Cooperative Learning in Turkey: A Content Analysis of Theses

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Abstract

This study is a content analysis of theses concerning cooperative learning prepared in Turkey between the years 1993 and 2014. A total of 220 theses which were accessible online (open access) at the site of Council of Higher Education (CoHE) were analyzed. The publishing classification form used in this study was prepared analyzing similar forms in the literature. Each thesis was subjected to content analyses using this form and the data were stored in electronic media. The data were analyzed and are presented in graphics, frequency and percentage tables, and in a descriptive manner. Results show that theses on the topic of cooperative learning increased in large numbers with the adoption of the 2005 constructivist learning curriculum. Results also show that most often quantitative methods were used, the effect of the method on academic success was studied, and percentage and frequency tables in particular were used as the data analysis technique.

Keywords

Content analysis • Cooperative learning • Learning methods • Collaborative learning • Theses

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Advancements in science and technology affect our lives in all areas. The needs and expectations of individuals and the marketplace continue to evolve in the areas of renewal, advancement and learning. As Meder (2001) states, information society causes a great transformation since it hardly keeps the pace of the whole world. In a modern society knowledge became the main source for production and continuous learning, and therefore, change and development became inevitable for individuals and societies to survive.

These changes and developments have triggered new efforts for strengthening and developing the education system in Turkey and have led administrators and educators to seek new approaches to learning. Key adjustments were made since 2005 in order to raise individuals who can meet the necessities of our age, think analytically, make syntheses, be solution-oriented, be able to find information efficiently, and communicate effectively. Specifically, curricula were improved in the context of approaches and models and a student centred education atmosphere was created in place of a teacher centred educational approach.

Student centred learning methods are classified as active learning applications. Active learning does not accept teachers as main information givers and changes the learning atmosphere into an operational process in which students learn actively and teachers monitor the process. Active learning processes contributes to students' acquiring high level skills that can be used in life and in developing intellectual entrepreneurship (Akpınar & Gezer, 2010). In active learning students seek out relevant resources, learn to acquire information from different sources, organize and present the information they found, take and share responsibilities in individual and group projects, share their knowledge, and interactively cooperate to form a collective knowledge (Akar, 2012). Learners have active roles in learning and the teaching environment; thus, researchers and educators develop and enact learning environments in which learners are active. One approach in which the students are active is Cooperative Learning.

Cooperative learning is a form of group work which aims to increase the learning skills of the students and their peers in the group for shared goals using different methods. This learning method has earned respect worldwide, especially in the USA. Increasing numbers of studies on this topic, the variety of student and educational activities, and the number of individuals taking part in these activities are all the indicators of this respect (Timur, 2006). Cooperative learning is also well respected in education media at all levels as an alternative for instruction strategies. The reason for this high level of respect is the fact that students can learn from each other while making descriptions, decisions and cooperating in strategies and problem solving methods (Doymuş, Şimşek, & Şimşek, 2005; Koç, 2014).

Cooperative learning shines out when compared to conventional methods in many aspects. One superior part of cooperative learning method against other methods is that the attention of the teacher is not only on one student but on the whole group formed (Panitz, 1999). In this method the students are active and the teacher is a guide. The academic assignment given to the group isn't done by just one student; there is an issue of sharing (Gillies, 2004). The students not only interact with the teacher only but also among themselves (Yaşar, 1993, p. 431). Therefore a media of socialization for students is achieved. Cooperative learning gives students opportunities to actively get involved with the teaching and learning process and improve their skills of sharing, having feedbacks of their own learning, interacting with friends, using their own skills, being responsible and helping their friends to learn, solving problems, and thinking critically (Yıldız, 1998).

In the literature, studies concerning cooperative learning increased in numbers beginning in the 1960's, but this increase was only seen in Turkey in the 2000's. These studies mostly explore the effect of the method on academic achievement of students in different courses, its effect on attitudes of students, and the effectiveness of the method overall. However, no attempts were made to analyze and classify the studies about cooperative learning as a whole.

Analyzing scientific theses on certain issue can give the depth and commonness of that issue and clearize the main idea of it (Göktaş & Erdem, 2006). From this point it is important to analyze the studies in the area of education in a comprehensive manner as it enlightens researchers, educators and teachers while facilitating and leading researchers to study in a particular area (Cohen, Manion, & Morrison, 2007). Therefore analyses of graduate theses are important. Owing to these kinds of researches it becomes possible to propose new perspectives for educational sciences and education in a specific field. Besides, it is thought that analyzing all theses together and making content analyses of them has important role in determining the contemporary trends and research issues will have important contributions to the field.

The subjects and the findings of studies, including theses which form the base for these studies, are important in guiding researchers in that area (Karamustafaoğlu, 2009; Şimşek et al., 2007). There are examples of studies in the literature in which analyses of graduate theses are made according to some certain criteria. First studies about graduate theses are the analyses of subjects and fields of some doctorate theses and content analyses are used in the first examples of studies in the literature (Cavitt, 2006). Kayhan and Koca (2004) analyzed theses and manuscripts held in mathematics education between 2000-2002 according to their subjects. Macauley, Evans, Pearson, and Tregenza (2004), analyzed doctorate theses prepared until 2003 in Australia according to their fields of study. Altıparmak and Nakipoğlu (2005) analyzed the

graduate theses in Science education according to the methods used. Evrekli, İnel, Deniş, and Balım (2011) analyzed the theses according to sufficiency of some parts, and Deniş and Uçar (2015) analyzed the theses according to their fields of study, chapters studied, methods and models used, and types of dependent and independent variables used. Kabaca and Erdoğan (2007) analyzed the graduate theses in Science and Mathematics education according to the statistical mistakes made. Şimşek et al. (2007) analyzed the graduate theses held in education technology according to contents, methods and designs, Erdoğmuş and Çağıltay (2009) analyzed the graduate theses prepared in the same field according to methods, techniques of sampling, research subjects, and data collection tools. Belingiray (2009) analyzed the graduate theses in Human resources management according to years, universities, institutes, departments, languages, subjects, and fields of application. Doğru, Gençosman, Ataalkın, and Şeker (2012) analyzed theses in science education prepared between 1990-2009 according to types of study, dates fields, study groups, study models, data collection tools, statistical analyses, and chapters studied. Özay Köse, Gül, and Konu (2014) made descriptive analyses of studies held in biology education and determined tendencies and primary research subjects. The first systematic research in literature analyzing the studies on cooperative learning was the PhD thesis prepared by Tarım (2003). This thesis was a content analysis of some of the PhD theses prepared until that time, but a more comprehensive content analyses of all Master's and PhD theses is needed for the determination of current trends on cooperative learning. Koç Damgacı and Karataş (2015) analyzed the studies comparing conventional and cooperative learning models according to techniques used, course of application, education levels of participants, and effect of the two models on academic success using content analyses.

The aim of this study is to perform a content analysis of theses published in CoHE National Thesis Center's site with open access on cooperative learning and to determine the subjects, trends and methods of the studies on cooperative learning as well as the techniques used in application of this method. Therefore, this study is expected to be helpful for researchers to see the historical progress of the theses, the contemporary situation, and trends in this subject. For this purpose, the theses were analyzed according to the following research questions. In Turkey;

1. What is the distribution of the theses on cooperative learning according to preparation language, levels, methods and designs of the theses?

2. What is the distribution of the theses by year?

3. What is the distribution of the theses according to the universities they were prepared at?

4. What is the distribution of the theses according to the departments and disciplines?

5. What is the distribution of the theses according to the sampling?

6. What is the distribution of the theses according to applications made?

7. What is the distribution of the theses according to data collection tools?

8. What is the distribution of the theses according to data analyses methods?

9. What is the distribution of the theses according to validity and reliability methods?

10. What is the distribution of the theses according to ıssues?

11. What is the distribution of the theses according to academic supervising?

12. How is the distribution of the theses according to the results obtained?

Method

In this study a content analysis method was selected as an appropriate tool given the aim of the study. Content analysis brings together similar data in context of certain concepts and themes while describing and organizing them in a way that readers can understand (Yıldırım & Şimşek, 2011, p. 227). Content analysis is also a systematic and replicable technique in which words of a text are summarized in smaller content categories with codifications based on certain rules (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2011, p. 269).

Data Collection Tool and Procedure

Since the first thesis on cooperative learning was prepared in 1993, the data of this study was collected from theses prepared from 1993 to 2014 and available on CoHE National Thesis Center. The term "Cooperative Learning" was entered to the search part and for the "search in" part the option of "all" was selected in the site of National Thesis Center and 316 records were found. Of these, 102 could not be downloaded as some were put on a time limit for access by the author and others were only accessible from the libraries of the universities from which they were prepared. Again "Cooperative Learning" (another term used for the Turkish equivalent for Cooperative Learning) was entered to the "search" part and again the option of "all" was selected for the "search in" part and 45 results were found. For the same reasons 10 theses could not be downloaded. Therefore, with the first search 214 theses were downloaded and with the second search 35 were downloaded. It was discovered that 16 of the original theses were duplicates, so with the exclusion of these, 233 were

left. An additional 13 theses were excluded because they were not mainly about cooperative learning leaving a total of 220 theses in the study.

A study schedule is used in the analyses and classification process of theses in order to guide the researchers. In order to ensure the validity of the classification a meeting on coding led by the third researcher was made. Then the theses taken into research are shared between the first and third researchers for classification. The classification was made by reading the theses, evaluating descriptions and applications in related parts and filling out the theses classification form. The classification made by these researchers were controlled by each other. In order to ensure internal validity, randomly selected 20 theses were reviewed by the other researcher and it was seen that coordination of the two researchers was really high. Some disagreements out of these controls were revised and discussed among the researchers and internal validity and reliability were tried to be ensured. The reports were prepared and language correction and translation were made by the second researcher.

The Publishing Classification Form prepared by Çiltaş, Güler, and Sözbilir (2012) and the Educational Technology Publications Classification Form prepared by Göktaş et al. (2012) were used in order to evaluate the material with some minor revisions. Each thesis was subjected to content analyses using this adapted form and the data were stored in computer media. The data were analyzed and were presented in either frequency and percentage tables or descriptive graphics.

The publishing classification form is comprised of nine parts: descriptive information about the identity of the thesis, field of discipline, subject, method, data collection tools, sampling, validity and reliability studies, information regarding the implementations and methods of data analyses. The researchers worked with each other in the process of classification of the theses. Classifications were shared between researchers and discussed in depth.

Data Analysis

Data reached out of the analyses using content analyses in context of the research are analyzed using descriptive statistical methods (percentage and frequency). As a response to each research question, frequency of data and percentage rates are calculated according to these frequencies regarding the data in the database formed. The data obtained from the publishing classification form formed of seven parts and adapted to cooperative learning are stored in a Microsoft Excel page. These data were analyzed using the tabs on the same page. The results are transformed into graphics, frequency and percentage tables and presented descriptively.

Findings

This section is devoted to the findings obtained by the use of data collected in accordance with the descriptive statistics of the theses analyzed, distributions and sub-objectives of the research.

Table 1
Descriptive Statistic for the Theses Subjected to Content Analysis

Language of Theses	Frequency (f)	Percentage (%)
French	1	0.4
English	14	6.4
Turkish	205	93.2
Total	220	100
Level of Theses	Frequency (f)	Percentage (%)
Doctorate	56	25.5
Master's	164	74.5
Total	220	100
Method of Theses	Frequency (f)	Percentage (%)
Qualitative	9	4.1
Mixed	82	37.3
Quantitative	129	58.6
Total	220	100
Designs of the Theses	Frequency (f)	Percentage (%)
2x2 Factorial	3	1.4
3x3 Factorial	1	0.5
Inter-subject Multiple Probe Design	1	0.5
Nonequivalent with Control Groups	10	4.5
Pre-test Post-test without Control Groups	10	4.5
Pre-test Post-test with Control Groups	173	78.6
Solomon's Quadruplet Design	1	0.5
Activity Research	3	1.4
Case Study	18	8.2
Total	220	100

According to these findings most of the thesis on cooperative learning are in Turkish (f = 205, 93.2%). Upon analyzing Table 1, it is seen that 164 (74.5%) of the theses on cooperative learning are at Master's level and 56 (25.5 %) of them are at a Doctorate level. It also is seen that quantitative research methods are used most often (f = 129, 58.6%), whereas 82 (37.3%) researches were prepared using mixed methods, and 9 (4.1%) were prepared using qualitative methods. The methods of some studies were not stated, so these were analyzed while filling out the thesis classification form and were included to the mixed group as both qualitative and quantitative methods were used. Another finding regarding the designs of the studies indicates that the pre and post-test control group experimental design was used regardless of research method in a majority (f = 173, 78.6%) of the theses on cooperative learning.

Findings about the Yearly Distribution of the Theses on Cooperative Learning

According to the first question of the study, the yearly distribution of the thesis on cooperative learning is analyzed and the findings are shown in Figure 1.
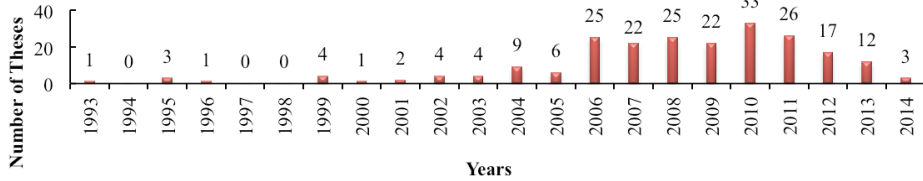

Figure 1. The yearly distribution of the theses on cooperative learning.

When Figure 1 is analyzed it is seen that a majority of the thesis (f =185, 84.1%) were prepared after the changes made in curricula in 2005. The number of the thesis are peak in 2010 with a total of 33.

Findings about the Theses on Cooperative Learning According to the Universities They Were Prepared at

In the 3rd problem of the study the theses prepared on cooperative learning are analyzed according to the universities they were prepared at and the findings are shown in Figure 2.
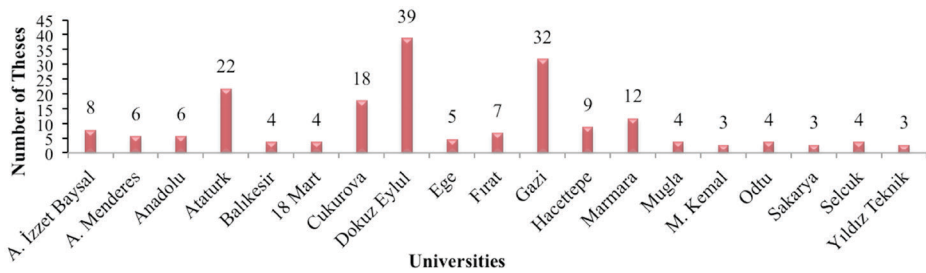

Figure 2. The universities at which thesis on cooperative learning are prepared most often

When Figure 2 is analyzed it is seen that the first three universities at which most of the theses on cooperative learning are prepared are Dokuz Eylül University (f = 39, 17.7%), Gazi University (f = 32, 14.5%) and Atatürk University (f = 22, 10%). The 220 theses analyzed in the study were prepared at 41 different universities. Due to the issue of space in Figure 2 the universities at which one or two theses were prepared were not included. At Universities of 19 Mayıs, Ahi Evran, Ankara, Beykent, Bilkent, Boğaziçi, Cumhuriyet, Çağ, Erzincan, İstanbul, Kafkas, Kara Elmas, Kastamonu, Kocatepe, M. Akif Ersoy, Pamukkale and S. Demirel one thesis was prepared each and Universities of Akdeniz, Dicle, KTU, Niğde and Uludağ two theses were prepared each.

Findings about the Theses on Cooperative Learning according to Departments and Disciplines

In the 4th problem of the study graduate theses on cooperative learning were analyzed according to the departments in which they were prepared and the findings are given in Table 2.

Table 2

The Distribution of the Theses According to the Departments and Disciplines They were Prepared

Departments	Disciplines	Frequency (f)	Percentage (%)
Physical Education	Physical Education	1	0.5
	Sports Education	1	0.5
	Total	2	0.9
Computer Instruction Technology Education (CITE)	Computer Instruction Technology Education	8	3.6
	Technology Education	1	0.5
	Total	9	4.1
Secondary Level Social Departments Education (SLSDE)	Geography Education	7	3.2
	Total	7	3.2
Secondary Level Science and Mathematics Teaching (SLSMT)	Biology Education	5	2.3
	Physics Education	14	6.4
	Statistics	1	0.5
	Chemistry Education	8	3.6
	Mathematics Education	14	6.7
	Technical Education	1	0.5
	Total	43	19.6
Primary Education	Science Teaching	52	23.7
	Primary School Mathematics Education	10	4.6
	Pre-School Education	2	0.9
	Primary School Education	23	10.5
	Social Sciences Education	6	2.7
	Turkish Language Teaching	9	4.1
	Total	102	46.4
Educational Sciences	Educational Administration	1	0.5
	Communication Sciences	2	0.9
	Educational Curricula	30	13.6
	Special Education	1	0.5
	Total	34	15.5
Fine Arts Education	Music Teaching	2	0.9
	Turkish Islamic Arts	2	0.9
	Art Teaching	5	2.3
	Total	9	4.1
Foreign Language Education	Applied Philosophy	1	0.5
	Arabic Teaching	1	0.5
	French Language Education	1	0.5
	English Language Education	11	5.0
	Total	14	6.4
TOTAL		220	100

When the data in Table 2 are analyzed, it is seen that theses on cooperative learning were prepared in 16 different departments. The departments most theses were prepared in were Primary School Teaching (f = 102, 46.4%), Secondary Level Science and Mathematics Teaching (SLSMT) (f = 43, 19.6%), Educational Sciences (f = 34, 15.5%), Foreign Language Education (f = 14, 6.4%), Computer Instruction Technology Education (CITE) (f = 9, 4.1%), Fine Arts Education (f = 9, 4.1%) and Secondary Level Social Departments Education (SLSDE) (f = 7, 3.2%).

Also when the findings in Table 2 are analyzed it is seen that most theses on cooperative learning were prepared in the disciplines of Science Teaching (f = 52, 23.6%), Educational Curricula (f = 30, 13.6%), Primary School Teaching (f = 23, 10.5%), Mathematics Education (f = 14, 6.4%) and Physics Education (f = 14, 6.4%).

Findings about the Theses on Cooperative Learning According to the Samples

The 5th problem of the research focused on sampling methods of theses, the types of sampling groups, and the grades of application used in the theses on cooperative learning. In most of the theses sampling methods were not stated so the classification is made by the researchers through the analysis of each thesis. These findings are given in Table 3.

When the findings in Table 3 are analyzed, it is concluded that in a majority of the theses, the purposeful sampling method was used. In addition, most of the theses were applied in secondary school level (f = 111, 45.6%) for sampling. The sampling groups vary, as one of the theses was applied with bank officers in the context of in-service education and one was applied with public education course students. The sampling types of two theses could not be found.

Regarding the grades of application, most of the theses were applied at the level of secondary school 7th grade (f = 46, 20.9 %). 41 theses were applied at secondary school 6th grade and 25 theses were applied at 5th grade. Another important point in Table 3 is that 5th grade was used for both primary and secondary schools. This is due to the fact that during the 2012–2013 educational year 5th grade was classified in secondary school level with the adoption of the 4+4+4 system. In order for this situation to not to affect the results, 5th grade was divided into two groups and it was taken as secondary school 5th grade in the theses prepared since 2012–2013 educational year. The total number of the theses found was 244 because in some of the theses a few classes were taken together.

The distribution of the sampling sizes of the theses on cooperative learning is given in Figure 3.
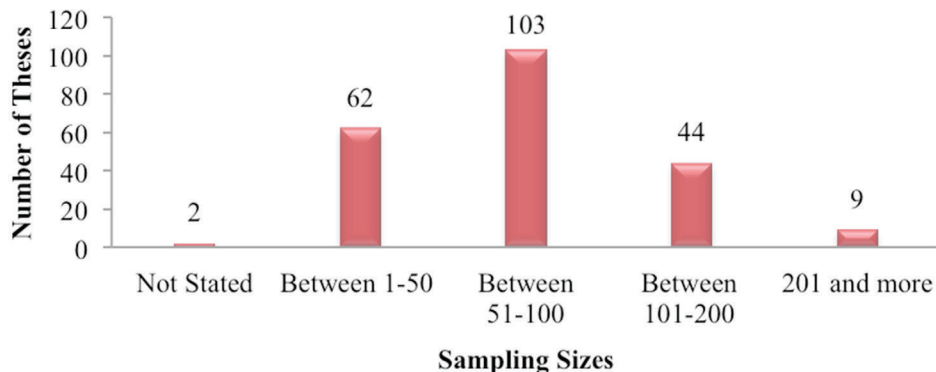
Figure 3. Distribution of the sampling sizes of the theses on cooperative learning

Table 3

The Distribution of the Theses According to the Samples Used in the Theses on Cooperative Learning

Sampling Methods Used in the Theses		Frequency (f)		Percentage (%)
Purposeful Sampling		183		83.2
Homothetic Sampling		1		0.5
Availability Sampling		13		5.9
Cluster Sampling		11		5.0
Maximum Variability		3		1.4
Probabilistic Sampling		1		0.5
Random Sampling		6		2.7
Stratified Random Sampling		1		0.5
Typical Case Sampling		1		0.5
TOTAL		220		100
Sampling Groups	Grades of Application	Frequency (f)	Total	Percentage (%)
Primary School	Pre-School	2	50	20.5
	3rd Grade	3		
	4th Grade	20		
	5th Grade	25		
Secondary School	5th Grade	1	111	45.6
	6th Grade	41		
	7th Grade	46		
	8th Grade	23		
High School	9th Grade	11	31	12.7
	10th Grade	13		
	11th Grade	3		
	12th Grade	4		
Vocational College	1st Grade	1	2	0.8
	2nd Grade	1		
College of Physical Education and Sports (CPES)	2nd Grade	1	1	0.4
University	Preparation Class	4	39	15.9
	1st Grade	20		
	2nd Grade	10		
	3rd Grade	4		
	4th Grade	1		
Adult	Public Education Center	1	10	4.1
	Bank Officers	1		
	Teachers	5		
	Academics	1		
	Not Stated	2		
TOTAL		244	244	100

According to the findings, in 103 of the theses on cooperative learning 51–100 persons (46.8%) were included in the sampling. In 62 theses, 1–50 persons (28.2%) were included in the sampling. The sampling sizes of two theses could not be determined as sampling sizes were not stated.

Findings about the Theses on Cooperative Learning according to the Applications Made

In the 6th problem of the study the numbers of the groups formed, the technique most used, and the durations of the applications in the theses was analyzed and the findings are given in Table 4.

When Table 4 is analyzed in 126 of the theses on cooperative learning (59.7%) one experimental and one control group were formed. In 26 theses (12.3%), two experimental and one control group were formed. There are 61 studies (28.9%) in which more than one experimental group were formed. In one thesis four experimental and three control groups were formed, and in 21 theses (9.5%) no control groups were formed.

The technique most used in the theses on cooperative learning is Learning Together. Learning together technique was used in 56 (26.5%) theses, Student Teams-Achievement Divisions (STAD) was used in 51 (23.2%) theses, and Jigsaw technique was used in 41 theses (18.6%). The term cooperative learning is used for the cases where the names of the techniques used in the theses were not stated and could not be clarified.

The duration of the applications in 84 theses lasted 6–10 weeks, 67 theses lasted 1–5 weeks and 33 theses lasted 11–15 weeks. In six theses the duration was given in number of courses. The longest duration of application was stated as 24 weeks and in 20 of the theses the durations of applications were not stated.

In the 6th problem of the study the courses of application for the theses on cooperative learning were analyzed and the data are given in Figure 4.
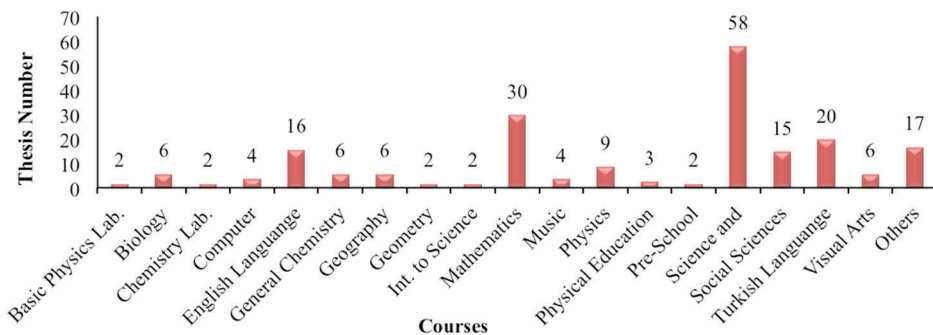

Figure 4. The distribution of the theses on cooperative learning according to the courses of application

Table 4

The Distribution of the Theses According to the Application in the Theses on Cooperative Learning

Groups Formed	Frequency (f)	Percentage (%)
1 Experimental	17	8.1
1 Experimental 1 Control	126	59.7
1 Experimental 2 Control	6	2.8
1 Experimental 3 Control	1	0.5
2 Experimental	4	1.9
2 Experimental 1 Control	26	12.3
2 Experimental 2 Control	15	7.1
2 Experimental 3 Control	1	0.5
3 Experimental 1 Control	11	5.2
3 Experimental 2 Control	1	0.5
3 Experimental 3 Control	1	0.5
4 Experimental 2 Control	1	0.5
4 Experimental 3 Control	1	0.5
Total	211	100
Cooperative Techniques Used	Frequency (f)	Percentage (%)
Academic Contradiction	7	2.5
Exchange of Information	2	0.7
Computer Supported Cooperative Learning	7	2.5
Cooperative Integrated Reading and Composition (CIRC)	4	1.4
Jigsaw	41	14.4
Jigsaw II	16	5.6
Jigsaw IV	2	0.7
Learning Together	56	19.6
Group Research	16	5.6
Twin Check	13	4.6
Cooperative Learning	21	7.4
Collaborative Inquiry	4	1.4
Team Assisted Individualization	11	3.9
Reading/Writing Application	6	2.1
Student Teams Achievement Divisions (STAD)	51	17.9
Team Learning	2	0.7
Discussion Inquiry	2	0.7
Team-Game-Tournament	10	3.5
Ask Together Learn Together	14	4.9
Total	285	100
Duration of the Application	Frequency (f)	Percentage (%)
5–15 Courses	6	2.7
1–5 Weeks	67	30.5
6–10 Weeks	84	38.2
11–15 Weeks	33	15.0
16–20 Weeks	9	4.1
21 Weeks and More	1	0.5
Not Stated	20	9.1
Total	220	100

When the results in Figure 4 are analyzed it is seen that the application of theses on cooperative learning were mostly applied in Science and Technology (f = 58, 26.4%),

Mathematics (f = 30, 13.6%), and Turkish (f = 20, 9.1%). It was stated previously in Table 2 that 52 theses were prepared in the discipline of Science Education. On the other hand, it is shown in Figure 3 that 58 theses are prepared in the course of Science and Technology. The cause of the difference is that the theses prepared in Biology Education, Physics Education and Chemistry Education makes their applications in Science and Technology courses.

Findings about the Data Collection Tools Used in the Theses on Cooperative Learning

In the 7th problem of the study focused on the diversity of the data collection tools used in the theses on cooperative learning and the findings are given in Figure 5.
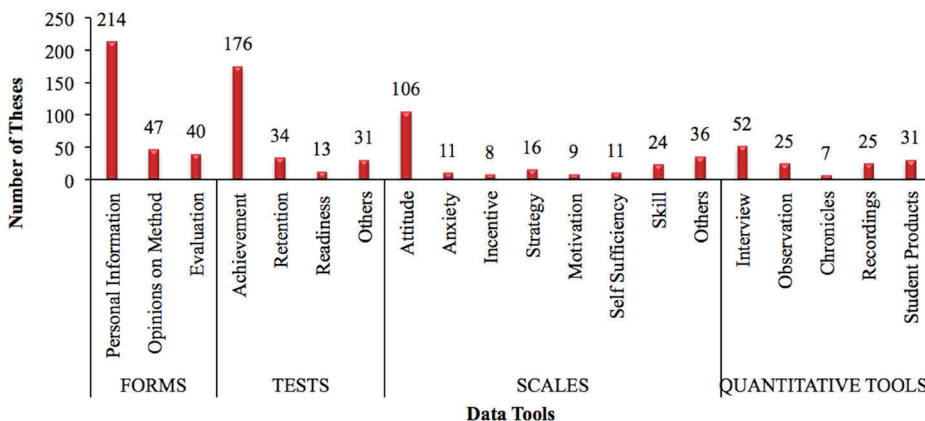

Figure 5. Diversity of the data collection tools used in the theses on cooperative learning

When Figure 5 is analyzed it is seen that in 214 theses (97.2%) personal information forms were used, in 47 theses (21.4%) method feedback forms were used, in 40 theses (18.2%) forms regarding activities and the evaluation of the process of group work were used. It is also seen in the theses analyzed that various tests were used. Achievement tests were used in 176 theses (80%), persistence tests were used in 34 theses (15.5 %), and attitudes scales were used in 106 theses (48.2%). Skill scales were used in 24 theses (10.9%) and learning strategies scales were used in 16 (7.2%) theses. Among quantitative data scales, interviews were used in 52 theses (23.6%), students products evaluation in 31 (14.1%), observation in 25 (11.4%) and taking images, photos, or voice recordings were used in 25 theses (11.4%).

Findings about the Data Analyses Methods Used in Theses on Cooperative Learning

In the 8th problem of the study, data analysis methods used in theses on cooperative learning and at what frequency these methods were used were analyzed and the findings are presented in Figure 6.
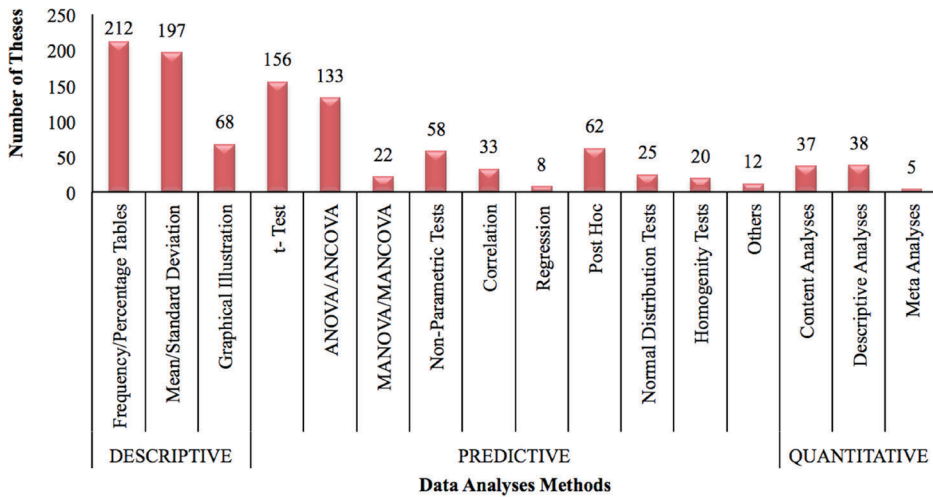
Figure 6. Distribution of the data analyses methods used in theses on cooperative learning

When the findings in Figure 6 were analyzed it is seen that Frequency and Percentage Tables of descriptive statistical methods were used in 212 theses (96.3%) and in 197 theses (89.5%) Average/Standard Deviation were used. The researchers preferred t-Test in 156 theses (70.9%) and ANOVA/ANCOVA tests in 133 theses (60.5%) for predictive statistical methods. As for the quantitative research methods, content analysis was used in 37 theses (16.8%) and descriptive analyses 38 in theses (17.2%).

Findings about Validity and Reliability Methods Used in the Theses on Cooperative Learning

In the 9th problem of the study validity and reliability methods used in theses on cooperative learning and at what frequency these methods are used were analyzed and findings are given in Figure 7.
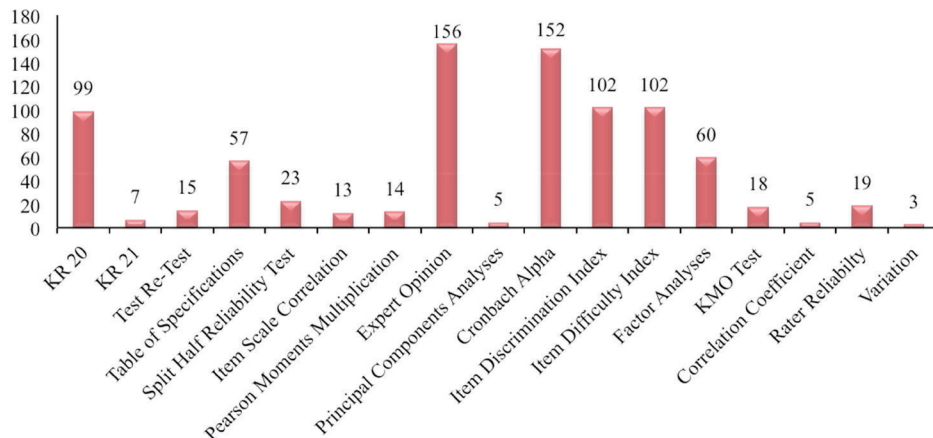

Figure 7. Distribution of validity and reliability methods used in theses on cooperative learning

According to Figure 7, it is clear that the validity and reliability method most used was taking expert views (f = 156, 70.9%). In 152 theses (69.1%) Cronbach Alpha method was used and in 102 theses (46.4%) calculation of difficulty and resolving indexes was used.

Findings about the Issues Studied in the Theses on Cooperative Learning

In the 10th problem of the study the issues studied in the theses on cooperative learning were analyzed, 127 different sub issues are found and these issues are coded and gathered and grouped in 10 main issues. Findings regarding this problem are given in Figure 8.
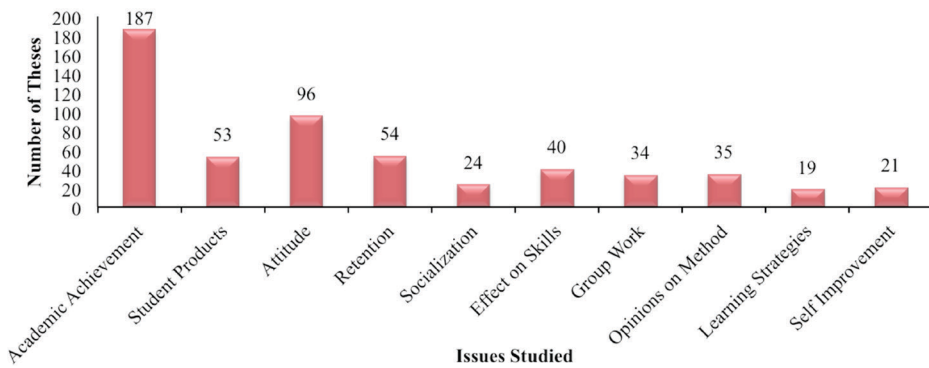

Figure 8. Distribution of the issues studied in theses on cooperative learning

When Figure 8 is analyzed it is seen that the issue studied most is the effect of cooperative learning on academic success of students. In 96 theses (43.6%) the effect of cooperative learning on the attitudes towards courses, the method itself, and group work, in 54 theses (24.5%) its effect on retention of the lessons learned were studied.

Findings about the Academics Supervising in the Theses on Cooperative Learning

In the last problem of the study distribution of the academics supervising the researchers in the theses on cooperative learning were analyzed.
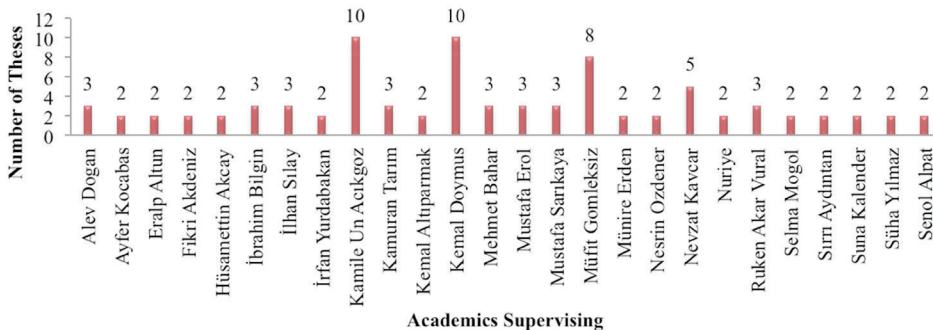

Figure 9. Distribution of the academics supervising in the theses on cooperative learning

In the 220 different theses analyzed in this study, 151 different academics were identified as the primary supervisors. When Figure 9 is analyzed it is seen that 26 academics supervised more than one thesis. 135 academics supervised one thesis each. Kamile Ün Açıkgöz and Kemal Doymuş supervised the largest number of theses with 10 (4.5%) theses each.

Findings Related to the Results Obtained in the Theses

It was identified 773 results the researchers obtained in theses analyzed within the context of this research. The results with a frequency less than 4 were excluded from the table. The results were grouped into 9 categories considering their similarities and differences.

Considering the results obtained in the theses, it is observed that researchers often obtained results indicating the fact that cooperative learning method has been more

Table 5

The Results Obtained in the Theses

Theme	Results obtained	f
Achievement	Increased Academic Achievement.	163
	There Was No Significant Difference.	24
Attitude	Helped Learners Develop Positive Attitude Towards the Course.	68
	Reduced the Anxiety and Fear Towards the Course.	9
	There Was No Change in the Attitudes.	28
Learning	Boosted Interest and Participation in the Course	44
	Provided Meaningful Learning.	14
	Had Positive Effects on Problem Solving Strategies.	11
	Did Not Affect Learning Styles.	4
	Reduced the Learning Period.	4
Retention	Increased Retention of Information Learned.	46
	Did Not Affect the Retention of Information Learned.	8
Skills	Provided the Development of Social Skills.	68
	Had Positive Effects on Cognitive Process Skills.	21
	Had Positive Effects Reading Comprehension and Narrative Skills.	18
	Had Positive Effects on Problem Solving Skills.	13
	Had Positive Effects on Psychomotor Skills.	12
	Improved Communication Skills.	12
	Had Positive Effects on Affective Skills.	10
	Improved Research Skills.	7
	Has Been Effective in the Development of Written Expression Skills	5
	Had Positive Effects on Critical Thinking Skills.	4
	Had Positive Effects on Speaking Skills.	4
Opinions	Students and Teachers Expressed Positive Opinions Regarding the Method.	47
	Students and Teachers Expressed Negative Opinions Regarding the Method.	21
	It Was Revealed That Teachers Had Insufficient Knowledge Regarding the Methods.	5
Problems Encountered	Students Who Did Not Fulfill Their Duties Lowered the Achievement Level.	16
	It Was Revealed That Applications Take A Lot of Time.	13
	Students Feel Bored During Group Work Activities.	10
	It Was Understood That the Applications Were Not Appropriate for Crowded Classes.	8
Motivation	Had Positive Effects on Motivation.	9
	Did Not Affect Motivation At All.	4
Self-Confidence	Improved Self-Confidence.	13
	Did Not Affect Self-Confidence.	4
	Had Positive Effects on Self-Efficacy Belief.	5
Total		757

effective (f = 163) to increase students' academic achievement, when compared to the other methods. Additionally, it seems very often that the method used in the theses was proved to be effective to help learners develop positive attitudes towards the course, to make learners remember what they learn longer, to draw learner interest and active participation in the course and to develop social, cognitive and communication skills. Also, even though students and teachers who participated in the research in the theses examined generally have positive opinions regarding the method, the results indicating that they encounter various problems during the applications.

Discussion

The post-graduate theses on cooperative learning prepared in Turkey were analyzed in this study from different aspects. In the analysis, the answers for 11 questions of the study about the years, languages, study levels, disciplines, courses of applications, methods, designs, methods of sampling, types of sampling, the grades of application classes, magnitude of sampling, shapes of the groups formed, the cooperative techniques used in applications, durations of applications, variety of data collection tools, methods used in data analyses, and validity and reliability methods used in data collection tools were sought.

As seen in Figure 1, the first thesis studies on cooperative learning were prepared in the early 1990's. The theses on the method have approximately 25 years of history and the numbers of the theses have increased since 2006. The reason for this is thought to be the changes made in curricula based on constructivist approach in the context of the reform and improvement efforts in the Turkish education system in 2005–2006. Since cooperative learning is one of the most important models in constructivist approach, it is thought to be the reason for the increase of the researchers' interest on this field (Bozbolat, 2012). Koç Damgacı and Karataş (2015) found in their research they analyzed researches where experimental method was used that there was a rise in researches made on cooperative learning since 2004Surprisingly, there is a decrease in the number of theses on cooperative learning in recent years.

It is seen that the majority of the theses prepared were in the Turkish language (93.2%). There are 14 theses in English, 11 of which are prepared in disciplines of English Language Teaching. The three theses left are prepared in universities where the language of instruction is English. There is only one thesis in French and it is prepared in the field of French Language Teaching.

It is seen in the research that a great majority of the theses (n = 193, 87.8%) are held using the experimental method. Chang and Hsieh (1997) determined that experimental method is used more than descriptive method in their study they analyzed doctorate theses, Juodaityte and Kazlauskine (2008) found out that although experimental

method was used more than the descriptive method, there were theses where both methods are used at the same time in their study they analyzed doctorate theses.

It is seen as a result of the analyses of theses on cooperative learning that mostly the result "this method has a positive effect on academic success, interest in the course of study, reading and comprehension skills, socialization, and communication skills of students" is reached. This is similar to the results of the studies "this method has a positive effect more than other methods" on recognizing the main theme and comprehension by Stevens, Slavin, and Farnish (1991), on academic success and behaviors of students by Whicker, Nunnery, and Bol (1997), on academic success and developing reading and writing skills of students by Genlott and Grönlund (2013), and on reading comprehension by Pan and Wu (2013). Besides it is seen in the results of the studies held at all levels of education in different fields of study that cooperative learning has a more positive effect on student success than conventional methods (Johnson & Johnson, 1999; Kasap, 1996; Koç, 2014; Tarım, 2003; Timur, 2006; Tonbul, 2001) as Gömleksiz (1997) states that cooperative learning can be used in many levels varying from primary schools to universities and this study supports that idea. The results show that most studies on cooperative learning were conducted at a variety of levels including primary, secondary and high school levels. Theses on cooperative learning are mostly studied with primary and secondary school students. This result is similar to the result of the study by Koç Damgacı and Karataş (2015) that studies on cooperative learning held at secondary and bacheloria levels are more than the studies held at other levels of education.

The three universities at which most of the theses on cooperative learning were prepared are Dokuz Eylül, Gazi and Atatürk Universities. It is thought that the reason for this is that the academics who made the first studies in this field and made serious contributions to the literature were working at these universities and mentoring post graduate students. At Dokuz Eylül University, experimental design is used in theses on cooperative learning the most (Koç Damgacı & Karataş, 2015).

The fact that most of the theses on cooperative learning were prepared in courses of Science and Technology, Mathematics, and Turkish Language complies with the results of the thesis by Tarım (2003). This result is similar to the result of the study by Koç Damgacı and Karataş (2015) that theses prepared using the experimental design were mostly prepared in courses of Science and Technology, Mathematics, and Turkish. Furthermore, the subjects of the theses on cooperative learning were mostly concerned with the academic achievement and attitudes which comply with the results of the study by Kyndt et al. (2013) who also found that most of the concepts studied were based on achievement and attitudes.

It is seen that researchers used quantitative (58.6%), mixed (37.3%) and qualitative (4.1%) methods in the theses they prepared on cooperative learning. Parallel to these

it is seen that the researchers used descriptive and predictive statistical methods in data analyses parts of the theses. It is thought that the reason for the researchers' using tests for quantitative data collection tools for validity and reliability is the research methods used. The result that the techniques preferred most are Learning Together and Student Teams Achievement Divisions (STAD) and Jigsaw complies with the results of the research by Tarım (2003). Besides this result is similar to the result by Koç Damgacı and Karataş (2015) that in theses on cooperative learning using experimental design, the techniques used the most are STAD, Jigsaw and Learning Together

Most of the studies on cooperative learning prepared in Turkey are quantitative studies. Some qualitative researches can be made studying the effects of cooperative learning method on higher cognitive skills as creative thinking and critical thinking. According to the theses analyzed, no studies explored the relation between learning styles and cooperative learning. Therefore, studies on this issue have the potential for serious contributions to the literature. Comparisons and contrasts need to be made between cooperative techniques themselves and the main method with other methods except for the conventional method in order to increase the validity of the research results. Relating the effectivity of cooperative learning method and the sub-techniques used in this method and to make more certain generalizations.

References

Akar, M. S. (2012). *Fen ve teknoloji öğretmenlerinin işbirlikli öğrenme modeli hakkında bilgilendirilmesi, bu modeli sınıfta uygulamaları ve elde edilen sonuçların değerlendirilmesi: Kars il örneği* [Informing of science and technology teachers about cooperative learning model, applications of this model in the class and evaluating the obtained results: Kars sample] (Doctoral dissertation, Atatürk University, Erzurum, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Akpınar, B., & Gezer, B. (2010). Öğrenen merkezli yeni eğitim yaklaşımlarının öğrenme-öğretme sürecine yansımaları [Learner-centered new educational paradigms and their reflections on the period of learning and teaching]. *Dicle University Journal of Ziya Gökalp Faculty of Education, 14*, 1–12.

Altıparmak, M., & Nakiboğlu, M. (2005). Fen bilimleri eğitimi lisansüstü tez çalışmalarında uygulanan nitel ve nicel yöntemler [Qualitative and quantitative methods applied in graduate theses in science education]. *Journal of the Buca Educational Sciences Faculty, 17*, 49–64.

Benligiray, S. (2009). Türkiye'de insan kaynakları yönetimi alanında yapılan lisansüstü tezler ve bu tezlerde incelenen temaların analizi: 1983-2008 dönemi [The theme analysis of the postgraduate theses written on human resource management in Turkey: 1983-2008 period]. *Eskişehir Osmangazi University Journal of Economics and Administrative Sciences, 4*(1), 167–197.

Bozbolat, E. (2012). *Türkçe dersinde birleştirilmiş işbirlikli okuma ve kompozisyon tekniği ile kullanılan hikâye haritası yönteminin öğrencilerde okuduğunu anlama becerisini geliştirmeye etkisi* [The effect of story mapping method supported with cooperative integrated reading and composition technique on developing students' reading comprehension skill in Turkish language course] (Doctoral dissertation, Fırat University, Elazığ, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2011). *Bilimsel araştırma yöntemleri* [Scientific research methods]. Ankara, Turkey: PegemA Yayıncılık.

Cavitt, M. E. (2006). A content analysis of doctoral research in beginning band education, 1958-2004. *Journal of Band Research*, *42*(1), 42–58.

Chang, P. L., & Hsieh, P. N. (1997). A qualitative review of doctoral of dissertation management in Taiwan. *Higher Education, 33*, 115–136.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). New York, NY: Routledge.

Çiltaş, A., Güler, G., & Sözbilir, M. (2012). Türkiye'de matematik eğitimi araştırmaları: Bir içerik analizi çalışması [Mathematics education research in Turkey: A content analysis study]. *Educational Sciences: Theory & Practice*, *12*, 565–580.

Deniş Çeliker, H., & Uçar, C. (2015). Fen eğitimi araştırmacılarına bir rehber: 2001-2013 yılları arasında yazılan lisansüstü tezlerin incelenmesi [A guide for science researchers: examination of thesis written between 2001-2013 years]. *Electronic Journal of Social Sciences, 14*(54), 81–94. http://dx.doi.org/10.17755/esosder.56295

Doğru, M., Gençosman, T. , Ataalkın, A., & Şeker, F. (2012). Fen bilimleri eğitiminde çalışılan yüksek lisans ve doktora tezlerinin analizi [Analysis of the postgraduate and doctoral theses conducted on sciences education]. *Journal of Turkish Science Education (TUSED), 9*(1), 49–64.

Doymuş, K., Şimşek, Ü., & Şimşek, U. (2005). İşbirlikli öğrenme yöntemi üzerine derleme: I.İşbirlikli öğreneme yöntemi ve yöntemle ilgili çalışmalar [A review on cooperative learning method: I. Cooperative learning method and studies related with this method]. *Erzincan University Journal of Education Faculty*, *7*(1), 59–83.

Erdoğmuş, U. F., & Çağıltay, K. (2009, February). *Türkiye'de eğitim teknolojileri alanında yapılan master ve doktora tezlerinde genel eğilimler* [General trends in the master and doctorate theses in the field of educational technology in Turkey]. Paper presented at the XI. Akademik Bilişim Konferansı, Harran University, Şanlıurfa Turkey.

Evrekli, E., İnel, D., Deniş, H., & Balım, A. G. (2011). Fen eğitimi alanındaki lisansüstü tezlerdeki yöntemsel ve istatistiksel sorunlar [Methodological and statistical problems in graduate theses in the field of science education]. *Elementary Education Online (EEO)*, *10*(1), 206–218.

Genlott, A. A., & Grönlund, A. (2013). Improving literacy skills through learning reading by writing: The iWTR method presented and tested. *Computers & Education, 67*, 98–104.

Gillies, R. M. (2004). The effects of cooperative learning on junior high school students during small group learning. *Learning and Instruction*, *14*(2), 197–213.

Göktaş, B., & Erdem, R. (2006). Sağlık yönetimi alanında yapılan tezlerin profili [The profiles of theses in the field of health management]. *Journal of Fırat Health Services*, *1*(1), 53–63.

Göktaş, Y., Küçük, S., Aydemir, M., Telli, E., Arpacık, Ö., Yıldırım, G., & Reisoğlu, İ. (2012). Türkiye'de eğitim teknolojileri araştırmalarındaki eğilimler: 2000-2009 dönemi makalelerinin içerik analizi [Educational technology research trends in Turkey: A content analysis of the 2000-2009 decade]. *Educational Sciences: Theory & Practice, 12,* 177–199.

Gömleksiz, M. (1997). *Kubaşık öğrenme: Temel eğitim dördüncü sınıf öğrencilerinin matematik başarısı ve arkadaşlık ilişkileri üzerine deneysel bir çalışma* [Cooperative learning: An experimental study on the mathematics achievement and friendship of primary education fourth grade students]. Adana, Turkey: Baki Kitap ve Yayınevi.

Johnson, D. W., & Johnson, R. T. (1999). *What makes cooperative learning work*. Retrieved from http://www.eric.ed.gov/PDFS/ED437841.pdf

Juodaitytė, A., & Kazlauskienė, A. (2008). Research methods applied in doctoral dissertations in education science (1995-2005): Theoretical and empirical analysis. *Vocational Education: Research & Reality, 15*, 36–45.

Kabaca, T., & Erdoğan, Y. (2007). Fen bilimleri, bilgisayar ve matematik eğitimi alanlarındaki tez çalışmalarının istatistiksel açıdan incelenmesi [Examining of statistical properties of the thesis studies in the fields]. *Pamukkale University Journal of Education, 22*, 54–63.

Kasap, H. (1996). *İşbirlikli öğrenme, fen başarısı, hatırda tutma, öğrenci yüklemeleri ve işbirlikli öğrenme gruplarındaki etkileşim* [Cooperative learning, science achievement, retention, student attributions and interaction in cooperative learning groups] (Master's thesis, Dokuz Eylül University, İzmir, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Karamustafaoğlu, O. (2009). Fen ve teknoloji eğitiminde temel yönelimler [Main trends on science and technology education]. *Kastamonu Education Journal, 17*(1), 87–102.

Kayhan, M., & Koca, S. (2004). Matematik eğitiminde araştırma konuları: 2000-2002 [Research subjects in mathematics education: 2000-2002]. *Hacettepe University Journal of Education, 26*, 72–81.

Koç, Y. (2014). *Fen ve Teknoloji öğretmenlerinin işbirlikli öğrenme modeli hakkında bilgilendirilmesi, bu modeli sınıfta uygulamaları ve elde edilen sonuçların değerlendirilmesi: Ağrı il örneği* [Informing science and technology teachers about cooperative learning model, application of the model in the classroom and evaluation of the obtained data: Case of Ağrı] (Doctoral dissertation, Atatürk University, Erzurum, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Koç Damgacı, F., & Karataş, H. (2015). İşbirlikli öğrenme yöntem ve tekniklerinin eğitimde kullanımına ilişkin deneysel çalışmalar ve sonuçları [Experimental studies and results regarding collaborative methods and techniques performed in education]. *Journal of Research in Education and Teaching, 4*(1), 304–314.

Kyndt, E., Raes, E., Lismont, B., Timmers, F., Dochy, F., & Cascallar, E. (2013). A meta-analysis of the effects of face-to-face cooperative learning. Do recent studies falsify or verify earlier findings? *Educational Research Review, 10*, 133–149.

Macauley, P., Evans, T. D., Pearson, M., & Tregenza, K. (2004). Using digital data and bibliometrics for researching doctoral education. *Higher Education Research and Development, 24*(2), 189–199.

Meder, M. (2001). Bilgi toplumu ve toplumsal değişim [Information society and social change]. *Pamukkale University Journal of Education*, 9, 72–81.

Özay Köse, E., Gül, S., & Konu, M. (2014). Türkiye'de sosyal bilimler veri tabanında taranan biyoloji eğitimi araştırmalarının incelenmesi [The study of biology education researches published at ULAKBIM social sciences database in Turkey]. *The Journal of Academic Social Science, 2*(1), 265–276.

Pan, C-Y., & Wu, H-Y. (2013). Cooperative learning effects of on English reading comprehension and learning motivation of EFL freshmen. *English Language Teaching, 6*(5), 13–27.

Panitz, T. (1999). The motivational benefits of cooperative learning. *New Directions for Teaching and Learning, 78*, 59–68.

Stevens, J., Slavin, R. E., & Farnish, A. M. (1991). The effect of cooperative learning and direct instruction in reading comprehension strategies on main idea identification. *Journal of Educational Psychology, 83*(1), 8–16.

Şimşek, A., Özdamar, N., Becit, G., Kılıçer, K., Akbulut, Y., & Yıldırım, Y. (2007). Türkiye'deki eğitim teknolojisi araştırmalarında güncel eğilimler [The current trends in educational technology research in Turkey]. *Selçuk University Journal of Institute of Social Sciences*, *19*, 439–458.

Tarım, K. (2003). *Kubaşık öğrenme yönteminin matematik öğretimindeki etkinliği ve kubaşık öğrenme yöntemine ilişkin bir meta analiz çalışması* [Effectiveness of cooperative learning method on teaching mathematics and meta analytic study for cooperative learning method] (Doctoral dissertation, Çukurova University, Adana, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Timur, S. (2006). *İlköğretim 7. sınıf fen bilgisi dersinde işbirlikli öğrenme yönteminin öğrenci başarısına etkisi* [The effects of cooperative learning on student success in 7th grade primary education science course] (Master's thesis, 18 Mart University, Çanakkale, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Tonbul, C. (2001). *İşbirlikli öğrenmenin ingilizce dersine ilişkin doyum, başarı ile hatırda tutma üzerindeki etkileri ve işbirlikli öğrenme uygulamalarıyla ilgili öğrenci görüşler* [The Effects of cooperative learning and traditional teaching methods on English achievement, satisfaction and retention and students opinions about cooperative learning] (Master's thesis, Dokuz Eylül University, İzmir, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Whicker, K., Nunnery, J., & Bol, L. (1997). Cooperative learning in the secondary mathematics classroom. *The Journal of Educational Research, 91*, 42–48.

Yaşar, Ş. (1993). *Yabancı dilde okuma becerilerinin geliştirilmesinde küçük gruplarla* öğretim *yönteminin etkililiği* [The effectiveness of teaching in small groups in the development of reading skills in a foreign language]. Adana, Turkey: Çukurova University Faculty of Education Publications.

Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Ankara, Turkey: Seçkin Yayıncılık.

Yıldız, V. (1998). *İşbirlikli öğrenme ve geleneksel öğretimin okulöncesi çocukların temel matematik başarıları üzerindeki etkileri ve mevcut uygulamalarla ilgili öğretmen görüşleri* [The Effects of cooperative learning and traditional teaching methods on pre-school children's mathematical achievement and teachers ideas about the present applications] (Doctoral dissertation, Dokuz Eylül University, İzmir, Turkey). Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/