

**THE RELATION OF 6TH GRADE SCIENCE TEXTBOOKS IN SECONDARY SCHOOL WITH DAILY LIFE:
AN EXAMPLE OF CELL****Ümmühan Ormanç***ummuhan@gmail.com***Salih Cepni***cepnisalih@yahoo.com***ABSTRACT**

Among the basic aims of education, raising students as individuals that have the knowledge regarding the field as science literates and relate and reflect this knowledge to their daily life takes part. For this purpose, the curriculum and lessons should be given importance to daily life. At this point, in order for teachers to be able to include the relationship with daily life in their lessons, it is necessary to include the relationship with daily life in the textbooks. In the study, it is aimed to analyse the case of relation the cell subject in sixth-grade science textbook with daily life. The problem sentence of the study was, "How is the relationship between daily life in the cell and the subject in the 6th grade science book?" In the study document analysis, which is one of the qualitative research methods, was used. The data is obtained from the science textbook advised by Turkey Ministry of National Education. In the evaluation of the data the control List of Relation with Daily Life (In Materials, Lesson Plans, Textbooks, Class Observations), which was developed by the researchers, was used. According to the findings obtained from the study, it can be said that relation with daily life in the cell subject is at a medium level with 41.6% frequency and at deficient level with 32.4% frequency. Within this context, the relation level of the cell subject in the sixth-grade science textbook with daily life is at medium and deficient. In this context, considering that textbooks are one of the main sources of teachers, it can be stated that this situation is a negative situation in terms of relation with daily life. At this point, it can be said that similar studies can be done on other subjects in order to understand the situation in the textbooks.

Keywords: *Science, document analysis, cell, relation with daily life*

INTRODUCTION

Providing opportunities for students to become valuable persons for both themselves and the community and also making them acquire the necessary knowledge and skills are among the basic goals of education. For this purpose, as Ozdemir (2010) suggests, comprehending and using new information and technological developments deliberately, is vital to become science literate. Science literacy is a compound of individuals' research-questioning, critical thinking, developing problem-solving and decision-making skills, being lifelong learners; and skill, behaviour, value, understanding, and knowledge about the science necessary for sustaining the sense of wonder about the world around them (Kavak, Tufan, & Demirelli, 2006). According to American National Science Education Standards science literacy is defined as understanding the process and scientific concepts necessary for economic productivity, personal decision making, and participating in social and cultural activities

(National Research Council [NRC], 1996). Within this context, science literate individuals are the people that have the scientific process skills regarding discovering natural environment and basic knowledge concerning science and those comprehended the relation between science and natural environment of social and technological changes and transformations (MEB, 2013).

In order to raise science literate individuals, it is necessary to face people with problems and conditions that they may encounter in daily life and provide offers them to find a solution. Science courses that take place in primary and secondary schools provide students encounter problems concerning daily life, help them recognize and search/question these problems, enable them to generate solutions for these problems and by this way make it easier for them to adapt environment/world. As it is suggested in MEB (2013), learning goals, are designed considering the connection between scientific knowledge and skill, perception and daily life. In other words, in science courses, it is aimed to acquire not only theoretical information they can use only in lessons but also skills for producing logical and constructive solutions to the problems they may encounter in daily life (Costu, Unal, & Ayas, 2007).

Many incidents that we come across in daily life are related to science (Akgun, Tokur, & Duruk, 2016). In other words, it is true that most of the subjects take place in science lessons take place in life itself and are related to events in real life or the results of them (Evcim, 2010). Within this context, it can be said that science and daily life are concentric and relating science with daily life has an important place in the process of discussing a subject. As Ay (2008) suggests, the relation of the knowledge to be taught with daily life explains students the reason why this information is taught. In this case, knowledge acquired in this situation is permanent as long as it is related with daily life and more easily applicable to new encountered lifelong incidents (Buyuksahin & Demirci Guler, 2014). That is to say, if scientific concepts are related with daily life incidents and used in solving daily life problems then they can be transferred to students more deeply (Balkan Kiyici, 2008). In other words, similarities of the subjects in real life are significant in terms of ensuring the learning and determining this learning level (Kamaraj, 2009). In other words, the more a subject is related with daily life, the more students and teachers are motivated. In parallel with this situation, it becomes easier for students to understand the subject.

Considering the studies on relation with daily life, it is determined that participants' relation level in different science subjects are at low-to-moderate level (Akgun, Cinici, Yildirim, & Koprubasi, 2015; Bozkurt, 2008; Dede Er, Sen, Sari, & Celik, 2013; Dogan, Kirvak, & Baran, 2004; Emrahoglu & Mengi, 2012; Pekdag, Azizoglu, Topal, Agalar, & Oran, 2013; Yedigargoglu & Demircioglu, 2012; Yigit, Devcioglu, & Ayvaci, 2002). As it is seen, every participant from primary school students to science teachers in every level has difficulty in relating science subjects with daily life. Similarly, Ay (2008) states that students cannot relate their knowledge with daily life in any field of science and they are extremely ineligible in using their knowledge explaining the environmental incidents. In this respect, what should be done in order to provide them relate science subjects with daily life must be emphasized. At this point, it is significant to determine the factors that are effective in working up a connection between science and daily life. Kocak Kosece (2013), lines up the factors that are effective in relating science and daily life as, teacher, curriculum, textbook, laboratory, learning approaches, and socio-economic factors. Each factor has a significant place in relating science with daily life and in this study textbook factor will be discussed. Because in Turkey, teachers, laboratory, learning approaches, and socio-economic factors that vary from person to person or from school to school. However, a single curriculum and related textbooks recommended by the Ministry of National Education are used. In this context, it can be said that science textbooks used by all teachers are common. In addition, one of the main sources for teachers is textbooks in our country and teachers teach their courses parallel to the textbooks. In this context, it is thought that the higher the correlation with daily life in the textbooks, the more the teachers' level of relationship with the daily life will be. For this purpose, one of the most important factors in relation to daily life was seen as textbooks and was included in this study.

Textbooks are the basic environment that analyses and explains the subjects take place in curriculum in a planned and regular way, and direct students in accordance with objectives of the course as an information source (Unsal & Gunes, 2002). In other words, a textbook is a tool which is prepared or chosen in relation to the teaching of the lesson (Guzel, Oral, & Yildirim, 2009). In this context, a textbook which is one of the biggest helpers of teachers is a material that determines considerably what (subject, concept, feature ...) is to be taught and how (activity, method ...) (Arslan & Ozpinar, 2009). Namely, textbooks should not only be designed for meeting the needs of the teacher but also, as Semerci (2004) states, should guide the education and learning activities. Within this context, it is said that textbooks are the materials that are being used actively by students and teachers and have a significant place in the education and learning process.

In literature, textbooks were analysed in terms of content, educational, language, wording, and method-technique etc. (Akinoglu, Sahin, & Gurdal, 2002; Aycan, Kaynar, Turkoguz, & Ari, 2002; Guzel & Adibelli, 2011; Maskan, Maskan & Atabay, 2007). In some of the studies in literature, (Akinoglu, Sahin, & Gurdal, 2002; Aycan, Kaynar, Turkoguz, & Ari, 2002; Guzel & Adibelli, 2011; Maskan, Maskan, & Atabay, 2007) textbooks were analysed in terms of scientific process skills. In their studies, Abd-El-Khalick, Waters, and Le (2008) attempted to determine to what extent chemistry books reflect the nature of science and Chiappetta and Fillman (2007) did the same in biology books. Moreover, Karamustafaoglu and Ustun (2005) aimed to evaluate science textbooks by teacher candidates, Guzel et al. (2009) aimed to evaluate physics textbooks by physics teachers. In Ceken's (2011) study, the figures related to heart and lung in 4th-8th grade science and technology textbooks were analysed in terms of the incorrect information given. In Ogan-Bekiroglu's (2007) study, how much textbooks were appropriate for teaching and learning was searched. Lastly, Ceken and Ayas (2010) studied on the learning goals in science and technology curriculum and determination of which can be adapted according to the geographic conditions of the region in which the program is applied. Within this context, studies that analysed science (also physics, chemistry, biology) textbooks in terms of different perspectives were often encountered. However, in the literature, there is no study on the examination of textbooks in relation to daily life. Considering that one of the main objectives of science programs is to gain the ability to relate to daily life, it is interesting that there is no study on this subject. As Unsal and Gunes (2003) stated the basic principle in the preparation of the textbooks was that textbooks should contain the behaviours determined in the curriculum. In other words, the activities that would enable gaining knowledge, skill, and characteristics and also textbooks should have the quality to guide these activities. In science curriculums, the relation with daily life or the use of the context-based approach is actually going back many years. It can be said that the first examples of this issue started in the field of chemistry with the name of "Salter's story" in England and this content was adopted by many countries such as Belgium, China (Hong Kong), New Zealand, Russia, Scotland, Slovenia, Spain, Switzerland and the USA (Bennett & Lubben, 2006). Similarly, it is seen that the context-based approach was embraced with ChemCom: Chemistry in the Community in America (Schwartz, 2006). At this point, in Turkey and many countries considering the fact that one of the basic aims of the science program is relating with daily life, it is thought that the analysis of the science textbooks in this respect will be important in terms of literature. In the studies taking place in the literature although relating to daily life takes place as a sub-dimension, a study, in which relating with daily life issue in textbooks is analysed deeply, cannot be found. Within this context, in the study, it is aimed to analyse the relating to daily life case of the cell subject in 6th grade science textbook. The main reason for the selection of the cell subject in the study is that science is an important issue in terms of relating to daily life, especially as the cell forms the basis of biology and is a micro level concept. The problem sentence of the study is determined as;

- How is the relationship between daily life in cell life and in the 6th grade textbook?

METHOD

In the study, in which the issue of the relation of the cell subject in sixth grade science textbook with daily life is analysed, document analysis, which is one of the qualitative research methods, is used. Document analysis is the process of assembling present records and documents concerning the study

and coding them according to certain norms and a system (Cepni, 2014). At this point, this study relation is suitable for document analysis.

The data is obtained from the science textbook advised by Turkey Ministry of National Education. For this purpose, the internet page of The Ministry of National Education was reviewed and the textbook advised for the sixth-grade science course was downloaded. The textbook was prepared by The Ministry of National Education and a commission. When the textbook is surveyed it is seen that the cell subject is the first subject of 'the systems in our body' unit.

In the evaluation of the data, "The Control List of Relation with Daily Life (In Materials, Lesson Plans, Textbooks, Class Observations)", which was developed by researchers, was used. For this purpose, firstly, literature scan was performed and a detailed evaluation tool that analyses the dimension of relation with daily life in the documents was not encountered. In order to develop the items of the evaluation tool, some studies on relation with daily life (Cepni, Ozmen, & Ayyaci, 2015; Elmas & Eryilmaz, 2015; Ultay & Donmez Usta, 2016) were analysed and these studies were utilized in the writing of the items. As a result of the studies, it was concluded that the evaluation tool consists of six dimensions and each dimension had its own substrates. The evaluation tool separated into three as sufficient, partly sufficient and insufficient and these parts were filled appropriately for the items. Subsequently, the evaluation tool was sent to five specialists who have a profession in the field of evaluation. Necessary arrangements were made according to the specialists' feedback. As the specialists stated that sufficient, partly sufficient and insufficient parts were not divided exactly, the evaluation tool which was started as rubric was converted to control list. In the control list, themes and codes were formed and the evaluation dimensions were constituted as good-medium-deficient-unavailable. In addition, it was concluded that the evaluation tool should have added two more dimensions and consist of eight themes. Then the preliminary application of the control list was performed, incoherent or similar items were amended. The final form of the control list takes place in Table 1.

Table 1
The Control List of Relation with Daily Life (in the Materials, Lesson Plans, Textbooks, Class Observations)

Theme	Codes	Good (3)	Medium (2)	Deficient (1)	Unavailable (0)
The daily life context of the subject	Starting the subject with a context corresponding efficaciously with the science concept discussed Appropriate context for the student's level The context which is taken from daily life The discussion of the concept should be appropriate for the proceeding of the context Being appropriate for being accordingly to the student Being appropriate for other education principles (from tangible to intangible)				
Daily life in activities/experiments	Having the activities/materials from daily life The activities taken solving a problem in daily life The activities having an equivalent in daily life The activities scrutinizing the connection of the events of daily life with science Associating the skills in the activities with the skills used in daily life				
Daily life in the application of excursion/observation/examination	Having an equivalent in daily life Establishing a connection with science Association with skills used in daily life The application having a proximodorsal principle Being appropriate for other education principles (from tangible to intangible, progressivity, relativity)				
Daily life in examples	Daily life examples should have an efficacious connection with the science concept discussed Examples should be appropriate for the student's level Examples should be from tangible to intangible Examples should be appropriate for the proximodistal principle Appropriate for the other education principles (such as relativity, progressivity)				
Daily life in concepts	Making a connection with the context while the subject is being explained Scrutinizing the concept with extensive examples from daily life Explaining a science concept in an event from daily life				
Daily life in simulation	Having the simulation from daily life Giving the similarities between the alike(concept) and the likened Giving the differences between the alike(concept) and the likened Having simulation examples appropriate for science concept The simulation should be appropriate for the student's cognitive level				
In-terms of visually	Establishing context-concept-visual connection The visual should be scientific The visual should be appropriate for the student's level(information given in the education level) The visual should be appropriate for the proximodorsal principle				
Daily life in questions	The question should directly include a problem/situation that the individual/society has While fictionalizing the question science concepts/formulas/laws should be in a pattern with the context The answer to the question should emerge as a result of the thinking process Should have the quality to be solved by the students using their daily life experiences				

While the analyses were made primarily, the cell subject was read and how the control list was going to be used was decided. The cell subject consisted of five subheadings and the control list was analysed according to these five subheadings separately. Since the activities and the evaluation questions were given at the end of the subject these were evaluated respectively. Analyses were made by two researchers. While the common points remained the same, the points that created difference were reviewed and shared decision was made. In the analysis of the data obtained as a result of the control list analysis, descriptive analysis method was used and examples were used for each theme.

FINDINGS

The cell subject that takes place in the first unit of the secondary school sixth grade textbook consists of five major topics and analyses were carried out using these five topics as a base. The findings regarding the theme of daily life context are shown in Table 2.

Table 2
Finding concerning daily life context theme of the cell subject

The daily life context of the subject	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
Starting the subject with a context corresponding efficaciously with the science concept discussed	-	-	-	-	2	6.7	3	10.0
Appropriate context for the students' level	1	3.3	1	3.3	-	-	3	10.0
The context which is taken from daily life	-	-	-	-	2	6.7	3	10.0
The discussion of the concept should be appropriate for the proceeding of the context	-	-	-	-	2	6.7	3	10.0
Being appropriate for being accordingly to the student	-	-	1	3.3	1	3.3	3	10.0
Being appropriate for other education principles (from tangible to intangible)	-	-	1	3.3	1	3.3	3	10.0
Total	1	3.3	3	9.9	8	26.7	18	60.0

As it is seen in Table 2 in terms of daily life context, it is understood that the context does not exist with 60% frequency and deficient with 26.7% frequency. Within this context, it can be said that in cell subject three major topic contents were not started with any context, and two subjects started with a context. However, in terms of the context of the two subjects, it is understood that the beginnings consist of a few introduction sentences and preparation questions. An example of this situation is given in Image 1:

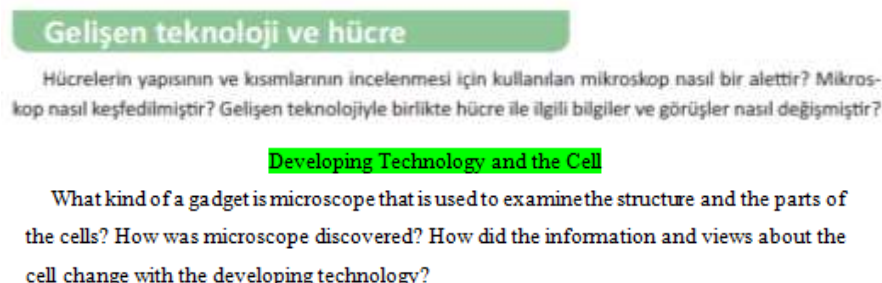


Image 1. Example of the daily life context of the cell subject

As it is seen in Image 1, in the developing technology, and the cell headline, the introduction was made with three questions. In this context, it can be said that the subject was too much deficient in terms of daily life context.

The findings regarding the theme of daily life in the activities/experiments that take place in the cell subject are indicated in Table 3.

Table 3

Finding concerning daily life in activities/ experiments theme of the cell subject

Daily life in activities/ experiments	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
Having the activities/materials from daily life	1	5.0	3	15.0	-	-	-	-
The activities have taken during solving a problem in daily life	-	-	2	10.0	2	10.0	-	-
The activities having an equivalent in daily life	-	-	4	20.0	-	-	-	-
The activities scrutinizing the connection of the events of daily life with science	-	-	3	15.0	1	5.0	-	-
Relating the skills in the activities with the skills used in daily life	2	10.0	2	10.0	-	-	-	-
Total	3	15.0	14	70.0	3	15.0	-	-

As a result of the textbook research, four activities took place in the cell subject and analyses were carried out over these four activities. According to the findings obtained, the fact that "having those activities/materials from daily life" with 15% frequency and with regards to "the fact that the activities should have an example in daily life" was at medium level with 20.0% frequency. From the general point of view, it can be said that daily life in the activities/experiments was at medium level with 70.0% frequency. One of the examples from the activities was indicated in Image 2.

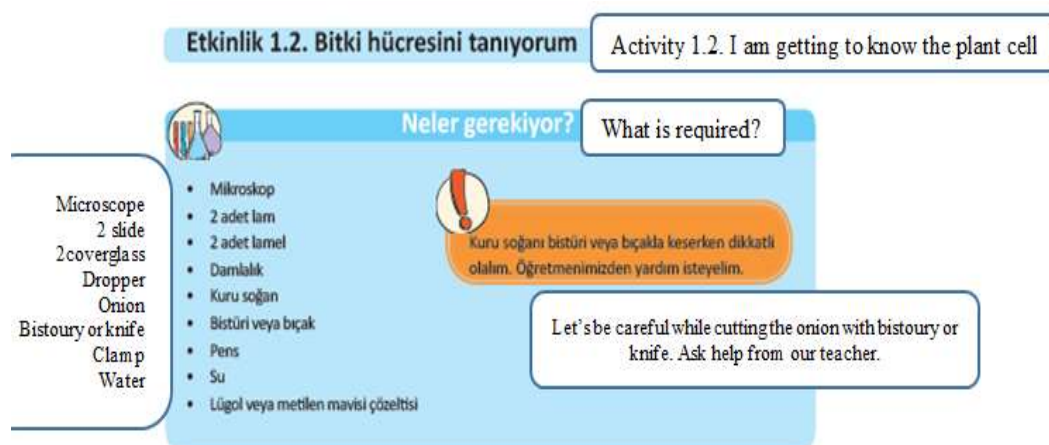


Image 2. Example of the theme of daily life in the activities/experiments of the cell subject

As it is seen in Image 2, in the 'I am getting to know the plant cell' activity generally the materials from daily life were used. In addition, it can be said that the activity had an equivalent in daily life. In the activity, the microscopic observation of a plant that exists in our environment was included. Since any excursion/observation/examination practice was not encountered in the process of discussing the

cell subject in sixth grade science textbook, an analysis could not be made in this dimension. The findings regarding daily life theme in the examples of the cell subject are indicated in Table 4.

Table 4

Finding concerning daily life in examples theme of the cell subject

Daily life in examples	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
Daily life examples should have an efficacious connection with the science concept discussed	1	4.0	3	12.0	-	-	1	4.0
Examples should be appropriate for the students' level	1	4.0	3	12.0	-	-	1	4.0
Examples should be from tangible to intangible	-	-	2	8.0	2	8.0	1	4.0
Examples should be appropriate for the proximodistal principle	-	-	1	4.0	3	12.0	1	4.0
Appropriate for the other education principles (such as relativity, progressivity)	-	-	2	8.0	2	8.0	1	4.0
Total	2	8.0	11	44.0	7	28.0	5	20.0

In Table 4, the findings concerning the condition of relating examples in five topics of the cell subject with daily life are taking part. As a result of the analyses in the textbook "the fact that the examples of daily life clearly related with the science concept discussed" and "the fact that the examples are appropriate for the students' level" were found at medium level with 12.0% frequency. Besides, from the general point of view, it is accomplished that the examples from daily life were at medium level with 44.0% frequency and at deficient level with 28.0% frequency. In Table 5, findings concerning daily life theme in the concepts of the cell subject are included.

Table 5

Finding concerning daily life in concepts theme of the cell subject

Daily life in concepts	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
Making a connection with the context while the subject is being explained	-	-	1	6.7	4	26.7	-	-
Scrutinizing the concept with extensive examples from daily life	-	-	2		2	13.3	1	6.7
Explaining a science concept in an event from daily life	-	-	1	6.7	3	20.0	1	6.7
Total	-	-	4	26.7	9	60.0	2	13.3

In the five topics that took place in the cell subject, at the part of explaining the subject/concept; "making a connection with the context while the concept is being explained" with 26.7% frequency and "explaining a scientific concept in an event from daily life" was at deficient level 20.0% frequency. From a general point of view, it is concluded that relation with daily life in the discussion of the subject was at deficient level with 60% frequency and at medium level with 26.7% frequency. An example of this condition takes place in Image 3.

Hücrenin tüm yaşamsal olaylarını kontrol eden yapıya çekirdek denir. Hücreyi denetleyen ve yöneten yapıdır. Hayvanlarda göz rengi ve kan grubu, bitkilerde ise çiçek rengi gibi canlılara ait kalıtsal bilgilerin nesilden nesile aktarılmasını sağlayan yapıları bulundurmaz. Bazı tek hücreli canlılarda ise çekirdek bulunmaz. Bu canlıların kalıtsal bilgileri hücrenin sitoplazmasına dağılmış hâtedir.

The structure that controls all biological functions of the cell is called **nucleus**. What supervises and commands the cell is structure. In animals eye color and blood type, in plants flower color include the structures that provide the transmission of genetic background that belongs to living beings from generation to generation. Some protists do not have a nucleus. The genetic background of these living beings is scattered in the cytoplasm of the cell.

Image 3. Example of daily life theme in the concepts of the cell subject

As it is seen in Image 3, there is a text regarding the teaching of nucleus subject. When the text was reviewed, it is seen that theoretical information concerning the nucleus subject was given, but there was almost no connection with daily life. As a result of the analyses when the simulation part, which was a sub-dimension of the control list, was concerned. It was realized that no simulation takes part in the explaining of the cell subject. In this context, the simulation theme could not be analysed. In addition, findings regarding the visual theme are as seen in Table 6.

Table 6
Finding concerning *visuality theme of the cell subject*

In terms of visuality	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
Establishing context-concept-visual connection	-	-	4	20.0	1	5.0	-	-
The visual should be scientific	1	5.0	4	20.0	-	-	-	-
The visual should be appropriate for the students' level (information given in the education level)	-	-	5	25.0	-	-	-	-
The visual should be appropriate for the proximodistal principle	1	5.0	4	20.0	-	-	-	-
Total	2	10.0	17	85.0	1	5.0	-	-

As it is seen in Table 6 the visual images that took place in the cell subject were at medium with 85.0% frequency and at good level with 10% frequency concluding that they were related with daily life. The data concerning daily life theme in the questions of the cell subject is included in Table 7.

Table 7
Finding concerning *daily life in questions theme of the cell subject*

Daily life in questions	Good		Medium		Deficient		Unavailable	
	f	%	f	%	f	%	f	%
The question should directly include a problem/situation that the individual/society has	1	3.1	-	-	5	15.6	2	6.3
While fictionalizing the question science concepts/formulas/laws should be in a pattern with the context	-	-	7	21.9	1	3.1	-	-
The answer to the question should emerge as a result of the thinking process	1	3.1	1	3.1	6	18.8	-	-
Should have the quality to be solved by the students using their daily life experiences	-	-	2	6.3	6	18.8	-	-
Total	2	6.3	10	31.3	18	56.3	2	6.3

As it is seen in Table 7, it is concluded that "while fictionalizing the question science concepts/formulas/laws should be in pattern with the context" was at medium with 21.9% frequency,

“emerging of the answer of the question as a result of a thinking process” was at deficient with 18.8% frequency and “having the quality to be sold by the students using daily life experiences” was at deficient with 18.8% frequency. From a general point of view, it can be said that the questions were related with daily life at deficient level with 56.3% frequency, at medium with 31.3% frequency and at good level with 6.3% frequency. The findings concerning the condition of relation with the daily life of the cell subject are as seen in Table 8.

Table 8
Finding concerning relation with daily life theme of the cell subject

Relation with Daily Life	Good		Medium		Deficient		Unavailable		Total	
	f	%	f	%	f	%	f	%	f	%
The daily life context of the subject	1	0.7	3	2.1	8	5.6	18	12.7	30	21.1
Daily life in activities/ experiments	3	2.1	14	9.9	3	2.1	-	-	20	14.1
Daily life in the application of excursion/ observation/examination	-	-	-	-	-	-	-	-	-	-
Daily life in examples	2	1.4	11	7.8	7	4.9	5	3.5	25	17.6
Daily life in concepts	-	-	4	2.8	9	6.3	2	1.4	15	10.6
Daily life in simulation	-	-	-	-	-	-	-	-	-	-
In terms of visibility	2	1.4	17	11.9	1	0.7	-	-	20	14.1
Daily life in questions	2	1.4	10	7.0	18	12.7	2	1.4	32	22.5
Total	10	7.0	59	41.6	46	32.4	27	19.0	142	100.0

When Table 8 is analysed, it is seen that the subject’s daily life relation was unavailable with 12.7% frequency, daily life in activities/experiments was at medium level with 9.9% frequency, daily life in examples was at medium with 7.8% frequency, daily life in concepts was at deficient with 6.3% frequency, in terms of visibility was at medium with 11.9% frequency and daily life in examples was at deficient with 12.7% frequency. In addition, from a general point of view, it can be stated that in the cell subject daily life was at medium level with 41.6% frequency and at deficient level with 32.4% frequency.

DISCUSSION

As a result of the study, it is understood that in the cell subject, the daily life context does not take place to a large extent. In addition, in some subjects it formed a context, but these can be said to be deficient. In these parts, generally a few introduction sentences related to the subject or preparation questions took part, and it is thought that these did not have a satisfying connection with daily life. This is because the introduction sentences included theoretical information relating the subject and questions had a structure similar to preparation questions. In this situation, there was a deficiency in the cell subject in terms of daily life context. Similarly, Kanli and Yagbasan (2004) concluded that physics textbooks did not include examples, stories, caricature etc. that would arouse attention and curiosity in students, and also did not present multiple and variable events from daily life in order to support learning. Despite the importance of relating with daily life in the program and the vision of science program being determined as science literacy individuals, it was an interesting result not to make a full relation with cell life in textbooks. This is due to textbooks have an important place for teachers to use daily life effectively in their courses.

As a result of the analyses made on the cell subject, four activities took place in the cell subject. According to the findings obtained it is determined that, in terms of “the activities/materials are from daily life” and “the activities having an equivalent in daily life” were at medium level. From a general point of view, it can be said that the daily life in activities/experiments were at medium level. When the activities were analysed generally it was understood that materials from daily life were used and the microscopic dimension of some situations in our environment was observed. What the literature is

concerned on this subject are that, Arslan and Ozpinar (2009) researched mathematics textbooks, they determined that the activities give importance to applications and subjects mentioned with new occupations relating with the daily life of the student and other fields. In their study concerning science programs, Aydin and Cakiroglu (2010) reported that the teachers were concentric with the daily life and they present activities that can be made with simple materials without a laboratory. On the other hand, in their study on physics textbooks, Guzel, Oral, and Yildirim (2009) stated that the view that experiments were not chosen from daily life adequately was largely accepted. Clearly there are differences in the literature regarding this situation. However, when it is considered on the subject basis, it can be said that the activities from the daily life take part in teaching the cell subject. In this context, it can be said that the activities related to cell are more related to the daily life. It was understood that the activities carried out were parallel to the fact that the materials contained in life and the situations that we could encounter in daily life. At this point, it is thought that it will be important to include activities in the lessons for relation to daily life.

As a result of the study, it is understood that the relation of the examples that took place in the subject with daily life was medium-deficient. According to the findings obtained, in the textbook "the fact that the examples of daily life have an efficacious connection with the discussed science concept" and "the fact that the examples are appropriate for the student's level" were found at medium level. As it is seen, the examples were appropriate for the students' level and the subject. However, it can be stated that the examples given were not efficaciously related with the daily life and were not chosen from the immediate environment. In their study, Akinoglu et al. (2002) stated that science book included examples from daily life, Guzel, Oral, and Yildirim (2009) remarked that the view that the examples in physics textbooks were not chosen from daily life adequately was largely accepted. Considering that one of the easiest steps in relation to daily life is to give examples from daily life, it is interesting that this situation is lacking in the science textbooks. It is thought that various examples suitable for different environments should be possible in the textbooks in order for teachers to give examples of their relation with daily life in their courses.

In the findings regarding the analyses of the cell subject, it is understood that, in the lecturing part of the subject/concepts "relating with the context while the concept is being explained" and "the explanation of the science concept inside from an event in daily life" was at deficient level. In addition, generally it can be said that in subject lecturing the relation with daily life was at deficient-medium level. When the textbook was analysed, it is thought that theoretical information was given in the part of the lecturing of the subject, almost no connection was made with daily life. As it is seen the cell subject of the textbook was intelligible and sufficient in terms of theoretical information. Similarly, in literature, Kose (2009) found that the legibility level of the cell subject in secondary school biology book was easy and legible. However, in the study it is understood that the daily life connection of this theoretical information was weak. In their study, in which they analysed science textbooks, Maskan, Maskan, and Atabay (2007) stated that whether the students could adapt the texts of basic scientific concepts with their daily life was partial. Within this context, considering the fact that relation with daily life in the lecturing part of the subject/concept and profound learning of the subject is significant, it is thought that there should be some supplementation about the relation with daily in concept teaching.

According to the findings obtained from the study, it is determined that the visuals that took place in the cell subject were related with daily at medium-good level. Nonetheless, in contrast to this situation some studies in literature (Guzel, Oral, & Yildirim, 2009; Maskan, Maskan, & Atabay, 2007) indicated that the pictures were not chosen from daily life adequately. It can be said that the pictures that take part in the studies generally are aimed at the cell and organelles of the cell and they are related with daily life at medium level. In this context, it can be said that cell pictures are suitable in textbooks. As a result of the study, it is understood that the questions that took place in the cell subject are deficient to a large extent, and some of them were related with daily life at medium level. When the evaluation questions were analysed it can be said that some questions were directly at knowledge level and some include stories from daily life or they were questions related with the daily life. When examining the questions in exams conducted in our country and international exams such as PISA,

TIMSS, it is seen that context-based questions were frequently included. At this point, in order for the students to be successful in these exams, they should face similar questions and the teaching process should be continued in this way. In this context, it is considered that the importance given to context-based questions especially in evaluation questions should be increased and textbooks should be updated in this way.

As a result of the study, it is understood that on the cell subject generally activities/experiments and examples are at medium level in terms of visuality and daily life, concepts and daily life in questions are at deficient level and the daily life context is unavailable. From a general point of view, it is understood that the cell subject in sixth grade science textbook daily life is at medium and deficient level. When the studies in the literature are concerned, teacher candidates found the book adequate in terms of relating biology subjects that take place in science book with daily life (Atici, Keskin Samanci, & Ozel, 2007). In their study, Koray, Bahadir, and Gecgin (2006) reported that a great number of students found the subjects in chemistry textbook related with daily life. In their study which they performed with teachers Aydin and Çakiroglu (2010) indicated that in primary school science and technology course the daily life was integrated with the program. Moreover, in the studies done with teachers while Aydin (2010) stated that they occasionally agreed with the idea that there should be a connection between the chemistry knowledge of the participants and the daily life of the students. Guven (2010) stated that the participants found the content of the introduction to science books being connected with the daily life sufficient or partly sufficient. On the other hand, Tasdemir (2011) determined that mathematics books were not created in a way that can be used by the students in their daily life, Akkus, Uner, and Kazak (2014) determined that generally students cannot use the information in chemistry textbook in their daily life. As it is seen there are differences on the relation with the daily life issue in the studies done with textbook analysis, teachers and students. However, it is probable that a parallel can be formed to make this difference different stages and course contents. In addition, when the ideas/point of views of the students or teachers are investigated it is natural for differences to emerge. Similarly, in Yildirim's study (2011) while the application of relating what is learned with daily life occur less often according to the students' ideas, teachers stated that this application occurred more often. As it is seen the answers that the students and teachers gave on the relation with the daily life differ from each other. However, one conclusion that should be kept in mind is that in the textbook, which has an important place for teachers, it is not good to relate with cell life in daily life.

CONCLUSION

As a result of the study, it is understood that the daily life connection level of the cell subject in the sixth-grade science textbook is at medium and deficient level. At this point considering the fact that relation with daily life is significant in order to learn the information permanently and become science literate students, it is thought that this point should be attached importance. In this context, especially at the point of canalizing the subject rather than giving only theoretical information, forming daily life contexts, and giving examples from immediate environment is significant.

As a result of the study; when the secondary school sixth grade science textbook and curriculum is analysed, it is seen that although the program does not ground on contextual learning, it emphasizes relating with the daily life. Within this context the introduction parts of the subjects should include interesting events, stories or questions from daily life. At the same time, although it is appropriate for the subject, in the textbook during the process of cell subject discussion no excursion/observation/examination application is encountered. Considering a subject inside from the nature itself it is thought that the applications of excursion/observation/examination can be added to the process of the cell subject discussion.

In the study, simulation part takes place in the control list of relation with daily life. As it is known simulations/analogies are techniques used often in relation with daily life. However, in the textbook analysis, the fact that this situation was never encountered is interesting. When literature is searched in the cell subject simulations are used often especially in teaching organelles and different simulation

examples are included related to this. However, as a result of the textbook analysis in the cell subject no simulation was encountered. In this context, it is thought that the simulations that have an important place in relation with daily life should be used more often in textbooks. At this point it is thought that these points should be taken into account while preparing the textbooks.

Besides, considering the fact that the activities that will be prepared by researchers regarding the subject discussion process, researches are needed to be done on this issue. In the study, analyses were made by specialists. However, in doing the same study with students, teachers or teacher candidates and the comparison of the data obtained will then be important in terms of literature.

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