



## INVESTIGATION OF THE EXTENT TO WHICH THE UNITS OF HEALTHY LIFE PREPARE CHILDREN FOR STRUGGLING WITH COVID-19

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### Abstract:

Schools are one of the important environments where children can attain the right attitudes and behaviours during the epidemic. The curriculum implemented and textbooks taught in schools form the basis of resources for knowledge that can be used by both teachers and students. In Turkey, health information is given to primary school children in the units of “Healthy Life” in life sciences classes. In the current study, the extent to which the units of healthy life prepare children for struggling with COVID-19 was investigated. To this end, both the life sciences curriculum and the textbooks taught in the first three grade levels were analyzed. The findings of the study revealed that both the life sciences curriculum and the textbooks taught do not have the content adequate to prepare children for struggling with the epidemic.

**Keywords:** primary school, life science, textbooks, COVID-19.

### 1. Introduction

Man’s having a healthy life depends on his/her adaptation to the physical and social environment. It is also closely related to the individual's understanding of the events related to the community of which he/she is a part and his/her ability to make judgments (Selçuk, 2008, p. 58). Schools where individuals officially take their first step into the community life after family and which represent the society they live in are places where social relationships are initiated and progressed through education and where

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behaviours are developed through mutual interaction (Taneri, 2017, p. 10). From a humanitarian perspective, the main reason for the existence of the school, which is the place where education is institutionalized, is to meet the needs and expectations of all people related to the education (Şişman, 2015, p. 9).

Schools provide an important environment for the promotion of health and health education (Bentsen, Bonde, Schneller Danielsen, Bruselius-Jensen & Aagaard-Hansen, 2020). A healthy citizen is more likely to be productive. Health education should be an integral part of education (Veugelers & Schwartz, 2010). Health education is important for understanding the need to know diseases and ways of preventing diseases in order to protect one's own health. Knowing about health and using this information help individuals create a healthy lifestyle (Karim, 2020). While providing health education in schools, health literacy skills should also be imparted to students in addition to providing health information for them.

In most of the definitions of health literacy, it is defined as an individual cognitive skill (Samerski, 2019). Health literacy can help people grasp the reasons behind recommendations and project the consequences of various possible actions (Paakkari & Okan, 2020). Schools are a critical area that includes the basic process for students to acquire health literacy and to help them achieve this goal at the end of this process (Vamos, Okan, Sentell & Rootman, 2020). Education and literacy are the important aspects of the promotion and development of health (Truman, Bischoff & Elliott, 2019).

Studies show that the school environment is an important social determinant of health among children and adolescents (Högberg, Strandh, Petersen & Johansson, 2019). Health and education are closely related (Yamada, Sekine, Tatsuse & Asaka, 2019). There are also different ways to address health education in schools. In some cases, it is an issue in itself (e.g. social and personal health education in Ireland), in other cases it is covered within a wide range of issues. In the latter, health education is considered as part of personal education (e.g. "personal and social development" in Portugal) or civic education (e.g. "health and citizenship education" in France) (Jourdan, Samdal, Diagne & Carvalho, 2008). When the education given in primary level in Turkey is examined, it is seen that life sciences and health education is related to each other in the curriculum. In this context, in the life studies course curriculum prepared with a spiral approach, at 1<sup>st</sup>-3<sup>rd</sup> grade levels, there are units of "*Healthy Life*".

While explaining the issue of fulfilling the roles expected from individuals, curriculums emphasize the importance of training individuals who can produce knowledge, use them functionally in life, solve problems, think critically, be entrepreneurial and decisive, have communication skills, empathize and contribute to society and culture (MEB, 2018, p.3). The vision of the Life Sciences course curriculum is to create individuals who have basic life skills, are self-aware, lead a healthy and safe life, who are sensitive to nature and the environment, are researching, have high self-confidence, are at peace with their environment and have internalized national and spiritual values (MEB, 2015, p. 1). These basic knowledge and skills to be imparted to students through the curriculum should match the needs of the child in real life. The

curriculum should help the individual acquire basic skills to contribute to improvement of the quality of his/her life (MEB, 2009, p.6). Life skills are adaptive behaviours and positive abilities that enable individuals to cope effectively with the demands and challenges of daily life (Mahmoedi & Moshayedi, 2012) and individuals should be able to use these abilities outside the school.

Among the objectives of educational activities is there individuals' acquisition of problem solving, decision-making, creative and critical thinking skills along with metacognitive skills. Educational and instructional theories and practices help achieve these objectives (Kalaycı & Yıldırım, 2020). In this connection, by taking the European Framework of Competences as a reference, the Turkish Framework of Competences was constructed and the key competences were incorporated into the curriculums put into effect in 2018.

Key competences added to the curriculums are mainly aimed at inculcating life skills in students. For example, Mathematical Competence and Basic Competencies in Science/Technology require solving and applying a series of problems encountered in daily life by developing the mathematical thinking style (MEB, 2018, p.5). In Digital Competence, individuals should also be able to use information technology to support critical thinking, creativity and innovation. In Learning to Learn Competence, primarily basic skills such as literacy, numeracy and information and communication technologies should be acquired. Personal and social welfare connected to Social Competence is related to the individual's being aware of his/her optimum physical and mental health and how healthy life style creates a source for himself/herself, his/her family and close social circle (European Parliament and the Council of Europe, 2006, p.16). When the general structure of the life studies curriculum is examined, it is expected that it will prepare students in advance for the epidemic that has been on the agenda of the world recently, and encourage children to fight the epidemic through the skills, competencies and objectives it contains. In addition, in order to ensure their participation in the fight against the epidemic, the curriculum should provide students with a certain level of information and skills in relation to issues such as maintaining a healthy life and determining the necessary measures.

## **2. Literature Review**

In the past two decades, the world has seen three coronaviruses emerging and causing epidemics that have given rise to serious global health problems (Guarner, 2020). The world experienced outbreaks of coronavirus infection threatening the global pandemic in 2002-2003 with Severe Acute Respiratory Syndrome (SARS) and in 2011 with Middle East Respiratory Syndrome (MERS) (Prompetchara, Ketloy & Palaga, 2020). In December 2019, a new pneumonic disease, COVID-19, emerged in Wuhan, Hubei Province, China (Park, Thwaites & Openshaw, 2020). Methods of combating this new global pandemic include measures such as detecting and isolating cases, reducing contacts and quarantine, vaccines and treatments, social and physical distancing (World Health Organization,

2020). In this context, the World Health Organization frequently emphasizes the importance of hand hygiene, respiratory etiquette, environmental cleaning and disinfection, as well as of maintaining physical distances and avoiding close, unprotected contact with people with fever or respiratory symptoms (World Health Organization (a), 2020).

Many social issues having scientific dimensions are started to be taught to children at school through life sciences. One of the basic school subjects at primary school level, life sciences has an important place to prepare students for daily life in Turkey. Schools, curricula, teaching materials and activities should equip students with skills and competencies necessary to cope with potential difficulties. In this respect, textbooks are the learning materials most easily available to students.

Relevant learning materials such as textbooks, workbooks and teacher guides are assumed to be essential inputs in effective schooling systems (Milligan, Tikly, Williams, Vianney & Uworwabayeho, 2017). Textbooks are very useful and accessible resources that students and teachers can use according to their needs (Mahmood, 2011). Textbooks are developed by curriculum experts and subject matter experts and are widely used by teachers for teaching purposes. They describe the areas and subjects of knowledge to be taught in the classroom and the performance standards students are expected to achieve (Benavot, 2011). It is expected that textbooks can help students learn independently when the implementation of a lesson is requested or carried out (Mataheru, Huwaa & Matitaputty, 2020).

As mentioned above, although COVID-19 is a new global pandemic, it is not the first. Up-to-date studies are needed to guide students to lead a healthy life. In this regard, there are many studies in the literature conducted in the primary school level about the autonomous learning of children at home (Xie, & Yang, 2020), home-based distance education and academic counselling applications for primary school students (Hong, 2020), designing of scientific literacy worksheets for distance education on the issue of COVID-19 (Setiawan, 2020), alleviation of the negative effects of home confinement on children (Wang, Zhang, Zhao, Zhang, & Jiang, 2020), primary school teachers' views of online education during the COVID-19 pandemic (Fauzi, & Khusuma, 2020); however, there is no study investigating what will happen when students go back to schools.

Also on mental health (see Growitz, 2020; Arslan, & Allen, 2020; O'Connor, Cloney, Kvalsvig, & Goldfeld, 2019; Raval, Montañez, Meyer, & Berger - Jenkins, 2019; Lambie, Solomon, Joe, Kelchner, & Perleoni, 2019 etc.); dental health related (see Riolina, Hartini, & Suparyati, 2020; Rachmawati, Agustini, Hayati, Saptarini, Carolina, & Rusminah, 2019; Jafari, Makvand Gholipour, & Khoramiyan Tousi, 2019; Heriyanto, Laela, & Mulyanti, 2019; Rashidi Birgani, & Niknami, 2019; Naseri-Salahshour, Abredari, Sajadi, Sabzaligol, & Karimy, 2019 etc.); Related to nutrition (Sasube, & Luntungan, 2020; Hariyadi, 2020; Guglielmo, Chantaprasopsuk, Kay, Hyde, Stewart, & Gazmararian, 2020; Jadgal, Sayedrajabizadeh, Sadeghi, & Nakhaei-Moghaddam, 2020; Schmitt, Bryant, Ranger, Kirkham, Katare, & Benjamin, 2019 etc.); on body health (Lodewyk, McNamara, & Sullivan, 2020; Lee, Zhang, Chu, Gu, & Zhu, 2020; Hyde, Gazmararian, Barrett -

Williams, & Kay, 2020; Cairney, Dudley, Kwan, Bulten, & Kriellaars, 2019; Richards, Ivy, Wright, & Jerris, 2019).

In light of the previous global epidemics, it can be argued that in order for students to be prepared for a possible epidemic, the life sciences course curriculum should guide students to lead a healthy life with the objectives shaped in accordance with the development levels of students. Textbooks which are the main tools in the accomplishment of the objectives in a curriculum should be prepared in this direction and should contribute to the achievement of this goal by supporting the related objectives. In this connection, investigation of the objectives related to the unit “Healthy Life” in the 2018 Life Sciences curriculum, explanations about these objectives, and the primary school life sciences textbooks prepared according to these objectives will facilitate the determination of the current state of the prior knowledge of children that can be activated during the epidemic in Turkey.

In the current study, in order to determine how well the 2018 Life Sciences curriculum and the textbooks taught prepare children for struggling with COVID-19, answers to two basic questions were sought. In this regard, the research problems are given below:

- 1) What is the relationship between the objectives of the unit “Healthy Life” in the 2018 Life Sciences course curriculum and the objectives aiming to prepare students for struggling with COVID-19 and what is the distribution of this relationship across the grade levels?
- 2) What is the level of information in the contents of the unit “Healthy Life” in terms of preparing children for struggling with COVID-19 and what is the distribution of this knowledge across the grade levels?

### **3. Material and Methods**

The current study employed the qualitative research design. The case study method was used in order to be able to address the nature of the problem and the questions for which answers are sought in an enhanced and integrated manner (Merriam, 2018, p. 50). The case study is a qualitative approach in which the researcher investigates by using detailed and in-depth data collection that includes multiple sources of information (Creswell, Hanson, Plano Clark & Morales, 2007). Although there are many different designs of the case study (single case, multiple case, etc.) in practice, the embedded multiple case design was used in the current study. In multiple case studies, the researcher deliberately selects more than one situation to bring different perspectives to the subject (Creswell, 2012, p.99). The advantage of a multiple case study is that the author can analyze data in all situations and in different situations (Gustafsson, 2017). When planning a case study, researchers develop a data collection matrix in which they determine the amount of information they will collect about the case (Creswell, 2012, p. 102). The case addressed in the current study and their sub-units are shown in Table 1.

**Table 1:** The Case Addressed in the Current Study and Their Sub-Units

Case	Sub-Units
The Unit “Healthy Life”	The 2018 Life Sciences Course Curriculum
	1 <sup>st</sup> Grade Life Science Textbook (A)
	2 <sup>nd</sup> Grade Life Sciences Textbooks (B-C)
	3 <sup>rd</sup> Grade Life Sciences Textbooks (D-E)

### 3.1 Sampling

In the current study, the criterion sampling method, one of the purposive sampling methods, was used. The purposive sampling is widely used to determine and selection of the data-rich cases in qualitative research. Though there are several different purposive sampling methods, the criterion sampling is widely preferred (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood, 2015). The researcher should provide a justification for the purposeful sampling strategy to be used to select the case and gather information about the case (Creswell, 2012, p. 102). The sample obtained in criterion sampling shows homogeneity according to the selected criteria and the decisions about these criteria are made in advance. This sampling strategy is particularly useful for investigating a phenomenon in depth (Schreier, 2018, p. 93). In this regard, the basic criterion determined in the current study are; the unit “Healthy Life” in the Life Sciences course curriculum implemented in Turkey in the 2019-2020 school year and all the life sciences textbooks taught in primary schools in Turkey in this school year.

### 3.2 Data Source

The data source of the current study is comprised of the 2018 Life Sciences course curriculum and the primary school 1<sup>st</sup>-3<sup>rd</sup> grade life sciences textbooks. As the documents, the 2018 Life Sciences course curriculum and the 1<sup>st</sup> grade life sciences textbook (Ardıç Publication), 2<sup>nd</sup> grade life sciences textbooks (Beşgen Publication and Ministry of National Education Publication) and 3<sup>rd</sup> grade life sciences textbooks (Evren Publication and Ministry of National Education Publication) were used in the current study.

All of these textbooks were being thought all over Turkey in the 2019-2020 school year.

Samples related to the documents making up the data source of the current study are given below.

How the objectives are constructed in a spiral manner and how the content of the objectives and the explanations about the content expected to be mastered by students during the educational-instructional process are conveyed to the practitioners with its details and limits in the curriculum are shown in Figure 1.

**Figure 1:** Primary school second grade objectives of the unit “Healthy Life” and explanations about the objectives

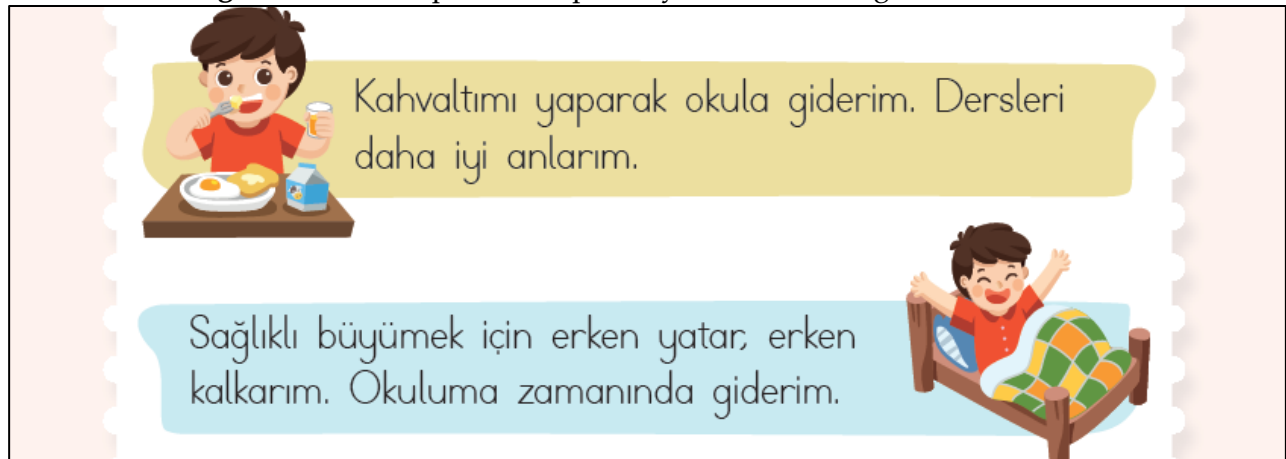
HB.2.3. Sağlıklı Hayat
<b>HB.2.3.1. Sağlıklı büyüme ve gelişme ile kişisel bakım, spor, uyku ve beslenme arasındaki ilişkiyi fark eder.</b>
<b>HB.2.3.2. Dengeli beslenmeye uygun öğün listesi hazırlar.</b>
<b>HB.2.3.3. Yemek yerken görgü kurallarına uyar.</b> <i>Evde ve diğer sosyal ortamlarda (lokanta, pastane, yemekhane, misafirlik vb.) yemek yeme kuralları üzerinde durulur. İhtiyacı kadar yemek yeme ve ekmek israfını önleme konuları vurgulanır.</i>
<b>HB.2.3.4. Sağlıklı bir yaşam için temizliğin gerekliliğini açıklar.</b> <i>Kişisel temizlik ve çevre temizliği üzerinde durulur.</i>
<b>HB.2.3.5. Sağlıkla ilgili hizmet veren kurumları ve meslekleri tanır.</b> <i>Hastane, aile sağlığı merkezi/sağlık ocağı, eczane gibi kurumlar ile doktorluk, hemşirelik, eczacılık ve diş hekimliği gibi meslekler üzerinde durulur.</i>
<b>HB.2.3.6. Mevsimine uygun meyve ve sebze tüketiminin insan sağlığına etkilerini fark eder.</b>
<b>HB.2.3.7. Mevsim şartlarına uygun kıyafet seçer.</b>

Source: MEB, 2018, p.20.

As can be seen in Figure 1, in the explanation coded as HB.2.3.4., “HB” denotes the code of the course, “2” denotes the grade level and “4” denotes the number of the objective. The statement “Explains the necessity of hygiene for a healthy life” is the objective statement. The statement given under this objective “Personal hygiene and environmental hygiene are explained” explains the subjects to be taught within the context of this objective. The number of subjects to be taught in this objective is 2.

The other documents used in the current study are textbooks. The example for the situations found in the textbooks and expressed as “the total number of the statements in the textbook and the statement related to the epidemic” is given in Figure 2:

**Figure 2.** An example for the primary school second grade textbook



Source: Dokumacı, Özdemir Gök & Dokumacı, 2019, p.108.

In Figure 2, there are sample statements from the textbook used by the primary school second graders. Here, the total number of the statements is 4.

### 3.3 Data Analysis

In the data analysis process, first, digital forms of the life sciences textbooks and the 2018 Life Sciences course curriculum were obtained. The researchers created a document analysis form to analyze these digital resources. The items in this form are given below:

- Performing a comprehensive literature review on the subject of the research.
- Determination of the distribution of the objectives in the unit “Healthy Life” in the curriculum across the grade levels.
- Determination of the distribution of the number of the subjects in the unit “Healthy Life” in the curriculum across the grade levels.
- Analysis of the objectives in the unit “Healthy Life” in the curriculum according to the theoretical framework.
- Investigation of the state of the presence of the objectives stated in the curriculum in the textbooks.
- Finding statements in the texts in the unit “Healthy Life” of the textbooks that can be related to the theoretical framework.
- Counting the statements in the texts in the unit “Healthy Unit” of the textbooks.

The digital documents were analyzed many times with the help of the items in the document analysis form. The data obtained from this analysis were entered into Microsoft Excel 2010 program and frequencies and percentages were calculated.

### 3.4 Validity and Reliability Studies

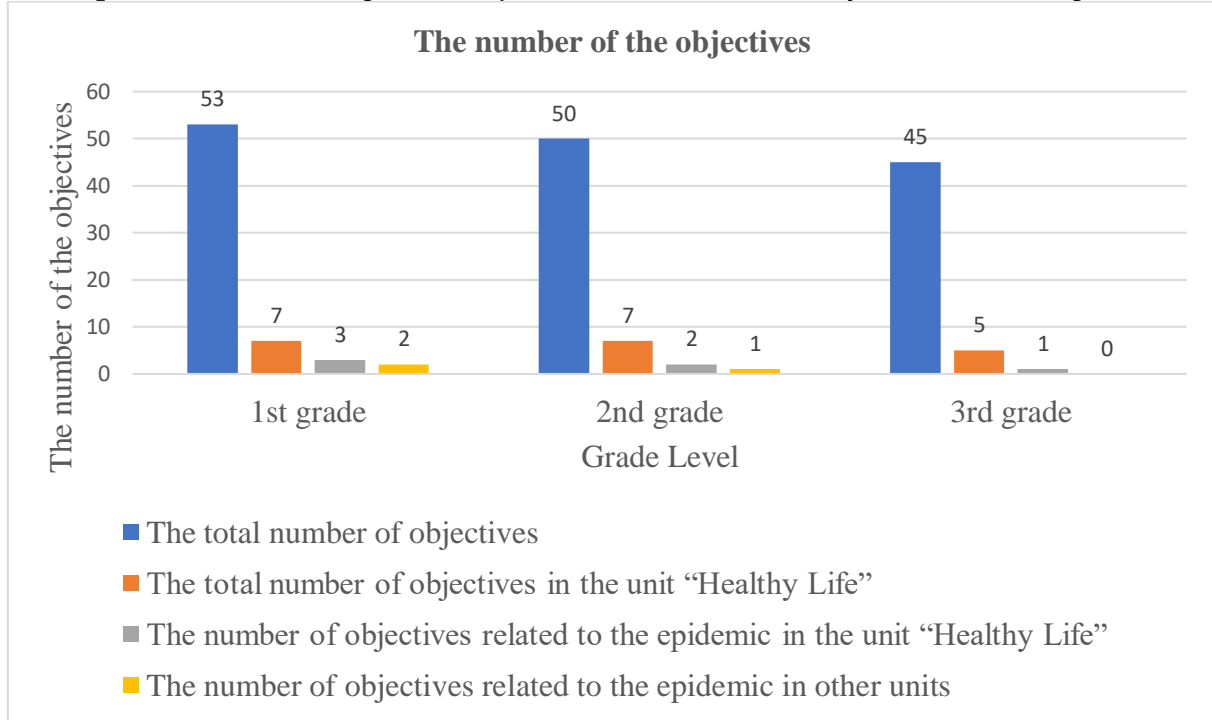
In qualitative research, the length of the time allocated to the study constitutes one of the procedures of validity (Creswell& Miller, 2000). In order to establish reliability, what has been done in the research should be explained clearly (Grossoehme, 2014). Internal reliability refers to applicability, consistency, impartiality of the basic value or the actual value of within-group interpretations and results (Onwuegbuzie& Leech, 2007). In the current study, in order to establish validity and reliability, the process of the study was planned and adequate time was spared for the completion of each stage. The researchers attempted to explain each stage and detail of the current study simply, clearly and comprehensibly. The case and sub-units addressed in the current study were examined by each researcher separately and then they compared their results.

## 4. Results and Discussion

An answer was sought for the first research problem of the study “What is the relationship between the objectives of the unit “Healthy Life” in the 2018 Life Sciences course curriculum and the objectives aiming to prepare students for struggling with COVID-19 and what is the distribution of this relationship across the grade levels? Findings related to this problem are given in Graph 1 and Graph 2:



**Graph 1:** The relationship of the objectives in the unit “Healthy Life” with the epidemic



As can be seen in Graph 1, there are a total of 148 objectives in the Life Sciences course curriculum; 53 for the first grade level, 50 for the second grade level and 45 for the third grade level. When the objectives in the unit “Healthy Life” are examined, it is seen that there are a total of 7 objectives in the first grade and 3 of these objectives can be related to the epidemic, that there are a total of 7 objectives in the second grade level and 2 of these objectives can be related to the epidemic and that there are a total of 5 objectives in the third grade and 1 of these objectives can be related to the epidemic. Thus, it can be said that with the increasing grade level, the number of objectives related to the epidemic decreases. Moreover, in the units apart from the unit “Healthy Life”, 2 objectives in the first grade level, 1 objective in the second grade level and no objective in the third grade level were found to be related to the epidemic.

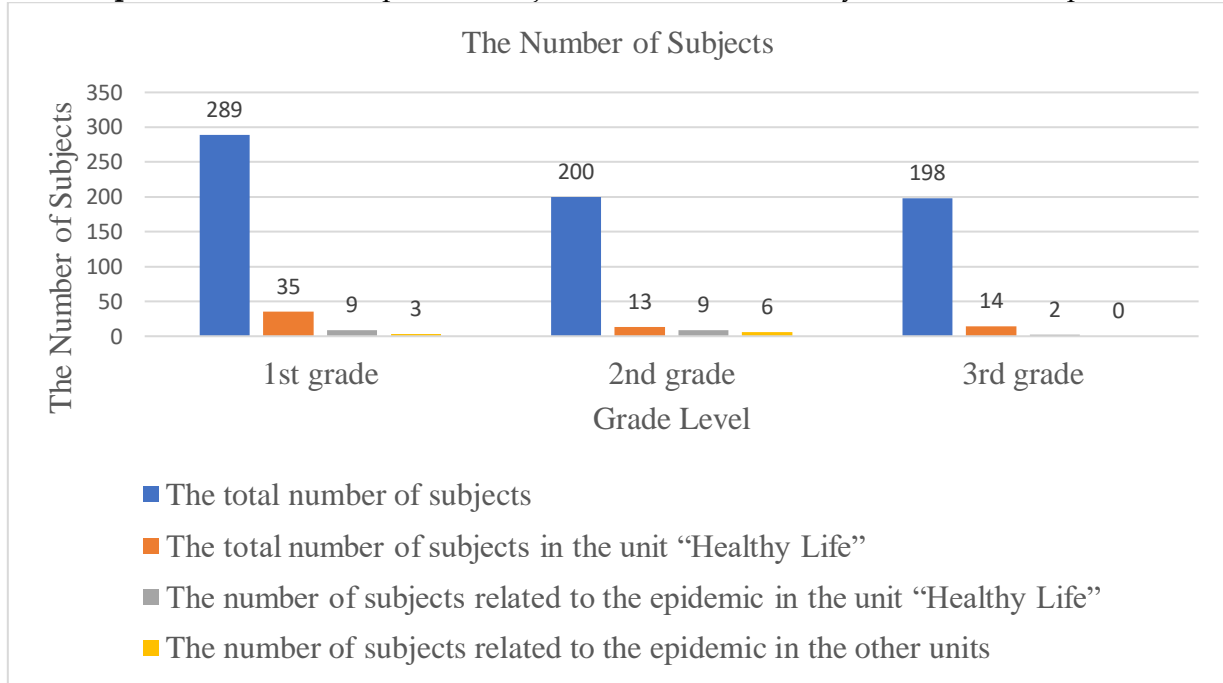
The objectives that can be related to the epidemic in the curriculum are as follows:

*‘Performs his/her personal care regularly (1<sup>st</sup> grade, 3<sup>rd</sup> unit, 1<sup>st</sup> objective); Recognizes the measures to be taken to protect his/her health (1<sup>st</sup> grade, 3<sup>rd</sup> unit, 2<sup>nd</sup> objective); Prepares food and beverages taking hygiene rules into consideration (1<sup>st</sup> grade, 3<sup>rd</sup> unit, 5<sup>th</sup> objective); Explains the necessity of hygiene for a healthy life (2<sup>nd</sup> grade, 3<sup>rd</sup> unit, 4<sup>th</sup> objective), Knows the institutions and professions offering health-related services (2<sup>nd</sup> grade, 3<sup>rd</sup> unit, 5<sup>th</sup> objective); Obeys the rules of hygiene in public spaces to protect his/her own health and the health of the society (3<sup>rd</sup> grade, 3<sup>rd</sup> unit, 5<sup>th</sup> objective)’.*

The objectives that can be related to health in the units other than the unit ‘Healthy Life’ are as follows: *‘Develops his/her habit of toilet use and hygiene (1<sup>st</sup> grade, 1<sup>st</sup> unit, 8<sup>th</sup>*

objective); *Is sensitive towards keeping nature and the environment clean* (1<sup>st</sup> grade, 6<sup>th</sup> unit, 4<sup>th</sup> objective); *Knows the institutions and persons he/she can receive help in case of emergency* (2<sup>nd</sup> grade, 4<sup>th</sup> unit, 4<sup>th</sup> objective)'.

**Graph 2:** The relationship of the subjects in the unit “Healthy Life” with the epidemic



As can be seen in Graph 2, there are a total of 687 subjects to be taught within the context of the explanations of the objectives in the Life Sciences course curriculum; 289 subjects for the first grade level, 200 subjects for the second grade level and 198 subjects for the third grade level. When the subjects in the unit “Healthy Life” are examined, it is seen that there are a total of 35 subjects in the first grade and 9 of these subjects can be related to the epidemic, that there are a total of 13 subjects in the second grade level and 9 of these subjects can be related to the epidemic and that there are a total of 14 subjects in the third grade level and 2 of these subjects can be related to the epidemic. Moreover, in the units apart from the unit “Healthy Life”, 3 subjects in the first grade level, 6 subjects in the second grade level and no subject in the third grade level were found to be related to the epidemic.

The subjects that can be related to the epidemic in the explanations of the objectives in the curriculum are as follows:

*‘Hand washing, bathing will be explained. Moreover, the issue of maintaining continuity in personal care will be explained* (1<sup>st</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 1<sup>st</sup> objective); *The issues of performing personal care, consuming fruit and vegetables, ways of protecting from contagious diseases, clever use of medicine, the necessity of going to doctor will be explained* (1<sup>st</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 2<sup>nd</sup> objective); *It will be reminded that hands should be washed before eating* (1<sup>st</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 5<sup>th</sup>

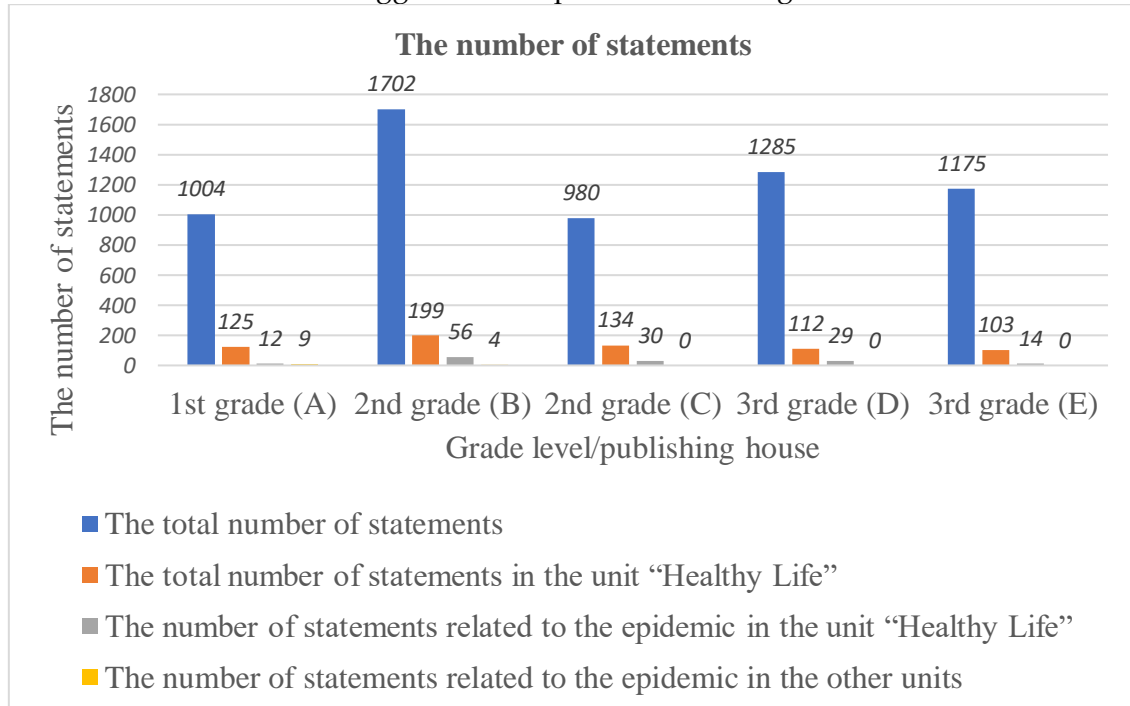
objective); *Personal hygiene and environmental hygiene will be explained (2<sup>nd</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 4<sup>th</sup> objective); Institutions such as hospital, community health centre, pharmacy and professions such as doctor, pharmacist, dentist will be explained (2<sup>nd</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 5<sup>th</sup> objective); The importance of using public spaces such as toilets and washrooms in compliance with the rules of hygiene will be explained (3<sup>rd</sup> grade, 3<sup>rd</sup> unit, in the subjects of the 5<sup>th</sup> objective)'.*

The subjects that are in the explanations of the objectives that can be related to health in the units other than the unit 'Healthy Life' are as follows:

*'Learning about hygiene materials (1<sup>st</sup> grade, 4<sup>th</sup> unit, in the subjects of the 1<sup>st</sup> objective); Doing what is necessary to protect nature and the environment and warning others kindly to do what is necessary are discussed (1<sup>st</sup> grade, 6<sup>th</sup> unit, in the subjects of the 4<sup>th</sup> objective); The necessity of his/her keeping his/her room, study table, toys, dresses clean and tidy is explained by using an emphatic language (2<sup>nd</sup> grade, 2<sup>nd</sup> unit, in the subjects of the 4<sup>th</sup> objective).*

The findings related to the second research problem of the current study "What is the level of information in the contents of the unit "Healthy Life" in terms of preparing children for struggling with COVID-19 and what is the distribution of this knowledge across the grade levels?" are given in Graph 3.

**Graph 3.** The distribution of the levels of the units 'Healthy Life" in terms of informing students about how to struggle with the pandemic across grade levels and textbooks



As can be seen in Graph 3, in the textbooks taught within the Life Sciences course curriculum, there are a total of 1004 (Textbook A) statements in the first grade level, 1702 (Textbook B) and 980 (Textbook C) statements in the second grade and 1285 (Textbook D) and 1175 (Textbook E) statements in the third grade. When the distribution of the statements in the units “*Healthy Life*” across the grade levels is examined, it is seen that there are a total of 125 statements in the first grade textbook A and 12 of them can be related to the epidemic, that there are a total of 199 statements in the second grade textbook B, and 56 of them can be related to the epidemic; that there are 134 statements in the second grade textbook C and 30 of them can be related to the epidemic; that there are a total of 112 statements in the third grade textbook D and 29 of them can be related to the epidemic and that there are a total of 103 statements in the third grade textbook E and 14 of them can be related to the epidemic. Moreover, in the units other than the unit “*Healthy Life*”, there are 9 statements in the first grade textbook A and 4 statements in the second grade textbook B; thus, a total of 13 statements that can be related to the epidemic.

Some of the statements aiming to inform students about how to struggle with the epidemic are given below.

Some of the statements in the textbook taught in the first grade:

*‘I use my clothes carefully; I try to keep them clean’ (1<sup>st</sup> grade, textbook A, p.79); We need to wash the fruits and vegetables before we eat them to protect our health (1<sup>st</sup> grade, textbook A, p.84); The vaccine enhances our resistance to microbes (1<sup>st</sup> grade, textbook A, p.84); We need to do exactly what the doctor says; we need to use the medicine he/she prescribes regularly (1<sup>st</sup> grade, textbook A, p.85)’.*

Some of the statements in the textbooks taught in the second grade:

*‘Our hands are the organs we use the most frequently in our daily life. For this reason, our most contaminated organ is our hands (2<sup>nd</sup> grade, textbook B, p.91); We should not use someone else’s plates, glasses, forks, spoons, etc. (2<sup>nd</sup> grade, textbook B, p.102); The effects of the clean environment we live in on our health are great (2<sup>nd</sup> grade, textbook B, p.106); Keeping common areas clean is our responsibility to each other (2<sup>nd</sup> grade, textbook B, p.106); Microbes, the biggest enemy of our health, multiply in dirty places and spread to the environment. We take most of the diseases into our body with our hands. Door handles, handrails of stairs, handles in city buses, money are places where microbes can be found (2<sup>nd</sup> grade, textbook B, p.107); We should use toilet paper in the toilet. We should wash our hands when we get out of the toilet’ (2<sup>nd</sup> grade, textbook C, p.109); The microbes we cannot see with our eyes and that make us sick live and multiply in dirty environments. That’s why we should pay attention to the cleanliness of our hands. School toilets, parks, public transportation vehicles are common areas. Therefore, after we use these areas, we need to wash our hands with soap. In this way, we protect both our own health and the health of those around us. We prevent the spread of infectious diseases (2<sup>nd</sup>*

grade, textbook C, p.120); *When we get sick, we go to the hospital, community health centre or family doctor. In these institutions, the doctor examines us and prescribes medicines when necessary. We buy our medicines from the pharmacy (2<sup>nd</sup> grade, textbook C, p.124)*'.

Some of the statements in the textbooks taught in the third grade:

*'The cleanliness of common areas is very important to protect our health and health of the society. Thus, we must pay attention to hygiene. We must take some measures for hygiene' (3<sup>rd</sup> grade, textbook D, p.89); When we sneeze and cough, we must cover our mouths with a handkerchief so that we don't infect those around us. We shouldn't go to school when we are sick, we should wear a mask if we go (3<sup>rd</sup> grade, textbook D, p.89); Obeying the hygiene rules is important not only for ourselves, but also for the people we live with. We use many areas such as hospitals, schools, parks, toilets, picnic areas, shopping malls together with others. We should use these areas cleanly (3<sup>rd</sup> grade, textbook E, p.86); If we don't follow the hygiene rules in common areas, germs can spread quickly and infect people. For this reason, we should wash our hands after using the toilet and throw the napkins we use into the trash. We must cover our mouth properly when sneezing and coughing. We shouldn't spit on the ground. Complying with cleaning and hygiene rules protects both our own health and the health of other people (3<sup>rd</sup> grade, textbook E, p.86)*'.

When the units other than the unit "Healthy Life" including objectives and statements about health are examined, it is seen that there are 9 statements in the first grade level and 4 statements in the second grade level. In one of the two textbooks taught in the second grade level, no objective and statement has been found. These statements are given below:

*'We should wash our hands with soap before and after using the toilet' (1<sup>st</sup> grade, textbook A, p.27); We should flush the toilet when we enter the toilet, close the door, and flush again after we are done (1<sup>st</sup> grade, textbook A, p.27); 'We should throw the toilet paper and towel papers we use into the trash (1<sup>st</sup> grade, textbook A, p.27); We use materials such as soap, shampoo, toothpaste in our personal care. There are also cleaning materials used for cleaning the bathroom, kitchen, floor, stove, laundry and dishes (1<sup>st</sup> grade, textbook A, p.113); Friends, all living things need a clean environment first to live a healthy life. For this, nature should be protected and the environment should be kept clean. We should throw our garbage in the trash for the protection of nature and a clean environment. We should warn those who throw garbage on the ground (1<sup>st</sup> grade, textbook A, p.180); We keep our house and clothes clean' (2<sup>nd</sup> grade, textbook B, p.69); After studying, I leave my desk regularly, even wipe it' (2<sup>nd</sup> grade, textbook B, p.72); I take care to keep my clothes clean. I fold my clean clothes or put them on hangers in my closet. I do not leave my dirty clothes on the floor, I put them in the laundry basket (2<sup>nd</sup> grade, textbook B, p.72)*'.

## 5. Discussion

In the current study, it was attempted to determine the extent to which the 2018 Life Sciences course curriculum prepares students for struggling with COVID-19. To this end, first the objectives in the curriculum, then the subjects in the explanations of the objectives and the statements that could be related to the epidemic were determined. Moreover, it was determined whether there are objectives and subjects that could be related to the epidemic in the units other than the unit “Healthy Life” so that a holistic perspective of how well students are prepared for struggling with the epidemic by the Life Sciences course curriculum can be provided. The obtained results have revealed that the objectives and subjects that could be related to health are largely limited to the unit “Healthy Life” as there are few objectives and subjects that can be related to health in the other units.

When the distribution of the objectives in the unit “Healthy Life” across the grade levels was examined, a total of 6 objectives were found to be related to the epidemic; 3 in the first grade level, 2 in the second grade level and 1 in the third grade level. When the subjects in the explanations of the objectives were examined, it was similarly seen that the number of subjects that could be related to the epidemic is small; 12 subjects in the first grade level, 15 subjects in the second grade level and 2 subjects in the third grade level; thus, a total of 29 subjects that can be related to the epidemic. In this regard, it can be said that the 2018 Life Sciences course curriculum has some shortcomings in terms of preparing students for struggling with the epidemic because the number of the objectives and subjects aiming to prepare students for struggling with the epidemic seems to be inadequate. Parallel to this finding, Aktay & Çetin (2019) stated that the objectives and the values included in the Life Sciences course curriculum were simplified. The teachers’ opinions of the curriculum are also that the content was simplified (Karaman, 2019). In the study conducted by Armağan Erbil, & Doğan (2019), teachers stated that the self-care skills needed by students in their daily lives should be increased in the primary school life studies curriculum. Oker, & Tay (2019) concluded that primary school 2<sup>nd</sup> and 3<sup>rd</sup> grade students want to learn about health, animals, natural disasters, technology and cleanliness. In this connection, many health issues such as infectious diseases and epidemics and increasing problems induced by the inequalities in the health care system can be detected by collecting information in the electronic health records (Cowell, 2018) and measures that can be taken to find solutions to these problems can be expressed as objectives and these objectives can be added to curriculums.

Life Sciences lessons centre on experiences helping the child make sense of the world from the moment he/she comes to the world. In their later life, it is attempted to impart information, skills and values to children in compliance with their world of experience and to contribute to their making sense of their environment from social and physical dimensions (Kabapınar, 2016, p.1). Children who are in a new environment outside the family and friends will make progress both in the planned education process and in their individual and social life in line with the knowledge and skills they have gained through new experiences. In this respect, life studies lessons have an important

mission in shaping the child's life and preparing him/her for the future. In order to fulfil this mission, it is a great necessity to prepare curriculum and effective textbooks that will facilitate the implementation of these curriculums.

Similarly, in their study, Benes, Boyd, Cucina, & Alperin (2020) emphasized that if school health education is to take its place as a holistic actor that prepares children for a healthier life, school health education should develop a collective, meaningful and sustainable research agenda including the curriculum, instruction, professional preparation and all the school endeavours. Tomokawa, Miyake, Takeuchi, Kokudo, & Asakura (2020) examined the ways through which Japan's school health system includes children and the factors that enable children to participate in this system. It has been concluded that in order to encourage children's participation in school health activities in developing countries, it is necessary to clearly define the importance, benefits, effects and aims of children's participation in relevant legal and administrative documents at the administrative level. It has also been emphasized that schools should ensure that stakeholders have a common understanding of the educational benefits of children's participation, taking into account the cultural context of each country. It has been stated that it would be beneficial to provide teachers with appropriate training so that they could facilitate child participation.

Within the context of the second question of the current study, textbooks which have an important role in the inculcation of the knowledge and skills necessary for students to combat the epidemic both inside and outside the classroom were evaluated. To this end, the relationship of the statements found in the units "Healthy Life" in 1 textbook taught in the first grade level, 2 different textbooks taught in the second grade and 2 different textbooks taught in the third grade with the epidemic was investigated. According to the results obtained from this investigation, the number of statements that can be related to the epidemic in the textbooks is very small, as in the case of objectives. In addition, it was concluded that some subjects that could be related to the epidemic included in the explanations of the objectives in the unit "Healthy Life" are not addressed in the textbooks. Thus, it can be argued that the textbooks are inadequate in terms of preparing students for struggling with the epidemic.

The limitation of teacher-student communication during the pandemic brings about many problems and requires students to learn the information alone at home, especially during the quarantine process, and to develop skills on their own. Hence, students will be alone with their textbooks and will refer to the textbooks as a bedside resource. Based on the findings of some studies conducted on textbook development (Wuryani, & Yamtinah, 2018; Elvita, Amini, & Ahmad, 2019; Amini, 2020; Prabowo, 2020), the conditions we are in have once more revealed the importance of the prepared textbooks. However, when the textbook (A) prepared for the first grade was examined, direct statements were not encountered in the book to inform students about how to combat the epidemic. While in the explanations of the objectives in the curriculum, the ways of protecting from infectious diseases, clever use of medicines and necessity of

going to the doctor are mentioned, these subjects were found not to be addressed in the textbooks.

Among the textbooks analyzed in the current study, it was seen that the smallest number of statements to inform students about how to struggle with the epidemic are in the first grade textbook, while the highest number of statements was found to be in the second grade textbooks. This might be because the first grade students are not literate yet. However, it is still necessary to increase the number of subjects to inform students about how to take precautions against the epidemic and how to deal with it in accordance with the student level in the textbooks to be taught in the first grade level. In the second grade textbooks, subjects such as self-care, personal hygiene, keeping the environment clean, protecting the health of one's own and the society, preventing the spread of microbes were mentioned. Although it is thought that these bits of knowledge and skills learned by students in the second grade level will allow them to use what they have learned about dealing with the epidemic in their real life, the number of statements in the second grade textbooks should be increased.

It was concluded that the information given to students by the third grade textbooks about the epidemic is less than the second grade textbooks. The third grade is a grade level where students can construct informative texts and statements better than the first two grades because of their developmental level. Seen from this perspective, it is highly possible to better inform students about the precautions to be taken against infectious diseases, rules to be followed during and after the disease, and the stages to be followed in the unit "Healthy Life" taught in the third grade level. It is thought that these additions to the textbooks to be taught in the third grade will make it easier for students to adapt to the conditions of the age.

Children's health greatly affects their physical and cognitive development (Sofiana, Gustina, Wardani, & Halimatusa, 2019). The existing research shows that most of the health problems occurring in children are due to hygiene and that they can be prevented to a great extent through hygiene education given to children (Öncü, Vayisoğlu, Lafci, Yurtsever, Bulut, & Peker, 2019; Sun, Wang, Adhikari, Ye, Meng, Wu, Mao., Raat, & Zhou, 2020; Pane, & Andayani, 2020; Pane, & Andayani, 2020; Sofiana, Gustina, Wardani, & Halimatusa'diyah, 2020; Sun, Wang, Adhikari, Ye, Meng, Wu, Mao, Raat, & Zhou, 2020). In addition, Allison & Attisha (2019), in their study examining the relationship between students' health status and the school attendance process, stated that if a child is sick, precise guidance should be provided about when to stay home and how to avoid minor illnesses or anxiety. Textbooks can be used as a complementary material in this guidance process. For this to happen, the health-related issues in textbooks must be qualified enough to inform students and help them take their own precautions.

Educational and instructional activities can play an important role in the development of health literacy in students, which is another issue that should be emphasized. In this context, steps to be taken towards improving health literacy in students should first start in primary school years and gradually spread across the life of



the individual in the ongoing process. Aghazadeh, Aldoory, & Mills (2020) investigated the effects of health literacy interventions in schools and found that students' health literacy scores increased significantly following the implementation of health literacy courses integrated into the core curriculum.

Health in school is an interdisciplinary field of study. As schools financially affect both health and education, they significantly determine the future well-being and economic efficiency of the population. Recent research shows that healthy children learn better and more educated adults are healthier (Kolbe, 2019). Defining quality school health education is critical to effective discussions about how it will affect the well-being of future generations (Videto & Dake, 2019). In their study conducted to evaluate the HealthLit4Kids program from the perspective of parents by using the Self-Determination Theory, Nash, Cruickshank, Flittner, Mainsbridge, Pill, & Elmer (2020) reached the conclusion that more research needs to be done on the most appropriate pedagogical approaches to support the health literacy development of children of primary school age, in particular on parental involvement, inclusion and optimization of education.

Commanding trust in students and parents is a vital element of institutional response. Alongside regular classroom lectures, teaching should include a range of assignments and studies that put COVID-19 in a global and historical context (Daniel, 2020). In Turkey, where discussions are continuing on resuming face-to-face education, it is necessary to secure the health of students and to convince parents that their children will be safe and secure in schools. Through assignments to be given to students and works to be carried out with student-family cooperation, both students and parents can be encouraged to act safely in the school within the context of combating the epidemic. School safety encompasses a wide range of behaviours, programs and risk reduction efforts to enable school children to reach their full potential in a safe environment (Cowell & McDonald, 2018). Promoting health behaviour, actively preventing health risks and motivating individuals to change their lifestyle (Jerylström & Adolffson, 2020) can also be done through an effective curriculum and textbooks that will support the curriculum. This will help ensure school safety and create a healthy school environment for students.

## **5. Recommendations**

Investigation of the fourth grade; that is, the last grade of the primary school and combination of the findings to be obtained for fourth graders with the findings of the current study can contribute to having a holistic picture of primary education in terms of struggling with the epidemic and to the re-organization of the information to be given to students in relation to combating COVID-19.

How much of the information given in the book can be examined that can be transformed into practice? This situation can be reviewed in cooperation with teachers after the schools are opened. In this way, students' level of knowledge about how to deal

with COVID-19 within the context of life sciences and the unit “Healthy Life” can be determined and thus the direction of new applications can be determined.

## 6. Conclusion

In the current study, it was aimed to determine the extent to which the unit “Healthy Life” in the 2018 Life Sciences curriculum prepares students for dealing with COVID-19. To this end, first the objectives in the curriculum and the subjects in the explanations of the objectives and then the statements that could be related to the epidemic were determined and analyzed. Moreover, it was determined whether there are objectives and subjects in the units other than the unit “Healthy Life” to reveal a holistic picture of how well children are prepared for struggling with the epidemic within the context of the Life Sciences curriculum. The obtained findings revealed that the objectives and subjects that can be related to the epidemic are largely limited to the unit “Healthy Life” and that there are few objectives and subjects that can be related to epidemic in the other units. Parallel to the objectives, the number of statements that could be related to the epidemic was found to be small in the textbooks. Among the textbooks analyzed in the current study, it was seen that the smallest number of statements to inform students about how to struggle with the epidemic are in the first grade textbook, while the highest number of statements was found to be in the second grade textbooks. Accordingly, it can be said that the textbooks have shortcomings in terms of preparing students to deal with the epidemic.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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## References

- Alemdar, Ç. (2019). *1<sup>st</sup> Grade Life Science Textbook*. Ankara: Ardıç.
- Allison, M. A., & Attisha, E. (2019). The link between school attendance and good health. *Pediatrics*, 143(2). Doi: <https://doi.org/10.1542/peds.2018-3648>
- Arslan, G., & Allen, K. A. (2020). Complete mental health in elementary school children: Understanding youth school functioning and adjustment. *Current Psychology*, 1-10. Doi: <https://doi.org/10.1007/s12144-020-00628-0>

- Benavot, A. (2011). Improving the provision of quality education: Perspectives from textbook research. *Journal of International Cooperation in Education*, 14(2), 1-16.
- Benes, S., Boyd, K. M., Cucina, I., & Alperin, H. L. (2020). School-Based Health Education Research: Charting the Course for the Future. *Research Quarterly for Exercise and Sport*, 1-16. Doi: <https://doi.org/10.1080/02701367.2020.1712315>
- Bentsen, P., Bonde, A. H., Schneller, M. B., Danielsen, D., Bruselius-Jensen, M., & Aagaard-Hansen, J. (2020). Danish 'add-in'school-based health promotion: integrating health in curriculum time. *Health promotion international*, 35(1), e70-e77. Doi: 10.1093/heapro/day095
- Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical literacy, physical activity and health: Toward an evidence-informed conceptual model. *Sports Medicine*, 49(3), 371-383. Doi: <https://doi.org/10.1007/s40279-019-01063-3>
- Cowell, J. M. (2018). Population health: School health services and school nursing. Reprints and permission: Doi: 10.1177/1059840517748720
- Cowell, J. M., & McDonald, C. C. (2018). School safety. *Journal of school nursing*, 34(4), 254-254. Doi: 10.1177/1059840518782215
- Creswell, J. W. (2012). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications.
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 39(3), 124-130. Doi: 10.1207/s15430421tip3903\_2
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The counseling psychologist*, 35(2), 236-264.
- Çelikbaş, E., Gürel, F. & Özcan, N. (2019). *3<sup>rd</sup> Grade Life Science Textbook*. Ankara: Ministry of Education Publications.
- Dokumacı, A., Özdemir Gök, N. & Dokumacı, Z. (2019). *2<sup>nd</sup> Grade Life Science Textbook*. Ankara: Ministry of Education Publications.
- Elvita, W., Amini, R., & Ahmad, R. (2019). The development of integrated thematic textbooks with scientific approach for elementary schools students. *JPGI (Jurnal Penelitian Guru Indonesia)*, 4(1), 63-67. Doi: <https://doi.org/10.29210/02369jpgi0005>
- Estacio, E. V., Whittle, R., & Protheroe, J. (2019). The digital divide: Examining socio-demographic factors associated with health literacy, access and use of internet to seek health information. *Journal of health psychology*, 24(12), 1668-1675. Doi: 10.1177/1359105317695429
- European Parliament and the Council of Europe. (2006). Action programme in the field of lifelong learning (2004-2006). *Official Journal of the European Union L* (327): 45-68.
- Fauzi, I., & Khusuma, I. H. S. (2020). Teachers' Elementary School in Online Learning of COVID-19 Pandemic Conditions. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 5(1), 58-70. Doi: <https://doi.org/10.25217/ji.v5i1.914>
- Grossoehme, D. H. (2014). Overview of qualitative research. *Journal of health care chaplaincy*, 20(3), 109-122. Doi: 10.1080/08854726.2014.925660

- Growitz, S. (2020). Importance of Mental Health Awareness for Elementary School Students.
- Guarner, J. (2020). Three emerging coronaviruses in two decades: the story of SARS, MERS, and now COVID-19. Doi: 10.1093/AJCP/AQAA029
- Guglielmo, D., Chantaprasopsuk, S., Kay, C. M., Hyde, E. T., Stewart, C., & Gazmararian, J. A. (2020). Nutrition Policies, Practices, and Environments in Low-Income Georgia Elementary Schools, United States, 2015-2017. *Journal of School Health*, 90(4), 278-285. Doi: <https://doi.org/10.1111/josh.12874>
- Gustafsson J. (2017). Single case studies vs. multiple case studies: A comparative study (Thesis). Sweden: Halmstad University.
- Hariyadi, D. (2020). Nutrition Education Through Storytelling Methods To Increase Consumption of Vegetables and Fruits For Elementary School Children. *Jurnal Teknologi Kesehatan Borneo*, 1(1), 41-47.
- Heriyanto, Y., Laela, D. S., & Mulyanti, S. (2019, November). Relationship Between School Dental Health Education Program Through Video and Interactive Calendar Against Changes in Tooth Brushing Behavior in Elementary School-aged Children at SDN ArcamanikEndah and SDN Mekarjaya in Bandung City and Their Families. In *International Conference On Interprofessional Health Collaboration and Community Empowerment* (Vol. 1, No. 1, pp. 399-401).
- Hong, D. S., Choi, K. M., Runnalls, C., & Hwang, J. (2019). How well aligned are common core textbooks to students' development in area measurement?. *School Science and Mathematics*, 119(5), 240-254. Doi: <https://doi.org/10.1111/ssm.12336>
- Högberg, B., Strandh, M., Petersen, S., & Johansson, K. (2019). Education system stratification and health complaints among school-aged children. *Social Science & Medicine*, 220, 159-166. Doi: <https://doi.org/10.1016/j.socscimed.2018.11.007>
- Hyde, E. T., Gazmararian, J. A., Barrett-Williams, S. L., & Kay, C. M. (2020). Health Empowers You: Impact of a School-Based Physical Activity Program in Elementary School Students, Georgia, 2015-2016. *Journal of School Health*, 90(1), 32-38. Doi: <https://doi.org/10.1111/josh.12847>
- Jadgal, M. S., Sayedrajabizadeh, S., Sadeghi, S., & Nakhaei-Moghaddam, T. (2020). Effectiveness of Nutrition Education for Elementary School Children Based on the Theory of Planned Behavior. *Current Research in Nutrition and Food Science Journal*, 8(1), 308-317. Doi: <http://dx.doi.org/10.12944/CRNFSJ.8.1.29>
- Jafari, A., MakvandGholipour, M., & KhoramiyanTousi, S. (2019). The effect of health promotion program on permanent dental health in elementary students. *Iranian Journal of Pediatric Dentistry*, 14(2), 79-88. d Doi: 10.29252/ijpd.14.2.79
- Jerlström, C., & Adolfsson, A. (2020). Prevention of Chlamydia Infections With Theater in School Sex Education. *The Journal of School Nursing*, 36(3), 203-211. Doi: 10.1177/1059840518811912
- Jourdan, D., Samdal, O., Diagne, F., & Carvalho, G. S. (2008). The future of health promotion in schools goes through the strengthening of teacher training at a global level. *Promotion & education*, 15(3), 36-38. Doi: 10.1177/1025382308095657

- Kalaycı, N., & Yıldırım, N. (2020). Comparative Analysis and Evaluation of Turkish Course Curricula (2009-2017-2019). *Trakya Journal of Education*, 10(1), 260-284. Doi: 10.24315/tred.580427
- Karabiyik, Ü. A. (2019). *3<sup>rd</sup> Grade Life Science Textbook*. Ankara: Evren.
- Karim, H. A. (2020). Health Literacy Among Rural Communities: Issues of Accessibility to Information and Media Literacy. *Jurnal Komunikasi: Malaysian Journal of Communication*, 36(1). Doi: <https://doi.org/10.17576/JKMJC-2020-3601-14>
- Kolbe, L. J. (2019). School health as a strategy to improve both public health and education. *Annual review of public health*, 40, 443-463. Doi: <https://doi.org/10.1146/annurev-publhealth040218-043727>
- Lambie, G. W., Solomon, C., Joe, J. R., Kelchner, V. P., & Perleoni, M. K. (2019). A school-based mental health counseling intervention with students in Title I elementary schools. *Children & Schools*, 41(3), 161-168. Doi: <https://doi.org/10.1093/cs/cdz011>
- Lee, J., Zhang, T., Chu, T. L. A., Gu, X., & Zhu, P. (2020). Effects of a fundamental motor skill-based afterschool program on children's physical and cognitive health outcomes. *International journal of environmental research and public health*, 17(3), 733. Doi: <https://doi.org/10.3390/ijerph17030733>
- Lodewyk, K. R., McNamara, L., & Sullivan, P. (2020). Associations Between Elementary Students' Victimization, Peer Belonging, Affect, Physical Activity, and Enjoyment by Gender During Recess. *Canadian journal of school psychology*, 35(2), 154-170. Doi: <https://doi.org/10.1177/0829573519856814>
- Mahmoedi, A., & Moshayedi, G. (2012). Life Skill Education for Secondary Education. *Life science journal*, 9(3), 1393-1396.
- Mahmood, K. (2011). Conformity to quality characteristics of textbooks: The illusion of textbook evaluation in Pakistan. *Journal of research and Reflections in Education*, 5(2), 170-190.
- Mataheru, W., Huwaa, N. C., & Matitaputty, C. (2020). The Development of Textbook Based on Constructivism in the Basic Mathematical Concept Course. In *Journal of Physics: Conference Series* (Vol. 1429, No. 1, p. 012006). IOP Publishing. Doi: 10.1088/1742-6596/1429/1/012006
- MEB (2009). *Primary Education 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> grades Life Studies lesson curriculum and guide*. Ankara: State Books Directorate Printing House..
- MEB (2015). *Primary Education 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> grades Life Studies lesson curriculum and guide*. Ankara: State Books Directorate Printing House.
- MEB (2018). *Primary Education 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> grades Life Studies lesson curriculum and guide*. Ankara: State Books Directorate Printing House.
- Merriam, S. B. (2018). *Qualitative research a guide to desing and implementation*. Selahattin Turan (Translated Ed.). Translation from 3<sup>rd</sup> Edition. Ankara: Nobel.
- Vocational Qualifications Authority (2015). *Turkey qualifications framework*. Ankara.
- Milligan, L. O., Tikly, L., Williams, T., Vianney, J. M., & Uworwabayeho, A. (2017). Textbook availability and use in Rwandan basic education: A mixed-methods study. *International journal of educational development*, 54, 1-7.

- Naseri-Salahshour, V., Abredari, H., Sajadi, M., Sabzaligol, M., & Karimy, M. (2019). The effect of oral health promotion program on early dental decay in students: A cluster randomized controlled trial. *Journal of caring sciences*, 8(2), 105. Doi: 10.15171/jcs.2019.015
- Nash, R., Cruickshank, V., Flittner, A., Mainsbridge, C., Pill, S., & Elmer, S. (2020). How Did Parents View the Impact of the Curriculum-Based HealthLit4Kids Program Beyond the Classroom?. *International Journal of Environmental Research and Public Health*, 17(4), 1449. Doi: <https://doi.org/10.3390/ijerph17041449>
- O'Connor, M., Cloney, D., Kvalsvig, A., & Goldfeld, S. (2019). Positive mental health and academic achievement in elementary school: new evidence from a matching analysis. *Educational Researcher*, 48(4), 205-216. Doi: <https://doi.org/10.3102/0013189X19848724>
- Onwuegbuzie, A. J., & Leech, N. L. (2007). Validity and qualitative research: An oxymoron?. *Quality & quantity*, 41(2), 233-249. Doi: 10.1007/s11135-006-9000-3
- Öncü, E., Vayisoğlu, S. K., Lafci, D., Yurtsever, D., Bulut, E. R., & Peker, E. (2019). Comparison of interactive education versus fluorescent concretization on hand hygiene compliance among primary school students: A randomized controlled trial. *The Journal of School Nursing*, 35(5), 337-347. Doi: <https://doi.org/10.1177/1059840518785447>
- Paakkari, L., & Okan, O. (2020). COVID-19: health literacy is an underestimated problem. *The Lancet Public Health*, 5(5), e249-e250. Doi: <https://doi.org/10.1016/>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health and mental health services research*, 42(5), 533-544. Doi: 10.1007/s10488-013-0528-y
- Pane, R., & Andayani, L. S. (2020). Relationship between the Cleanliness of Nails and the Usage of Footwear with the Incidence of Helminths Infections on Elementary Student in Sibolga of 2019. *Britain International of Exact Sciences (BIOEx) Journal*, 2(1), 45-52. Doi: <https://doi.org/10.33258/bioex.v2i1.107>
- Park, M., Thwaites, R. S., & Openshaw, P. J. (2020). COVID-19: lessons from SARS and MERS. *European Journal of Immunology*, 50(3), 308. Doi: 10.1002/eji.202070035
- Prabowo, M. A. (2020). Investigation of the Textbooks Based on Problem Based Learning to Improve Student Learning Outcomes in Thematic Learning. *International Journal of Educational Research Review*, 5(4), 373-379. Doi: <https://doi.org/10.24331/ijere.758174>
- Promptchara, E., Ketloy, C., & Palaga, T. (2020). Immune responses in COVID-19 and potential vaccines: Lessons learned from SARS and MERS epidemic. *Asian Pac J Allergy Immunol*, 38(1), 1-9. Doi: 10.12932/AP-200220-0772
- Rachmawati, E., Setiawan, A. S., Hayati, A. T., Saptarini, R. P., Carolina, D. N., & Rusminah, N. (2019). Determination of Oral Hygiene Status (OHI-S) and Dental Health Status (def-t) of Elementary School Age Children in Bandung City. *Journal of International Dental and Medical Research*, 12(4), 1447-1451.

- Rashidi Birgani, H., & Niknami, S. (2019). Effect of Oral Health Education on Adoption of Dental Caries Preventive Behaviors among Elementary Students Using Combined Training. *Health Education and Health Promotion*, 7(1), 1-7. Doi: 10.29252/HEHP.7.1.1
- Raval, G., Montañez, E., Meyer, D., & Berger-Jenkins, E. (2019). School-Based Mental Health Promotion and Prevention Program “Turn 2 Us” Reduces Mental Health Risk Behaviors in Urban, Minority Youth. *Journal of school health*, 89(8), 662-668. Doi: <https://doi.org/10.1111/josh.12805>
- Richards, K. A. R., Ivy, V. N., Wright, P. M., & Jerris, E. (2019). Combining the skill themes approach with teaching personal and social responsibility to teach social and emotional learning in elementary physical education. *Journal of physical education, recreation & dance*, 90(3), 35-44. Doi: <https://doi.org/10.1080/07303084.2018.1559665>
- Riolina, A., Hartini, S., & Suparyati, S. (2020). Dental and oral health problems in elementary school children: A scoping review. *Pediatric Dental Journal*. Doi: <https://doi.org/10.1016/j.pdj.2020.04.001>
- Samerski, S. (2019). Health literacy as a social practice: Social and empirical dimensions of knowledge on health and healthcare. *Social Science & Medicine*, 226, 1-8. Doi: <https://doi.org/10.1016/j.socscimed.2019.02.024>
- Sasube, L. M., & Luntungan, A. H. (2020). The Relationship Among Nutrition Knowledge, Vegetable Diet, Nutrition Status of Don Bosco Elementary Students, Manado. *International Journal of Global Operations Research*, 1(1), 1-5.
- Schmitt, S. A., Bryant, L. M., Korucu, I., Kirkham, L., Katara, B., & Benjamin, T. (2019). The effects of a nutrition education curriculum on improving young children’s fruit and vegetable preferences and nutrition and health knowledge. *Public health nutrition*, 22(1), 28-34. Doi: <https://doi.org/10.1017/S1368980018002586>
- Schreier, M. (2018). Sampling and generalization. *The Sage handbook of qualitative data collection*, 84-98.
- Selçuk, Z. (2008). *Education psychology*. Ankara: Nobel.
- Setiawan, A. R. (2020). Scientific Literacy Worksheets for Distance Learning in the Topic of Coronavirus 2019 (COVID-19). Doi: [10.35542/osf.io/swjmk](https://doi.org/10.35542/osf.io/swjmk)
- Sofiana, L., Gustina, E., Wardani, Y., & Halimatusa’diyah, T. (2020, March). Environmental Factors and Helminth Infections Among Elementary Students. In *5th Universitas Ahmad Dahlan Public Health Conference (UPHEC 2019)* (pp. 72-75). Atlantis Press. Doi: <https://doi.org/10.2991/ahsr.k.200311.013>
- Sudiana, I. K., Adiputra, N., & Adnyana, P. B. (2020). Development of Health Integrative Thematic Textbooks (Batik) To Provide Health Education in Elementary Schools. *JPI (Jurnal Pendidikan Indonesia)*, 8(2), 256-265. Doi: 10.23887/jpi-undiksha.v8i2.24103
- Sun, C., Wang, Q., Poudel Adhikari, S., Ye, R., Meng, S., Wu, Y., ... & Zhou, H. (2019). Correlates of School Children’s Handwashing: A Study in Tibetan Primary Schools. *International journal of environmental research and public health*, 16(17), 3217. Doi: <https://doi.org/10.3390/ijerph16173217>

- Şişman, M. (2015). *Introduction to educational science*. Ankara: Pegem.
- Taneri, A., (2017). The effect of case study with scenario based learning methods for gaining production and consumer knowledge. Doctoral Thesis, Gazi University Institute of Educational Sciences, Ankara.
- Tomokawa, S., Miyake, K., Takeuchi, R., Kokudo, S., & Asakura, T. (2020). Participation of children in school health in Japan. *Pediatrics International*. Doi: <https://doi.org/10.1111/ped.14347>
- Truman, E., Bischoff, M., & Elliott, C. (2020). Which literacy for health promotion: health, food, nutrition or media?. *Health promotion international*, 35(2), 432-444. Doi: 10.1093/heapro/daz007
- Ulusoy, Y. (2018). *2<sup>nd</sup> Grade Life Science Textbook*. Ankara: Beşgen.
- Vamos, S., Okan, O., Sentell, T., & Rootman, I. (2020). Making a Case for “Education for Health Literacy”: An International Perspective. *International journal of environmental research and public health*, 17(4), 1436. Doi: <https://doi.org/10.3390/ijerph17041436>
- Veugelers, P. J., & Schwartz, M. E. (2010). Comprehensive school health in Canada. *Canadian Journal of Public Health/Revue Canadienne de Sante'e Publique*, 55-58.
- Videto, D. M., & Dake, J. A. (2019). Promoting health literacy through defining and measuring quality school health education. *Health promotion practice*, 20(6), 824-833. Doi: <https://doi.org/10.1177/1524839919870194>
- Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *The Lancet*, 395(10228), 945-947. Doi: [https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X)
- World Health Organization (a). (2020). *Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations: scientific brief*, 27 March 2020 (No. WHO/2019-nCoV/Sci\_Brief/Transmission\_modes/2020.1). World Health Organization.
- World Health Organization. (2020). Coronavirus disease 2019 (COVID-19): Situation report, 72.
- Wuryani, M. T., & Yamtinah, S. (2018). Developing Thematic Textbooks based on Character Education at Elementary School. *Ilkogretim Online*, 17(1). Doi: 10.17051/ilkonline.2018.413768
- Xie, Z., & Yang, J. (2020). Autonomous learning of elementary students at home during the COVID-19 Epidemic: A case study of the Second Elementary School in Daxie, Ningbo, Zhejiang province, China. *Ningbo, Zhejiang Province, China (March 15, 2020)*. Doi: <http://dx.doi.org/10.2139/ssrn.3555537>
- Yamada, M., Sekine, M., Tatsuse, T., & Asaka, Y. (2019). Association between lifestyle, parental smoke, socioeconomic status, and academic performance in Japanese elementary school children: the Super Diet Education Project. *Environmental health and preventive medicine*, 24(1), 22. Doi: <https://doi.org/10.1186/s12199-019-0776-x>



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