

## **Life Sciences Curriculum in Turkey and the Evaluation of Values Education in Textbooks**

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**Abstract:** In primary schools in Turkey, life sciences is one of the lessons which take the responsibility of preparing students to the social life and help students gain intended values. In the vision of Life Sciences curriculum the aim is to raise individuals who are compatible with themselves, their society and nature, who know and protect themselves, their nation, their homeland and nature and also develops them. From this point of view, the role of life sciences lesson in having students gain values is clearly seen. In this research, life sciences curriculum, text books, workbooks based on this program are evaluated by taking the “scanning model” as a basis. During the research, life sciences textbooks and workbooks published by Turkish Ministry of National Education for the first, second and third grades were examined. The results of the research showed that in life sciences curriculum the biggest emphasis was put on patriotism, in textbooks it was on the value of affection and the workbooks mostly included activities related to the value of affection. It was recommended that gains including all the values stated in life sciences curriculum should be included and they should be taken into consideration while preparing textbooks and workbooks.

**Key words:** Life sciences • Values education • Curriculum • Textbook • Turkey

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### **INTRODUCTION**

Even though the schools do not cover “values education” lessons, it is taught through hidden curriculum. According to [1], the atmosphere in the school, teachers’ understanding and expectations of discipline contribute to the teaching and development of students’ values. From this point of view, it is crucial that students are given values education properly in primary school level in which a human is largely shaped for a child in terms of forming a balanced personality for his future.

In Turkish Primary School Institutions the task of preparing students for social life and having students gain intended values is undertaken by life sciences lesson in first, second and third grades as well as the other lessons. In the vision of life sciences curriculum, the aim is stated as to raise individuals who are compatible with themselves, their society and nature, who know themselves, their nation, their homeland and nature while protecting and developing them at the same time. From this point of view, the role of life sciences lesson in having students gain values is clearly seen.

In life sciences curriculum which has been gradually implemented since the year 2005, after the change in education program in Turkey, values and teaching them

have been given greater importance compared to previous curriculums. Values that should be taught in life sciences curriculum has been determined and explained. These values are: tolerance, affection, respect, peace, helpfulness, integrity, honesty, justice, patriotism, protecting and developing cultural values [2].

Textbook is one of the means that enables teachers to use their power in a better way and to teach in a more systematic way. Also, it enables students to revise what has been taught whenever and wherever they want in their own pace. That is why; it is one of the essential tools in students’ education especially in teaching values.

For this reason, textbooks should serve to the teaching of values as well as contributing to their personality development. According to [3]; textbooks used in primary and secondary schools are not able to ensure the teaching of intended values since they rarely explain whole features of heroes (in terms of their individual and cultural reflections).

When the life sciences book is prepared sensitive to values teaching, it can be one of the most important tools in values education as a course of its nature. These books may include texts, visual elements about values education and assessment and evaluation activities. Texts, visual elements, assessment and

evaluation studies and activities chosen for life sciences books can play an important role in raising students' awareness about values. For this reason, life sciences curriculum and textbooks prepared based on this program are expected to contribute to values teaching.

In Turkey, there are a lot of research done on the life sciences curriculum accepted in 2004 and the books which are prepared according to this program. However, they mostly dealt with approaches to teaching values or the situation of including a few values in the program [4, 5]. So far, the matter of evaluating values with a holistic approach in life sciences curriculum and the books prepared accordingly haven't been discussed in any research.

The aim of this research; in order to find out to what extent values education were included in primary school first, second and third classes' life sciences textbooks and workbooks which were published and delivered to be studied in 2011-2012 academic year by MONE and life sciences curriculum 2005.

## **MATERIALS AND METHODS**

**Research Model:** Research was done with scanning method. The reason why this method was chosen is because the subject of teaching values was investigated holistically. It is because scanning methods are approaches that aim to describe past and present situations in the way they exist [6].

**Data Collection:** Data resource of the research consists of first, second and third grade life sciences curriculum which has been applied gradually since 2004 and textbooks and workbooks for primary school first, second and third grade life sciences published and delivered to schools to be studied during 2011-2012 education and teaching term complying with the program prepared by MONE. In total three curriculums and six textbooks were examined in scope of this research.

**Analysis of Data:** Since this research works on written teaching curriculum and textbooks, analysis method was preferred as a qualitative research method. Content analysis consists of systematic analysis of written and verbal materials. What the people said and wrote was made quantitative by coding. The aim was to change verbal information into quantitative data [7]. Content analysis, investigates a social fact by making conclusions

about explicit and hidden content. Explicit content includes visible expressions and hidden content refers to underlying meaning of expressions [7-10].

First thing to do in content analysis is to determine main categories as analysis unit and sub-categories and then to define them. Later, content unit (sentence, paragraph or whole text) in which analysis will be done is decided on [7, 10]. There are qualitative and quantitative applications of content analysis. Quantitative content analysis was used in this research since the sub-categories was evaluated without classifying according to their qualifications. According to Berelson (1952, 135-146) the content of the messages is counted systematically in order to obtain accurate, objective and reliable data in quantitative content analysis.

Counting process is done by assuming that expressions or words chosen as a category have synonyms within the context unit. Here, the aim to make conclusions from explicit and hidden content.

In the research, the subject of "values education" was dealt with as the main category. All of the values in Life Sciences Curriculum were stated as sub-categories. These sub-categories are: "tolerance, affection, respect, peace, helpfulness, honesty, integrity, justice, patriotism, protecting and developing cultural values."

In the research, as the context unit "sentence" was chosen for textbooks and "activity" was chosen for workbooks. Then the frequency of usage of sub-categories in each sentence/activity was determined. In the counting process both the explicit and hidden content were taken into consideration. To be more precise, the words corresponding to sub-categories in each sentence/activity chosen as context unit, the statements explaining given sub-categories or sentences signifying the meaning directly were counted. The weight of each single concept was scored as one point.

In order to ensure the reliability, a method used by [11] and [12] before was taken as an example in the research. A randomly chosen curriculum (life sciences 2) and from two books (life sciences 1 and life sciences 3 textbooks) four sub-categories (affection, respect, charity, justice) were coded again in different times by two fields experts<sup>1</sup> (one is a textbook writer and the other is a researcher). At least %70 of consensus is required among the coders for the reliability of the research. A %97 of consensus was reached among researchers/coders in this research. Samples from analyzed curriculum and books weren't taken in order to ensure the validity of the

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<sup>1</sup>Dr. Süleyman Yiğittir, Emine Özel Eren

research. All of the texts from the books and curriculum mentioned were examined without being taken out. The values of categories in the curriculum and books are shown as frequencies in tables. Data were interpreted with the help of obtained statistical analyses.

**Findings:** In this section, results concerning the sub-categories of values education in 2005 life sciences curriculum in Turkey and first, second and third grade life sciences textbooks and workbooks are stated.

**Sub-Categories of Values Education According to Classes in Life Sciences Curriculum:** There are gains concerning the values in life sciences curriculum. The distribution of values education according to grades sub-categories is shown in Table 1.

As is seen in Table 1, in life sciences curriculum “patriotism” was mostly stated among the values education sub-categories; and it was respectively followed by “affection” (21) and “tolerance” (20), “respect” (18), “justice” (14), “protecting and developing cultural values” (14) and “tolerance” (10). On the other hand, values like “peace” (7), “integrity” (7), “honesty” (8) were less discussed in the curriculum. In life sciences curriculum, the most number of values are discussed in third grade (55); it was respectively followed by first grade (48) and second grade (39).

Some of the gains about the sub-categories of life sciences curriculum are given as example below:

- A.1.6. He accepts that he or his friends can make mistakes during the games. (LS1).
- A.1.16. He recognizes and shows respect for Turkish flag and Turkish National Anthem. (LS1).
- A.2.23. He spots his own and his friends’ unethical behaviours and shows positive values in his relationship with his friends. (LS2).
- B.2.35. He realizes that his community and homeland are unique places and accepts his homeland as homes. (LS2).
- A.3.8. He realizes his friends’ biased behaviours and shows unbiased behaviours himself. (LS3).
- B.3.41. He accepts his homeland just as his house and his school as home. (LS3).

**Sub-Categories of Values Education According to Classes in Life Sciences Textbooks:** The distribution sub-categories of values education according to life sciences textbooks of 1st, 2nd and 3rd grade is shown in Table 2.

As is seen in Table 2, in life sciences textbooks “affection” (103) was mostly stated among the values education sub-categories; and it was respectively followed by “protecting and developing cultural values” (47) and “helpfulness” (46), “patriotism” (39) and “respect” (24). On the other hand, values like “peace” (1), “justice” (6), “tolerance” (10), “integrity” (16) and “honesty”(19) were less discussed in textbooks.

In life sciences textbooks, the most number of values education sub-categories was included in second grade (145); it was respectively followed by third grade (105) and first grade (61). The values most included according to grades were “affection” in the first and second grade; “patriotism” in the third grade. The value of “peace” was only included in the third grade’s textbooks.

Some of the expressions concerning values education in life sciences textbooks are given below.

- Let’s love animals and protect them. (LS1, p.34)
- What would you like to do to commemorate Republic Day vehemently? (LS1, p.51)
- Everybody in Aslı’s family helps each other with affection, respect, solidarity and tolerance. (LS1, p.88)
- I am sorry, I have broken the vase. (LS1, p.92)
- By providing equal rights justice should be secured. (LS2, p. 21)
- I have completed most of the work I have to do. I can help the ones who need it. (LS2, p. 24)
- Individuals who love their country can’t harm their country’s assets. (LS2, p. 33)
- You always tell the truth, you know that we trust you. (LS2, p. 106)
- We should be tolerant to each other’s emotions and thoughts. (LS3, p. 21)
- I think you shouldn’t take your wallet (LS3, p. 61)
- We should treat all children with affection (LS3, p. 81)
- We should respect to other people’s rights while using the rights and liberties that we have. (LS3, p. 113).

**Sub-Categories of Values Education According to Classes in Life Sciences Workbooks:** The distribution sub-categories of values education according to life sciences workbooks grades in first, second and third classes’ is shown in Table 3.

As is seen in Table 3, in life sciences workbooks “affection” (19) was mostly stated among the values education sub-categories; and it was respectively followed by “respect” (14) and “tolerance” (9), “helpfulness” (8), “patriotism” (8). On the other hand, values like “peace” (1), “justice” (4), “integrity” (5).

Table 1: Frequencies Distribution of Values education According to Classes in Life Sciences Curriculum

Values education sub-categories	Curriculum (class)			Total F
	LS1 f	LS2 f	LS3 f	
1. Tolerance	10	2	8	20
2. Affection	7	5	9	21
3. Respect	8	3	7	18
4. Peace	2	2	3	7
5. Helpfulness	3	5	2	10
6. Integrity	1	3	3	7
7. Honesty	2	3	3	8
8. Justice	6	4	4	14
9. Patriotism	6	7	10	23
10. Protecting and developing cultural values	3	5	6	14
Total	48	39	55	142

Table 2: Frequencies Distribution of Values education According to Classes in Life Sciences Textbooks

Values education sub-categories	Textbooks (class)			Total F
	LS1 f	LS2 f	LS3 f	
1. Tolerance	5	1	4	10
2. Affection	20	61	22	103
3. Respect	7	8	9	24
4. Peace	-	-	1	1
5. Helpfulness	9	24	13	46
6. Integrity	6	6	4	16
7. Honesty	4	4	11	19
8. Justice	-	4	2	6
9. Patriotism	5	7	27	39
10. Protecting and developing cultural values	5	30	12	47
Total	61	145	105	311

Table 3: Frequencies Distribution of Values Education According to Classes in Life Sciences Workbooks

Values education sub-categories	Workbooks (class)			Total F
	LS1 f	LS2 f	LS3 f	
1. Tolerance	4	1	4	9
2. affection	5	5	9	19
3. respect	7	2	5	14
4. peace	-	-	1	1
5. charity	3	2	3	8
6. integrity	1	2	2	5
7. honesty	-	2	4	6
8. justice	1	2	1	4
9. patriotism	2	2	4	8
10. protecting and developing cultural values	1	3	3	7
Total	24	21	36	81

In life sciences workbooks, the most number of values education sub-categories are included in third grade (36); it was respectively followed by first grade (24) and second grade (21). The values most

included according to grades were “respect” (7) in the first grade and “affection” in the second grade (5). The value of “peace” was only included in the third grade workbook.

Some of the expressions concerning values education in life sciences workbooks are given below.

- The Activity of "Our Flag and National Anthem" (LS1, p. 29)
- The Activity of "Two Heads are Better than One" (LS1, p. 72)
- The Activity of "Our Values" (LS1, p. 74)
- The Activity of "Our Flag and National Anthem" (LS2, p. 28)
- The Activity of "With Its Pros and Cons" (LS2, p. 40)
- The Activity of "Hooray, It is Bairam" (LS2, p. 130)
- The Activity of "Wealth of life" (LS3, p. 17)
- The Activity of "Why do we celebrate Republic Day?" (LS3, p. 42)
- The Activity of "Honesty and Trust" (LS3, p. 53)

## **RESULTS AND DISCUSSION**

As a result of the research carried out to find out how much importance was given to values education in Primary School Life Sciences Curriculum in Turkey, it was found that values like "patriotism, affection, tolerance, respect, justice, protecting and developing cultural values, helpfulness" were mostly included. Besides, in the curriculum values were mostly included in 3<sup>rd</sup> grade; in the textbooks values were mostly included in the 2<sup>nd</sup> grade; in the workbooks values were mostly included in 3<sup>rd</sup> grade. In the textbooks and workbooks of Life Science, it was found that in addition to the values defined for gains, different values were also included. While in the textbooks and workbooks the value "affection" covered the most, the value "peace" covered the least. The results of this research have overlapped the study findings of [13] and [5]. In these researches "affection" was mostly uttered value by students. However, it can be said that according to results of this research all the values weren't included in the curriculum and balanced distribution of the values wasn't taken into account in the textbooks and workbooks. Besides this, it can be claimed that the statements aiming at values education included in the curriculum and the textbooks were not qualified enough.

Life sciences lesson is one of the lessons that can teach values education in the best way. With this purpose in mind, in the curriculum and textbooks and workbooks that will be prepared according to this program values education should be given importance. In the curriculum gains directly related to values should be included. In teaching materials, in addition to values' gains, gains

should be taken into consideration in teaching all the subjects holistically and when needed they should be stressed. Values such as "responsibilities, peace, freedom, being scientific, sovereignty, being hardworking, aesthetic, hospitality, cleanliness" which are not found especially in life sciences curriculum should be paid attention in curriculum and in teaching materials to be prepared accordingly.

The Education of Values in particularly life sciences and in all lessons curriculums should be featured. Meanwhile the most important study to be carried out is to find the answer of the question about which values to be taught because there is a conflict about which values to be taught in general curriculums. With this aim in 1996 studies on "Living Values Educational Program" prepared by UNICEF staff [14]; Ryan and Bohlin and Gallup, the applications of different countries such as the U.S.A. [15] should be examined; values classifications should be carried out according to the characteristics of the society with large scaled researches. In performing the classification of values and education of values institutions such as especially Turkish National Education Ministry, Culture and Tourism Ministry, Justice Ministry, Social Services Children Protection Institution should work together; besides, it is thought that being in close collaboration with the media is necessary. It shouldn't be forgotten that values can be turned into permanent behaviors through the educating of values to all members of the society particularly children.

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