



PRIMARY SCHOOL SCIENCE COURSE WITHIN SCOPE OF THE EDUCATIONAL PROGRAMS IMPLEMENTED IN TURKEY

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Abstract: In this study, educational programs that have been used from past to present were examined chronologically to better analyze the nature of the current Science program in primary schools in Turkey. In this research, in which the document analysis method was preferred among the qualitative research methods, official documents published by the Ministry of National Education and its affiliates were used as the data source. The obtained documents were analyzed by content analysis method. The Science course programs used in the past in the country were discussed from a multidimensional perspective. The distinctive features and orientations that have appeared in the programs over the years have been examined in line with the nature of time. As a result of the research, it is seen that the Science program in Turkey today focuses on the skills of individuals to solve daily life problems in their environment to adapt to the 21st century people in parallel with the developments in science education in the world.

Key words: Science course, educational program, primary schools.

1. Introduction

1. 1. Science

Science refers to the process of discovering, testing, separating, and integrating the functioning and order in the natural environment in which humanity lives, with a purposeful, planned study, and the whole of safe information obtained in this way (Ministry of National Education, 1995a). This body of information contained in the concept of science, since the emergence of humanity on earth until today, has been filtered, organized, accumulated, transferred, and tested between generations for many years, and proven to be reliable and objective, through the information obtained during the interaction with its natural environment to meet its needs (Çilenti, 1985; Uluçınar Sağır, 2008). In this direction, science is an attempt to systematically examine nature and natural events through this information, and to make predictions about events that have not yet been observed, which enable humanity to better research and understand itself and the environment, and which lays a foundation for studies to obtain new knowledge in science subjects. It can be defined as an effort to be found (Çilenti, 1985; Kaptan & Korkmaz, 2001a). Physics, chemistry, biology, astronomy, geology, and all natural environments are within the scope of science (Okan, 1993).

1. 2. Science Education

Preparing the individual for life and providing support in the process of giving meaning to the situations that occur in daily life are among the main objectives of the education system. In the process of fulfilling these goals, science courses and other courses in this field are important (Coştu et al., 2007). Science education is defined as the whole of activities for the individuals to acquire the knowledge, skills and processes contained in science (Ministry of National Education, 1995a). In the developing world, where scientific and technological developments affect our lives more and more each day, the importance of science education, which will be given to individuals from primary school, is increasing day by day to capture the changing knowledge and create the manpower required by the age (Geban, 1996; Kaptan, 1999; Ministry of National Education, 2005a). Considering the

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importance of science and technology in shaping human life, the effectiveness of science education is important for a productive and high standard of living society aiming for a safe and livable world (Kober, 1992). The main purpose of science education, which provides individuals with rich experiences in an approach based on research and discovery can be stated as raising creative individuals who can handle and examine the universe and the environment they live in from a scientific point of view, have the ability to think critically, establish a relationship between science and technological developments, use the acquired knowledge and skills in daily life (Higher Education Board, 1997; Kaptan & Korkmaz, 2001b; Çepni et al., 2001; Hançer et al., 2003). In science education, individuals are expected to recognize the problems in their environment, make observations, gather information, make hypotheses, and perform tests based on them, interpret the data and findings, and reveal the relevant results, make analysis and generalizations based on the cause-effect relationship, and make the knowledge and skills they have gained operative (Geban, 1996; Aktamış & Ergin, 2006; Uluçınar Sağır, 2008).

1. 3. Science Teaching

Science teaching is perceived as a continuous effort that requires the individual to rediscover the current situations that are used to make sense of nature. According to this point of view, although science is cumulative knowledge, it also includes historical knowledge and method knowledge about the processes by which this knowledge is obtained. In this direction, the concept of "learning" gains weight as a quality in science teaching (Ministry of National Education, 2005b). In this context, science teaching becomes an active process in which students are put in the center, and it is aimed for them to strive for learning in line with the support they receive for the learning to take place (National Research Council, 1996). Therefore, approaches such as performing activities related to bringing to the surface and evaluating the knowledge that the student needs, like a scientist, instead of passively learning, actively working on knowledge production and acquisition, and bringing it to the discussion environment in appropriate ways form the basis for the preparation of current science education programs in Turkey (Ministry of National Education, 2005b).

In this direction, it is important to examine the programs that have been used from the past to the present to understand the nature of the Science program in force in Turkey today. In this context, this research aimed to evaluate the formation processes of the current program by examining all Science programs in Turkey chronologically.

2. Method

2. 1. Research Design

Qualitative research methods were used in this study. Qualitative research allows for the interpretation of concepts, facts, and situations from wide angles. Qualitative data collection methods such as observation, interview and document analysis are generally used in these studies. In this way, it is ensured that a qualitative process is followed to reveal perceptions and events in a realistic and holistic way in the natural environment (Bowen, 2009; Yıldırım & Şimşek, 2008). In the study, it was aimed to examine the Science programs applied in Turkey from past to present to better understand the nature of the science program currently in practice in country. In this direction, document analysis method, a qualitative research method, was preferred as the model of the research. Documents are one of the most important and effective data sources of qualitative research (Yıldırım & Şimşek, 2008; Creswell, 2017). The document analysis method includes the analysis of written materials containing information about the case or cases that are aimed to be investigated (Yıldırım & Şimşek, 2008).

2. 2. Data Source

It is thought that the most reliable documents that can be used for the purposes of the research are the documents published by the official institutions in the country. For this reason, official documents published by the Ministry of National Education and its affiliates constitute the data source of document analysis.

2.3. Data Analysis

After the data were collected from the official documents published by the Ministry of National Education and its affiliates, which constitutes the data source, they were analyzed by content analysis method. In content analysis, it is essential to gather similar data within the framework of certain concepts and themes and to interpret them in a way that the reader can understand (Yıldırım & Şimşek, 2016). To ensure validity and reliability in the research, the documents were analyzed separately by two researchers.

3. Findings

It is known that Turks attach immense importance to knowledge and education from Central Asia to the present day. On the other hand, the systematization of education throughout the country was realized with the “Law of Unification of Education”, which was put into effect in 1924 after the proclamation of the Republic of Turkey. With this law, all activities related to education and training in the country were gathered under the Ministry of National Education and comprehensive innovation studies related to education and training were started (Law of Unification of Education, 1924; Binbaşlıoğlu, 1995; Varış, 1996). However, in this period, it is seen that the “Primary Education Temporary Law”, which came into force in 1913, continued to be implemented partially (Akyüz, 1993). In the program development studies conducted between 1924-1930, the idea of adopting the republic and the innovations brought by the republic to the generations to be raised with an understanding emphasizing the national qualities was prioritized (Yüksel, 2003).

3.1. 1924 Primary Schools Program

In this period, based on the program in the “Public Primary Schools Directive”, which came into force in Ottoman era in 1915 for the first time, a transitional program was introduced under the name of “Primary Schools Program”, which included separate courses for male and female students (Genç, 2007). In the program, information about the subjects included in the course and the teaching methods to be used is given for each course; the objectives of the courses are placed in the program in a scattered manner instead of being given under separate headings under the courses (Aslan, 2011).

It is seen that the course named “Natural Study, Agriculture, Hygiene”, which forms the basis of the Science course, was included in the 1924 program. It has been decided that this course will be taught as three hours per week for the 1st and 2nd grades, and two hours per week for the 3rd, 4th, and 5th grades. However, by emphasizing the necessity of conducting the course in a natural environment, giving importance to practices and environmental analysis it has been suggested to organize study trips to observe plants, animals, and natural events in natural environments (Aslan, 2011).

3.2. 1926 Primary Schools Program

After the 1924 program remained in effect for two years, the 1926 program was put into effect as the first program that reflected the understanding of education in the republican era. This program was prepared based on concepts such as “Life Sciences”, “Collective Education” and “Working School” introduced by John Dewey (Wilson & Başgöz, 1973). With the 1926 program, the five-class primary school was divided into two phases. First part of the “Natural Study, Agriculture, Hygiene” course content in the 1924 program, was named “Life Science” in the 1926 programs first phase (Tuğluoğlu & Tunç, 2010).

It is seen that science education was conducted as two different courses under the name of “Nature Lessons” and “Matters Lessons” in the second phase of primary education. Of these courses, the course called “Nature Lessons” is two hours per week for the 4th and 5th grades. On the other hand, it has been decided that the lesson named “Matters Lessons” will be taught as two hours per week only for the 5th grades. “Nature Lessons” in the program covers basic information about farming such as animals, plants and cultivation of agricultural products, the interaction of living and non-living things with each other and the environment, human body and health issues, and environmental awareness (Aykaç et al., 2011). “Matter Lessons” has the following dimensions: “States of Matter”, which includes topics such as matter, solids, liquids, gases and state change; “Force”, which includes gravity,

heat, light, and electricity; “Weather”, which includes topics such as gases, pressure, temperature, wind, based on air-related topics; “Water”, which includes titles such as water pressure, floating and sinking substances, clean water sources and water-borne diseases, “Simple Machines” and the usage areas of wind and water power in daily life “Renewable Energy Resources” (Zan et al., 2016).

3.3. 1930 Village Schools Program

Enacted in 1926, the program remained in effect for ten years. During this period, as of 1930, the “Village Schools Program” was prepared based on the principles of the city school program to raise village children in line with the conditions and needs of the village (Gözütok, 2003). In this program prepared for village schools with three classes, there are no courses called “Nature Lessons” and “Matters Lessons” because there is no second phase of primary school in the program.

3.4. 1936 Primary Schools Program

In the program development studies carried out in the period between 1930-1950, the idea of making the methods in developed countries more effective, foreign experts such as John Dewey were invited to the country to carry out studies on existing programs, and the ideas of loading the students with more information than before and raising intellectual individuals are at the forefront.

It is seen that the programs developed in this period were in the form of the “Curriculum Program”, in which the courses and subjects and the course hours allocated to them were specified (Dewey, 1939; Ministry of National Education, 1990; Yüksel, 2003). It is seen that the principles of “National Education” were included in the first part of the 1936 program, entitled “Primary Schools Goals”. In the program, the objectives related to the course were specified in the introduction part of the courses, and the principles suggested by the teacher to be considered in the teaching of the courses were also explained (Akbaba, 2004). A new course was created under the name of "Natural Knowledge" by combining the “Matters Lessons” and “Nature Lessons” in the 1936 program and the 1926 program (Çelenk et al., 2000). It has been decided that the newly created course will be taught as three hours per week for the 4th and 5th grades.

In the 1936 program it is seen that natural resources and home economics practices in the country are added to the content of the “Nature Knowledge” course, and the necessity for students to conduct experiments individually and the importance of thinking and decision-making processes are emphasized (Aykaç et al., 2011). The program also emphasizes the necessity of creating teaching tools such as aquarium, terrarium, and insectarium in schools, and making the best use of them for observation purposes in schools (Ökten, 1939).

3.5. 1939 Village Primary Schools Program

The 1936 program continued to be implemented until 1948. During this period, the study period of village schools was increased to five years, according to the decision made at the "1st Council of National Education" convened in 1939. As a result of this decision, the “Village Primary Schools Program”, which is focused on practical lessons about village life, was put into effect based on the 1936 program (Genç, 2007). In this program, besides the lessons such as music and gymnastics, it is seen that the natural science lesson is not included in the program (Boykoy, 2011).

3.6. 1948 Primary Schools program

In accordance with today's modern program development approach, “Training Program” studies have started to be conducted since the mid-1940s. In these years, the implementation of different primary school programs in villages and cities creates a difference in terms of educational standards. For this reason, “Board of Education and Discipline” asked teachers for their opinions on the structure and practices of village and city programs.

As a result of this study, it was decided to combine the programs of village and city schools and the “1948 Primary Schools Program” was prepared and put into effect (Arslan, 1999). With the 1948 program, the objectives of national education were rearranged into four groups under the headings of “Social”, “Personal”, “Human Relations” and “Economic Life”, and their applications in primary

school classrooms were explained (Binbaşıoğlu, 1995). In the 1948 program, it was decided that the “Nature Knowledge” course would be taught as three hours per week for the 4th and 5th grades. However, only one lesson per week is reserved for the course called “Agriculture-Working”, valid only in village schools (Aykaç et al., 2011).

When the objectives of the “Nature Knowledge” course in the 1948 program are examined, it is noteworthy that they were prepared in a different and comprehensive way compared to the previous programs. Different from the aims of previous programs, the program aims to keep students' curiosity about learning alive from their childhood, to develop positive attitudes towards the course, to enable them to observe and comment, to get rid of dogmatic thinking structures acquired from traditions and customs, to enable them to understand the importance and benefits of science, to use scientific opinion and method, enable them to use their skills and to gain them to the society as constructive individuals with the habit of critical thinking (Aykaç et al., 2011).

3.7. 1962 Primary Schools Program Draft

After the 1948 program was put into effect, it is seen that many negative criticisms were brought about the program. The heavy structure of the program due to the many courses and the subjects in the course content, the weakness of the connection between the courses, the lack of attention to individual differences in teaching and the passive position of the student in the teaching process necessitated the preparation of a new program (Binbaşıoğlu, 1995; Genç, 2007). In this direction, studies on the 1962 program draft, which will be the source of the 1968 program, have been started. To prepare the 1962 program draft, a commission of 108 people was formed from teachers, primary school principals, inspectors, national education directors and administrators, experts, and parents. This commission then continued to work in committees that would create distinct parts of the program and course contents and prepared the draft of the program (Arslan, 1999). In the 1962 program draft, it was decided to give science lessons under the name of “Science and Nature Knowledge” by combining the “Nature Knowledge”, “Family Knowledge” and the “Agriculture-Working” lessons applied in village primary schools in the previous program (Ministry of National Education, 1969). It has been decided that the newly created course will be taught as five hours per week for the 4th and 5th grades.

The draft of the program was implemented in pilot primary schools for five years, and it was finalized with the evaluation and development studies conducted during this period and started to be implemented in all primary schools as a 1968 program (Genç, 2007). In this program, while focusing on locality, problem solving, planning, examination-research and project studies, the principle of students being active in the lesson and positioning teachers as guides and resource persons has been adopted (Karagöz, 1965; Ministry of National Education, 1995b). In the draft, instead of teachers being active in education and training, it was adopted that students should be active and that teachers should function as guides and resource persons (Karagöz, 1965).

3.8. 1968 Primary Schools Program

With the 1968 program, it was decided to conduct the “Science and Nature Knowledge” course for 4th and 5th grades as four hours per week. In addition, the name of the course was changed to “Science Knowledge” in 1974 (Board of Education and Discipline, 1974).

In the program, the objectives of the “Nature Knowledge”, “Family Knowledge” and “Agriculture-Working” courses in the 1948 program for the “Science Knowledge” course were rearranged, and “adaptation to the environment”, “observation ability”, “transferring the acquired knowledge to daily life”, was gathered under the headings of “health” and “agriculture” and the objectives of the course were determined accordingly (Çelenk et al., 2000). When the objectives of the Science course in the 1968 syllabus are generally examined, it is seen that the teaching of science is the recognition of the environment in which children live and adaptation to this environment. Consequently, the course aims to raise students as harmonious individuals who can use science in their daily lives, meet their needs and those of their environment (Dindar & Taneri, 2011).

3.9. 1992 Science Knowledge Program

The 1968 program is considered important in terms of including innovations such as the processing of units and subjects, preparation, planning, unit and cluster studies, research, examination, self-learning, discussion, and evaluation. However, it is emphasized that the results of the implementation are not sufficiently evaluated, rearranged, and made in accordance with the current requirements, so it is unsuccessful (Gözütok, 2003). In this direction, since 1983, a program development model has been put forward by the Board of Education and Discipline regarding the procedures and principles of program development studies, the general principles to be followed in the preparation of programs, and the execution of program development studies (Board of Education and Discipline, 1983). In this model, the people who should be involved in the preparation and development of the programs and the working style of the program development team were determined. It was emphasized that it was necessary to determine the general objectives, unit, and subject-specific objectives for each program, and to reveal the behaviors for each unit separately, and it was decided to re-evaluate the programs after a one-year implementation and to use the obtained evaluation results in the program development process (Gözütok, 2003).

It is seen that every stage of the program development process has been made more detailed and specific within the scope of some innovations brought to the model introduced in 1983 by the “Education Research and Development Center Presidency”, which was established within the scope of the “National Education Development Project” in 1992 (Büyükkaragöz, 1997). In this direction, it is seen that target behaviors, content, educational status, and evaluation criteria are prioritized in program development studies (Çelenk et al., 2000).

After the 1968 program, it is seen that the practice of collective development of primary school programs has been replaced by program development studies specific to individual courses. In this context, a new program was put into effect in 1992 for the “Science Knowledge” course. In this program, unlike the previous ones, it is seen that the objectives are given in detail. The general objectives of science teaching, the class objectives for each grade level, the specific objectives related to the subjects, the behaviors related to the objectives, and the behaviors that measure whether these objectives are achieved or not are specified in detail. It is seen that the general objectives of the course, unlike previous programs, include items such as providing students with the ability to use their minds, providing constructive, creative, and critical thinking skills, proposing models, forming hypotheses, establishing a relationship between science and technology, understanding the concepts of genetics and evolution and our place in the universe (Ministry of National Education, 1992; Aykaç et al., 2011). In the 1992 Science Knowledge program, unlike the 1968 program, it is seen that the laboratory method has started to be used while teaching science subjects. In this way, it is aimed to enable students to see the subjects and concepts covered in the lesson with their experimental dimension, and to facilitate their understanding and learning of the lesson by conducting the examinations and activities in stages in a laboratory environment (Dindar & Taneri, 2011). In the 1992 program, it was decided to teach the Science course as four hours per week for the 4th and 5th grades, but later these course hours were reduced to three per week (Balım & Elaldı, 2003). Although the 1992 program was more comprehensive than the 1968 program, it was criticized for its emphasis on content teaching in science teaching and for not giving importance to the dimension of science-technology-society-environment relations (Dindar & Taneri, 2011). In the 1992 program, the topics of “Water on Earth and the Water and Air Surrounding Us” and “Our Sources of Wealth” from the 1969 program were removed. New topics such as “Sound”, “Heat”, “Light”, “Electricity”, “Human and Environment” and “Matter and Energy” have been added.

3.10. 2000 Science Knowledge Program

The Science Knowledge Program, which entered into force in 2000, was established under the name of “Primary School Science Knowledge Course (4, 5, 6, 7 and 8th Grade) Education Program” with the decision of the Board of Education and Discipline, dated 13.10.2000 and numbered 387. It has been implemented since 2007 (Board of Education and Discipline, 2000). The units in the syllabus consist of three parts as "objectives", "students' achievement" and "subjects". Some units also include activities related to teaching, learning and assessment (Kaptan & Korkmaz, 2001b).

Although the behaviors that should be acquired through the objectives of the 1992 Science Literacy Program were specified separately, this distinction was abolished with the Science Literacy Program of 2000, and the specific objectives for all general course objectives were included in the program under the name "objection ". In this direction, general objectives and special objectives are clearly separated from each other (Aykaç et al., 2011). In the 2000 Science Knowledge program, unlike the 1992 program, there is a significant improvement in the learning-teaching process. This program stands out as the one in which the foundations of constructivism, which is the dominant approach in today's program, are laid. In the program, teachers are encouraged to plan the course in the best way by adding their own experience and creativity to the course, and to provide the appropriate environment for students to discover, actively participate in the lesson, engage in observation and research activities in the activities carried out, and provide an appropriate environment for teachers in the classroom and outside the classroom by specifying their role as a guide in the teaching processes (Aykaç et al., 2011). In the 2000 Science Knowledge program, unlike the 1992 program, it is seen that some unit contents were increased or decreased, some units were combined, and some units were shifted to different classes (Ministry of National Education, 2000).

3.11. 2005 Science and Technology Program

In the 2005 program, the name of the "Science Knowledge" course was changed to "Science and Technology". It is seen that "Science and Technology Literacy", and "Science-Technology-Society-Environment Relations" are emphasized in the vision of the program (Ministry of National Education, 2005b). In line with the program, individuals are provided with the opportunity to read and understand not only science but also technological developments, to question with critical thinking and make decisions. In addition, it has been revealed that students should understand the nature of science and technology, their interaction with each other, society, and the environment, and apply the knowledge, understanding and skills they have acquired while striving for technology and science-related problems (Dindar & Taneri, 2011). Also, the program aims to give importance to the natural environment, prioritize logic, evaluate the results of actions, provide information and experience about science and technology-related professions, attract students' interest in these professions and increase their economic efficiency by using this knowledge, understanding and skills in their future professional lives. In the program, it is seen that the understanding that puts the student in the center of the 2000 program and adopts the teacher's role as a guide for the student in the course and activities is maintained (Ministry of National Education, 2005b).

3.12. 2013 Science Program

With the changes made in the Primary Education and Education Law in 2012, primary schools were reduced to four years and 5th grades were taken to the secondary school level. With the 2013 Science program prepared in this direction, Science was arranged to include the 3rd grades of primary school (Ministry of National Education, 2013). In addition to the constructivist approach, it is seen that the 2013 program is based on the research and inquiry-based teaching approach. In addition, the concepts of appreciation, habit, interest, awareness, consciousness, and attitude development and producing solutions to problems were emphasized.

3.13. 2018 Science Program.

It is seen that the 2018 Science program continues to adopt the research and inquiry-based teaching approach introduced by the 2013 program. In addition, the aim of raising all individuals as science literate, as set out in the 2005 program, is also emphasized in this program. The 2018 program expanded the concept of scientific literacy so that scientifically literate people are those individuals who can look at the world from the perspective of a scientist, can examine, research, investigate, connect everyday life with scientific topics and use the scientific method to solve the problems encountered in all areas of life (Ministry of National Education, 2005b; Ministry of National Education, 2013; Ministry of National Education, 2018). Again, in the objectives part of the program, it was emphasized that it was aimed for students to use scientific process skills to solve the problems encountered in daily life (Bakaç, 2019).

4. Conclusion and Discussion

With the fast-developing technology, the importance of science is increasing rapidly in the 21st century. Among the main objectives of the courses related to science, raising individuals who think, ask, and act come to the fore. To achieve these goals, instead of presenting ready-made information to students, it is necessary to work on teaching the ways of learning and to provide the opportunity to apply what is learned (Gürkan and Gökçe, 1999).

In the programs implemented in the first years of the Republic, it is seen that Science course is more practical than theoretical knowledge transfer. The fact that the country had an agricultural society structure in these years led to the need to implement different programs in villages and cities, and in the program applied in the villages, courses from the daily life of the villages were implemented. Towards the end of the first half of the 20th century, in parallel with the developments in the world, it is seen that scientificity came to the fore in science teaching. In the programs implemented since these years, students were supported to follow scientific processes and conduct observation and experiment activities in the laboratory environment. With the emergence of the student-centered education approach, it is seen that problem solving, planning, examination, research, and project activities aimed at ensuring active learning of students have begun to form the essence of science education.

When the science programs put into effect in Turkey is examined chronologically, it is seen that the first program studies for science courses in Turkey started in 1924. With the change in the program in 1926, concepts such as "Life Sciences", "Collective Education" and "Working School" put forward by John Dewey were also taken as basis in the science program. In the program development studies carried out in the period between 1930 and 1950, the idea of making the methods in developed countries functional was dominant, and foreign experts such as John Dewey were invited to the country to carry out studies on existing programs. For the 1936 science curriculum, the ideas of loading students with more information than before and raising intellectual individuals were brought to the fore.

Since the second half of the 20th century, the aims of science education have changed in line with the transfer of knowledge and skills that students will need in their daily lives and in the environment they live in. In the programs developed since these years, it is seen that the objectives have been emphasized and detailed.

"Educational Program" studies in line with today's modern program development approach began to be carried out since the mid-1940s. When the aims of the Science course in the 1968 program are generally examined, it is seen that teaching science means recognizing the environment in which children live and helping them adapt to this environment. In this regard, the course aims to raise students as harmonious individuals who can use science in their daily lives and meet the needs of themselves and their environment. Starting with the 1992 program, the objectives are given in detail, unlike the previous programs. The general objectives of science teaching, separate classroom objectives for each grade level, specific objectives for the subjects, behaviors related to the objectives, and behavioral patterns that measure whether these objectives have been achieved are stated in detail. It seems that the general objectives of the course, unlike previous programs, include items such as providing students with the ability to use their minds, providing constructive, creative, and critical thinking skills, proposing models, establishing hypotheses, establishing the relationship between science and technology, understanding the concepts of genetics and evolution and our place in the universe. In the 1992 Science program, unlike the 1968 program, it is seen that the laboratory method has begun to be used when teaching science subjects. In this way, it is aimed to make it easier for students to understand and learn the course by being able to see the subjects and concepts covered in the course in an experimental dimension, and by carrying out the examinations and activities step by step in the laboratory environment.

In the 21st century, it has been accepted that technological developments are an integral part of science. In this direction, the content of the course includes more purposes related to the use of technology in daily life. However, the interaction of technology with people and the environment has begun to be addressed with the dimension of environmental protection. It is seen that the importance of science course in the programs applied in Turkey from past to present is increasing in parallel with

the world. In this context, it was ensured that students started to take Science course from a younger age.

In the 2000 Science program, unlike the 1992 program, a great improvement is evident in terms of the learning and teaching process. This program stands out as the program in which the foundations of constructivism, which is the dominant approach in today's curriculum, are laid. In the program, teachers are encouraged to plan the lesson in the best possible way by adding their own experience and creativity to the lesson, and to provide an appropriate environment for students to learn by exploring, actively participating in the lesson, and carrying out observation and research activities. It is seen that "Science and Technology Literacy" and Science-Technology-Society-Environment relations are highlighted in the vision of the 2005 science program. In line with the program, individuals are given the opportunity to read and understand not only science but also technological developments, question them with critical thinking and make decisions. In addition, it has been revealed that students need to make sense of the nature of science and technology, their interaction with each other, society, and the environment, and apply the knowledge, understanding and skills they have acquired while trying to solve problems related to science and technology. It is seen that the 2013 program is based on the research and inquiry-based teaching approach as well as the constructivist approach. In addition, emphasis is placed on the concepts of appreciation, habit, interest, awareness, consciousness, and attitude development, and finding solutions to problems. It is seen that the 2018 program continues to adopt the research and inquiry-based teaching approach introduced with the 2013 program. In addition, the aim of raising all individuals as science literate, set out in the 2005 program, is also emphasized in this program. The 2018 program expanded the concept of science literate as individuals who can look at the world from a scientist's perspective, examine, research, investigate, make connections between daily life and science subjects, and use the scientific method to solve problems encountered in all areas of life. Today, it is seen that the scope of the Science course focuses on the ability of individuals to solve daily life problems. In this direction, today's science education aims to provide individuals with the opportunity to get to know the world and their environment in which they live, while also providing them with creative thinking skills. In addition, it focuses on improving the skills of logical thinking and problem solving, while ensuring that the world we live in together is recognized correctly with effective communication processes.

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