Content Analysis of Curriculum-Related Studies in Turkey between 2000 and 2014

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Abstract

This study aims to carry out a content analysis determining the general framework of studies related to curriculum. For this purpose, 154 curriculum-related studies carried out in Turkey between 2000 and 2014 were examined in terms of year, sample, method, data collection technique, purpose, and result. The most studies related to curriculum were observed to have been performed in 2013, generally with teachers and evaluating 6th-8th grade curricula; the focus has been on qualitative research methodology and data acquisition mostly took advantage of the curriculum. The curriculum has guided students away from memorization; the content has been improved and covers changes that have occurred in the world. The major problems in how well curricula can be applied were reported as crowded classrooms and insufficient class duration, quality materials, and in-service trainings. Inconsistencies between curricula and exams have also been reported. These results become more of an issue in terms of illuminating curricular development in Turkey as a whole and in terms of demonstrating the reasons for difficulties in reaching the desired goals.

Keywords

Curriculum • Content analysis • Testing system • Educational studies • Assessment and evaluation

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Knowledge generation and sharing has become the most critical precondition for sustainable community development as a result of globalization (Akkoyunlu & Yılmaz, 2005; Akpınar & Aydın, 2007; Doğan, 2012). The education system changes and renews itself in parallel with these conditions (Kösterelioğlu & Özen, 2014). In recent years, signs of constructivist approaches have been seen in the curriculum, which has had update attempts as an effect of changes in Turkey's education system. Briefly, the constructivist approach says that knowledge is individually formed, and this process occurs thanks to an individual's active interactions with their own environment (Baki, 2008). Consequently, students have an active role in the process of generating the knowledge that one's social environment and culture create in order to make learning permanent and functional (Gürol, 2002). This approach brings new perspectives and concepts to education and can be summarized as student-centered and lifelong education (Akpınar & Gezer, 2010). The most concrete sign that education systems are formed by new understandings are that curriculum is certainly known as the road-map of education activities (Gözütok, 2003). Curricula are the most significant central components of a country's educational system (Taş, 2007; Yeşilyaprak, 2006). Curriculum is always open for improvement, because innovations reflected in the education system are observable to the extent that they are a part of the curriculum (Gözütok, 2003; Kösterelioğlu & Özen, 2014; Yapıcı & Demirdelen, 2007). Concordantly, the Ministry of National Education (MEB) has begun curriculum-development studies through the innovations and developments they've made in the education system since 2004 within the scope of a constructivist approach (Doğanay & Sarı, 2008). With the 2004 decision of the Board of Education and Discipline, Turkish, Mathematics, Social Sciences, and Science and Technology curricular classes prepared for 1st-5th graders were put into effect during the 2005-2006 academic year with developments that were able to reflect student-centered and constructivist approaches. Also, with the Board's 2005 decision, some changes were brought about in the Mathematics, Social Sciences, and Science and Technology curriculum for 6th-8th graders; with the Board's 2006 decision, Music, Visual Arts, Religion and Ethics, Revolution History, Physical Training, and English curriculum were also changed for 1st-8th graders. Additionally, the Board of Education and Discipline's 2008 decision caused Mathematics, Chemistry, Physics, Biology, and Geometry curricular developments for secondary education to start being applied during the 2009-2010 academic year. Finally, with the Board's 2013 decision, changes have gradually been made to the Mathematics (5th, 6th, 7th, and 8th grades), Science (3rd, 4th, 5th, 6th, 7th, and 8th grades), English (2nd, 3rd, 4th, 5th, 6th, 7th, and 8th grades) curricula and Math, Physics, Chemistry, Biology and Geometry curricula for high schools (see URL-1).

A curriculum can only be determined to be valid and effective after it has been applied and the outcome assessed. As a consequence, curricula need to be considered regularly and systematically in terms of potential changes (Ertürk, 1972; Saylan, 2001). Although these assessments hold great importance for determining considerations

when developing curricula in order for the next one to be more successful, it is hard to tell whether the Board of Education and Discipline have made profound use of the research results.

The Aim of Study

It is unimaginable that an education system would be indifferent to changes in the educational field in keeping pace with the 21st century (Özdemir, 2000; Özden, 1999). In fact, these curriculum changes shape an important part of education reform change (Sahlberg, 2006). Education reform change is a structuring that all countries have given priority in recent years (Doğan 2012; Sahlberg, 2006). However, the attempts to change Turkey's education system cannot be said to have been conducted successfully (Erdoğan, 2012). Frequent changes in the curriculum can be shown as an example of this (Özdemir, 2000). This study intends to bring forth the current situation of curriculum studies. When analyzing the literature, various studies are found to have been conducted using the technique of content analysis in order to observe general trends in different disciplines like science, computers, and so on (Arık & Türkmen, 2009; Erdoğan, Marcinkowski, & Ok, 2009; Göktaş, Küçük et al., 2012; Göktaş, Hasançebi et al., 2012; Oruç & Ulusoy, 2008; Sandelowski & Barroso, 2003; Ulutaş & Ubuz, 2008). There have also been a few studies that had analyzed curriculum studies in the terms of the number of studies, discipline, sampling, data collection tool, and research method (Akpınar, Dönder, & Karahan, 2013; Erdoğan, Kayır, Kaplan, Aşık, & Akbunar, 2015; Ozan & Köse 2014; Kurt & Erdoğan, 2015). However, different from those studies, this one intends to also bring forth the aims of current curricula and the results obtained systematically according to these aims, thus shedding light on both program development and program evaluation studies.

This study aims to collect and analyze research that has been performed from 2000–2014 in relation to curricula. At the beginning of the new century, the Turkish government began to develop curricula under the framework of an emergency action plan. In studies carried out between 2000 and 2014, one frequently analyzed topic has been about this work on curricula and its effects on teachers, students, and society. Such reform movements have also been observed in Europe and the USA. Therefore, the findings of this study are significant in that it will provide information about all of these efforts. In order to achieve this goal, the following research questions have been determined for the years 2000-2014:

- How many studies related to curriculum were carried out?

- How have the studies been distributed in relation to curriculum in terms of disciplines?

- How has the curriculum distribution of the studies been in terms of sample used?

- Which research methods were used in these studies?

- Which data collection techniques were used in these studies?

- What were the aims of these curricula-related studies?

- What results were obtained from these studies' aims?

Method

This study employs the document analysis method. A document is a written source of reference that makes possible an in-depth description and explanation of the investigated issue (Yıldırım & Şimşek, 2008). Document analysis, on the other hand, refers to analyzing written sources that contain information about the investigated concepts (Çepni, 2007; Yıldırım & Şimşek, 2008). Furthermore, document analysis is an established research method that has been applied to make valid and reliable inferences using texts (Krippendorff, 2004).

Data Sources and Data Collection

While identifying the studies for review, the following points were taken into consideration: study participants should be Turkish and the studies should have been carried out by Turkish scholars. In addition, only studies carried out between 2000 and 2014 were chosen. Articles whose full text could not be accessed were not included in the study. The articles were searched using two SSCI international journals based in Turkey, 26 journals published by education faculties, and two peer-reviewed journals. Studies included in the research were found using the Google Academic search engine, TÜBİTAK ULAKBİM DergiPark, and EBSCOhost-ERIC databases. In order to find the relevant articles, the key words *curriculum* and *curriculum evaluation* were searched.

Following the first search, a total of 167 articles were found, but four of them were eliminated because they were about achievement tests. During this process, 154 articles in 30 journals were accessed. Table 1 shows the journals' titles and the number of articles published in each journal.

Table 1
Articles Published in Journals

Journal Name	*f*	Journal Name	*f*
Journal of Ministry of Education	12	Uşak University Journal of Social Education	5
Journal of Kazım Karabekir Education Faculty	9	Ankara University Journal of Faculty of Education Sciences	5
Educational Sciences:Theory & Practice	8	Çukurova University Journal of Education	4
Mehmet Akif University Journal of Education	8	Erzincan University Journal of Education	4
Uludağ University Journal of Education	8	İnönü University Journal of Education	4
Journal of Kırşehir Education Faculty	7	Bartın University Journal of Education	4
Journal of Gazi Education Faculty	7	Education and Science	3
Journal of Ziya Gökalp Education Faculty	7	Mersin University Journal of Education	3
Pamukkale University Journal of Education	7	Journal of Theory and Practice in Education	3
Abant İzzet Baysal University Journal of Education	6	Journal of Necatibey Education Faculty	3
Balıkesir University Journal of Social Education	6	Bayburt University Journal of Education	2
Hacettepe University Journal of Education	6	Amasya University Journal of Education	2
Yüzüncü Yıl University Journal of Education	6	Ege University Journal of Education	2
Journal of Buca Education Faculty	6	Turkish Journal of Computer and Mathematics Education	1
Sakarya University Journal of Education	6	Erciyes University Journal of Education	0

Each eligible article was coded *A1*, *A2*, *A3*, and so forth, and a matrix was developed based on the research questions. The matrix included the code, publication year, related discipline, the sample, research method, data collection technique, aim, and result. Table 2 provides a matrix sample.

Table 2
Matrix Sample Used in Data Collection

Code	Year	Discipline Grade	Sample	Research method	Data collection techniques	Aim	Result
A1	2005	General (1st-5th)	Teacher	Qualitative	Open-ended questions	Applicability of the curriculum	In-service training courses are adequate -Time is inadequate -Crowded classrooms -Material lacking -Difficulty establishing concepts with daily life

Data Analysis

For purposes of data analysis, two qualitative analysis techniques, descriptive and thematic content analysis, were used in conjunction. Descriptive content analysis refers to systematic analyses that involve the discussion of studies on a specific topic leading a descriptive assessment of trends and research results (Sozbilir, Kutu, & Yaşar, 2012). In other words, quantitative and qualitative studies, performed by themselves, are reviewed and categorized; this leads to identifying the general trends in the field from the viewpoint where researchers are shown the overall trends that are involved or are related to the field (Selçuk, Palancı, Kandemir, & Dündar, 2014).

Thematic content analysis, on the other hand, entails synthesizing and interpreting studies on a given topic from a critical perspective by developing themes or basic templates (matrices/templates). Such efforts then lead to a detailed presentation of the overall structure of the issue, which are investigated from a holistic perspective (Au, 2007). In a nutshell, thematic content analysis entails a qualitative perspective regarding studies performed in a field; this leads to a presentation of contrasts and similarities on a comparative basis. In this context, descriptive content analysis was applied for analyzing Research Problems 1-5, while the sixth and seventh research problems were subjected to thematic content analysis.

Table 2 was used in the data-analysis process. First off, the answer to the first research question was determined by looking at the curricula in the table and the number of studies carried out according to year (see Figure 1). Then, the second research problem was answered by showing the frequency of the number of disciplines in the chosen studies (see Table 4). The third research problem was answered by showing the frequency of sample types (see Figure 2). The fourth research problem was answered by showing the frequency of method types (see Figure 3). The fifth research problem was answered by showing the frequency of data-collection tool types (see Figure 4). For the sixth research problem (again see Table 2), the aim of curriculum studies by year, as well as their frequency, was determined (see Figure 5). However, more than one aim was obtained from some studies. Meanwhile, the answer to the seventh research problem presents the aims, the themes, and results obtained from these studies, as well as the codes (see Tables 5, 6, 7, and 8). Moreover, the disciplines for these results and their frequency were also determined. This enabled the aims, fields of discipline, and results of the curriculum studies to be presented easily. Also, the number of results in each discipline has clearly been presented. Table 3 shows how the encoding was performed. As seen in Table 3, in-service courses that were conducted with pre-school disciplines with the aim of analyzing the curriculum's practicality were determined to be insufficient. All of the above steps helped reveal the frequency of individual codes pertaining to the identified themes.

Table 3
Coding Sample

Theme	Code	Related discipline	Number of studies (*f*)
A2. Curriculum's Applicability	In-service training courses are adequate	Pre-School	4
		Life Sciences	3
		Mathematics (6th-8th)	5
		Geography (9th-12th)	4
		Biology (9th-12th)	2
		Chemistry (9th-12th)	4
		Literature (9th-12th)	3
		General (1th-5th)	10
Total			35

Validity and Reliability of the Research

In order to establish internal consistency (reliability) of the encoding, data were independently encoded by the first researcher twice. In order to prevent recollection of related encodings from being a factor, the researcher took a one-month break between the first and second encoding. Next, the two encodings were compared with each other and reliability was calculated using Miles and Huberman's (1994) formula of reliability, [agreement / (agreement + disagreement)] x 100. The Pearson correlation coefficient between the two encodings was calculated as .98. Encodings were corrected after this process, and 10% of the encoded data (15 articles) were chosen at random and encoded by two researchers; 100% consistency was determined between these two encodings.

Findings

This section first presents information about the 154 studies that were reviewed, including the publication year, discipline, sampling, research method, and data collection techniques (see Appendix 1). Then each study is discussed in detail, with the maximum and minimum values in each category being indicated. The last step develops the thematic codes that arise connected to the aims and conclusions of these studies.

In Appendix 1, studies that only used documents as data sources were left blank in the sample column. As can be seen in Appendix 1, several studies are found dealing with the curriculum of different disciplines. In these studies, different samples and data collection techniques were used. The most studies were seen to be carried out in 2013 with teachers. Furthermore, the qualitative approach was found to be employed most frequently as a research method, and documents were used most frequently as data sources. Figure 1 shows the distribution of studies by year of publication.
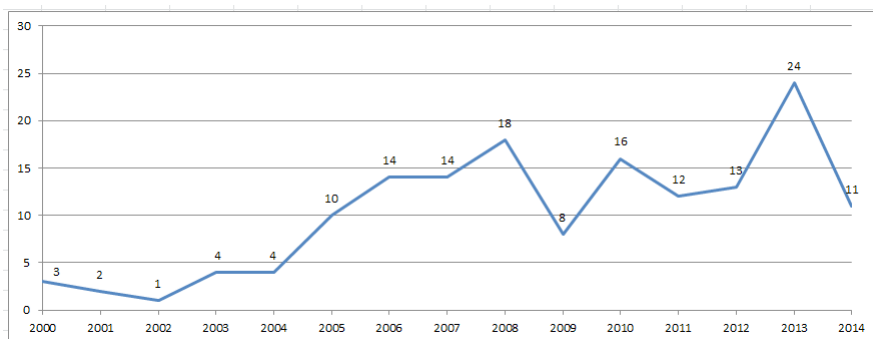

Figure 1. Studies by year of publication.

Figure 1 indicates that the least amount of studies was carried out between 2000 and 2004 for the years 2000-2014. The number of studies increased between 2005 and 2009. These types of studies decreased in 2009 but increased again in 2010. In 2011 and 2012, the number of studies decreased. However, it increased in 2013. In fact, 2013 was the year the most studies were carried out.

Table 4 shows the distribution of studies in terms of discipline.

Table 4
Studies by Related Disciplines

Disciplines	1st	1st-5th	4th-5th	6th-8th	4th-8th	9th-12th	1st-12th	Total
Pre-School	6							6
Reading-Writing		3						3
Life Sciences		6						6
Turkish			4	6				10
Social Sciences			6	7	7			20
Science			7	9	4			20
Mathematics			6	6		2		14
English			1	2	2	1		6
Visual Arts			1			1		2
Music			1	2			1	4
Physical Training				2	1	1		4
History				1		1		2
Citizenship				1		1		2
Geography						6		6
Biology						3		3
Chemistry						4		4
Literature						4		4
General		16		1	1	3	3	32
Others		1				5		6
Total	6	26	26	37	23	32	4	154

As can be seen in Table 4, the majority of studies are concerned with general evaluation of the education curricula for grades 6 through 8. This is followed by studies evaluating the Science, Social Sciences, Mathematics, and Turkish curricula. Only one study was concerned with evaluating the following disciplines' curricula: History of Arts, Religious Culture and Ethics, Guidance, Ottoman Turkish, Sociology, and Geometry. These studies were grouped under the category *others*. Table 4 also shows that the majority of studies was about 1st-5th grade curricula, whereas the least amount of studies were about pre-school curricula. Figure 2 presents statistical information about the studies' samples.
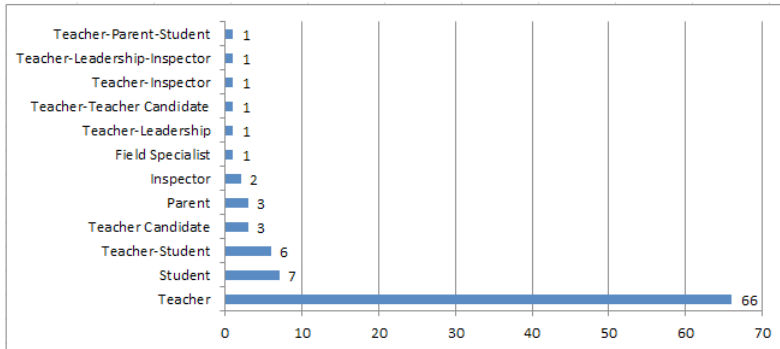
Figure 2. Studies' samples.

Although 154 studies were analyzed in this research, Figure 2 shows samples from the 93 studies that made an effort to document their sample. Figure 2 shows the vast majority of studies were carried out with teachers, followed by students.

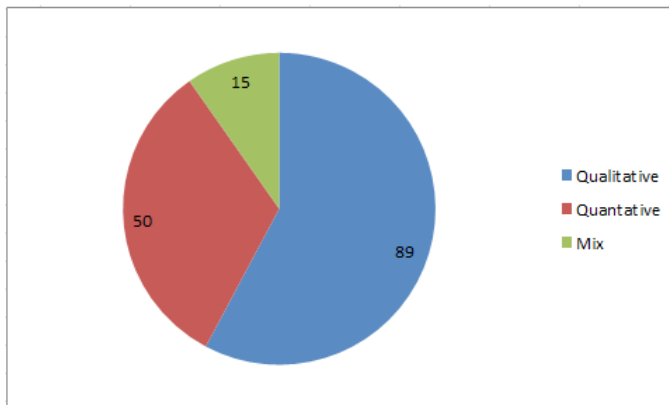Figure 3 presents the distribution of studies by its adopted research method.

Figure 3. The studies' research methods.

As can be seen in Figure 3, the qualitative research approach was employed most often in studies. The quantitative research approach was also employed in studies. The combined use of qualitative and quantitative research approaches was found less often. Figure 4 presents the data collection techniques used in studies.
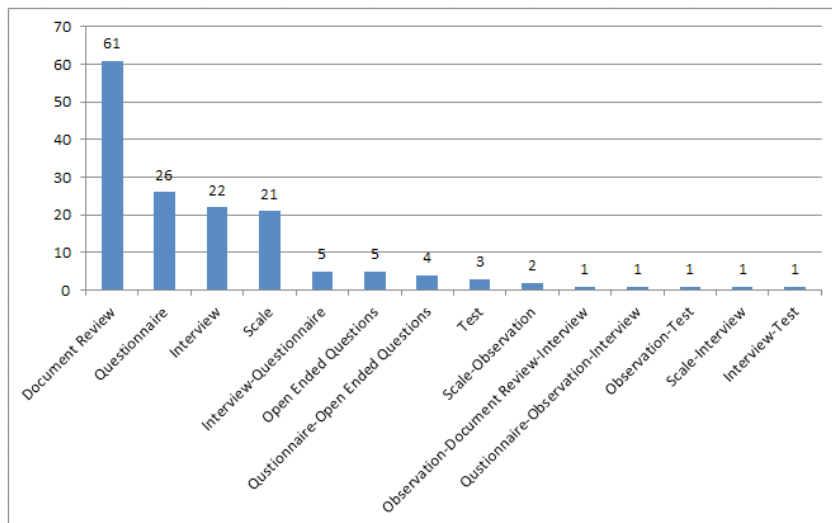
Figure 4. The studies' data collection techniques.

As can be seen in Figure 4, the most frequently used data-collection technique in studies is the document review. Curricula were also selected as documents. This is followed by survey questionnaires, interviews, and scales. In addition, some studies also collected data using open-ended questions and tests. Most studies were found to only employ one data-collection tool, while fewer studies, however, employed more than one data-collection tool. Figure 5 presents the data regarding the studies' aims.
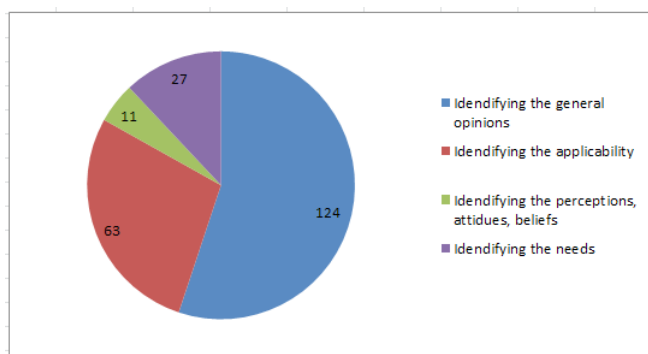
Figure 5. The studies' aims.

Figure 5 shows that studies mostly aimed at analyzing curricula in terms of identifying general opinions about the curriculum and its applicability. In addition, some studies also aimed at identifying the needs of teachers and their perceptions or attitudes towards the curriculum. Some studies also had more than one aim: identifying general opinions about curriculum and about its applicability were found to be targeted simultaneously.

Table 5 presents the theme-coded data about studies that aimed to identify general opinions about the curriculum.

Table 5
General Opinions about the Curriculum

Thematic codes related to general opinions about the curriculum (f_{total} = 124)	Disciplines (Grades)
Sufficient content (f = 38)	Life Sciences, Social Sciences (6th-8th); Literature (9th-12th); Social Science (4th-5th); Science and Technology (4th-8th); Mathematics (6th-8th); Turkish (6th-8th); General (1st-5th); General (1st-12th); Music (1st-12th); Visual Arts (9th-12th); Geography (9th-12th); English (4th-5th); Religious Culture and Ethics (9th-12th)
Knowledge and skills are balanced (f = 13)	Social Sciences (4th-8th), Geography (9th-12th), Pre-School, Turkish (6th-8th), Citizenship (9th-12th)
Individual differences among students are taken into consideration (f = 14)	Social Sciences (4th-8th), Science and Technology (6th-8th), Mathematics (6th-8th), Visual Arts (4th-5th), Guidance (1st-5th), Literature (9th-12th), Social Sciences (4th-5th), English (4th-5th)
Avoids path memorizing and encourages students to do research (f = 37)	Social Sciences (4th-8th); Science and Technology (4th-5th); Mathematics (6th-8th); General (1st-5th); Reading-Writing; Mathematics (4th-5th); Mathematics (6th-8th); Phys. Ed. (6th-8th)
Students can easily relate the courses with daily life (f = 28)	Science and Technology (4th-5th), Guidance (1st-5th), Chemistry (9th-12th), Science and Technology (4th-8th), Mathematics (6th-8th), Social Sciences (6th-8th), Literature (9th-12th), Life Sciences, Social Sciences (4th-5th), Science and Technology (4th-8th), English (4th-5th)
Goals are consistent with courses (f = 10)	Science and Technology (6th-8th), Chemistry (9th-12th), Pre-School, English (4th-8th)
Clear and well-established learning objectives (f = 13)	Mathematics (4th-5th), Mathematics (6th-8th), Literature (9th-12th), Science and Technology (6th-8th), Turkish (4th-5th)
Covers changes in the world (f = 19)	Biology (9th-12th), Literature (9th-12th), Science and Technology (6th-8th), Pre-School, Sociology (9th-12th), Mathematics (4th-5th), Mathematics (6th-8th)
Proper measurement and assessment for realizing goals (f = 3)	Social Sciences (6th-8th)
More applicable (f = 1)	Music (6th-8th)
More fun (f = 2)	Phys. Ed. (9th-12th), Turkish (4th-5th)
More boring (f = 6)	Geography (9th-12th), General (1st-5th)
Needs assessment/incomplete (f = 1)	General (1st-12th), General (4th- 8th)
Less useful (f = 1)	Chemistry (9th-12th)
Does not take individual differences among students into consideration (f = 3)	Chemistry (9th-12th), Ottoman Turkish
Uses more material (f = 1)	Turkish (4th-5th)
Heavy load for research homework (f = 1)	Social Sciences (4th-5th)
Textbooks inadequate (f = 4)	General (1st-5th), General (1st-5th), Geography (9th-12th)
Learning objectives are not consistent with activities (f = 4)	Life Sciences, History (9th-12th)
Most students haven't acquired all stated learning objectives by activities' end (f = 5)	Social Sciences (4th-5th), Mathematics (6th-8th), Music (6th-8th), Citizenship (6th-8th)
Knowledge and skills unbalanced (f = 3)	Mathematics (4th-5th), History (9th-12th)
Insufficient content (f = 15)	Reading-Writing, Social Sciences (4th-8th); Turkish (4th-5th); English (9th-12th); Chemistry (9th-12th); English (6th-8th); Social Sciences (4th-5th); General (9th-12th); Literature (9th-12th)
Higher teacher dependency (f = 3)	Social Sciences (4th-5th), Geography (9th-12th)
Comprehending content is unclear through activities (f = 5)	Social Sciences (4th-8th), Geography (9th-12th), Turkish (6th-8th)

As can be seen in Table 5, studies with the aim of identifying general opinions about curriculum concluded that the curriculum avoids memorization and encourages students to do research, the curriculum's aims are consistent with the courses, and the curriculum can be easily related to daily life. Additionally, the content has been improved and covers changes occurring in the world. Table 6 presents the thematic codes about the studies aimed at identifying the curriculum's applicability.

Table 6
Applicability of the Curriculum

Thematic codes related to applicability of the curriculum ($f = 63$)	Disciplines (Grades)
Insufficient measurement and assessment ($f = 4$)	Pre-School
In-service training courses are adequate ($f = 36$)	Pre-School, Life Sciences, Mathematics (6th-8th); Geography (9th-12th); Biology (9th-12th); Chemistry (9th-12th); Literature (9th-12th); General (1st-5th); General (4th-8th)
Overcrowded classrooms ($f = 42$)	Pre-School, Science and Technology(6th-8th); Mathematics (4th-5th); Mathematics (6th-8th); General (1st-12th); Music (6th-8th); Geometry (9th-12th); Geography (9th-12th); Biology (9th-12th); English (6th-8th); General(1st-5th)
Time is inadequate ($f = 40$)	Social Sciences (4th-5th), Science and Technology (4th-5th), History (9th-12th), History of Art (9th-12th), Music (6th-8th), Visual Arts (9th-12th), Biology (9th-12th), Literature (9th-12th), Guidance (1st-5th), Music (4th-5th), General(1st- 5th), Physical Training (6th-8th), English (4th-8th)
Inappropriate to students' level ($f = 6$)	Science and Technology (4th-5th), History(6th-8th), Guidance (1st-5th)
The content is very intense ($f = 6$)	Science and Technology (4th-5th), Geometry (9th-12th), Chemistry (9th-12th)
Lacking material ($f = 29$)	Mathematics (4th-5th), Phys. Ed. (1st-8th), Visual Arts (4th-5th), Geometry (9th-12th), Chemistry (9th-12th), English (6th-8th), Music (4th-5th), General (1th- 5th), Phys. Ed. (6th-8th)
Inconsistent with the exam system ($f = 32$)	General (1st-5th), General (6th-8th), Geometry (9th-12th), Chemistry (9th-12th), Mathematics (6th-8th), Geography (9th-12th), Biology (9th-12th), Chemistry (9th-12th)
Leaders do not have enough information about the curriculum ($f = 3$)	General (1st-12th)
Students' interests not taken into consideration ($f = 5$)	History of Art (9th-12th), Visual Arts (4th-5th), Literature (9th-12th)
Activities are unclear ($f = 6$)	Phys. Ed. (9th-12th), Geometry (9th-12th), Music (4th-5th),
Textbooks are adequate ($f = 6$)	Geometry (9th-12th), History of Art (9th-12th), Music (4th-5th)
Distribution of topics by grade is problematic ($f = 3$)	Biology (9th-12th), Chemistry (9th-12th), Geometry (9th-12th)
Teachers' role as a guide is not taken into consideration ($f = 1$)	Literature (9th-12th)
Difficult to relate concepts to daily life ($f = 1$)	General (1st-5th)

As can be seen in Table 6, studies dealing with the opinions about the curriculum's applicability commonly found that the major barriers against curricular implementation are crowded classrooms, inadequate lesson duration, lack of materials, insufficient in-service training courses, and that the curricular incompatibility with the exam system. Table 7 presents the thematic codes derived from studies that analyzed perceptions, attitudes, and beliefs towards the curriculum.

Table 7
Perceptions, Attitudes, and Beliefs towards the Curriculum

Thematic codes about perceptions, attitudes and beliefs towards the curriculum ($f = 11$)	Disciplines/Grades
Teachers who are familiar with the curriculum believe in their success ($f = 2$)	Science and Technology (4th-5th)
Teachers have a positive approach towards using materials in class ($f = 4$)	Social Sciences (6th-8th)
Teachers have a positive approach towards the curriculum's applicability ($f = 3$)	Social Sciences (4th-5th), Social Sciences (6th-8th), Science and Technology (4th-5th)
Students have a positive approach towards the curriculum's applicability ($f = 2$)	Social Sciences (6th-8th), Science and Technology (4th-8th)
Teachers do not believe in the curriculum ($f = 8$)	Pre-School, Science and Technology (6th-8th), Mathematics (4th-5th), Mathematics (6th-8th), Turkish (4th-5th), General (1st-5th), General (4th-8th), Pre-School, Physical Training (9th-12th)
Teachers have a negative approach towards using materials in class ($f = 1$)	Life Sciences
Teachers have a negative approach towards the amount of measurement and assessment ($f = 10$)	Social Sciences (4th-5th), Science and Technology (6th-8th), Mathematics (4th-5th), Mathematics (6th-8th), Turkish (4th-5th), General (1st-5th), General (4th-8th), Pre-School, Physical Training (9th-12th), Chemistry (9th-12th)
Leaders have a negative approach towards the amount of measurement and assessment ($f = 1$)	General (1st-5th)
Leadership takes the curriculum more seriously than teachers ($f = 1$)	General (1st-5th)
Teachers have a negative approach towards the curriculum's applicability (f = 4)	Science and Technology (4th-5th), Chemistry (9th-12th), English (9th-12th)
Students have a positive approach towards the curriculum's applicability (f = 3)	Social Sciences (6th-8th)
Teachers are not reluctant to be innovative (f = 3)	General (4th-8th)
Teacher candidates feel measurement and assessment to be inadequate (f=2)	General (1st-5th)
Teacher candidates feel incompetent about measuring and assessing ($f = 1$)	Phys. Ed. (1st-8th), English (4th-8th)

As can be seen in Table 7, studies dealing with analyzing the perceptions, beliefs, and attitudes towards the curriculum found that participants mostly don't believe in the curriculum and regard the amount of assessment and measurement to be unnecessary. Table 8 presents the thematic codes derived from studies that analyzed participants' curricular needs.

Table 8
Participants' Needs

Thematic codes related to needs of the participants ($f = 27$)	Disciplines/Grades
Teachers have insufficient information about the curriculum ($f = 23$)	Pre-School, Mathematics (4th-5th), Geometry (9th-12th), Phys. Ed. (9th-12th), General (1st-5th), General (9th-12th), Geography (9th-12th), Biology (9th-12th), Chemistry (9th-12th)
Teachers feel incompetent about being able to apply the curriculum ($f = 20$)	Science and Technology (4th-5th), Mathematics (4th-5th), Turkish (4th-5th), General (1st-5th), General (9th-12th), Chemistry (9th-12th), Guidance (1st-5th)
Teachers feel incompetent about being able to measure and assess ($f = 24$)	General (1st-5th), History (9th-12th), Geography (9th-12th), Biology (9th-12th), Chemistry (9th-12th), Guidance (1st-5th), English (4th-5th)
Teacher candidates feel incompetent about being able to measure and assess ($f = 2$)	General (1st-5th)
Teachers need guide books ($f = 2$)	Biology (9th-12th)

As can be seen in Table 8, studies dealing with identifying needs frequently found that participants did not know the curriculum, nor did they know how students could achieve the learning objectives; they also had difficulty in measuring and assessing.

Discussion

Curricula are among the most important means of projecting the effects of changes on an educational environment observed in a given education system (Ayas, Çepni, & Akdeniz, 1993; Güven & Iscan, 2006; Lönnqvist, Horn, & Berktay, 2005). This is why efforts to assess curriculum are most crucial. A glance at the findings reveals that curriculum evaluation analyses have been ascribed great importance in Turkey, as well (see Figure 1). Yet the number of such analyses tends to fluctuate over time. As can be seen in Figure 1, there was an increase in the number of studies related to curriculum in 2005, 2007, 2010, and 2013. In these same years, the curriculum had been subjected to updates in accordance with decisions from the Board of Education and Discipline (see T.C. Millî Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı, n.d.). The increase in the number of studies can be said to be based on these studies on the updated curriculum.

According to Table 4, analyses focused on curriculum were more often than not focused on general evaluations of the 6th-8th grade curricula. General evaluations of 9th-12th grade curricula constitute the second most frequent category. This is a probable result from the importance of placement tests taken at the end of 8th grade, as these tests determine which high school individual students will attend. In the same vein, 12th grade ends with a set of exams that play a defining role in the university admission system. Therefore, one can forcefully argue that these grades are more emphasized, given their relatively greater impact on students' lives. Another point to note is that studies analyzing pre-school curricula are few and far between,

given that a quite a number of studies entailed a general evaluation of 1st-5th grade curricula. Ozan and Köse's (2014) study also observed the limited focus on preschools in terms of curriculum analyses. When considering that study habits, which students gain between first and fifth grade, affect the rest of their school life (Bümen, 2005), researching this period in depth could be a favorable case. Nevertheless, 75% of the knowledge a person learns is formed from birth until the age of six (Bloom, 1998). Furthermore, as the pre-school era plays the largest role in shaping students' educational careers and instilling basic knowledge, identify what exactly students need to be provided in this period is crucial. For this reason, further emphasis and stronger focus on the pre-school period is required. On the other hand, a glance at curricula analyses broken down with reference to specific disciplines reveals that fundamental disciplines such as social sciences, science, mathematics, and Turkish language are prioritized more compared to others such as physical education, music, and arts. The studies by Erdoğan et al. (2005), Kurt and Erdoğan (2015) also arrived at similar results. This is perhaps a consequence of applying numerous exams that play major roles in shaping students' futures in Turkey, and the weight fundamental disciplines have in such exams. Yet one should not forget that classes such as physical education, arts, and music make positive contributions to students' thinking skills, as well as improving their achievement levels in other courses. This is why these classes' curricula also merit detailed analysis.

It can be seen in Figure 2, which summarizes the sample group related to curriculum studies, that studies have mostly been conducted with teachers. Another finding by Kurt and Erdoğan (2015) was that the curriculum evaluation analyses had also been performed mostly with teachers. Teachers are the ones who apply the alterations and approaches that the curriculum supports (Fullan, 1993; Keys, 2003; Norman, 2001). Teachers serve as a bridge between the curriculum and students, so teachers' thoughts, feelings, and application-oriented opinions about the curriculum have great importance (Kilpatrick, 2009). Hence, checking up on teachers' thoughts about the updated curriculum is essential. Nonetheless, attention has been drawn to the limited number of studies performed with students, those most affected by curriculum changes. Education systems that do not give room to student thoughts cannot be expected to be successful (Levin, 2000). Students may notice some problems that the teachers and members who had updated the curriculum failed to notice. Looking at problems from students' standpoints and giving importance to their point of view may fix the problems that come up in educational applications (Heshusius, 1995). Another matter that has drawn attention is the lack of expert views in related fields showing up frequently in curriculum studies. Yet a curriculum's success depends on its strength in terms of insight into the field (Karahan, 2009). In this vein, program evaluation studies should make more frequent reference to experts' views.

Additionally, this content analysis can be understood to have generally interpreted data collected generally from one kind of sample in the studies. Few studies used two or more samples. In fact, the period of change may manifest more details by considering all stakeholders that affect one another directly in the education process (Fullan, 1993). The literature has emphasized that studies with a focus on change in education should use a variety of samples (Werdell, 2009). As a result, researchers have been suggested to use students as a sample in future studies, as well as to conduct studies with more than one sample.

Figure 3, which summarizes the work of the research methods related to the curriculum, shows that qualitative research methods have been generally preferred in studies. Ozan and Köse's (2014) study, which provided a content analysis of curricula developed since 2005, led to a parallel conclusion and observed that the qualitative research method was employed most often in terms of curricula analyses. One noteworthy point is the limited number of mixed studies that combined qualitative and quantitative research. Studies by Akpınar, Dönder, and Karahan (2013), Erdoğan et al. (2015) that entailed curricula content analyses also reached similar results and found that the mixed method has seen only limited application. By using various methods with the help of mixed methods research, events can be brought together, analyzed, and presented in a healthier framework (Greene, 2005; Gökçek, 2008). Mixed methods research has the advantage of being both qualitative and quantitative, and produces more precise and accurate data in term of its application (Çepni, 2007). Researchers can be recommended to use the mixed method in future studies on curriculum by taking into consideration its stated advantages.

Figure 4, which summarizes the data collection techniques used in curricula-related studies in the literature, shows that the studies have generally benefited from document review as a data collection technique. After documents, studies were seen to benefit from questionnaires, interviews, and scales, respectively. Another remarkable point is seeing that observation has not taken place as as a data collection technique. Akpınar, Dönder, and Karahan (2013) concluded in their theses related to the effectiveness of applying primary school curriculum that questionnaires and interviews had mostly been used, whereas observation had not occurred as a data collection technique. Similarly, Erdoğan et al.'s (2015) study on the basis of curriculum content analyses revealed that observation was seldom used as a data collection technique in studies. Written sources ensure the detailed description and disclosure of investigated cases (Yıldırım & Şimşek, 2008), whereas observations provide researchers with first-hand data (Ekiz, 2009; Yıldırım & Şimşek, 2008). Only one kind of data collection technique similar to sample selection was determined to have been used in the studies, as well as there being quite a limited number of studies with two or more data collection techniques. Each and every data collection

technique has its own advantages and disadvantages (Çepni, 2007). Thus, it could be suggested to researchers to use observation more often as a data collection technique for future curriculum-related studies and to conduct their research by using more than one data collection technique. Meanwhile, studies regarding curriculum have shown that studies infrequently apply more than one data collection technique (Akpnar, Dönder, & Karahan, 2013; Erdoğan et al., 2015; Ozan & Köse, 2014).

Figure 5 summarizes the topics and aims of curricula-related studies and shows them to have been aimed at determining opinions related in the literature to curriculum applicability and the general views on this. Similarly, Akpnar, Dönder, and Karahan (2013) concluded in their theses related to the effectiveness of curriculum applications that they aim mostly to determine opinions related to curriculum applicability, in particular, teacher's opinions. Although studies specifying the applicability of curriculum are high in number, it is worth noting that most did not use the observation method, which helps to reveal how curriculum is put into practice in the class environment. Determining the applicability of the curriculum only through questionnaires and interviews may not give very reliable results. The limited number of studies aimed at determining perceptions, attitudes, and beliefs on the learning objectives of curricula has also been pointed out. In this regard, more studies are needed in this area because determining the features with negative effects and removing them from the curriculum is the first step towards providing successful education (Lambdin & Preston, 1995). If teachers' beliefs, knowledge, and attitudes are used in education-related activities, they are believed to be more successful (Haney, Czernıak, & Lumpe, 1996). Additionally, an inadequate number of studies in the literature aimed at determining needs have clearly been seen. Yet determining what is needed is of the uttermost importance if a curriculum is thought to have problems (Balta & Eryılmaz, 2011).

Table 5 summarizes the results of studies aimed at determining general opinions about the curriculum and shows the conclusion that students are mostly encouraged to research rather than memorize, and that the goals are coherent with the lessons and can be easily associated with real life. In addition, the content has been improved and covers changes that occur in the world. These results can be seen as an indicator of the curriculum's success. These days, student-centered education is known to have an important role in solving education problems by drawing students away from memorization and providing students with the ability to structure knowledge not with questions like "What shall we teach?", "How shall we teach?", or "What shall we use to teach?", but with ones such as "What do students want to learn?", "What would students do to learn?", and "What would help students learn?" (Baki, 2008; Bery & Sharp, 1999; Hartly, 1987; Lea, Stehanson, & Tray, 2003). Students also need to associate newly learned notions with real life events to help meaningful

learning take place in education (Ayas & Özmen, 1998). Hence, this should be taken into consideration while developing curriculum (Ayas, Karamustafaoğlu, Sevim, & Karamustafaoğlu, 2001; MEB, 2010). Globalization has led to developments in each field, and this process also affects educational institutions (Sahlberg, 2006). Changes in economy, environment, policy, culture, history, and technology require making changes in educational systems in order for needs to be meet (Akpınar & Aydın, 2007; Guzman, 2003; Özdemir, 2000). Thus, improving content and seeing that it covers novel approaches is very significant.

As can be seen in Table 6, which summarizes the results of studies aimed at determining general opinions about the curriculum's applicability, the results are repetitive in terms of crowded classrooms; insufficient lesson time, materials, and in-service trainings; curriculum's incompatibility with the exam system; positive changes in content but little knowledge of curriculum; and in particular, experiencing difficulties in assessment and evaluation. Another finding of Erdoğan et al.'s (2015) study was that reasons similar to these presented the most important obstacles preventing healthy applications of curricula. Crowded classrooms create various negative influences both on students and teachers (Çınar, Temel, Beden, & Göçgen, 2004). Students are distracted easily, preserving class order becomes harder, and lecturing has to be used more in crowded classrooms. This situation leads to fatigue and a reduction in teacher motivation (Erden, 1998).

Nonetheless, students should be provided with adequate and appropriate material support while performing curriculum activities (MEB, 2010). When analyzing the curricula, suggestions for at least one activity related to each learning objective and teaching material were observed that could be used in almost every activity. Thus, serious malfunctions have been experienced when implementing the curriculum stemming from a lack of material (Kablan, Topan, & Erkan, 2013).

In-service training curricula are of great importance for teachers for reflecting the curriculum into the classroom environment. Many teachers do not know about the curriculum and need guidance implementing it (Ayyıldız, 2010; Horasan, 2012; Kete & Horasan, 2013). Research provides many types of curriculum, such as *designed curriculum* (planned by curriculum developers), *implemented curriculum* (used by teachers), and *accessed curriculum* (which is perceived and accessed by students; Howson & Wilson, 1986, Kilpatrick, 2009). Differences were reported among these program types, and the difference between designed curriculum and implemented curriculum is closely related to teachers' information about the program and educational needs (Doğanay & Sarı, 2008; Handal & Herrington, 2003). Atila's (2012) analysis also noted a similar conclusion, referring to the existence of differences between the official curriculum and the curriculum applied in practice.

Furthermore, the difference was found to be associated with insufficient information about the curriculum on the teachers' behalf, and shortcomings in terms of in-service trainings. In addition, while traces of process-oriented education (as opposed to result-oriented) have been encountered in the curriculum, traces of result-oriented education are seen in our current testing system. However, in order to be more applicable, the philosophies of curriculum and testing systems should show parallels with each other in the education system (Öztürk, 2013). Test-oriented approaches are regarded as one the major problems inhibiting the development of Turkey's educational system (Çepni, Kaya, & Küçük, 2002).

In general, some negative attitudes towards evaluating and assessing the curriculum have been determined to exist, as well as teachers and teacher candidates feeling inadequate mostly in terms of evaluation and assessment (see Table 7). Additionally, as shown in Table 8, studies performed to determine needs have shown that instructions on how to carry out the curriculum's assessment and evaluations are needed. Baykan, Ercan, and Erdoğan's (2011) study on the need for and obstacles to the use of complementary assessment and evaluation techniques recommended alongside the new curriculum has also emphasized that sufficient in-service trainings for teachers were not available with respect to curricular assessment and evaluation. Evaluation and assessment is an important tool for monitoring students' progress and for finding the curriculum's weaknesses and strengths. Thus, it is quite significant (Cansız-Aktaş & Baki, 2012). Teacher competency is one significant factor affecting the quality of education. The teaching profession requires subject-field information, as well as general cultural and pedagogical information and skills. One of the most significant qualities that teachers should have is the knowledge and skills related to measuring and assessing (Mertler, 1999; Zhang & Burry-Stock, 2003). In parallel with new understandings in learning theories, some changes have been made to the field of evaluation and assessment (Birgin, 2008). Using evaluation techniques and tools that reveal students' written and oral performances by supporting them, as well as assessments that highlight what students can do rather than what they cannot, is supported in curricula. Consequently, in-service trainings on evaluating and assessing should be given greater importance.

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Appendix 1

Year, Related Discipline, Sampling, Research Design and Data Collection Techniques Used in the Studies

Year	Discipline/Grades	Sample	Method	Data Collection Techniques
2000 (f = 3)	General(1st-5th)	-	Qualitative	Curriculum review
	General(4th-8th)	-	Qualitative	Curriculum review
	Visual Arts(9th-12th)	Teacher	Mix	Questionnaire-Open ended question
2001 f(= 2)	General (9th-12th)	Teacher	Quantitative	Questionnaire
	Social Sciences(4th-8th)	Teacher	Quantitative	Questionnaire
2002	Life Sciences	Teacher	Quantitative	Questionnaire
2003 (f = 4)	Science (4th-5th)	Teacher	Qualitative	Interview
	Biology(9th-12th)	-	Qualitative	Curriculum review
	Geography(9th-12th)	-	Qualitative	Curriculum review
	General (1st-12th)	-	Qualitative	Curriculum review
2004 (f = 4)	Music(4th-12th)	-	Qualitative	Curriculum review
	Pre-School	Teacher	Mix	Questionnaire- Observation-Interviews
	Science and Technology (4th-8th)	Teacher	Quantitative	Questionnaire
	Pre-School	-	Qualitative	Curriculum review
2005 (f = 10)	General(1st-5th)	Teacher	Qualitative	Open ended question
	Social Sciences(4th-5th)	-	Qualitative	Curriculum
	Literature(9th-12th)	Field Specialist	Qualitative	Interviews
	Literature (9th-12th)	-	Qualitative	Curriculum review
	General(1st-5th)	Teacher -Student	Mix	Scale-Interviews
	Turkish(4th-5th)	-	Qualitative	Curriculum review
	General(1st-5th)	Teacher	Quantitative	Scale
	Turkish (4th-5th)	Teacher -Student	Qualitative	Interview
	Social Sciences(4th-5th)	-	Qualitative	Curriculum review
	Social Sciences(4th-8th)	-	Qualitative	Curriculum review
2006 (f = 14)	Geography (9th-12th)	-	Qualitative	Curriculum review
	Biology(9th-12th)	-	Qualitative	Curriculum review
	Geography(9th-12th)	-	Qualitative	Curriculum review
	Mathematics(1st-5th)	-	Qualitative	Curriculum review
	General(1st-12th)	-	Qualitative	Curriculum review
	Social Sciences (4th-5th)	-	Qualitative	Curriculum review
	History(6th-8th)	-	Qualitative	Curriculum review
	Social Sciences(6th-8th)	-	Qualitative	Curriculum review
	Literature(9th-12th)	-	Qualitative	Curriculum review
	Life Sciences	Teacher	Quantitative	Questionnaire
	General (4th-8th)	-	Qualitative	Curriculum review
	English (4th-8th)	-	Qualitative	Curriculum review
	English (4th-5th)	Teacher-Inspector	Quantitative	Questionnaire
	Physical Training(6th-8th)	Teacher-Student	Quantitative	Scale

Year	Discipline/Grades	Sample	Method	Data Collection Techniques
2007 (f = 14)	Mathematics(4th-5th)	Teacher	Quantitative	Scale
	General(4th-8th)	Teacher-Inspector Leadership-	Quantitative	Scale
	Science and Technology (4th-5th)	Teacher	Quantitative	Scale
	Science and Technology (4th-5th)	Teacher	Quantitative	Questionnaire review
	Mathematics (4th-5th)	Teacher	Quantitative	Scale
	General(1st-5th)	Parents	Quantitative	Questionnaire
	Mathematics (6th-8th)	-	Qualitative	Curriculum review
	General (1st-5th)	Teacher-Teacher Candidate	Mix	Open ended question-Questionnaire
	General (4th-8th)	Teacher	Quantitative	Scale
	Geography(9th-12th)	-	Qualitative	Curriculum review
	Geography (9th-12th)	Teacher	Mix	Open ended question-Questionnaire
	Turkish(4th-5th)	Teacher	Quantitative	Scale
	Reading-Writing	Teacher	Mix	Interviews-Questionnaire
	Life Sciences	Teacher	Quantitative	Scale
2008 (f = 18)	General(6th-8th)	Teacher	Quantitative	Questionnaire
	Geography (9th-12th)	Teacher	Qualitative	Open ended question
	Citizenship(6th-8th)	Teacher-Student	Quantitative	Test
	Music (6th-8th)	Teacher	Mix	Scale-observation
	Mathematics(6th-8th)	Teacher	Qualitative	Interviews
	Social Sciences(6th-8th)	-	Qualitative	Curriculum review
	History of Art (9th-12th)	-	Qualitative	Curriculum review
	Social Sciences(4th-5th)	Parents	Mix	Questionnaire-Interview
	Mathematics(4th-5th)	Teacher	Quantitative	Scale
	Mathematics (6th-8th)	Teacher	Quantitative	Questionnaire
	Mathematics (6th-8th)	Students	Quantitative	Test
	Reading-Writing	Teacher	Quantitative	Questionnaire
	Pre-School	Teacher	Qualitative	Observation -Interviews-Curriculum review
	Physical Training(6th-8th)	-	Qualitative	Curriculum review
	Science and Technology (6th-8th)	Teacher	Quantitative	Scale
	Science and Technology (4th-5th)	Teacher	Qualitative	Interviews
	Life Sciences	-	Qualitative	Curriculum review
	Chemistry (9th-12th)	Teacher	Quantitative	Questionnaire
2009 (f = 8)	General(1st-5th)	Teacher Candidate	Quantitative	Scale
	Science and Technology (6th-8th)	Teacher	Quantitative	Scale
	Mathematics(6th-8th)	Teacher	Mix	Questionnaire-Interviews
	Turkish(6th-8th)	-	Qualitative	Curriculum review
	General(1st-5th)	Student	Quantitative	Scale
	General(1st-5th)	Teacher	Qualitative	Interviews
	General(1st-5th)	Teacher	Quantitative	Scale
	Science and Technology (6th-8th)	Teacher	Mix	Interview-Questionnaire

Year	Discipline/Grades	Sample	Method	Data Collection Techniques
	General(4th-8th)	Teacher	Quantitative	Scale
	Guidance(1st-5th)	Teacher	Quantitative	Questionnaire
	Science and Technology (4th-8th)	Teacher	Quantitative	Questionnaire
	Turkish(6th-8th)	-	Qualitative	Curriculum review
	Music(4th-5th)	Teacher Candidate	Qualitative	Interviews
	Mathematics(4th-5th)	Teacher	Mix	Interviews-Scale
	General(1st-5th)	Teacher-Leadership	Quantitative	Questionnaire
2010 (f = 16)	Mathematics(9th-12th)	-	Qualitative	Curriculum review
	General(4th-8th)	Teacher	Quantitative	Scale
	English(4th-8th)	-	Qualitative	Curriculum review
	Science and Technology (4th-8th)	-	Qualitative	Curriculum review
	General(1^{s}-5th)	Parents	Quantitative	Questionnaire
	General(1st-12th)	-	Qualitative	Curriculum review
	Science and Technology (6th-8th)	Teacher	Quantitative	Questionnaire
	General(1st-5th)	Teacher	Qualitative	Interviews
	General(1st-5th)	Teacher	Qualitative	Open ended question
	Literature (9th-12th)	Teacher	Quantitative	Questionnaire
	Social Sciences(6th-8th)	-	Qualitative	Curriculum review
	Science (6th-8th)	-	Qualitative	Curriculum review
	Science and Technology (4th-5th)	-	Qualitative	Curriculum review
	Science and Technology (6th-8th)	Teacher Candidate	Qualitative	Interviews
2011 (f = 12)	Turkish(6th-8th)	-	Qualitative	Curriculum review
	Social Sciences(4th-8th)	Teacher	Quantitative	Questionnaire
	General(1st-5th)	-	Qualitative	Curriculum review
	Mathematics(4th-5th)	-	Qualitative	Curriculum review
	Science and Technology (6th-8th)	Teacher-Student	Qualitative	Interviews
	Turkish(4th-5th)	-	Qualitative	Curriculum review
	Turkish (6th-8th)	Teacher	Qualitative	Interviews
	Social Sciences(4th-8th)	-	Qualitative	Curriculum review
	Mathematics(9th-12th)	Teacher	Quantitative	Scale
	Social Sciences(6th-8th)	Teacher	Quantitative	Questionnaire
	Chemistry(9th-12th)	Teacher	Qualitative	Interview
	Sociology (9th-12th)	-	Qualitative	Curriculum review
	Science and Technology (4th-5th)	-	Qualitative	Curriculum review
2012 (f = 13)	Science and Technology (6th-8th)	-	Qualitative	Curriculum review
	Mathematics(6th-8th)	Teacher-Student	Mix	Interviews-Test
	English(9th-12th)	Teacher	Quantitative	Questionnaire
	Social Sciences(4th-8th)	-	Qualitative	Curriculum review
	Life Sciences	Teacher	Quantitative	Questionnaire
	Pre-School	-	Qualitative	Curriculum review
	Music(6th-8th)	Teacher	Qualitative	Interview

Year	Discipline/Grades	Sample	Method	Data Collection Techniques
	Biology(9th-12th)	Teacher	Qualitative	Interviews
	Mathematics(6th-8th)	-	Qualitative	Curriculum review
	Turkish(6th-8th)	-	Qualitative	Curriculum review
	Citizenship(9th-12th)	-	Qualitative	Curriculum review
	Physical Training(9th-12th)	Teacher	Qualitative	Interviews
	Social Sciences(4th-5th)	Student	Quantitative	Test
	Ottoman Turkish (9th-12th)	Student	Qualitative	Interviews
	History(9th-12th)	Teacher	Qualitative	Interviews
	Pre-School	Teacher	Qualitative	Interviews
	Science and Technology (4th-5th)	Teacher	Qualitative	Interviews
	General(4th-8th)	Inspector	Quantitative	Scale
2013	Geometry(9th-12th)	Teacher	Qualitative	Interview
(f = 24)	General(4th-8th)	-	Qualitative	Curriculum review
	General(9th-12th)	Teacher	Quantitative	Questionnaire
	Turkish (6th-8th)	-	Qualitative	Curriculum review
	Mathematics(6th-8th)	-	Qualitative	Curriculum review
	Social Sciences(4th-8th)	-	Qualitative	Curriculum review
	Science and Technology (6th-8th)	-	Qualitative	Curriculum review
	Religion Culture(9th-12th)	-	Qualitative	Curriculum review
	Social Sciences(6th-8th)	Student	Quantitative	Scale
	Life Sciences	Teacher	Quantitative	Questionnaire
	General(1st-5th)	Inspector	Qualitative	Interviews
	Science and Technology (4th-8th)	-	Qualitative	Curriculum review
	Social Sciences(6th-8th)	Teacher	Quantitative	Questionnaire
	Social Sciences(4th-5th)	Teacher	Quantitative	Questionnaire
	Visual Arts(4th-5th)	Teacher	Qualitative	Interviews
	English(6th-8th)	Student	Mix	Observation-Test
2014	Pre-School	Teacher	Mix	Questionnaire-Interviews
(f = 11)	Physical Training (4th-8th)	Student-Teacher-Parents	Qualitative	Interviews
	Revolution History (9th-12th)	-	Qualitative	Curriculum review
	Social Sciences(4th-8th)	Teacher	Quantitative	Scale
	Reading-Writing	-	Qualitative	Curriculum review
	Chemistry(9th-12th)	Teacher	Qualitative	Interviews
	Chemistry(9th-12th)	Teacher	Mix	Interviews-Questionnaire
	General(9th-12th)	-	Qualitative	Curriculum review