



## EXAMINATION OF ACTIVITIES IN THE PRIMARY SCHOOL LIFE SCIENCES TEXTBOOKS IN TURKEY<sup>i</sup>

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### **Abstract:**

Students can find elements from life in one of the elementary school courses, life sciences. For this reason, it is important that the quality of the activities in this course. The aim of this study is classification of activities in textbooks of primary school life sciences taught in 2016-2017 academic year in our country. Document analysis technique is used in this study which has qualitative research feature. As a result of the analyzes, the total number of activities in the first grade life sciences textbook is 295, number 388 in the second grade textbook and 363 in the third grade textbook. The largest number of events in all of the textbooks is "expressing thought, value judgment, assumption". This is followed by the "interpretation of photographs and pictures" events in all books. In the least number of activity types in the textbooks, it is determined that "singing" is the first grade textbook. The types of activities that have only one in the second grade textbook are "discussing", "making calculation", "singing", "doing acrostic work" and "doing experiment". In the 3rd grade textbook, "slogan writing", "classification, listing, matching" and "making table, making graphic, concept mapping" activities are at least in number.

**Keywords:** life sciences course, textbooks, activities

### **1. Introduction**

Life sciences course is one of the courses that are effective during the transition from concrete operations to abstract operations period in a child's life. Students may encounter elements from life in Life Sciences courses. Hence, quality of activities suggested to be used in the classroom setting is critical.

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Life sciences course is a course instructed in the first three years of the primary school in Turkey. In the fourth year, Social Studies course replaces the Life Sciences course. Latest changes in Life Sciences curriculum in Turkey have been implemented in the 2018 curriculum. Constructivist approach has not been replaced in this curriculum; however, certain important changes have been made. These changes primarily include decreased number of attainments, shorter class hours, and six main themes replaced by six main units (Ministry of National Education, 2018). With the 2018 curriculum, the importance how students become more active in the classroom setting has come to the fore. Hence, it is crucial to use several activities in classrooms for making students more active.

Qualified activities in curricula and therefore textbooks and their content that will activate students will increase the quality of instruction and allow for an effective instruction of the course.

There are several studies conducted on textbooks and their activities both in the national and international literature (Ayva, 2010; Bromley & Russell, 2010; Doğan, 2008; Dumains, 2006; Guzdial, Rick & Kehoe, 2001; Gürol, 2002; Karaca, 2008; Kerpiç & Bozkurt, 2011; Köroğlu & Yeşildere, 2004; Meyer, Bromley & Ramirez, 2010; Morris, 2001; Skehan, 1996; Swan, 2007; Yiğittir & Kaymakçı, 2012).

Studies on Social Sciences textbooks have generally examined textbooks in the framework of a single subject. For instance, Meyer, Bromley and Ramirez (2010) investigated the subject of human rights in the secondary school Social Studies textbooks. The study concluded that there had been a general increase in the discussions on human rights since 1995. Again, Bromley and Russell (2010) used data from 465 textbooks of 69 countries and investigated the Holocaust education in the secondary school Social Sciences textbooks around the world since 1970. It was determined that the books and countries were more connected to the world society. The study also found that books discussed the Holocaust by emphasizing the human rights, diversity in society and an international description.

In the review of studies in the literature, no research was observed on the investigation of activities available in the Life Sciences textbooks in Turkey and suggested to be performed. It is assumed that this research will contribute to the literature. Accordingly, this research aimed to classify the activities in the primary school Life Sciences textbook used in the academic year of 2017-2018 in Turkey in accordance with the activity classification introduced by Kabapınar (2012). Answers to the following research questions were accordingly sought for:

1. What are the activities in the primary school 1st-grade Life Sciences textbook and its qualities?
2. What are the activities in the primary school 2nd-grade Life Sciences textbook and its qualities?
3. What are the activities in the primary school 3rd-grade Life Sciences textbook and its qualities?

## 2. Methodology

This study has the qualities of a quantitative research. The data collection instrument and data analysis process were addressed in this section.

### 2.1. Data collection instrument

The document review, which is a qualitative research method, was used in the study. The activities in the first, second and third-grade textbooks that were used in the primary school Life Sciences courses in the academic year of 2017-2018 in Turkey were analyzed with document review. Kabapınar's (2016) activity classification criteria were considered when reviewing the activities.

While the first- and second-grade textbooks were shaped by the latest Life Sciences curriculum that came into effect in 2015, the 2009 curriculum was used in the third-grade textbook. Hence, there were units in the first- and second-grade textbooks whereas themes were used in the third-grade textbook. The analysis was conducted accordingly when reviewing the activities.

### 2.2. Data analysis

The data were analyzed using content analysis, which is one of the qualitative research methods. The main purpose of content analysis is to reach concepts and relations that can explain collected data (Yıldırım and Şimşek, 2013). Two expert instructors helped to code the data. The codes of the researcher and the instructors were compared with each other. In doing so, Miles and Huberman's (1994) intercoder reliability formula was used. According to Miles and Huberman (1994), when this value is above 0.80, the analysis is considered reliable. In the analysis of the data collection instruments, the intercoder reliability coefficients between the different instructors are given in Table 1.

**Table 1:** Reliability coefficients of the data collection instrument

Data Collection Instrument	Expert 1	Expert 2	Mean
Document Review	0,94	0,96	0,95

According to Table 1, when the data were analyzed, the coefficient averages of the analyses of the researcher and the other two instructors were 0.95. Accordingly, it can be said that the analysis of the data collection tool used in this study was reliable.

## 3. Findings

The activities in the Life Sciences textbooks were analyzed in this study. Numbers of activities for all grade levels in the textbooks are given in Table 1.

**Table 1:** Total number of activities in primary school life sciences textbooks

Grades	Frequency (f)
1 <sup>st</sup> grade	295
2 <sup>nd</sup> grade	388
3 <sup>rd</sup> grade	363
<b>Total</b>	<b>1046</b>

In Table 1, the analyses showed that there were 295 activities in the primary school first-grade textbook, 388 activities in the second-grade textbook and 363 activities in the third-grade textbook.

### 3.1. Activities in the primary school first grade Life Sciences textbook and its qualities

Numbers of activities achieved in the examination of the first-grade Life Sciences textbook and their characteristics on the basis of units are presented in Table 2.

**Table 2:** Total number of activities in the first grade textbooks

Grade	Units	Frequency (f)
1 <sup>st</sup> grade	Unit 1- Me and My School	86
	Unit 2- My Family and My Home	44
	Unit 3- Healthy Life	67
	Unit 4- Safe Life	35
	Unit 5- I Love My Country	29
	Unit 6- Nature and Environment	34
	<b>Total</b>	<b>295</b>

The data in Table 2 indicate the numbers of activities in the primary school first-grade textbook. There were 86 activities in Unit 1 “Me and My School”, 44 in Unit 2 “My Family and My Home”, 67 in Unit 3 “Healthy Life”, 35 in Unit 4 “Safe Life”, 29 in Unit 5 “I Love My Country”, and 34 in Unit 6 “Nature and Environment”. Accordingly, there were 295 activities in the primary school first-grade Life Sciences textbook.

Examination of the activities in the primary school first-grade Life Sciences textbook is addressed in Table 3.

**Table 3:** Activities in the first grade life sciences textbook

Activities	Frequency (f)
Expressing one’s thoughts, value judgments and assumptions	158
Interpreting photos and pictures	75
Classifying, listing and matching	18
Empathizing	11
Preparing posters, albums and drawing pictures	10
Taking notes, summarizing, filling gaps and solving puzzles	9
Noticing changes and continuity in photos and pictures	7
Painting the picture	6
Singing songs	1
<b>Total</b>	<b>295</b>

According to Table 3, nine different types of activities were used in the first-grade Life Sciences textbook. The most used activity was “Expressing one’s thoughts, value judgments and assumptions” and 158 of 295 activities in total were in this type of activity. It was followed by “Interpreting photos and pictures” which was the second most used type of activity and was used in 75 activities. Other activities that were used less frequently than these two activities were “Classifying, listing and matching; Empathizing; Preparing posters, albums and drawing pictures; Taking notes, summarizing, filling gaps and solving puzzles; Noticing changes and continuity in photos and pictures; and Painting the picture” respectively. Only one activity of “Singing songs” was used in the first-grade Life Sciences textbook.

### 3.2. Activities in the primary school second grade Life Sciences textbook and its qualities

Numbers of activities achieved in the examination of the second-grade Life Sciences textbook and their characteristics on the basis of units are presented in Table 4.

**Table 4:** Activities in the second grade life sciences textbook

Grade	Units	Frequency (f)
2 <sup>nd</sup> grade	Unit 1- Me and My School	87
	Unit 2- My Family and My Home	51
	Unit 3- Healthy Life	43
	Unit 4- Safe Life	74
	Unit 5- I Love My Country	61
	Unit 6- Nature and Environment	72
	<b>Total</b>	<b>388</b>

The data in Table 4 indicate the units and numbers of activities in the primary school second-grade textbook. There were 87 activities in Unit 1 “Me and My School”, 51 in Unit 2 “My Family and My Home”, 43 in Unit 3 “Healthy Life”, 74 in Unit 4 “Safe Life”, 61 in Unit 5 “I Love My Country”, and 72 in Unit 6 “Nature and Environment”. According to Table 4, there were 388 activities in the primary school second-grade Life Sciences textbook.

Examination of the activities in the primary school second-grade Life Sciences textbook are addressed in Table 5.

**Table 5:** Activities in the second grade life sciences textbook

Activities	Frequency (f)
Expressing one’s thoughts, value judgments and assumptions	190
Interpreting photos and pictures	68
Classifying, listing and matching	45
Filling gaps and solving puzzles	17
Preparing posters, album and drawing pictures	13
Empathizing	12
Doing research	8
Impersonation	6
Writing slogans	5

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Painting pictures	3
Writing dialogs, stories, poems	2
Creating tables, graphics and concept maps	2
Comparisons	2
Giving examples	2
Prioritize	5
Observation	2
Discussing	1
Acrostics	1
Calculation	1
Telling similarities and differences	1
Experimentation	1
Singing songs	1
<b>Total</b>	<b>388</b>

According to Table 5, 22 different types of activities were used in the second-grade Life Sciences textbook. The most used activity was “Expressing one’s thoughts, value judgments and assumptions” again, and these activities constituted 190 of 388 activities in total. This type of activity was followed by “Interpreting photos and pictures” which was used in 68 activities as the second most used type of activity. Another activity frequently used in the second-grade Life Sciences textbook was “Classifying, listing and matching” which was used in 45 activities.

Other activities used less frequently than these three activities were “Filling gaps and solving puzzles; Preparing posters, album and drawing pictures; Empathizing, Doing research, Impersonation, and Writing slogans.”

Other than these, the following were the types of activity which were used in all units of the second-grade Life Sciences textbooks only for once: “Discussing; Acrostics; Calculation; Telling similarities and differences; Experimentation and Singing songs.” In general, there were more diverse activities in the second-grade textbook than in the first-grade textbook. Both textbooks used the same types of activity in the highest number.

### 3.3. Activities in the primary school third grade Life Sciences textbook and its qualities

Numbers of activities achieved in the document review of the third-grade Life Sciences textbook and their characteristics is presented in Table 6.

**Table 6:** Activities in the third grade life sciences textbook

Grade	Themes	Frequency (f)
3 <sup>rd</sup> grade	Theme 1: School is My Excitement	116
	Theme 2: My Unique Home	165
	Theme 3: Yesterday, Today, Tomorrow	82
	<b>Total</b>	<b>363</b>

Table 6 shows the themes in the primary school third-grade Life Sciences textbook and the number of activities in those themes. There were 116 activities in Theme 1 which is

“School is My Excitement”, 165 activities in Theme 2 which is “My Unique Home”, and 82 activities in Theme 3 which is “Yesterday, Today, Tomorrow”. Accordingly, there were 363 activities in the primary school third-grade Life Sciences textbook.

**Table 7:** Activities in the third grade life sciences textbook

Activities	Frequency (f)
Expressing one’s thoughts, value judgments and assumptions	233
Interpreting photos and pictures	32
Giving examples	20
Doing research	18
Empathizing	13
Discussing	13
Telling similarities and differences	11
Comparisons	11
Writing dialogs, stories, poems	5
Preparing posters, albums and drawing pictures	4
Writing slogans	1
Creating tables, graphics and concept maps	1
Classifying, listing and matching	1
<b>Total</b>	<b>363</b>

Table 7 shows that 13 different types of activities were used in the third-grade Life Sciences textbook. Distribution of activities in this textbook was more imbalanced than in other grade levels’ textbooks. The most used type of activity was “Expressing one’s thoughts, value judgments and assumptions.” These constituted 233 of 363 activities in total. It was followed by “Interpreting photos and pictures” which was the second most used type of activity and was used in 32 activities.

Other activities used in this textbook included “Giving examples; Doing research; Empathizing; Discussing; Telling similarities and differences; Comparisons; Writing dialogs, stories, poems; Preparing posters, albums and drawing pictures.”

Activities used only for once in the themes of the third-grade Life Sciences textbook were “Writing slogans; Creating tables, graphics and concept maps; and Classifying, listing and matching.” While activities of “Classifying, listing and matching” were the third most used activities in the first- and second-grade textbooks, they were the least used activities in this one.

In general, the most diverse activities were available in the primary school second-grade textbook. It was followed by the primary school third- and first-grade textbooks, respectively. The most used type of activities was “Expressing one’s thoughts, value judgments and assumptions” in all three textbooks. It was observed that the textbooks concentrated on this activity the most. Other types of activity were fewer.

#### 4. Results, Discussion and Recommendations

This study aimed to classify the types of activity in the Life Sciences textbooks used at primary schools in Turkey. To that end, the Life Sciences textbooks used in the first three years of primary school were handled. The analyses showed that there were 295 activities in the primary school first-grade Life Sciences textbook, 388 in the second-grade textbook, and 363 in the third-grade textbook.

The most used type of activity in all Life Sciences textbooks was “Expressing one’s thoughts, value judgments and assumptions.” It was followed by the activities of “Interpreting photos and pictures” in all books. The least used type of activity in the first-grade textbook was “Singing songs”. The following were the types of activity which were used in the second-grade textbook only for once: “Discussing; Acrostics; Calculation; Telling similarities and differences; Experimentation and Singing songs.” The least used types of activity in the third-grade textbook were “Writing slogans; Creating tables, graphics and concept maps; and Classifying, listing and matching.”

Consequently, the activities which ensure that students become more active in the Life Sciences textbooks were fewer than the activities of expressing one’s thoughts and interpreting photos. This is a remarkable result because ensuring active participation of students is of great importance in such a course in which children encounter elements from real life.

For instance, Bromley, Meyer and Ramirez (2011) examined 533 secondary school Social Sciences textbook of 74 countries published in the last four decades. It was concluded that the textbooks became more student-centric. Student-centric texts were found to be more common in countries that hold individual in the forefront.

In the courses such as Life Sciences and Social Studies which involve social sciences, student-centricity and activation of students in classroom setting should be particularly available in textbooks.

Also, Dumains (2006) determined that activities had a positive impact on students’ academic achievements in Mathematics course. These activities included dancing, musical activities, physical activities, art class activities. It was found that such activities developed by teachers especially in younger age groups enabled students’ bodies and therefore their minds.

Additionally, in Hashemi’s (2001) study on textbooks, use of critical thinking in high school Social Studies textbooks was addressed. To this end, use of the following skills was examined in the textbooks: “reasoning, questioning and evaluation of expressions, group work, interpretation, real judgment on matters, analysis and assessment, reason and openness”. It was eventually concluded that the activities in high school Social Sciences textbooks were addressed in two categories of satisfactory and dissatisfactory in regard to use of critical thinking.

Wade’s (2012) study investigated the studies conducted on textbooks in social studies education in the last decade. Studies reported in the area of theory and research was evaluated on the basis of sampling, methodology, finding and recommendations. Accordingly, researchers concentrated on recommendations to enhance the quality of

content analysis studies and cooperate with other educators and institutions to support textbook reform and creative social studies education.

It is consequently observed that use of activities, methods and techniques that can activate students in the classroom setting are highly important. It can be therefore recommended to increase the number of such studies to be conducted with classroom teachers and students and to conduct qualitative studies, particularly. How active learning methods affect achievement and attitude is generally investigated in quantitative studies generally in the literature. Yet, action research, which is a qualitative research design, is especially required for reflecting the classroom climate in a clear way and identifying student and teacher reactions during the process.

### **About the Author**

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