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Comparative Analysis of the 2009-2018 Curricula of Life Science Course in Turkey

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

This study was conducted to determine the similarities and differences between the curricula of 2009 and 2018 Primary School Life Science Course (1st, 2nd and 3rd Grades) in terms of the curriculum elements (purposes, content, education-teaching process, assessment and evaluation). The data of the study, which was conducted in accordance with the case study model, were analyzed by making use of the "document analysis" technique. According to the findings obtained in the study, it was determined that there are many common/similar acquisitions in the curricula; that curriculum of 2018 has a relatively richer structure in terms of personal quality and values but some of the fundamental skills found in the previous curriculum are not included in. It is seen that a more comprehensive and systematic presentation is preferred for the curriculum of 2009 and there are some deficiencies in the curriculum of 2018 in relation to the elements of the curriculum in question. Similarly, it was also found out that quite limited knowledge is presented in the curriculum of 2018 about assessment-evaluation activities.

Keywords: Primary school; life science; curriculum.

1. INTRODUCTION

The ability of a country to provide the required manpower depends on the success of the education system implemented. This important role of education systems increases the importance given to education at every stage and level. When the rapidly changing environmental

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conditions and social dynamism are taken into consideration, the education process should be organized and developed in a way that can meet the needs of today and tomorrow in order to educate the new generations with the characteristics required by the societies more qualified [1]. It is doubtless that education systems will only be able to fulfill the tasks expected from them only in this way.

The development of the students within the educational processes should be considered as a whole and the necessary planning should be made in this direction. Cognitive, affective and psychomotor skills that students can use in life should be gained from the first moment they are involved in these processes. For this reason, efforts should be made to organize learning environments with these competences starting from the first stage, in which individuals meet the planned and curriculummed education processes.

Primary school is an important stage in which the academic foundations are laid in the life of the individual [2]. Students are constantly acquiring new knowledge, skills and behaviors in primary school. With this aspect, it constitutes a critical period in the development and education of the individual because the behaviors gained in this period directly affect the individual's future life [3].

As in all stages of the education process, the main objective of primary education is to prepare students for life and to raise them as happy, healthy and productive individuals. In order to achieve this aim, various courses and curricula prepared for these courses are used. Besides each of the courses included in the teaching processes contributes to the students' ability to have some skills, Life Science course, which is formed by using different disciplines, has an important place in achieving the educational objectives since many attitudes and behaviors can be acquired at the same time.

In Turkey Life Science is a course that is taught in the first and third grades of primary school and aims to transfer the basic knowledge and life skills that students will use in their daily lives. Different definitions of this course, which is important for the child to recognize and understand himself and his close environment, have been made by educational scientists. In one of these definitions, Life Science course is defined as süre the process of establishing a connection based on proof with natural and social reality" [4]. In another definition, Hayat A course that tries to comprehend the natural and social understanding of the child as a whole according to his level of understanding. Ak [5]. Beyond a theoretical explanation, it is remarkable that the qualifications that are expected to be kept in the teaching processes are specified based on the basic characteristics of the course.

In Life Science course, the child gains the necessary skills to adapt to the environment by examining the social and cultural environment in which he / she is in. In this course, the child is provided with experiences in which he / she can obtain accurate and sound information about his /her environment and environmental problems starting from an early age. Life Science course with a good teaching of the child's perception, attention, design, such as the ability to develop the ability to find the best way [6].

Life Science is a course that contributes to the development of the child as a bio-social and cultural asset from the first year. Behavioral sciences that examine human behaviors and group dynamics are used in life science, which includes the course in life. In addition, natural, human, social sciences principles and skills are included in education and training curriculums [7].

Given all these definitions and explanations it can be said that Life Science aims to contribute to the social and personality development of students as well as their cognitive development and utilizes meaningful, concrete, functional, current, valid the knowledge and skills, in other words konowledge and skills from life in order to reach this objective. It is also can be said that life science is an interdisciplinary course that provides the opportunity for students to learn in their natural environment.

Life Science course curriculum is important in terms of preparing students who will be citizens of the future from the early ages for social life [8]. It is not known exactly when and where Life Science course starts, but it can be said that both science and social sciences education has been started from the moment of human existence [9]. When the history of this course is examined in Turkey, it is seen that in the curriculum which was prepared for the first time in 1926, the course was given with the same name for the first and third classes. In the 1936 curriculum, more importance was given to the developmental characteristics of the students and the principle

of rat understanding the remote environment by moving from close environment was included in the curriculum. In the 1936 curriculum, collective education was adopted in the second period [10].

In the 1948 curriculum, the quality of Life Science course was emphasized better and this emphasis was expressed as "Life Science course, an observation, life, work and experiment course [6]. The 1968 curriculum is a relatively systematic curriculum developed by testing a draft curriculum prepared three years ago. In the 1998 curriculum, which was prepared after a long period of 30 years, unlike the previous curriculum, the general objectives of the courses, the objectives at the classroom level and the specific objectives and behaviors of the units were tried to be clarified

The constructivist approach adopted throughout the curricula developed by the Ministry of National Education as of 2005 has led to significant differences in the Life Science curriculum. Accordingly, in the 2005 Life Science Lesson curriculum, which was developed with a student-centered perspective, human beings were dealt with as a whole in terms of biological, psychological, social and cultural aspects and as both the subject and the object of change. The curriculum is organized in three themes that can encompass these areas of learning at the same time as a requirement of the collective education that has been specifically adopted for the course [11]. The curriculum was revised in line with the characteristics required to be gained to the students and the evaluation studies carried out at the private and official level and a new curriculum was developed in 2009.

The 2009 curriculum, prepared with a common understanding within the framework of the approach taken in the previous curriculum, is quite similar in nature. The content of the curriculum is organized under the same themes and the main difference between the two curricula can be said to be the distribution of attainments and acquisitions included or excluded from the curriculum content. A similar situation is observed in the change made in 2014. In line with the decision taken by the Ministry of Education of Turkey, some achievements have been made in the 3rd class of the curriculum. Accordingly, it can be said that the 2009 curriculum is largely an extension of the previous curriculum.

The last of the curriculum development studies carried out for the Life Science course is the Primary School Life Science Course (Grades 1,2 and 3), which was prepared as a draft in 2015. In line with the decision no. 60 dated 29.07.2015 taken by the Ministry of National Education, it was decided that the new curriculum will be implemented in schools starting from the first year of 2016-2017 academic year. Accordingly, the 2009 curriculum has become a curriculum that has completely ceased to be implemented as of 2018-2019 academic year. In 2015, a number of arrangements were made in the content of the curriculum, which was developed as a draft and the curriculum was revised and completed as of 2018. The main purpose of this curriculum is "to train individuals who have basic life skills, who know themselves, lead a healthy and safe life, assimilate the values of the society they live in, are sensitive to nature and environment, research, produce and love their country" [12].

As can be seen, the curriculum of Life Science course is reviewed by the Ministry of National Education as a requirement of curriculum development mechanisms; most of the time it is renewed. There will never be a claim that an education curriculum sufficient to achieve all of the educational objectives can be developed, nor will the best curriculum be achieved, no matter how well prepared the curriculums are. For this reason, although the curriculum development studies carried out by the ministry are seen as an important effort, it is expected that each curriculum prepared for this effort to bring the desired results will be more qualified than the previous one.

Since Life Science is a course aiming at acquiring the basic knowledge and skills that individuals should know and apply throughout their lives, the qualifications of the curriculum of this course are important for the future lives of individuals. For this reason, the aim of this study is to analyze the 2018 Life Science Course Curriculum in detail in terms of curriculum elements and to compare similarities and differences between the two curricula.

When the explanations included in the 2018 curriculum are examined sentences as "the implementation of the curriculums will be totally passed by the 2018-2019 academic year and the necessary updates will be made according to the follow-up evaluation results. Thus, our curriculums and scientific, social, technological, etc. needs will be ensured continuity" are taken attention [12]. Accordingly, it is thought that the findings of the study will provide important

feedbacks for the curriculum development activities stated by the ministry, besides puting forward the strengths and weak sides of the curricula. In this study, the following questions were sought for this purpose;

What are the similarities and differences between 2009-2018 Primary School Life Science Lessons (1st, 2nd and 3rd Grades) Curricula?

1. What are the similarities and differences between the 2009-2018 Primary School Life Science Course (1st, 2nd and 3rd Grades) Curricula?
2. What are the similarities and differences in the content of 2009-2018 Elementary School Life Science Course (1st, 2nd and 3rd Grades) Curricula?
3. What are the similarities and differences between the 2009-2018 Primary School Life Science Lesson (1st, 2nd and 3rd Grades) Curricula in terms of learning-teaching processes?
4. What are the similarities and differences between 2009-2018 Elementary School Life Science Lesson (1st, 2nd and 3rd Grades) Curricula?

2. METHODOLOGY

2.1 Research Model

This research was conducted according to case study model, which is one of the qualitative research methods. Qualitative research is an interdisciplinary holistic approach and adopts an interpretive approach to the research problem. The facts and events under investigation are handled in their own contexts and interpreted in terms of the meanings people place on them [13].

According to Creswell [14], case studies are a qualitative research method in which the researcher deeply examines one or more cases with data collection tools (observations, interviews, audiovisuals, documents, reports) containing multiple sources and defines the situations and themes related to the situations. In this research, 2009 and 2018 Life Science Lessons (Grades 1-3) Curriculum were accepted as a case study and the elements of the curriculum were examined in a comparative manner and interpreted by the researcher.

2.2 Data Sources

The sources of the data used in the research are the 2009 and 2018 Life Science Lessons 1-3. The curriculums have been developed by the Life Science Specialized Commissions established by the Board of Education and Training, and the 2018 curriculum, which has been gradually benefited, is being implemented in schools as of the 2018-2019 academic year. Since the names of the curriculums are frequently used in the research, LSCC abbreviation was preferred from time to time instead of the term Life Science Course Curriculum.

2.3 Data Collection and Analysis Process

The curriculums examined in the research were obtained from the official web address of the Ministry of National Education Board of Education (http // www.ttkb.gov.tr). The curricula were examined by using “document analysis technique” which is frequently preferred in qualitative research within the framework of research problems. Document analysis involves the analysis of written materials containing information about the cases or subjects that are intended to be investigated. Documents are important sources of information that should be used effectively in qualitative research [15].

3. RESULTS

3.1 The Similarities and Differences between 2009-2018 Primary School Life Science Course (1st, 2nd and 3rd Grades) Curricula

When the 2009 Primary School Life Science Lesson (1st, 2nd and 3rd Grades) Curriculum is examined in terms of objectives, it is noteworthy that the objectives of the course are not included in the curriculum. In the 2018 curriculum, it is seen that 14 special aims of the course are presented by eliminating this deficiency. When the specific objectives of the 2018 Life Science Course Curriculum are examined, it is seen that the majority of these aims are focused on the development of the skills that students are expected to use in their daily lives. The curriculum also aims to enable students to acquire social values, especially family values, with these skills; to know themselves and their close environment. Accordingly, it can be said that the primary aim of the curriculum is to help students acquire basic life skills and develop positive personal qualities.

When the curricula are analyzed in terms of basic skills, it is seen that 14 skills were included in the 2009 Life Science Curriculum and 22 skills

were included in the 2018 curriculum. Accordingly, research, communication, entrepreneurship, decision-making and self-management skills are common skills expressed in the 2009 and 2018 curriculum by the same name. In addition to these skills, the skills expressed in the curriculums are very similar. For example, the skill that is expressed as problem solving in the 2009 curriculum takes place as problem solving in the 2018 curriculum, while the ability to use information technologies takes place in the 2018 curriculum as the use of information and communication technologies. Similarly, the skill presented in the form of effective use of resources is included in the 2018 curriculum as the use of resources.

In addition to this presentation, which was made under the title "Skills ında in the 2009 curriculum, the "Skills to be Gained to Students" subtitle was tried to be elaborated with the skills and sub-skills related to some skills (10-13). Accordingly, for each skill, the behaviors expected to be performed by the students during the skill acquisition process are presented gradually. When the curriculum skills were examined holistically by considering both titles, it was found that the majority of the basic skills included in the 2018 curriculum were related to the sub-skills included in the 2009 curriculum. These skills are presented in Table 1.

As can be seen in Table 1, most of the skills in 2018 LSCC were created by narrowing the scope of the skills that would cover multiple behaviors in the previous curriculum. For example, the skill that was presented in the 2009 curriculum as using time, money and materials was expressed as "time management" in the 2018 curriculum. Another remarkable way to develop skills is to combine multiple sub-skills with close-meaning names under a single skill name, as in the 8 self-protection skill in the 2018 curriculum. Another similarity obtained by examining the explanations in 2009 LSCC is that the expression making observations, which is presented among the behaviors of" research "skills in both curriculums, is presented as one of the basic skills in the 2018 curriculum under the name" observation". In line with all these findings, it can be said that the basic and sub-skills included in the 2009 LSCC cover all the skills offered in the 2018 LSCC. Also critical thinking; creative thinking; problem solving; Using Turkish correctly, effectively and beautifully; recognizing the basic concepts of science; 5 skills, including the skills to recognize the basic concepts of themes, are only included in the 2009 LSCC, so there may be some lack of skills for 2018 LSCC.

In the comparison of the curriculums in terms of objectives, the achievements presented according to the grade level were examined.

2009 LSCC 1-3. It has been developed to include 292 attainments in total for class levels and 21 of these attainments belonging to 3rd grade level have been excluded from the curriculum with the revision made in 2014. When the 2018 Life Science Course Curriculum is examined, it is seen that a total of 148 achievements are given for 1-3 levels. Some of the attainments in the first

Table 1. Associated skills in the 2009 and 2018 Life Science Curricula

Skills in 2009 LSCC	Skills in 2018 LSCC
Self-Recognition and Monitoring of Personal Development, Career Planning, Change, Continuity	Perception of Change and Continuity
Health Protection	
Developing Environmental Awareness and Using Environmental Resources Effectively	Balanced Nutrition, Personal Care
Participation, Sharing, Collaboration and Teamwork	Conservation of Nature, Recognition of National and Cultural Values
Leadership	Cooperation
Providing Security and Protection	
Accurate Perception of Time and Space	Following the Rules
Self-Recognition and Monitoring of Personal Development	Perception of Space
Participation, sharing, collaboration and teamwork	Self Recognition
Using time, money and material	Social Participation
Compliance with health and safety rules / procedures, Protection from natural disasters, Safety in traffic, Saying no ", Protecting your health	Time management

year are repeated in the second and some of the attainments in the second year are repeated in the third year, and in this case, it is emphasized that the content and course should be regulated considering the development of the student [12]. The numerical distribution of the attainments in the curriculum according to grade levels is presented in Table 2.

Table 2. 2009 and 2018 life science course curriculum distribution of attainments according to grade levels

	2009 LSCC	2018 LSCC
1.Grade	86	53
2.Grade	95	50
3.Grade	90	45
Total	**271**	**148**

When the presentations of the attainments in Table 2 are examined in the curriculums, it is determined that the systematic approach is followed in 2009 LSCC and the attainments are coded according to the level of the class and the order of attainment. The achievements included in the curriculum are presented under the related themes according to class level and the tables prepared regarding the distribution of these achievements according to skills and personal qualifications and matching with Atatürkism subjects and intermediate discipline attainments are also included in the curriculum. In 2018 LSCC, the HB course code was added to the achievements, and the achievements were numbered based on class level, unit number and achievement number. In the presentation of the achievements, a different path was followed and a different section was allocated for each grade level in the curriculum and these sections were named as "1st Class Achievements and Descriptions."

When the achievements included in the 2009 and 2018 curricula are examined in detail by taking into account the related explanations, many common / similar achievements have been found. Although there are many common /similar attainments in the curriculums, it is remarkable that this number is higher in 1st and 2nd grade levels. In addition to the similarities determined between the acquisitions in the curriculum, there are some differences. When the distribution of the attainments in the curriculums according to the subjects of Atatürkism is examined, it is determined that there are 27 attainments in total, 12 of which are directly related to Atatürkism in the 2009 curriculum, while there are only 3 attainments in the 2018 curriculum. The said achievements Hayat It has been determined that in our country, Life has a place for each class level. These attainments by grade level HB.1.5.5. Knows the life of Atatürk, HB.2.5.3. Investigate the childhood of Atatürk and HB.3.5.8. It investigates the personality traits of Atatürk." According to this, it is thought that the fact that there are very few achievements related to Atatürkism issues in the 2018 curriculum is an important deficiency determined for the curriculum.

When the attainments in the curriculum are compared in terms of their expression, it is noteworthy that the attainments in the 2018 curriculum are presented in very general terms. Some of the achievements presented in these curriculums are exemplified in Table 3.

When Table 3 is examined, it is seen that multiple interrelated achievements at different grade levels in the 2009 curriculum are presented in a general way in the 2018 curriculum. Although the achievements presented in the 2018 curriculum have been supported by relevant explanations, it has been tried to clarify the behaviors expected to be exhibited by the students.

It was determined that some mistakes were repeated in the writing and presentation of a few of the attainments in 2018 LSCC. "HB.3.1.6. It recognizes the individual and social contributions of the school. "And" H.B.3.1.10 investigates the professions and characteristics of interest ". In the 2018 curriculum, there were also some deficiencies related to the skills that were aimed to be developed through the attainments. Accordingly, although the perception of change and continuity, development of career awareness and entrepreneurship skills were included in the curriculum content, it was seen that there were no attainments in the curriculum that would enable students to acquire these skills.

3.2 The Similarities and Differences in 2009-2018 Elementary School Life Science Course (1st, 2nd and 3rd Grades) Curricula

When the content of 2009 LSCC is examined, it is seen that the curriculum is organized into three learning areas: individual, society and nature and Excitement", "My Unique Home" and "Yesterday, Today, Tomorrow tem. The features considered in the selection of themes are presented as items

Table 3. Examples of the ways in which attainments are expressed in 2009 and 2018 LSCC

Attainments in 2009	Attainments in 2018
A.1.18. Realize similar and different aspects with friends. A.2.14. He acknowledges that his differences with his friends are natural. A.3.2. It recognizes that the similarities and differences between students are natural. B.3.8. He recognizes that differences are natural and tolerates people with different characteristics. B.3.9. Develops a positive body image by recognizing its physical properties. B.3.16. It treats individuals belonging to different social and economic groups without prejudice, acknowledging that they may have different perspectives.	H.B 2.1.2 respects individual differences.
B.1.2. Tells me his home address and phone number. B.2.5. Obtains information that can reach their home or family elders if necessary. B.3.4. Specifies the importance of having address information. B.3.5. Describe his / her house according to the place he / she knows by using basic concepts related to direction.	H.B 1.2.3. Describe the location of his house. HB.2.2.3. Know the address of the house
A.1.4. Plans how to spend a day and follows his plan. B.1.7. He balances the time he spends on playing and studying. B.2.10. Makes daily and weekly plans by using time expressions correctly and fits these plans. B.3.21. Makes daily and weekly work plans by prioritizing the works to be done and complying with the plans. B.3.22. Investigate the relationship between eating, sleeping, studying and playing hours and personal success and failure.	HB.1.2.6. Plans what he / she can do during the day. HB.2.2.8. Applies the work planned during the day.

in the curriculum and when these items are examined, they can increase the students' interest and participation in the selection of themes; it was determined that the topics that would enable it to enrich the learning-teaching processes were preferred. Although it is stated that the thematic approach has been used for content organization, it is correct to say that the themes presented by the same name in the curriculum will be expanded gradually according to the class levels.

The themes are systematically presented by classifying them according to class levels. Accordingly, in addition to the examples of the activity given for each acquisition in the themes, the related personal qualities under the title of explanations; other courses, interdisciplinary and skills. When the intermediate disciplines presented under the title of explanations are examined, disaster protection safe life; entrepreneurship; human rights and citizenship; career awareness; special education; guidance and counseling; health culture; sport culture and Olympic training. The curriculum also emphasized the need to integrate the curricula of different courses by linking themes with other courses. Accordingly, interdisciplinary approach can be expressed as another approach taken into consideration in content regulation.

In 2009 LSCC, some concepts were determined according to themes and classes and these concepts were presented in tables. Similarly, the themes of Kemalism were also taken into consideration in the curriculum. The subjects included in the table are given together with the related explanations and the points to be considered during the process are tried to be clarified for the curriculum implementers.

The content of the 2018 curriculum is designed as four hours per week in the first and second grades of primary school and three hours per week in the third year [12]. The curriculum includes six units that are jointly designated for three class levels. There is no information and explanation for these units named Life in our School, Life in our Home, Healthy Life, Safe Life, Life in our Country and Life in Nature. In the curriculum, the achievements included in the direct units are presented and for the majority of these attainments, some explanations are given in italic font on a bottom line. These explanations are exemplified below.

HB.1.5.6. Will be willing to participate in national day, holidays, ceremonies and celebrations.

29 October Republic Day, 23 April National Sovereignty and Children's Day, 19 May Commemoration of Atatürk and Youth and Sports Day, 15 July Democracy and National Unity Day, 30 August Victory Day and preparations for these days are emphasized.

HB.2.4.2. Complies with safety rules when traveling by means of transport.

Compliance with safety rules when traveling with vehicles such as private vehicles, public transport and school buses (using seat belts and child seats, not hanging out of windows, not disturbing the driver and his surroundings, traveling in standing and open vehicles, riding and getting out of the vehicle, etc.) focuses on. [12].

In 2018 LSCC, no different information is provided about the content element and it is considered that these explanations made for the attainments are quite insufficient to make inferences about the content. In addition, it is thought that the fact that no explanatory information has been provided for some of the attainments in the curriculum is another important deficiency.

Although the unit-based approach for content regulation is expressed in the curriculum, it can be said that the spiral approach has been taken into consideration as it was in the 2009 curriculum due to the fact that the same units are extended to the student level for three grade levels. When the findings obtained from both curriculums were evaluated in a holistic manner, it was concluded that there were no similarities other than those expressed for the curriculum, and the curriculums had quite different content structures.

3.3 2009-2018 Similarities and Differences of Primary School Life Science Course (1st, 2nd and 3rd Grades) Curricula in terms of Learning and Teaching Processes

The information about the teaching and learning processes in 2009 LSCC is presented under different titles in the curriculum. In the curriculum, the explanations made in the “introduction” section have been tried to give clues about the process. It is stated that life science course

should be carried out in a non-traditional way with a student-centered approach within the framework of the principles adopted during the development of the curriculum. Under the heading “Basic Structure and Approach of the Curriculum”, the constructivist approach taken in the development of the curriculum was explained; the basic features that should be taken into consideration in order to organize the learning-teaching processes appropriate to this approach are underlined. In another topic presented as “learning-teaching process vurgulan, it was emphasized that other curriculum elements should be taken into consideration in planning of learning activities and the methods that students could be active should be preferred and the importance of using the curiosity underlying learning motivation was stated. The title is divided into eight sub-titles and the general characteristics expected to be found in the learning-teaching processes are tried to be elaborated through these sub-titles. According to this, under the heading of “learning styles gereken, it has been tried to clarify the characteristics of the students who are dominant in different intelligence areas with the title of eka intelligence fields ken. The features that should be considered in the planning and implementation of teaching processes are explained under the subheading of uygulama implementing learning-teaching activity;; The examples of behaviors expected by teachers during the implementation of the activities are presented under the title of “teacher's role ”.

When the other sub-headings of the curriculum, “concepts”, “specific days and weeks”, the relationship between school and family ”and esi duration of the curriculum” are examined, the concepts that are targeted to be realized by the students within the scope of the themes within the mentioned headings, according to the level of teaching It is seen that the specific days and weeks that are expected to be included, the things to be done in order to increase the family participation for the successful implementation of the curriculum, and the time required to devote to the teaching processes according to the number of attainments included in each theme.

The importance of the activities that will be realized in the process in order to achieve the curriculum attainments in the 2009 LSCC is emphasized and it is stated that these activities are the most critical element of the curriculum [16]. Apart from the headings described in the previous paragraphs, sample lesson plans and examples of activities given for each acquisition were included in the curriculum in order to organize the learning-teaching activities that are distinguished from the other elements of the curriculum with the constructivist approach in accordance with the other features highlighted in the curriculum. By means of these examples, both in-class and out-of-school activities organized according to different methods and techniques were presented to clarify the expectations of teachers in learning-teaching processes and to guide the curriculum implementers. In the curriculum, it is also stated that the examples of the activities are not required to be used exactly, and that teachers can develop new activities provided that it is in line with the philosophy of the curriculum and it is emphasized that the sample activities should not be satisfied with the curriculum.

When the 2018 LSCC is considered in terms of learning-teaching processes, it is seen that most of the relevant information is included within the scope of ecek Considerations in the Implementation of the Life Science Curriculum. Under this heading, the features to be considered during the process are presented as items and through the 11 items in the list, some points that are expected to be considered by the teachers during the course of the course are tried to be addressed. Although these explanations are considered sufficient for the general framework of learning-teaching processes, it can be said that the lack of specific examples or tips for implementation is another important limitation determined for the curriculum.

In addition to the above-mentioned explanations, the tables for each grade level before the units and the related attainments are included in the information given about the learning-teaching processes. By means of these tables, it is aimed to help teachers in the planning of learning activities by giving the number of attainments in the units and the expected time (lesson hours) to be allocated for that unit. In addition, some of the achievements within the units have some clues about the process in the explanations. Some of these explanations can be exemplified as;

HB.1.1.11. Participates in the process of determining classroom rules.

The subject is explained with the necessity of rules such as using class materials carefully, keeping the class clean, paying attention to the timing in communication (listening, speaking by speaking, speaking on the spot, etc.), not damaging the belongings of friends and

friends, and keeping himself and his environment clean. Care is taken to determine in-class rules with the participation of students. [12].

As can be seen in the example, the explanations about the application of the attainments are quite superficial. In addition to the insufficiency of the explanations, the fact that no information has been provided for all the attainments, as in the content element, is seen as an important deficiency in terms of the implementation of the curriculum in desired quality and efficiency. Similarly, when the explanations about the achievements given under the title of Bil Structure of Life Science Curriculum incel are examined, it is remarkable that one sentence is tried to be emphasized, but it is quite insufficient to emphasize that the course should be regulated in this direction by taking into consideration the development levels of students in the process of common achievements. .

Apart from those mentioned above, there is no different finding regarding learning-teaching processes in 2018 LSCC. Accordingly, it can be said that the general explanations made in the 2018 curriculum and the tables showing the duration of the curriculum are similar to the 2009 curriculum. When the other information presented in the 2009 curriculum is considered, it can be said that it has a relatively richer structure in terms of learning-teaching processes.

3.4 Similarities and Differences between 2009-2018 Primary School Life Science Course (1st, 2nd and 3rd Grades) Curriculum in Terms of Measurement and Evaluation

The requirements for the measurement and evaluation activities in 2009 LSCC and the required features of these activities are presented under the title of ölçme measurement and evaluation in life science course". As in the teaching and learning activities, it was suggested that individual differences of students should be taken into consideration in assessment and evaluation and it was suggested to use multiple evaluation techniques which will enable the measurement of the progress and success achieved in all dimensions of the curriculum. It is underlined that the assessment techniques to be used in the process will predict all the skills of the students and that the tools appropriate to the requirements of the learning process should be used.

In the next section of the curriculum, assessment and evaluation scales and forms of these attainments are given along with some examples of activities aimed at helping teachers to measure and assess students' achievement [16]. Teachers were given flexibility for assessment and evaluation activities by stating that they could use these forms or the appropriate assessment tools they would develop according to their attainments by using these forms as often as they wanted. When these examples were examined, it was seen that there were no sample forms other than the observation form, performance assignment, grading key included in the sample lesson plans, and the other scales proposed for the attainments were not sampled in the curriculum. In order to help the practitioners by eliminating the deficiency determined in the curriculum, it is possible to benefit from the evaluation examples given under the title of Ortak Joint Studies Related to Measurement and Evaluation Studies in Primary Education Curriculum alan in the Primary School Mathematics Curriculum (Grades 1-5). It was. In addition to the alternative assessment tools proposed in the curriculum, it is stated that traditional measurement tools can be used in order to evaluate student achievement at regular intervals.

When the 2018 LSCC is examined in terms of measurement and evaluation processes, it is noteworthy that very limited information is provided in the curriculum. When the title "Measurement-Evaluation Approach "in the curriculum is examined, it is seen that 7 items that are valid for the whole curriculum are given. In these articles, it is emphasized that diversity and flexibility should be adopted and general principles that are expected to lead the measurement and evaluation processes are expressed. It was emphasized that the curriculum practitioners should take advantage of appropriate assessment-evaluation methods and techniques throughout the education processes such as attainment-focused, individual differences, not being satisfied with cognitive measures, and having a multi-focused assessment approach through these principles. There are no examples of what are the methods and techniques that have the characteristics stated in the curriculum, and no other explanation is given other than the information given about the measurement and evaluation

processes. Accordingly, it can be said that 2018 LSCC is extremely incomplete and inadequate in terms of measurement and evaluation activities. When the findings of both curricula are evaluated together, it can be said that in 2009, it is seen that the students' developments in different fields should be evaluated with a process-oriented approach, but the 2009 curriculum is relatively more explanatory in terms of content and guiding the curriculum implementers.

4. DISCUSSION AND CONCLUSION

Life Science is a critical course in which students learn the skills they need to grow up as individuals who can adapt to the world they live in by knowing themselves and their close environment. As the behaviors expected to be acquired in Life Science course are important for the future lives of individuals as well as education-teaching processes, it is expected that the curriculum of the course will be developed in such a way as to reach these aims. The aim of this study is to compare the curricula of the curriculum prepared in 2009 and 2018 in terms of curriculum components and to obtain operational feedback to ensure the continuity of curriculum development mechanisms.

In the study, the curricula were first compared in terms of objectives. Accordingly, it was determined that the specific objectives of the course, which was not included in the 2009 LSCC, were included in the 2018 LSCC. The fact that these specific objectives are included in the 2018 curriculum is considered important in order to determine the direction of the curriculum and to eliminate a significant deficiency in the previous curriculum. Taking into consideration the basic skills offered in the curriculums, it is important to understand the basic concepts of science by using critical thinking, creative thinking, problem solving, correct, effective and five other skills were included in the 2009 curriculum.

In elementary school, where the child's individual identity begins to form; Life Sciences course has an important importance in order to identify and solve the problems in children's daily life, to transfer the knowledge learned to daily life, to think analytically, to adapt to the country and the world, to become a conscious consumer and especially to be a producer and to develop scientific thinking skills [17]. Since these missing skills in the 2018 curriculum are among the basic life skills that students are expected to acquire within the scope of Life Science course, it may be suggested that 2018 LSCC should be revised in terms of basic skills in order to achieve the general objectives of the curriculum and to acquire the behaviors of the students.

In the comparison of the curriculums in terms of objectives, the achievements which are presented according to the grade level are examined. In 2009 LSCC there were 271 attainments for grades 1-3, while relatively few (148 attainments) were included in 2018 LLL, and some of the attainments in 2018 LSCC were presented jointly for all three grade levels. Another difference determined in terms of the attainments in the curriculums is that the attainments in 2018 LSCC are presented in relatively general terms.

As it is mentioned; as of 2014-2018 academic year, life science course which is 4 weekly lessons in the first and second year of primary school should be reduced to 3 lessons in the third year, in addition to Life Science course, it was decided that Science course will be offered to students gradually as 3 course hours per week [18]. Accordingly, the curricula should be developed by taking into consideration the said application change and the decreasing course hours should be taken into consideration as well as the attainments of the curriculum of the Science course to be implemented. For this reason, it is expected that in the 2018 curriculum, it is expected that the attainments of the 3rd grade level will decrease and other curriculum elements will differentiate. Although the 2018 LSCC is examined from this perspective, it is seen that the attainments in the curriculum have decreased significantly for three grade levels. The fact that the attainments in the previous curriculum were combined in the 2018 curriculum is seen as one of the reasons for the quantitative difference between the curriculums.

When the behaviors intended to be gained to the students are taken into consideration through the acquisitions in the curriculums, many common / similar achievements are included in the curriculum, and it is determined that approximately half of the achievements in 2018 LSCC are related to the achievements presented in the previous curriculum. There are significant differences between the curricula in terms of the number of achievements related to Atatürkism issues. Tay and Baş [19] stated that in their studies where they examined the draft of the 2018 LSCC, this situation was abandoned as Kemalism issues. Accordingly, although many changes and innovations

have been made in the curriculum elements, it is seen that this important deficiency determined for the draft curriculum still continues unfortunately.

In addition to the specific and general objectives that should be included in the curricula developed by the MEB, the curriculums should address the distant objectives of National Education. For this reason, the situation expressed for 2018 LSCC is the first of the aims of the National Education in the Basic Law of National Education No. 1739 “Atatürk is bound by Atatürk's reforms and principles and Atatürk's nationalism which is expressed in the Constitution; Adopting, protecting and developing the national, moral, human, spiritual and cultural values of the Turkish Nation; family, the country, the people who love and try to glorify, human rights and the Constitution, democratic, based on the basic principles at the beginning, secular and social state of law, which know their duties and responsibilities towards the Republic of Turkey and raise citizens brought into behavior them "(EB, 1983) it is thought to be an important deficiency in order to achieve its purpose. Accordingly, it is thought that the enrichment of 2018 LSCC in terms of Kemalism attainments will be beneficial for increasing the functionality of the curriculum.

Undoubtedly, the diversity of the attainments in the curriculums is important for the quality of the curriculums, but the increases or decreases that can only be observed quantitatively will not be sufficient for judging the prepared curriculums. However, in addition to the quantitative deficiencies stated, it can be said that the curriculum has some deficiencies in terms of quality as it was determined that some mistakes were repeated in the writing and presentation of the attainments in 2018 LSCC. It is considered that the revision and revision of 2018 LSCC before the implementation will benefit the curriculum in terms of functionality and scientificness.

When the curricula were compared in terms of content, it was seen that the thematic approach, which is one of the content editing approaches in 2009 LSCC, was utilized, whereas the 2018 LSCC was developed according to the unit-based approach. Accordingly, the content of the 2009 curriculum is organized within the framework of three common themes for grades 1-3, while the six units included in the 2018 curriculum are similarly valid for three grade levels. When the themes and units included in the curriculums are examined in detail, it is determined that the 2009 curriculum has a relatively more comprehensive and systematic content structure and it is tried to clarify the content element within the informations presented for each acquisition in the curriculum. On the other hand, although there are no explanations for all of the attainments in 2018 LSCC, it is concluded that the explanations made for most attainments are quite superficial. As it is known, the content element of the curriculum is a tool for target behaviors because first the target behaviors are determined and then the content is arranged in a way to help them gain these aims and behaviors [4]. Accordingly, it can be said that it is a necessity that the content element be arranged as a mediator that will enable the outcomes of the curriculum to be reached. When the 2018 LSCC is considered in line with this understanding, it is considered that it is insufficient to provide only unit titles and explanations about certain attainments in the curriculum. For this reason, it is envisaged that presenting the content element in a concrete, clear, understandable, simple order in order to eliminate the deficiencies stated in 2018 LSCC will be an effort that will benefit the curriculum's success.

When the 2009 and 2018 Life Science Lesson Curricula are examined according to the learning-teaching processes, it is determined that the information related to this curriculum element is presented under different titles in the 2009 curriculum. According to this curriculum, the approach which was taken as the basis of the curriculum was introduced, it was tried to underline the things to be done in the process and the planning of the teaching was tried to be facilitated through the given sample activities. In the study conducted by Gülener [20], the participant teachers expressed a positive opinion about the general situation of the curriculum and stated that they provided sufficient information about the applicability of the curriculum. These findings are similar to the results of the research. In the 2018 LSCC explanations regarding the implementation of the curriculum, it was observed that the features that should be considered during the course of the course were emphasized similar to the 2009 curriculum, but that only the clues related to the specific achievements were tried to be presented in the curriculum as in the presentation of the content item, and no activity sample was included in the curriculum.

Guidance is one of the basic features of a good curriculum. No matter how close to perfect a curriculum has been developed, it is necessary to translate what is written on paper to enable students to acquire the desired characteristics targeted in the curriculum. For this reason, a good curriculum has to guide its practitioners by making use of not only satisfactory explanations but also concrete examples. It is considered that it is necessary to review and organize the learning-teaching processes in 2018 LSCC in line with this perspective in order to be understood correctly by the curriculum stakeholders.

The last element taken into consideration in the comparison of teaching curriculums is measurement and evaluation. The features that are expected to be taken into account regarding the assessment and evaluation activities in 2009 LSCC are presented under the title Ölçme Measurement and Evaluation in Life Science Course". Apart from the explanations within the scope of this title, alternative assessment and evaluation tools that are suggested to be used by the teachers are tried to be exemplified through the activities given for some of the curriculum attainments. Since these examples were limited with observation form, performance assignment and graded scoring key, it was stated that curriculum practitioners could also benefit from different examples in the curriculum prepared for grades 1-5. Türkyılmaz [21] found similar results in his study and stated that measurement and evaluation techniques in the life science course curriculum were found to be partially sufficient by the teachers, and how alternative techniques would be applied and the techniques and forms used to evaluate all the skills included in the curriculum should be diversified. has expressed. In 2018 LSCC, the things to be considered within the scope of measurement-evaluation activities in the process are presented in a general way under the title of "Measurement-Evaluation Approach" in Curriculum. The curriculum does not include any other course-specific explanations or sample measurement-evaluation methods and techniques to embody the requirements. In the light of all these results, although it does not contain sufficient number and variety of samples in terms of 2009 LSCC measurement and evaluation processes, it has been determined that it is relatively preferable.

Decision making is one of the main actions expected by teachers in teaching processes. In order to make correct decisions by the teachers, the basis of the decision should have the necessary information about the resolution of the decision process [22]. Teachers may also need to make decisions during the implementation of curricula. One of the main functions of measurement and evaluation processes in the curriculums is to help teachers make the right decisions. The aim of this course is not only to determine the success or failure of the students, but also to provide feedback about the curriculum success by revealing their level of utilization. For this reason, it is critical that teachers, who are curriculum practitioners, make use of the most appropriate assessment and evaluation tools for achieving the right decisions. To ensure that regulations and changes in the curriculum are successful, it is very important to know how the program is perceived and adopted especially by. Teachers [23]. Accordingly, expanding the scope of the explanations given in 2018 LLLP and including sample scales is considered to be beneficial in order to overcome the deficiency determined in the measurement and evaluation dimension of the curriculum.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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