

## Teachers' Opinions about Renewed Fifth Grade Science Lesson Curriculum\*

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### Abstract

The aim of the present study was to investigate the fifth grade science lesson curriculum that has begun to be applied in 2013-2014 academic year, considering teachers' opinions. In the current study, interview method that is one of the qualitative research methods was used. The semi- structured interview form was prepared by the authors considering experts' opinions. The interview form included of six open-ended questions to obtain teachers' opinion about the followings: informative works about renewed curriculum, general opinions about the new curriculum, gains, foreseen to be applied, the content, learning- teaching process, assessment and evaluation methods, problems in the application process of the curriculum, solutions about these problems, lesson books and materials that changed with the new curriculum. The interviews were conducted with 28 teachers, selected via purposeful sampling and that worked in 14 schools of Ministry of Education in one of the citites of Marmara Region in Turkey. The data was analyzed via descriptive statistics. The findings of the current study were as follows: 1- Teachers were not provided with information about the new curriculum, and in general, teachers reached details about the curriculum on the internet. 2- The biggest problem teachers confronted in the application process was subjects were very few, too superficial and simple. The most suggested solution was topics should be detailed and the scope should be extended. 3- The lesson books and materials were insufficient according to teachers.

**Keywords:** Science lesson curriculum, science teaching, teacher, curriculum, secondary school.

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The main aim of the education processes in the 21st century is bringing students with ways to reach intended information to learn instead of teaching information directly. In the teaching and learning process, students can solve the problems that they confront in new situations by internalizing the learning, and they can improve their abilities in the scientific method. The most important lesson that brings students with those features is Science lesson within the education curriculums (Kaptan, 1999). The basis of effective science teaching takes place in laboratories that include learning with doing and experiencing, and natural environments. When considered from this point of view, many topics of the science lesson were abstract and it is needed to make this information concrete. Hence, the role of teachers and curriculums seem important in terms of applying science lesson in the classrooms effectively. Henson (2006) stated that curriculums and learning processes should be revised and improved in accordance with the continuous changes and improvements in society. Moreover, Hjalmarson (2008) found that curriculums enter into the process of detrition in the lesson of time and strategies should reach to higher order thinking abilities in teaching and learning process (Gökmenoğlu & Eret, 2011). Besides, in teaching process, teachers should be willing to develop an optimistic attitude to the curriculum in order to apply the curriculum successfully (Tekbıyık & Akdeniz, 2008). In Turkey, The curriculums of primary and secondary schools were updated by Ministry of Education. The revised version of secondary school fifth grade science lesson curriculum began to be applied in 2013-2014 academic year (Ministry of Education, 2013). There are both similarities and differences between the new (2013) science lesson curriculum and the old former one (2005). The comparison of the curriculums was summarized in Table 1.

Table 1. *The comparison of 2005 and 2013 Science lesson curriculums*

2005 Science Curriculum	2013 Science Curriculum
Curriculum Name	Curriculum Name
Science and Technology	Sciences
The Vision of the Program	The Vision of the Program
Raising Science and Technology literate individuals. The nature of science and scientific knowledge were emphasized in Science and Technology literacy.	Raising Science and Technology literate individuals. Bringing students with basic information, the appreciation of science, scientist and scientific research were emphasized in Science and Technology literacy.
The Aim of the Program	The Aim of the Program
The aims are similar in general.	The aims are similar in general. Additionally, career consciousness and societal effects were emphasized.
Basic Approach of the Program	Basic Approach of the Program
Constructivist approach was adopted.	Constructivist learning approach based on searching and investigating came to the forefront.
Teaching, Strategies and Methods	Teaching, Strategies and Methods
Student centered methods	Student centered method based on searching and investigating came to the forefront. The argumentation method was emphasized.
Teacher- student Role	Teacher- student Role
Student is active, and the teacher is the guide. Democratic classroom environment.	Similar, additionally, teacher is a guide that directs the research process. The student's role is searching, investigating, explaining, and discussing the resource of knowledge. The searching and investigating dimensions were emphasized.
Assessment and Evaluation	Assessment and Evaluation
Process evaluation is in the foreground.	Process evaluation is in the foreground and using technology to evaluate student performance was emphasized.

Resource: (Eskicumalı, Demirtaş, Erdoğan, & Arslan, 2014:1084)

It is thought that teachers' opinions were important in terms of putting the changes which in with 2013 Science lesson curriculum in the practice effectively. Thus, the scope of the current study is investigating the new curriculum in accordance with teachers' opinion. The aim of the present study is to investigate the fifth grade Science lesson curriculum that began to be applied in 2013-2014 academic year considering teachers' opinions.

### Method

In the present study, interview method being one of the qualitative methods was used. The semi- structured interview form was prepared by the authors considering experts' opinions. The interview form comprised of six open-ended questions and these questions were prepared to obtain teachers' opinion about the followings: informative works about renewed curriculum, general opinions about the new curriculum, gains, foreseen to be applied, the content, learning- teaching process, assessment and evaluation methods, problems in the application process of the curriculum, solutions about these problems, lesson books and materials having been changed with the new curriculum. The interviews were conducted with

28 science lesson teachers being selected via purposeful sampling and that worked in 14 schools of Ministry of Education in the cities of Marmara Region in İstanbul, Turkey Büyükçekmece district. The participants were represented in Table 2.

Table 2. *Participants of the Study*

		n	%
Gender	Female	18	64,3
	Male	10	35,7
Age	20-25	5	17,9
	26-35	13	46,4
	36-45	4	14,3
	46-55	5	17,9
	56 and above	1	3,5
For how many years s/he is a teacher	1-8 years	12	42,9
	9-16 years	9	32,1
	17-25 years	3	10,7
	26-35 years	3	10,7
	36 years and more	1	3,6
For how many years s/he is a teacher at that school	1-5 years and more	20	71,4
	6-10 years and more	5	17,9
	11-15 years and more	2	7,1
	16-20 years and more	1	3,6
Having master or doctorate degree	Yes	2	7,1
	No	26	92,9

All of the teachers in the study group graduation department of Science teaching. The interviews with teachers were recorded by taking their permissions and then records were listened and transformed to the writing. The data was analyzed via descriptive statistics. According to this approach, obtained data is summarized according to predefined themes and interpreted (Yıldırım & Şimşek, 2008:224). The data was read separately by the researchers and coded in accordance with the themes and different codings were combined by a consensus.

### Findings

The opinions of Science and Technology teachers about new fifth grade Sciences curriculum were represented as tables below and the specific quotations of teachers' opinions take place. Teachers' opinions in terms of being informed about new fifth grade Sciences curriculum were shown in Table 3.

Table 3. *Teachers' Opinions in Terms of Being Informed about New Fifth Grade Science Curriculum*

Theme (Category)	Coding/Teachers	n	%
Being informed	I was not informed (T1, T3, T4, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T23, T24, T25, T26, T27, T28)	25	89.2
	There was an informing about distance education and it was not sufficient. (T5, T22)	2	7.1
Getting information	I got information from the internet (legal websites and teacher forums). (T1, T10, T11, T12, T13, T14, T15, T16, T19, T20, T21, T23, T24, T25, T26, T27)	16	57.1
	I scanned the books (teacher guidebook, lesson book). (T4, T6, T7, T10, T16, T17, T18, T20, T21, T28)	10	35.7
	Idea exchange with group teachers (T15, T19, T23, T24, T27)	5	17.8

When Table 3 was examined, it was seen that 89.2% of interviewed teachers indicated that they received no informing about fifth grade sciences curriculum, 7.1% of them indicated that there was informing about distance education, but this informing was not sufficient. 57.1% of the teachers said that they got information about the curriculum by searching websites, and teacher forums, 35.7% of them got information by examining the teacher guidebook and the lesson book, and 17.8% of them got information by exchanging ideas with group teachers. Teachers' Opinions:

“There was no informing; I got information by searching on the internet.” (T1) “I was not informed. We got information about the curriculum by examining the book.” (T4) “There was no informing about new fifth grade science lesson. I got information about this curriculum from the fifth grade sciences curriculum that was published on the internet after the beginning of academic year. Moreover, when we exchanged ideas with other science and technology lesson teachers, we had a chance to get accurate information.” (T15)

Teachers' opinions about the elements of new fifth grade Sciences curriculum were showed in Table 4.

Table 4. Teachers' opinions about the elements of the program

Theme (Category)	Strength	Coding/ Teachers		Weakness	Coding/ Teachers	
		n	%		n	%
Gains	It is suitable for students' level and readiness (T2, T6, T7, T10, T16, T17, T22, T23, T26, T27, T28)	11	39.2	It is not clear and explicit. (T1, T2, T15, T18, T19, T20)	6	21.4
	It is clear and explicit. (T3, T7, T17, T22, T23, T24, T25)	7	25	It is too simple and insufficient. (T2, T3, T11, T12, T13, T14, T18, T19, T20)	10	35.7
	It is sufficient. (T4, T5, T6, T9, T16, T21)	6	21.4			
Content	It is suitable for students' level and readiness (T6, T10, T16)	3	10.7	Topics are insufficient and superficial. (T1, T2, T3, T7, T11, T12, T13, T14, T15, T18, T19, T20, T24, T25, T27, T28)	16	57.1
	It is sufficient (T4, T5, T9, T16, T17, T22, T23, T26, T27, T28)	10	35.7	It is not consistent with the gains (T2, T3)	2	7.1
	It is consistent with the gains (T7, T8, T11, T13, T14, T17, T22, T24, T25, T26)	10	35.7			
Learning-Teaching Process/ Activities	Activity number is enough (T2, T5, T9, T16, T22, T27)	6	21.4	Activity number is not enough. (T1, T4, T15, T17, T24, T25)	6	21.4
	It is consistent with the gains and the content (T6, T7, T10, T11, T12, T14, T16, T20)	8	28.5	Activities are too simple and nonapplicable. (T8, T11, T12, T13, T14, T18, T21, T27, T28)	9	32.1
	It is applicable in the classroom (T10, T11, T12, T13, T14, T15, T17, T19, T22, T24, T25, T26)	12	42.8			
Evaluation	It is convenient to student level and enough. (T3, T5, T15, T16, T22)	5	17.8	Some gains are not consistent with the questions types. (T2, T3, T17)	3	10.7
	Methods are applicable in the classroom (T2, T9, T15, T22, T24, T25, T27)	7	25	Methods are insufficient (T4, T6, T8, T9, T10, T11, T12, T13, T14, T17, T18, T19, T23, T24, T25)	15	53.5
				Methods are nonapplicable (T7, T20, T26, T28)	4	14.2

As seen in Table 4, teachers' opinions about the elements of the curriculum were divided into two categories, namely strengths and weakness. Strengths about the gains were as follows: 39.2% of the teachers thought that gains are consistent with students' level and readiness, 25% of them indicated that gains are clear and explicit, 21.4% of them thought that gains are sufficient. Weakness about the gains was as follows: 35.7% of the teachers thought that gains are too simple and insufficient, 21.4% of them indicated that gains are not clear and explicit. The strengths about the content were as follows: 35.7% of the teachers thought that content is sufficient and consistent with the gains, 10.7% of them indicated that it was consistent with students' level and readiness. The weakness about the content were as follows: 51.7% of the teachers thought that topics are superficial and insufficient, 7.1% of them indicated that the content was not consistent with the gains. The strengths about learning- teaching process and the activities were as follows: 42.8% of the teachers thought that activities could be applied in classrooms, 28.5% of them indicated that activities were in line with the gains and the content, 21.4% of them thought that there were enough number of

activities. The weakness about the learning- teaching process and the activities were as follows: 32.1% of the teachers thought that activities were too simple and nonapplicable, 21.4% of them indicated that there were not enough number of activities. The strength about the evaluation was as follows: 25% of the teachers thought that evaluation methods are applicable in the classroom, 17.8% of them indicated that they were consistent with student level and enough. The weakness about the evaluation was as follows: 53.5% of the teachers thought that it was insufficient, 14.2% of them indicated that methods were not applicable and 10.7% of them said that some gains were not consistent with the question types.

Teachers' opinions: "I think that the curriculum distributed too widely in the sixth and seventh grade whereas the curriculum of the fifth grade is too simple and the gains are too poor. The intended gains are not enough while the type of questions in the lesson book cover extended gains. The gains are clear and explicit. The content is insufficient and it is not consistent with the gains. The evaluation methods are good but there are some wrong questions." (T3) "I think that the gains are consistent with student level and readiness. The content and the activities are also suitable. The evaluation methods are insufficient. In my opinion, evaluation methods applied in the past years were more successful." (T6) Teachers' opinions about the problems that they confronted in the application process of the fifth grade new science lesson curriculum and their solution offers were shown in Table 5.

Table 5. *Teachers' opinions about the problems they confronted in the application process of the curriculum and their solution offers*

Theme (Category)	Coding/ Teachers	n	%
Problems	Topics are very few, superficial and simple (T1, T2, T11, T12, T13, T14, T15, T16, T19, T20, T23, T24, T27, T28)	14	50
	There is not enough number of activities (T4, T5, T11, T17, T24, T25)	6	21.4
	There are abstract concepts (T1, T2, T18, T19, T26, T27)	6	21.4
	There is no student work book (T4, T5, T6, T15, T17, T24)	6	21.4
	The materials are insufficient (T3, T7, T10, T21)	4	14.2
	Time is not enough (T3, T17, T22, T23)	4	14.2
	Evaluation methods are insufficient (T4, T17, T24)	3	10.7
	Students' economic conditions (T8, T9)	2	7.1
	High class size (T10, T21)	2	7.1
Solution offer	Topics should be elaborated and the scope should be expanded. (T2, T5, T11, T12, T13, T14, T15, T16, T19, T20, T23, T24, T27, T28)	14	50
	Activities should be increased and interesting (T1, T2, T11, T12, T13, T14, T17, T24, T25, T26)	10	35.7
	Current examples should be increased in the content (T1, T2, T4, T16, T18, T27)	6	21.4
	The content should be visualized (T18, T19, T20)	3	10.7
	Evaluation examples should be increased (T4, T17, T24, T27)	4	14.2
	There should be student workbooks (T4, T5, T6, T24, T27)	4	14.2
	Activity materials should be sent availably (T7, T9, T10, T20, T21)	5	17.8
	Gains should be revised (T2, T15)	2	7.1
	Classrooms should be supported by technological equipment like smart boards (T10)	1	3.5
	Student should be grouped according to their levels (T22)	1	3.5
Examination system should be changed (T21)	1	3.5	

As Table 5 shows that in terms of teachers' problems in the application process, 50% of them indicated that topics were very few, superficial and too simple. 21.4% of them said that activities were not in enough number, there were abstract concepts, and there is no student work book. 14.2% of them thought that materials were insufficient, time was not enough, 10.7% of them pointed out that, evaluation methods were insufficient. 7.1% of them considered students' economic levels and high class size as problems. In terms of teachers' solution offers, 50% of them offered that topics should be elaborated and the scope should be expanded. 35.7% of them indicated that activities should be increased and made interesting. 21.4% of them indicated that there should be more current examples in the content, 17.8% of them said that activity materials should be sent available, 14.2% of them pointed out that there should be more evaluation examples increased and there should be student workbooks. 7.1% of them thought that gains should be revised, 3.5% of them indicated that classrooms should be supported by technological equipment like smart boards, students should be grouped according to their levels and the examination system should be changed.

Teachers' opinions: "In my opinion there are lots of abstract concepts in the topics and we have problems in teaching them to students. Topics are insufficient in terms of the scope. I think the scope of the topics should be expanded. Gains should be revised and they should include affective features. There should be more examples especially there should be more current examples." (T2) "I have trouble in teaching the topic in the process of curriculum application process because the content is too superficial. I have problem in teaching the abstract topics. Subjects should be detailed in order to be more comprehensible. Activities should be more related to daily life and there should be more examples related to the application of evaluation methods should be increased. Students should be provided with workbook." (T27).

Table 6. *Teachers' opinions about the new lesson books and materials*

Theme (Category)	Coding/ Teachers	n	%
Positive opinions	The lesson book is appropriate (T5, T7, T17, T22)	4	14.2
Negative opinions	The lesson books and materials are insufficient (T1, T2, T3, T9, T10, T11, T12, T13, T14, T15, T17, T20, T24, T26, T27)	15	53.5
	There is no student workbook and this is an important shortcoming (T4, T5, T6, T8, T11, T12, T13, T14, T15, T17, T20, T26, T27)	13	46.4
	The lesson books are insufficient in terms of information (T8, T11, T12, T13, T14, T16, T24, T27)	8	28.5
	Evaluation parts in the lesson books are insufficient. (T4, T6, T23, T25, T26)	5	17.8
	The lesson book is boring (T18, T19, T24)	3	10.7
	The lesson book is not in line with the gains (T2, T10)	2	7.1
	There are lots of differences between the publications of the Ministry of Education and private publishers (T21, T23)	2	7.1
Visuality is not enough (T6)	1	3.5	

As Table 6 shows that teachers' opinions about the lesson books and materials were coded into two categories as positive and negative. In terms of positive opinions, 14.2% of the teachers thought that the lesson book was appropriate. In terms of negative opinions, 53.5% of them indicated that the lesson books and materials were insufficient. 46.4% of them pointed out that there was no student workbook and this was an important shortcoming, 28.5% of them thought that the lesson books were insufficient in terms of information. 17.8% of them indicated that the evaluation parts in the lesson books were not enough, 10.7% of them thought that the lesson book was boring. 7.1% of them asserted that the lesson book was not consistent with the gains, and there are lots of differences between the publication of Ministry of Education and private publishers. 3.5% of them indicated that visuality was insufficient. Teachers' opinions: "There is no workbook and this is an important shortcoming. The lesson books should include more information." (T8) "The lesson book includes evaluation questions only at the end of chapters and this is not sufficient. Furthermore, there is no student workbook and this creates problem both in terms of student evaluation and classroom activities." (T26)

### Results, Discussion and Suggestions

The results of the current study that investigating teachers' opinions about the new fifth grade science lesson curriculum are as follows: 1- Substantially, teachers were not received any informing about the curriculum. Teachers reached the information about the new curriculum from the internet via legal websites and teacher forums on the internet. 2- The strength of the curriculum according to teachers is that; the curriculum is appropriate to students' level and readiness, whereas the weakness of it is that the curriculum is too simple and insufficient. The strength of the content is that it is sufficient and in line with the gains while the weakness of it is that the topics are superficial and insufficient. The strength of the learning- teaching process and activities that they are applicable in the classroom, whereas the weakness of it is that the activities are too simple. The strength of the evaluation methods is that they are applicable in the classroom, while the weakness of it is that they are insufficient. 3- The most important problem that teachers experienced in the application process is that the topics are insufficient, superficial and too simple. The most suggested solution offer is the topics should be elaborated and the scope should be expanded. 4- The lesson books and materials are insufficient according to teachers.

Teachers did not receive any informing about the curriculum before hand and this may create problems in the application process of the curriculum. Similarly, Tekbıyık and Akdeniz (2008) and Demirtaş, Arslan, Eskicumalı and Kargı (2015) found that teachers experienced some problems in the application process because they did not have enough information about the curriculum. Furthermore, as Dindar and Yangın (2007) and Öz indicated that teachers considered no informing as a significant problem (2007). According to Aydın and Çakıroğlu, teachers felt themselves powerless because the information about the curriculum especially about the application of the assessment and evaluation methods was insufficient (2010). It is thought that if teachers who are the implementers of the curriculum were informed about the curriculum, the program would be applied successfully. Teachers generally got information about the curriculum from the internet because there was no informing. As Buluş-Kırıkkaya (2009) found that teachers could reach information about the curriculum from the internet news. Demirtaş, Arslan, Eskicumalı and Civan (2015) emphasized that the teachers of different disciplines, not making information about the curriculum of their course work so that they have been found to obtain the necessary information from the Internet. In terms of teachers' opinions about the elements of the curriculum, there were both strengths and weaknesses about the gains, the content, the learning- teaching process/ activities and evaluation dimensions. In general, the strengths about the element of the curriculum are it is appropriate to students' level, applicable in the class, and sufficient, whereas the weaknesses are it is too simple, superficial and insufficient. Toraman and Alcı (2013) stated that most of the teachers found the curriculum was insufficient. As Tüysüz and Aydın (2009) stated that teachers indicated that the curriculum was appropriate to students' level and development. Aydın and Çakıroğlu (2010) found that some activities were simple and below the students' level. Teachers indicated that they experienced problems in the application process of the curriculum because of the fact that the topics were very few, superficial and too simple. With respect to this, they suggested that the topics should be elaborated and the scope should be expanded. According to Toraman and Alcı, teachers indicated that if the number of subjects were decreased in the curriculum, students would experience problems in terms of associating the topics. They also found that if the subjects were too simple, students would experience problems in terms of attending the lessons actively (2013). In the present study, teachers considered the lesson books and materials insufficient. This is in line with other studies, (Çınar, Teyfur & Teyfur, 2006; Erdoğan, 2007; Öz, 2007; Yangın & Dindar, 2007; Doğan, 2009; Demirtaş, 2012) teachers had problems in the application process of the curriculum due to shortcomings in the resources and materials. Teachers indicated that if the materials of the

curriculum were provided to the schools it would be better (Yangın & Dindar, 2007). The shortcomings of the materials in education activities were considered as an important problem hindering success that was hard to overcome, in the application process (Çınar, Teyfur & Teyfur, 2006). As a result, in order to apply the curriculum successfully, it is important to inform teachers about the curriculum, revise the weaknesses of the curriculum, and provide necessary materials to schools. In this regard, informative meetings/ seminars to teachers can be organized, informative brochures can be sent to teachers, the source books and activity materials related to the curriculum can be sent to schools. Future studies should focus on the opinions of teachers, school management, parents, students, and other related stakeholders about the new curriculum. More extended researches and revision studies focusing on the limits of the curriculum should be done in the future.

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