

RESEARCH TRENDS TOWARDS TEACHERS' IN-SERVICE TRAINING**Harun Şahin*****Muhammed Akinci****muhammed.akinci@erdogan.edu.tr***ABSTRACT**

This research aims to determine the trends of the studies about in-service teacher training in Turkey. It is a descriptive study using document analysis based on qualitative research method. Various databases were searched and 56 articles about in-service teacher training between 2012 and 2019 were used and included in the study. The data of the study was collected by "Article Classification Form", conceptualized and analysed in terms of its various characteristics within certain themes. According to the findings, there is a decreasing trend in the number of studies between the years of 2012-2019 related to in-service teacher training in Turkey. The studies were mostly carried out in descriptive structures with an unplanned manner during the in-service training of teachers by making urgent decisions. Moreover, the number of comprehensive and planned studies using mixed designs with different participants and multiple data collection and analysis processes is not sufficient. In this context, more emphasis should be given to the studies on in-service teacher training, numbers of which have been decreasing as of 2019, and the possible studies to be carried out should be planned in a comprehensive manner considering the real needs.

Keywords: *Teacher Training, In-Service Training, Research Trend.*

INTRODUCTION

Training and recruiting qualified teachers, wherever they are in the world, is important for the success of the education system. This is because the success of pre-service and in-service teacher training is among the factors affecting school success and providing development of the education system (Cheng, 2016; Dreer, Dietrich, & Kracke, 2017; Livingston, 2016). Osamwonyi (2016) states that lack of in-service teacher training causes insufficient professional development of teachers and the enhances the gap between demands and actual success levels. In this context, it is stated that in-service training is one of the basic elements for the professional development of teachers (Essel, Badu, Owusu-Boateng, & Saah, 2009; Saleem & Zamir, 2016). Moreover, developing teacher quality in line with current developments is related with the fact that whether teachers can keep themselves up to date. Teaching profession compared to many professions requires special effort and attention. Teaching is also a profession in which devotion is a prerequisite for development. However, there are studies regarding the workload of teachers leading to burnout and even mental problems (Bernotaite & Malinauskiene, 2017; García & Gambarte, 2019). Moreover, it is very difficult for teachers to devote time to their personal development in the turmoil of time. On the other hand, these people are the ones who carry

out the teaching activities. For this reason, in addition to their personal efforts to keep themselves up to date, in-service training of teachers might be more important than other professions.

Professional competence of teachers from past to present is an issue that has been debated despite the institutional and structural changes in teacher training in Turkey. In the past, different institutions such as Village Institutes (Rural Teacher Training Institute), Higher Teacher Schools and Educational Institutes were responsible for teacher training (Okçabol, 2005; Yılman, 2006). This responsibility has been given to the Faculties of Education since 1982 (Kilimci, 2011). Since the responsibility of teacher training has been given to the Faculties of education in Turkey, deficiencies in teacher training has been mentioned as one of the problems in the education system (Ayas, 2009; Doğan, 1999; Doğan, 2005; Tan, 1989; Yıldırım & Vural, 2014). While the debate on the quality of already trained teachers has not come to an end, it is an issue that needs to be thought about on how these trained teachers will keep up with the possible developments in the context of education. However, it is argued that in Turkey, the programs related to in-service training of teachers are inadequate, their educational quality is low, and there are deficiencies in the practice, teaching environment and teaching activities (Uztosun, 2017). In this case, the subject of discussion has since then become to how teachers adapt to the needs of the time.

Innovations brought by time and the need to constantly updating programs accordingly, inadequate student achievement, regional differences in educational quality, etc. causes the quality of current teachers to become questionable and reveals the need for in-service training (Alabi & Ige, 2014). Education is defined as the deliberate change process in individual's behaviors through experiences (Ertürk, 2013). Based on this definition, in-service training is the training given to employees in public or private sector (Taymaz, 1978a). The types of in-service training are classified according to the application objectives which are orientation training, basic education, development training, completion training, upgrade training and special field education (Taymaz, 1992). The classification shows that in-service training is provided for different purposes. Whatever the purpose is, in-service training has become necessary as a result of various needs. The factors that lead to the necessity of in-service training of the employees who have difficulty in meeting the needs of the rapidly changing society and profession with the training they receive before are as follows (Altınışık, 1996; Taymaz, 1978b): Inadequate pre-service training: Vocational education provided before starting a profession may be inadequate due to different reasons such as student selection and mistakes in teaching activities carried out afterwards (Sönmez, 2008). At this point, in-service training is needed to complete the deficiencies of pre-service training.

Social changes and failure to implement the "Equal Opportunity Principle" in education: Cultural and economic changes in the society cause the adoption of new educational approaches in order to realize the principle of equal opportunity in education. For example, applications such as inclusive education are adopted in order to include all the individuals to the education system who have cultural and individual differences due to the social circulation caused by the events such as war, migration, etc. (MONE, 2018). Such new educational applications increase the need for in-service training of teachers. Scientific and technological developments: Since it is not possible for individuals to be successful for many years by using the knowledge gained in school especially in recent conditions, there are major changes in every field in a short time, in which various institutions provide in-service trainings for their employees to renew themselves (Kale, 2015).

Obligation to fill in the gaps in communication: Communication disruption in the working environment may reduce efficiency. This is due to the positive relationship between organizational communication and job satisfaction (Karcioğlu, Timuroğlu, & Çınar, 2009). In this context, in-service trainings can be used to eliminate communication gaps in the work area.

Motivation obligation: The sense of professional belonging and motivation are related to the social and emotional competences gained during vocational education, as well as the choice of the correct profession. Acquisition of social and emotional competencies also depends on effective pre-service and

in-service training (Murano, Way, Martin, Walton, Anguiano-Carrasco, & Burrus, 2019). In addition, it is stated that in-service training has positive effects on attitudes and participants' practices (Nawab, 2017). When the factors above are taken into consideration, it could be stated that the possible problems that may arise in teacher training might be made even more difficult especially with "Inadequate pre-service training" dimension. In other words, omissions made in teacher training will be reflected in the teaching and learning activities of teachers. In such a situation where pre-service training is lacking, the only alternative way to solve the problem is to carry out effective in-service trainings for teachers. Success of in-service training also depends on different variables within and outside the classroom. Joyce and Showers (1980) state these variables during in-service trainings as theoretical knowledge, demonstration, practice, feedback and classroom application. Moreover, in-service trainings improve teachers' professional competencies as well as their beliefs, perceptions and attitudes towards the profession (Borg, 2011; Weinstein, 1989). This proves that in-service training is an important element of teacher training system.

Although some studies show that the teachers' perspectives towards in-service training are positive in Turkey, there are also studies indicating that their in-service training needs are not adequately met (Babacan & Özey, 2019; Bayar & Kösterelioğlu, 2014; Öztürk & Öztürk, 2019; Katman & Tutkun, 2015). In addition to the institutions that train teachers in this regard, the institutions that provide in-service trainings that will enable these teachers to update themselves have serious responsibilities. In-service trainings of teachers are carried out by the Ministry of National Education within the General Directorate for Teacher Training and Improvement in Turkey. In this context, the general objectives of in-service trainings given to teachers are stated as follows in the In-Service Teacher Training Regulation (MONE, 1995, p.2):

- Ensuring the adaptation of the personnel coming from pre-service training to the institution,
- To provide the personnel with a common opinion in understanding and interpreting the aims and principles of Turkish National Education in a unity and to gain unity in practice,
- To complement the deficiencies of pre-service training in terms of professional competence,
- To gain the knowledge, skills and behaviors required by the innovations and developments in the field of education,
- To improve the professional competence and understanding of the personnel,
- Ensuring the transition of the willing and talented personnel to the upper levels of their professions,
- To carry out completion training for different educational backgrounds,
- To gain integrity in interpreting Turkish National Education policy,
- To provide unity in application of basic principles and techniques of education,
- To support the development of the education system.

The general objectives above should be updated according to the various situations that raise the need for in-service training. This is due to the the systematic changes in the teaching profession and in schools where the profession is applied will increase the teachers' need for in-service training. Sezgin (2000) stated that the changes made in one part of the vocational education system will affect the other parts. This situation brings to mind the 12-year compulsory education system that started in 2012 and the question of what kind of in-service training has been given to the teachers for this new system since the 12-year compulsory education is a fundamental systemic change in this field. This is due to the fact that in this sytem, besides the increase of compulsory education period, there were important changes in the program structure and contents. (MONE, 2012). In addition, it is possible to consider the FATİH (The Increasing Opportunities and Improvement of Technology Movement) Project as a major systemic change, pilot implementation of which was started to in 2012 and planned to be implemented in the following years (Akıncı, 2017). Considering such radical innovations in the education system, providing in-service trainings appropriate to these changes and updating teachers' in-service trainings will help to prevent potential problems in teaching-learning activities.

In-service trainings for teachers should be planned in light of scientific research processes. In this context, scientific research activities carried out on this subject are important. Studies on in-service training of teachers are undoubtedly important in terms of describing the current situation and providing the basis for possible steps to be taken. When the literature on the subject is examined in Turkey, it is possible to see content analysis, trend and review studies examining various aspects of the studies on educational sciences and teacher training. Karadağ (2009) for example, examined doctoral theses in the field of educational sciences between 2003 and 2007 in Turkey. Arık and Türkmen (2009) conducted a study evaluating the various features of the articles in the journals related to Educational Sciences indexed in the Social Science Citation Index (SSCI). Keleş and Çelik (2013) examined in-service training courses conducted in 2000-2010 for teachers' use of computer technologies and education. Bıkmaz, Aksoy, Tatar, and Altınyüzük (2013) in their study analysed 358 doctoral theses in the field of Curriculum and Instruction in Turkey according to various variables. Selçuk, Palancı, Kandemir, and DüNDAR (2014) conducted a study aimed at analysing the content of the articles published in *TED Education and Science Journal* and determining the trends of the articles published in the journal. Ozan and Köse (2014) conducted a research aiming to determine the research trends of the studies published in Curriculum and Instruction field between 2007 and 2011 in Turkey. Yılmaz and Esen (2015) conducted a content analysis study about teachers' opinions about their in-service trainings. It is possible to increase the number of relevant studies.

The concept of trend that also forms the title of this study is expressed as "a general direction in which a situation is changing or developing" or "fashion" (Oxford Learner Dictionaries, 2019). However, it could be said that the studies under the name of "trend research" in the field of educational sciences in Turkey mostly aim to examine some studies under certain themes according to their distribution, years and method preferences in a certain field, between certain dates (Ozan & Köse, 2014; Şimşek et al., 2009; Ulutaş & Ubuz, 2008; Varışoğlu, Şahin, & Göktaş, 2013).

The examined studies above show that content analysis, trend, review, etc. being conducted in the field of educational sciences are becoming increasingly popular in Turkey. Although this is the current situation in the field of educational sciences, it is not possible to say the same about the prevalence of the studies that deal with teachers' in-service training with different dimensions. In this context, it is considered important to conduct a trend research about in-service trainings of teachers including the current studies carried out in 2012 and beyond, when the 12-year compulsory education system and pilot implementation of the FATİH Project started.

PURPOSE OF THE RESEARCH

This study aims to determine the trends of the studies conducted on teachers' in-service trainings in Turkey between 2012 and 2019. Based on this general purpose, the research aims to answer the following questions:

- What is the distribution of the studies by years?
- What are the research methods and designs commonly used?
- What are the commonly used data collection tools?
- What are the commonly used samples and their sizes?
- What are the common teaching branches for which in-service training is provided?
- What are the commonly used data analysis methods?

The examination of current studies on in-service trainings of teachers carried out in Turkey in 2012 and beyond, where major structural changes are aimed at in the education system, may contribute to the recognition and correction of various problems in the education system, by revealing the current situation in this field. The elimination of the deficiencies in this matter depends on the planned and proper execution of the educational activities from the very beginning. However, it is also important that the in-service trainings are carried out properly to eliminate the vocational deficiencies of the

teachers currently employed. The current situation on this subject can only be demonstrated by qualified scientific research. This study is important in this respect.

METHODOLOGY

Research design

Since document analysis was used in this study, the methodology of the research was expressed as a qualitative research. In qualitative research designs, documents are important data sources especially (Creswell, 2012). In addition, since the current situation of the studies on teachers' in-service training will be revealed, the study was considered as descriptive.

Studies included

In this research, 56 articles carried out in Turkey on in-service trainings of teachers from various scientific databases commonly preferred in university appointment and promotion processes in Turkey such as SSCI, Scopus, ProQuest, EBSCO, ERIC, ULAKBIM, Dergipark between 2012 and 2019 were included in the study. Some of the main criteria for the inclusion of studies in the research are as follows:

- The studies included in the research consist of all types of scientific articles.
- Related studies are only about in-service training of teachers.
- Considering the major systemic changes in educational system mentioned above the year limitation was taken as 2012 and beyond.
- Graduate theses were not included in the study.

Since these qualifications included in the study were accepted as the criteria, the sampling method used in this study was considered as criterion sampling. The characteristic of the criterion sampling is that it is valid in all cases that meet its predetermined criteria (Yıldırım & Şimşek, 2013).

Data collection and analysis

The data of the study was collected by "Article Classification Form" which was developed by Sözbilir and Kutu (2008) and updated by Ozan and Köse (2014). The related form consisted of 6 parts. These include basic information, methodology, data collection tools, sampling and data analysis methods of the research. Under each section, there were possible subtitles used in a research that the researchers who prepared the form added to the form based on expert opinions. In this context, articles written in Turkey about in-service trainings of teachers between 2012 and 2019 were examined in various dimensions. Researchers who updated the form used in the study received opinions from 3 experts in the Curriculum and Instruction field for the content validity and its Cohen Kappa coefficient was as found 0.83 in terms of consistency among experts. The included studies were examined in some such as dimensions of the general information, research method design/model, data collection tools, sampling and data analysis. In addition to these dimensions, the distribution of in-service teacher training branches was another dimension taken into consideration in the research. The data obtained were subjected to content analysis by arranging and conceptualizing the studies in terms of their various features within certain themes. The form of themes and arrangements in which content analysis was carried out provides clear information about the results of the examined studies (Yıldırım & Şimşek, 2013). The themes related to the study findings were determined by adhering to the sub-dimensions of the "Article Classification Form" used for data collection.

FINDINGS

Distribution of the studies examined by years

Figure 1 shows the distribution of studies on teachers' in-service training by years between 2012 and 2019.

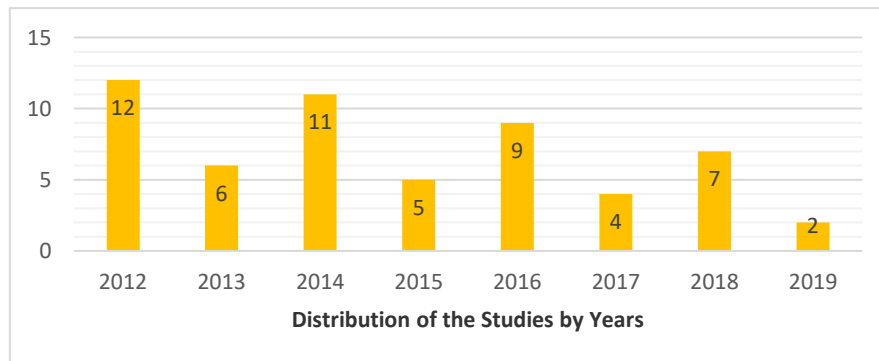


Figure 1. Distribution of the Examined Studies by Years

When Figure 1 is examined, it is seen that there have been various fluctuations in the numerical distributions of teachers' in-service trainings since 2012. In this context, the highest number of studies was conducted in 2012 and the least number of studies was conducted in 2019. Although there has been an increase and decrease in the number of studies conducted over the years, it is seen that the number of related studies tends to decrease.

Research methods and designs commonly used in studies

The findings towards research methods and designs commonly used in the studies are as shown in Table 1 and Figure 2.

Table 1
Research Methods and Designs/Models Used in Studies

Research Method	Research Design/Model	f	%	
Quantitative	<i>Experimental</i>	True Experiment	0	0
		Quasi-experiment	1	1,78
		Single Subject	0	0
		Other	0	0
	<i>Non-Experimental</i>	Descriptive	20	35,71
		Correlational	3	5,35
		Comparative	1	1,78
Other		0	0	
<i>Subtotal</i>		25	44,64	
Qualitative	<i>Interactive</i>	Culture analysis	0	0
		Phenomenological	2	3,57
		Grounded theory	0	0
		Case study	15	26,78
		Critical study	0	0
		Action research	0	0
		Other	2	3,57
	<i>Non-interactive</i>	Concept analysis	0	0
		Historical analysis	0	0
		Meta-analysis	0	0
<i>Subtotal</i>		22	39,28	
Mixed	<i>Mixed</i>	Explanatory	5	8,92
		Exploratory	0	0
		Embedded	4	7,14
		Other	0	0
<i>Subtotal</i>		9	16,07	
	Total	56	100	

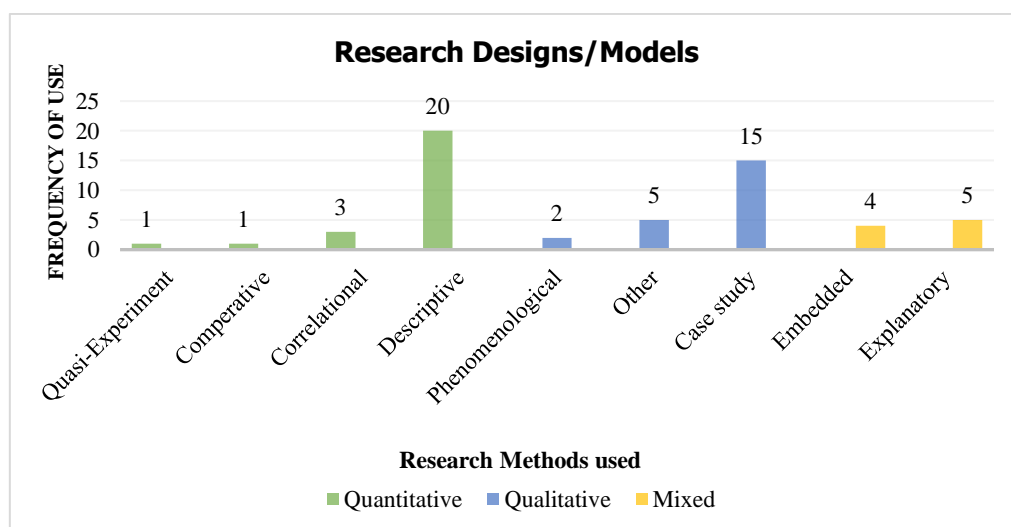


Figure 2. Distribution of the Research Methods and Designs Used in Studies

Table 1 and Figure 2 show that quantitative and qualitative designs are more preferred than mixed designs in the studies. The majority of the preferred quantitative designs are the non-experimental ones, and majority of the qualitative designs are interactive. In addition, the most preferred designs/models are descriptive survey model and case study.

Data collection tools commonly used in studies

The findings about the data collection tools commonly used in the studies are shown in Table 2 and Figure 3.

Table 2
Data Collection Tools Used in the Examined Studies

Category	Subcategory	f	%
<i>Observation</i>	Participant Observation	0	0
	Non-participant Observation	3	3,48
<i>Interview form</i>	Structured	1	1,16
	Semi-structured	24	27,90
	Non-structured	0	0
	Focus group	2	2,32
<i>Achievement test</i>	Open ended	0	0
	Multiple choice	4	4,65
<i>Attitude/Perception/Personality/Ability Tests</i>	Open ended	0	0
	Multiple choice	0	0
<i>Survey/Scale</i>	Open ended	4	4,65
	Likert type	29	33,72
<i>Documents</i>		5	5,81
<i>Alternative Evaluation</i>		0	0
<i>Other</i>		1	1,16
<i>Multiple Data Collection Tools</i>		13	15,11
Total		86	100

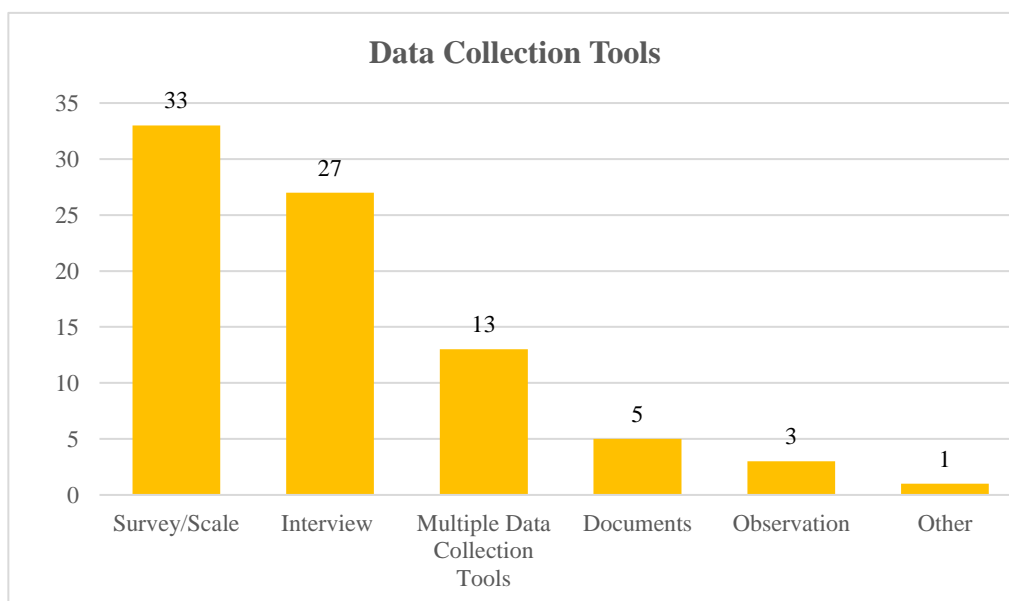


Figure 3. Distribution of Data Collection Tools According to Studies

According to Table 2 and Figure 3, the most frequently used tools in the data collection processes are Likert type questionnaires and scales and semi-structured interviews. Multiple data collection tools were used in 13 of the 56 studies, whilst only 1 data collection tool was preferred in 43 of them.

Commonly preferred samples and their sizes

In the majority of the studies examined, the participants were teachers. However, in 2 of the studies, in addition to teachers, school administrators were also included in the studies, while 1 study was conducted on academic staff. Findings related to the sample size and distributions of the participants in the studies are given in Table 3 and Figure 4.

Table 3
Descriptive Statistics Related to Sample Size in the Examined Studies

Category	f	%
Between 1 and 10	2	3,57
Between 11 and 30	14	25,00
Between 31 and 100	13	23,21
Between 101 and 300	15	26,78
Between 301 and 1000	7	12,50
More than 1000	3	5,35
Sample Not Specified	2	3,57
Total	56	100

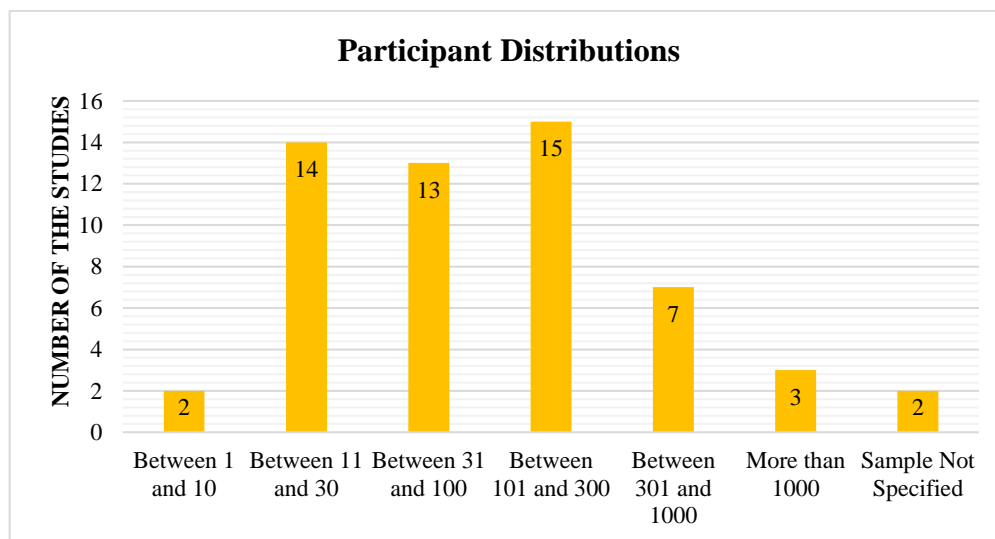


Figure 4. Participant Distributions in the Studies

Table 3 and Figure 4 show that the most preferred participant sizes are between 101-300, 11-30 and 31-100 respectively. In addition, the number of studies involving 1-10 and more than 1000 participants is limited. In addition, no sample group was mentioned in 2 studies.

Distribution of in-service teacher training branches in examined studies

In 53 of 56 examined studies, data were collected from teachers from various branches. In this context, the findings related to the distribution of in-service teacher training branches are given in Table 4 and Figure 5.

Table 4
Descriptive Statistics Related to Teacher Training Branches

Branches	f	%
Teachers in different branches	23	43,39
Primary School Teachers	7	13,20
Preschool Teachers	4	7,54
Geography Teachers	4	7,54
English Language Teachers	3	5,66
Mathematics Teachers	3	5,66
Religious Culture and Ethics Education Teachers	2	3,77
Science and Technology Teachers	2	3,77
Mentally Disabled Teachers	1	1,88
Turkish Language and Literature Teachers	1	1,88
History Teachers	1	1,88
Information Technology Teachers	1	1,88
Music Teachers	1	1,88
Total	53	100

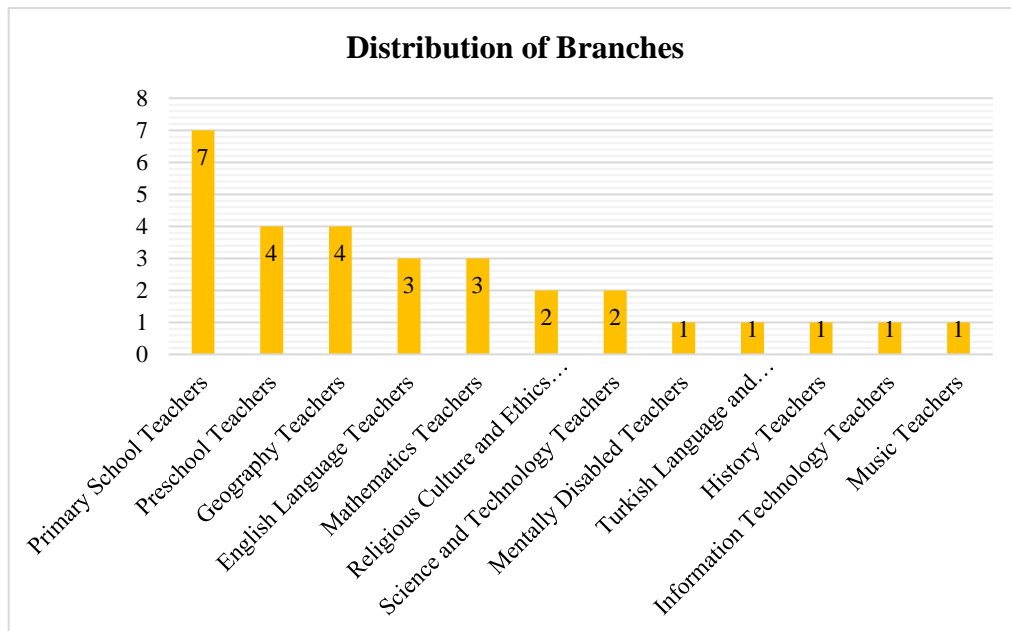


Figure 5. Distribution of Teacher Training Branches According to Studies

As stated in Table 4 and Figure 5, 23 of the studies examined did not mention the branches of teachers involved. However, in the 30 studies, the branches of teachers were clearly stated. According to these findings, it is seen that studies are more common than other teaching branches in in-service trainings attended by primary school teachers, preschool teachers and geography teachers respectively.

Commonly used data analysis methods

Data analysis methods commonly used and their distribution according to the studies are given in Table 5 and Figure 6.

Table 5
Data Analysis Methods Used in the Studies Examined

Category	Subcategory	F	%	
Quantitative	Descriptive	Frequency/Percentage	27	13,50
		Mean/Standard deviation	17	8,50
		Graphic	3	1,50
		<i>Subtotal</i>	47	23,50
	Predictive	Correlation Analysis	0	0
		t-test	5	2,50
		ANOVA (Variance Analysis)	8	4
		ANCOVA (Covariance analysis)	0	0
		MANOVA (Multivariate Variance Analysis)	1	0,50
		MANCOVA (Multivariate Covariance Analysis)	0	0
		Factor Analysis	1	0,50
		Regression Analysis	1	0,50
		Non-Parametric Tests	3	1,50
		Structural Equation Model	0	0
<i>Subtotal</i>	19	9,50		
Qualitative	Content analysis	13	6,50	
	Descriptive analysis	21	10,50	
	<i>Subtotal</i>	34	17	
Total		200	100	

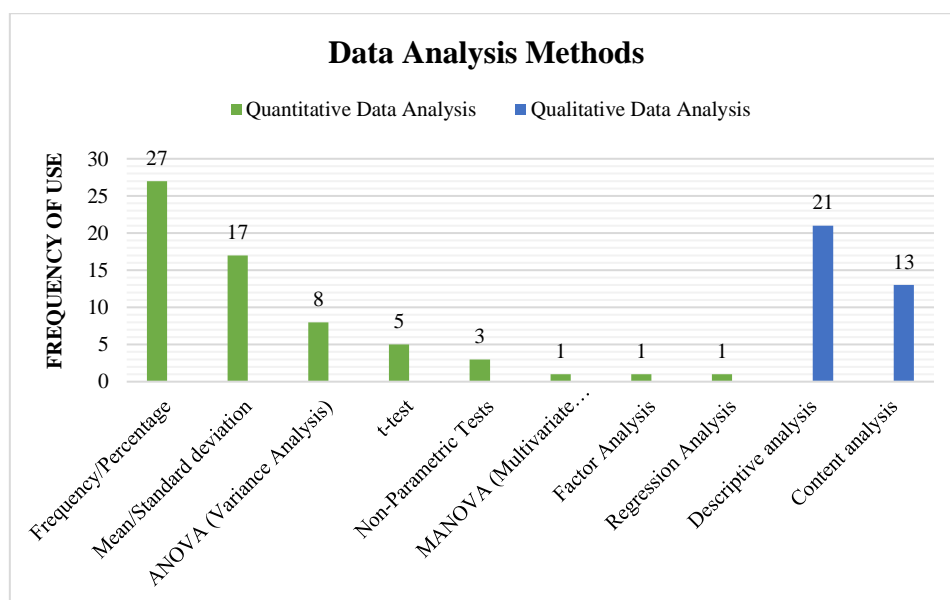


Figure 6. Distribution of Data Analysis Methods According to Studies

Table 5 and Figure 6 show that descriptive methods are commonly used in the analysis of both qualitative and quantitative data. In the analysis of the quantitative data, frequency-percentage and

mean-standard deviation are the most common analysis methods, and descriptive analysis is the most common analysis method in qualitative data analysis.

DISCUSSION

When the findings of the research are examined, it is possible to say that the number of the studies on in-service teacher training tends to decrease from 2012 to 2019 in Turkey. The year 2012 was where the major systemic changes were realized in Turkey's education system. These systemic changes were FATİH Project which aims to spread technology applications in education and 12-year compulsory education. Especially, with the 12 years of compulsory education system, which is also known as 4+4+4 and in which compulsory education is carried out in 4-year periods, has begun to be implemented. As the compulsory education period was increased from 8 to 12 years with the relevant system, the increase in the number of students included in the system caused the need for additional measures regarding the quantity and quality of the teachers requested (MONE, 2012). In-service training has been an important factor in meeting this need. For this reason, 2012 was accepted as the beginning year in the studies examined. In addition, 2012 was the year in which the most intense studies were carried out on teachers' in-service training. However, the number of related studies is decreasing gradually in the following years. The main reason for this may be the fact that the major systemic changes in the education system in 2012 drew attention to the in-service trainings of teachers and then lost its effect in the following years. In addition, this situation raises the question of whether the studies are really aimed at the needs or whether they are conducted according to the subjects that could be popular in the period in which they are carried out. However, it should be kept in mind that a large number of studies carried out on a popular subject is not a criterion for the quality of the work. Moreover, it is a fact that there are serious qualitative problems in the scientific studies in Turkey, that scientists do not conduct enough numbers of research, the studies do not receive enough citations and the impact factors are low (Al, 2012). In addition, it is stated that the number of national and international academic studies in Turkey might be deceptive as the studies are used as a means of collecting points from time to time and for this reason the necessary success cannot be achieved in international publications (Ak & Gülmez, 2006).

In the studies examined, it is seen that mixed designs are less preferred than quantitative and qualitative designs, non-experimental ones are more preferred as quantitative designs and interactive ones are more preferred as qualitative designs. In addition, the most preferred designs/models are descriptive survey model and case study. The most commonly used data collection tools in these studies are Likert type questionnaires/scales and semi-structured interviews. However, in 43 of the 56 studies, i.e. about 77%, only one data collection tool was used to collect data. This is contrary to the spirit and logic of the social sciences. Because, in the social sciences, studies using more than one data collection tool, also called triangulation, are considered valuable because they express the richness and complexity of human character in a better way (Cohen, Manion, & Morrison 2018). This situation shows the necessity of the studies on teachers' in-service trainings using different kinds of valid and reliable data collection tools. Yıldırım (2013) mentions about the inadequacy of valid and reliable data collection tools in teacher education research and emphasizes the need to generalize relevant data collection tools. In the majority of the 56 studies examined the participants were teachers and the most preferred sample sizes are concentrated in 3 groups as 101-300, 11-30 and 31-100. At first glance, it seems normal and probable that the participants of the studies on teachers' in-service training are mostly teachers. However, it should be remembered that in-service training programs are not independent of stakeholders such as academicians, program experts, managers and so on. In other words, it is necessary to involve as many different stakeholders as possible in the development and evaluation of these programs in scientific research processes. Köse and Akıncı (2019) stated that participation in the evaluation of teacher training programs on behalf of different stakeholders is insufficient.

The preferred research designs, data collection tools, the sample size and the fact that these samples in the studies are mostly composed of teachers, give the impression that the data collected from teachers during the in-service trainings were conducted at any place and time in an unplanned manner. This situation asserts the idea that there may be problems related to sample selection besides the

previously mentioned problems. However, there are many factors that should be taken into consideration in sampling selection such as homogeneity, standard error of sampling, sensitivity in sample statistics, tolerable error (Özen & Gül, 2007). This situation indicates that the necessary care is not shown in the selection of samples in the conducted studies. In addition, errors in sample selection are among the basic errors in scientific research processes (McGinnis, Heddle, and Shih, 2018). In addition, when the studies in which the branches of the teachers are clearly stated are examined, it is seen that scientific research processes are more common in the in-service trainings of primary school teachers, preschool teachers and geography teachers compared to other branches. In the analysis of qualitative and quantitative data collected from these participants, descriptive methods such as frequency-percentage and mean-standard deviation and descriptive analysis were commonly used.

CONCLUSION AND SUGGESTIONS

Consequently, the number of studies on in-service training of teachers between 2012 and 2019 in Turkey tends to decrease. The studies are mostly descriptive, quantitative and qualitative studies conducted during in-service training of teachers. The number of comprehensive and planned studies using mixed designs and multiple data collection and analysis processes involving different stakeholders is not sufficient. All these studies were carried out in an unplanned way by making urgent decisions and they have deficiencies in terms of being oriented towards the real needs and being done with correct and effective methods. It is a huge problem that the main mistakes made in the scientific research processes also continue in the studies regarding the in-service training of teachers. The prevalence of such methodological deficiencies is expressed in various studies in Turkey (Erdoğan, 2001; Toy & Tosunoğlu, 2007). Moreover, the academicians not being sufficiently involved in the in-service training processes of teachers can have negative reflections on the quality of the research conducted as well as the quality of the education conducted. However, the importance of university lecturers to be a part of these in-service trainings is known (Ulla, 2018). Based on mentioned deficiencies and errors in the current studies, some suggestions that can contribute to the researches and in-service trainings of the teachers are as follows:

- Academics should be more involved in the in-service training of teachers in the context of teaching and scientific research.
- Studies on teachers' in-service training number of which has been decreasing as of 2019 compared to previous years should be given more attention.
- Possible studies on teachers' in-service training should be carried out in a planned and comprehensive manner in accordance with the needs.
- In the studies, the diversity of qualitative and quantitative designs should be increased on behalf of methodological richness and more emphasis should be given to the mixed designs.
- In order to increase data richness, in the studies, valid and reliable data collection tools should be used to provide data from different stakeholders.

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