Understanding based on simple inference	121	12.28
2b (Mid-Level)	Understanding based on high-level inference and interpretation	204	20.71
3 (High Level)	Evaluation, criticism, and deeper thinking	6	0.60
Total		985	100

As seen in Table 5, of the 985 reading comprehension questions generated by the students based on the text, 654 (66.39%) were at the low level: recognizing an understanding of information evidently stated in the text. In addition, it was seen that most of the student-generated questions were worded in such a way that they demanded short answers such as “What”, “Where”, “When”, or “Who” Furthermore, the greatest ratio of questions at the low level was obtained among student-generated questions. The number of student-generated questions that required simple inference was 121 (12.28%). Another common level, with 204 questions (20.71%), was the level of understanding based on high-level inference and interpretation. Only six questions (0.60%) were of the highest level: evaluation, criticism, and deeper thinking. This ratio was the lowest among all the resources.

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3.5 Findings on Comparison of Questions

Ratios were used in this comparison since the number of questions obtained in the study was not sufficient to make a direct comparison. The distribution ratio of the questions according to the levels of all resources of questions is depicted in Figure 1.

As seen in Figure 1, the greatest ratio regarding all question resources was found at the low level, while the lowest ratio was at the highest level. Furthermore, it can be said that this finding reflects the greatest similarity and coherence in terms of levels among the student-generated questions, the questions in the textbooks, and those questions generated by teachers during the lessons. Here, the two question resources that students constantly dealt with during the educational process were those of teachers and textbooks. For this reason, the aforementioned question resources can be considered to be related to the students' capacity to generate questions.

No variation was observed for those questions that teachers generated for a text given accepting questions of the highest level. The questions that the teachers prepared were different from those they created during the lessons and those provided by the textbooks and the students. Comparatively, a variation was observed at the highest level for those questions prepared by teachers for a given text; these questions differed from both the questions the teachers produced during the lessons and from those questions from the textbook.

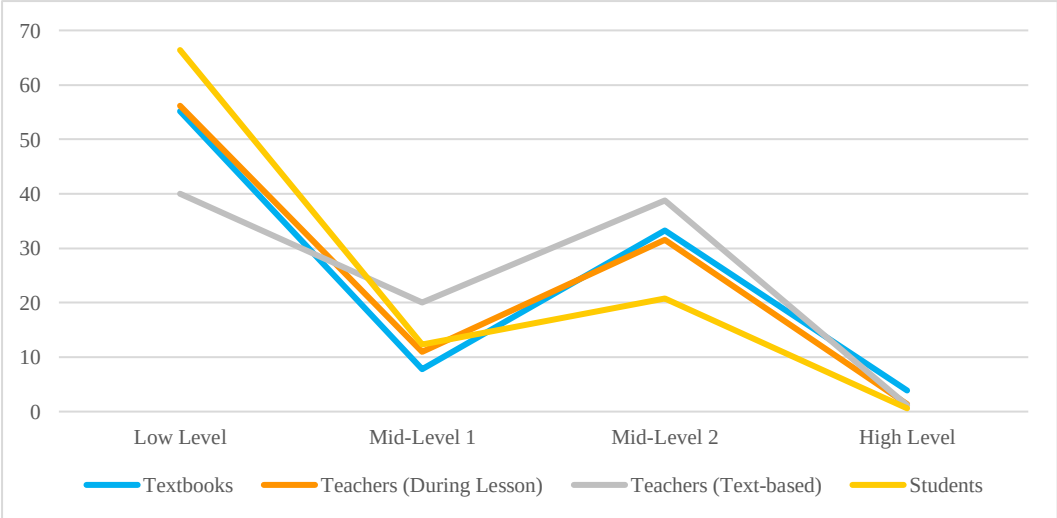


Figure 1: Comparison of the questions ratios in terms of levels

Source: Işır (2022)

When the question rates were addressed separately for each level and compared with the student questions, it was found that student-generated questions of a low level (66.39%) were most common, followed by the questions that teachers produced during lessons (56.16%), textbook questions (55.15%), and those questions that teachers prepared for a text (40%). Concerning those questions that require simple inference, the teachers' in-class questions (10.95%) and the student questions (12.28%) had similar rates of occurrence, which, however, differed from the questions in textbooks (7.73%), and those questions the teachers prepared for a text (20%). Concerning those questions that require higher-level inference and interpretation, the rate of questions that teachers produced in classrooms (31.50%) was, again, the closest to that of student-generated questions (20.71%). The rate of questions in textbooks (33.24%) was also found to be quite close to that of teachers' in-class questions. At this level, the rate farthest from that of student-generated questions was found to be that of text-based teacher-prepared questions (38.83%). Concerning questions of the highest level, student questions (0.60%), teachers' in-class questions (1.36%), and questions based on a text (1.17%) were found to have very similar rates; textbook questions were found to be similar (3.86%). In light of these findings, it can be said that the questions that were closest to the student-generated questions in terms of level were those questions that the teachers generated in classrooms. Comparatively, those questions most disparate from these findings were those questions that the teachers produced based on a text.

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A calculation was made to determine whether or not the difference between these rates is significant and, thereby, to determine the resource with the greatest chance of affecting students' questions. Through the calculation of *Z* and *p* values, the rates of the student questions and the rates of the questions from different resources were compared; the results obtained from these calculations are as follows:

At the low level, the difference between the rates of the student-generated questions and the questions that the teachers used in the classroom were not found to be statistically significant ($Z = 1.77$; $p > .05$). The difference between the student-generated questions and the textbook questions ($Z = 3.88$; $p < .05$) and the difference between the student-generated questions and the questions that the teachers prepared for a text given ($Z = 4.87$; $p < .05$) was found to be statistically significant. This result corroborates the notion that there is a close relationship between the questions that teachers produce and use in classrooms and student-generated questions; accordingly, it can be inferred that the most impactful resource affecting students' skills to ask questions stems from those questions teachers produce and use in the classroom.

The situation concerning the level requiring simple inference is similar to that of the previous levels. The difference between the rates of the student-generated questions and the questions that the teachers used in the classroom were not found to be statistically significant ($Z = .33$; $p > .05$). However, the difference between the rates of the student-generated questions ($Z = 2.42$; $p < .05$) and the questions that the teachers prepared for a text ($Z = -2.03$; $p < .05$) was found to be statistically significant. Therefore, the most powerful resource affecting students' skills to ask questions was, again, found to be those questions that the teachers produced and used in the classroom.

For those questions that require higher-level inference and interpretation, the relationship between the student-generated questions and those questions from all other resources was found to be statistically significant (textbooks [$Z = -4.88$; $p < .05$], teachers' in-class questions [$Z = -2.17$; $p < .05$], and teachers' text-based questions [$Z = -3.86$; $p < .05$]). In light of this result, it can be said that both the teachers and textbooks were insufficient in affecting students at this level and that they could not contribute to students' development in regard to making higher-level inferences, interpreting the text, and producing such questions. Potentially, this result stems from the fact that those questions that require higher-level inference and interpretation are not included in lessons as regularly. Additionally, insufficient question variation and the use of a certain type of question might be another reason for students using a certain type of answer for such questions, rather than constantly thinking, using higher-level skills, and improving the aforementioned skills.

Concerning the highest level, the difference between the textbook questions and student-generated questions was found to be statistically significant ($Z = -4.43$; $p < .05$). Therefore, inferring a relationship between textbook questions and the student-generated questions would not be convenient. Comparatively, the relationship between those questions that teachers produced in classrooms ($Z = .77$; $p > .05$), those prepared based on a text ($Z = -.62$; $p > .05$), and student-generated questions, was not found to be statistically significant. In light of this result, teachers can be considered the most powerful source affecting students' question-answering skills.

4. Discussion

A review of the literature revealed that the cognitive level of questions used in classrooms is separately focused and that the separation of that focus depends on the resource of the individual question. No study could be found in the literature that investigates textbook questions and questions generated by teachers and students, and thereby compares these in terms of level. Therefore, while evaluating the findings, whether these findings support those of similar studies and the relationship between the sources were examined from a holistic perspective.

This study determined that reading comprehension questions are mainly at the low level in regard to finding and remembering information evidently stated in the analyzed Turkish textbooks. Similar results are determined in different and related studies in the literature; however, in these examples, different taxonomies and classifications were used for determining question levels. Eroğlu (2019), who use the revised Bloom Taxonomy to analyze reading comprehension questions and activities in books used in 2015 and 2018, determined that 93.70% of

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questions and activities are prepared for low-level cognitive skills. Similarly, Akıncı (2020) and Durukan and Demir (2017) indicate that activities and questions are mainly at the low level among those studies that investigated activities in Turkish textbooks. Sezgin and Özilhan (2019) analyzed questions posed beneath texts in Turkish textbooks that referred to the Barrett Taxonomy and determined that a considerable percentage of these questions (66.8%) were of the basic comprehension level. Altun (2021) investigated the theme of 'assessment questions' in Turkish textbooks according to the PISA Reading Skills Assessment Frame; they determined that, essentially, the questions assessed represent low-level skills. Similar results were also obtained in other studies that applied or adhered to PISA levels, which thereby highlighted that questions on metacognitive skills are limited (Benzer, 2019; Diker Coşkun, 2013). All these research results are corroborated by those of the present study. Crucially, corroborating results are not limited to research in Turkey. Lee (2015) and Beerwinkle and McKeown (2021) found similar results at the low and criticizing evaluation question levels.

Another significant result of the present study is that the questions teachers ask in the classroom are part of the basic level that addresses low cognitive skills, just as the textbooks address low cognitive skills in terms of the same question levels. However, when teachers are asked to prepare text-based questions, it is seen that they are able to produce a greater number of high-level questions. A similar result was obtained in the study by Ayvacı and Şahin (2009), which states that teachers usually ask questions at a low cognitive level in lessons but ask higher-level questions in written exams. In addition, Güftâ and Zorbaz (2008) investigated teacher's written exam questions and Doğan Kahtalı (2021) investigated reading comprehension questions on the lesson plans of teacher candidates; these studies determined that those questions they assessed were, mainly, of a low level. Further studies determined that text-based questions teachers produce are mainly of a low or mid-level. Teachers have difficulty asking high-level questions (Akyol et al., 2013; Arap, 2015; Baysen, 2006; Samur & Soydan, 2013; Şahin, 2015). In research studies carried out in various other countries, it can be seen that results differ for low and mid-level questions, but not preparing high-level questions; the results of Magnusson's (2022) study, carried out in Norway, present an example. Magnusson's study reported that teachers in Norway attain the highest rates on inference and interpretation questions but also maintain low rates on criticizing evaluation questions (Magnusson, 2022).

Overall, it can be concluded that rates pertaining to high-level criticizing and evaluation questions are very low, regardless of the place in which a study is conducted. The situation facing teachers regarding higher-level questions can be explained by teachers' habits, according to the results put forward by Reflianto et al. (2022). However, the results of experimental studies, those that include training on asking questions, provided to teachers and even families (Hattie, 2009; Zibulsky et al., 2019), show that training can raise awareness, thereby facilitating the solving of questions and potentially improving question-answering skills.

Another result of the present study was that most of the student-generated questions (66.39%) were of the low level. However, few questions were generated at the higher level (0.60%). Similar results were also reported in different studies (Aydemir & Çiftçi, 2008; Çakıcı et al., 2012; Keray & Güden, 2013; Koray et al., 2005). These studies underlined that student-generated questions could be affected by teacher questions; these findings also corroborate the results of the present study. In conclusion, results obtained from other studies in the literature are similar to those revealed in the present study.

The most noteworthy contribution of the present study to the literature is that it provided evidence that students are mostly affected by their teachers in a classroom in which no specific education is provided in regard to asking questions. According to the results obtained herein, no significant relationship was found between the level distribution rates of student questions as compared to those generated and used by teachers in the classroom. This finding, which has been presented in context in the literature, is of critical importance: it empirically proves the view that teachers' questions serve as a model for students in regard to asking questions and working with texts (Magnusson, 2022; Singer, 1978).

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Appendix A

Level Classification of Questions: Theme, Codes, and Question Examples

Theme	Code	Example Question
Remembering Information (Low Level)	Student answers questions such as "What", "How", "Why", "When", "Where", and "Who", which question the information that is evidently stated regarding the event, place, time, and characters in the text.	Why does the character in the story cry? Why did Tom's father ask him to do to make sure Jeremy behaved well?
	Student determines the order of events given in the text and orders them according to a purpose.	How do the respective events of the story take place? Explain.
	Student finds a word or phrase whose definition is provided in the text.	What is the traditional improvised theatre?
	Student selects relevant information to accomplish a task (completing a table or answering a question).	What are the physical characteristics of the main character of the text?
	Student identifies the main idea/feeling that is evidently stated in the text.	What is the main feeling of the poem?
	Student identifies the topic that is evidently stated in the text.	What is the main topic of the text? What is narrated in the text?
	Student determines the hero's personal traits, purpose or intentions, all of which are evidently stated in the text.	What did Tom's father aim to achieve by making the cake well?
Understanding Based on Simple Inferences (Mid-Level 1)	Student finds the supporting idea/feeling through inference based on a specific part of the text.	What does the author want to tell us with this text?
	Student determines the instant feelings and thoughts of the characters through inference based on their reactions and behaviors.	What could Kaoru have felt after discovering the comet?
	Student explains the primary cause-and-effect relationships through inference based on a particular part of the text.	Why did Mustafa's mother come home sad?
	Student explains the meaning of words and phrases gained from the text using the context.	What do you understand from Tom's sentence "I lost my best enemy"?
	Student makes simple inferences by ordering, comparing, and classifying the information given in a limited part of the text.	What are the characteristics of the "*Düşman Pastası*"(Enemy Pie)?
	Student compares the information given in a limited part of the text with prior knowledge or makes inferences based on that information.	What do you think the village where the character lives look like?
	Student explains the similarities and differences between the characters in the text.	What are the common characteristics of Jeremy and Tom? What are the differences between the behaviors of bees and humans?
	Student makes reasonable predictions based on a limited part of the text.	If the taste of the *Düşman Pastası* was bad, how would the events of the text have taken place?
	Student makes inferences about individuals, or their personality traits, based on one or more sentences in the text.	What clues are given by Tom's father about his thoughts on friendship when making a delicious cake?
	Student suggests alternatives to the behaviors of the characters that are dominant in the text.	If you were Tom's father, what would you do to end the hostility?

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	Student draws conclusions from the text, finds the main idea, and makes generalizations by combining and relating in-text and out-of-text information.	What do you think is the main point of the text?
Understanding Based on Higher-level Inference and Interpretation (Mid-Level 2)	Student determines the similarities and differences between the thoughts in the text and their own thoughts and explains them with justifications.	If you put a title to this text, what would it be?
	Student gives examples, makes inferences, or make interpretations about a topic or event that takes place in the text based on their own experiences and prior knowledge.	•What problems do you think may arise from cultural differences?
	Student produces original solution(s) to the problem(s) addressed by the text using a relationship drawn from daily life/the real world.	If you were *Sığırtmaç* (Herdsman) *Mustafa*, what would you talk about with Atatürk?
	Student makes inferences about the personal traits purposes and intentions of the characters based on the text.	According to his thoughts about Jeremy, what kind of personality does our hero Tom possess?
	Student makes inferences or interpretations based on the information presented in the text.	What would you like to see when you look through *Çiçek Dürbünü* (kaleidoscope)? Why?
Evaluation, Criticism, and Deeper Thinking (High Level)	Student analyzes, evaluates, and criticizes the purpose, intentions, thoughts, and perspectives of the author.	In your opinion, which feelings did the poet write about in this poem? How did you find the author's perspective on reading? Explain.
	Student compares, criticizes, and evaluates the text being read and the other texts in terms of characters, topics, themes, and main ideas.	Compare the poem *Türkiye'm, Anayurdum, Sebebim, Çarem* (My Turkey, My Homeland, My Reason, My Remedy) with the poem you previously read, *Vatan Destanı* (Homeland Epic), in terms of the messages they give.
	Student evaluates the presentation style and order of the information in the text (text structure, organization) and suggests alternatives with a critical perspective.	Which part of the poem do you like most? Why?
	Student evaluates and criticizes the use of language in the text and the contribution of the words and phrases to the narration.	How did you find the wording of the author?
	Student evaluates and criticizes the message of the text by relating it daily life and experiences.	In your opinion, is it possible to create a World as depicted by the text? How?
	Student makes a critical evaluation of the message of the text considering multiple perspectives and criteria.	Does it make sense to try so hard to make a cake for your enemies?

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