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An Evaluation of Theses and Articles in terms of In-Service Training Needs of Special Education Teachers

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Abstract

The study aims to present postgraduate theses and articles regarding in-service training needs of special education teachers in Turkey between 2008 and 2022, examining them by year, type, university, journal, research method, design/model, sample size, data collection tool, data analysis, subject distribution, and suggestions according to the findings and keywords. The data source includes postgraduate theses and articles between 2008 and 2022. Document analysis was used, and the data were analyzed by content analysis. According to the findings, most of the theses and articles used qualitative research methods; the data collection method was mainly semi-structured interviews; the data analysis method was descriptive and content analysis. The subject distribution was gathered under nine different headings, and most studies are teachers' opinions in line with the educational needs of special education students. However, the studies on in-service training needs are much less than other studies. According to the findings, the need for in-service training is highly recommended in the suggestions, and according to the keywords, special education includes many different disciplines. It is essential that special education includes many different disciplines and that teachers have knowledge, skills, and equipment in many disciplines. Quantitative and mixed-design research studies can be carried out, and data collection tools can be developed to examine the in-service training needs of special education teachers in-depth, reveal the needs, and carry out practices. In-service training needs of teachers working in special education can be determined, and more studies can be conducted in this field.

Keywords: Individuals with special needs, in-service training, special education, teacher views, training needs

1. Introduction

Education is the planned design of predetermined goals in line with certain objectives to change and improve people's behaviour, and a series of effects that bring about desired changes in knowledge, skills, values, attitudes, and behaviours in individual (Ertürk, 2017: 13). Education covers all processes, including teaching, learning, knowledge transfer, and skill acquisition activities within these planned or accidental interactions in school, family, or environment, (Akyüz, 2014).

As there are physical individual differences between people, such as height, and weight, there are also differences in learning characteristics (Özdamar, 2016). There are differences in the

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learning speed, style, and behaviour of each individual in practice. While differences in learning are sometimes related to reasons such as living conditions, environment, insufficient experience, or disability diagnosis, they may not be due to any reason (Diken, 2014; Yılmaz & Batu, 2016). On the other hand, special education is a field that covers the education and training processes of individuals who differ from normal children in terms of mental, emotional, and social development (Ataman, 2003: 19). According to the MoNE Regulation on Special Education Services (2018), "special education curriculum are prepared to meet the educational and social needs of individuals who differ significantly in terms of their individual and developmental characteristics and educational competencies, and the implementation of these curriculum by specially trained staff in appropriate environments". Article 3 of the Decree Law No. 573 of the MoNE (1997) defines special education as "education carried out by specially trained personnel in environments appropriate to the disabilities and characteristics of individuals with special educational needs through improved educational curriculum and methods to meet the educational needs of individuals with special educational needs". Within this framework, the educational process should be planned and structured in accordance with the individual characteristics of students. In particular, the role of the teacher in implementing education curriculum prepared for individuals with special needs is of great importance.

The characteristics and needs of individuals with special educational needs vary greatly. In the Regulation on Special Education Services in our country (MoNE, 2018), individuals with special needs are defined as various disabilities that occur in different areas. These disabilities are classified as mental (mild, moderate, severe, and very severe) disabilities, hearing and visual impairment, physical disabilities, language and communication learning disabilities, autism, chronic diseases, social adaptation difficulties, hyperactivity disorder, and gifted and talented individuals.

In special education, in line with the increasing and diversifying needs of individuals, according to the MoNE's 2018 Regulation on Special Education Services, many different people specialised in different disciplines are involved. These people include educational administrators, special education teachers, classroom teachers, counsellors, workplace coordinator teachers, workshop teachers, and master trainers.

A special education teacher can work with a group with a single disability or with a group with multiple disabilities (such as moderate-severe intellectual disability-CP and visually impaired-medium-severe intellectual disability), providing daily teaching plans and other related support to students with special needs, having quite different roles and responsibilities (Diken, 2014).

The roles expected from the teacher in special education are shown in Figure 1.



Figure 1. *Roles Expected from Teachers in Special Education*

The roles expected of teachers in special education include maximum effort to serve the individual needs of the students in the most appropriate way, be able to evaluate the academic strengths and weaknesses of the students, guide, plan compliance meetings in cooperation with experts from different disciplines (e.g. psychologists and, physicians), create Individualised Education Programmes (IEP), provide basic life skills training (daily living skills and, self-care skills), recognise the abilities of special education students, and work in cooperation with other specialists (psychologists and physicians,) and other branch teachers. It is also vital to have knowledge of current laws and legislation related to special education (Cavkaytar, 2018). In addition to providing the necessary education to children, becoming a special education teacher requires a wide range of qualifications to cover areas such as family education and leisure time activities in case of a lack of specialised staff in the school (Özsoy, Özyürek & Eripek, 2002). According to Erol and Merze (2023), although the number of paid teachers cannot be reached clearly, it is stated that approximately 100 thousand paid teachers work in schools affiliated with the MoNE during the academic year. In special education schools, this need is met with paid teachers due to the lack of special education teachers who are graduates of the field (Arslan & Aslan, 2014; Özyürek, 2008; Yılmaz & Üredi, 2018). Individuals who graduated from different professional fields complete the 80-hour special education awareness course prepared by the MoNE General Directorate of Lifelong Learning (2016) to work as a paid teacher in special education schools.

Today's rapidly changing science and technological developments reveal that the professional knowledge and skills of employees may be insufficient to adapt to this change. When a lifelong learning approach is adopted, professional skills need to be continuously developed at individual, professional, and social levels (Özdemir, 2021). In this context, in-service trainings stand out as the most effective practice.

One of the sectors where in-service training is most needed is the education sector due to factors such as having a lot of staff and experiencing rapid changes in the education and training process and insufficiency of pre-service training (Baykan & Oktay, 2016). The teaching profession is one of the areas where there is a need for in-service training due to the inadequacy of the training before starting the profession or because teaching is a lifelong profession (Aktan

& Budak, 2021; Bümen, Ateş, Çakar, Ünal & Acar, 2012; Üçler & Yıkılmış, 2021). Therefore, in the training of qualified staff, education is at the forefront, and one of the crucial components of the continuity of education is In-Service Training (IST) activities.

The reasons that make IST compulsory are the deficiencies and inadequacies arising from pre-service training, the necessity to adapt to the continuous change and development of the service, the need for individual development and progress in the job, and the necessity to acquire some knowledge, skills, and habits on duty (Karip, 2007). In order to meet both mandatory requirements and achieve superior work outputs, each institution should organise regular training programmes in accordance with its own internal dynamics and plan trainings specific to its needs.

In special education schools, the number of special education teachers and branch teachers is high, and according to the studies (Bümen et al., 2012; Karasu, Çıgıl & Yılmaz, 2014), teachers generally focus on behaviour modification, classroom management, and teaching methods. In addition, according to the experience of the teachers, those who graduated between 2000-2008 focused more on teaching methods, while those who graduated in 2009 and later focused more on behaviour modification, classroom management, and teaching methods. The fact that teachers who graduated before 2000 did not take special education courses during their undergraduate education and the insufficient number of faculty members and staff trained in special education in universities reveal the need to support special education teachers. (Çıkılı, Gönen, Aslan Bağcı, & Kaynar, 2020; Kılıç, 2020; Tabak, 2021) emphasised in their studies that special education teachers graduated from different fields and did not receive education in special education, that efforts should be made to understand and eliminate the obstacles that they lack knowledge about student characteristics and needs for the education of students with special needs, and that in-service training should be organised for teacher needs. In addition, Şahin (2013) emphasised that special education in-service trainings and seminars should be increased, and their contents should be carefully planned to meet the needs of teachers working in special education schools. In this context, supporting special education teachers and branch teachers working in special education schools and organising in-service trainings is an important step in solving the problems in special education.

In this context, no study on thematic analysis of theses and articles on the in-service training needs of teachers in line with special education fields has been found, and it is expected that this study will provide comprehensive information to researchers who will work with teachers and support future studies.

This study aims to examine the studies conducted in Turkey between 2008 and 2022 on the in-service training needs of special education teachers, professional competence and self-efficacy, determination of needs, problems experienced by teachers in training for special education students, determination of in-service training needs and teachers' opinions. By examining postgraduate theses and national articles in detail according to the subject headings, it is aimed to reveal the subject trends and to provide a perspective for future research by determining the general profile of the studies. In line with these aims, answers to the following questions were sought.

In line with the in-service training needs of special education teachers, according to the examined theses and articles;

1. How is the distribution according to years?
2. How is the distribution according to type?

3. How is the distribution according to universities?
4. How is their distribution according to journals?
5. How is their distribution according to methods?
6. How is their distribution according to designs/models?
7. How is their distribution according to sample size?
8. How is the distribution according to data collection tools?
9. How is the distribution according to data analyses?
10. How is the distribution of topics?
11. How is the distribution according to suggestions?
12. How is their distribution according to keywords?

2. Method

In the method section of the research, detailed explanations about the research model, data collection tool, and the analysis process of the data obtained are given.

2.1. Research Model

In the research, document analysis technique, one of the qualitative research techniques, was preferred. Document analysis involves the examination of written materials that provide information about research-oriented facts and events, diversify the necessary data, and significantly increase the validity of the research (Yıldırım & Şimşek, 2021). In this study, national theses and articles on in-service training needs in special education between 2008 and 2022 were examined according to year, type, university, journal, method, design/model, sampling, data collection, data analysis, subject, recommendations of the studies, and keywords, and the findings were tried to be presented.

2.2. Data Collection Tool

As a data collection tool, the National Thesis Centre, Dergi Park, and Google Scholar databases within the study were scanned and examined. As a result of this search, 99 theses and 56 articles published between 2008 and 2022 were identified. The theses and articles were classified according to year, level, title, method, sample size, data collection method, design/model, university and journal, recommendations according to the findings of the studies, data analysis method, and keywords. The data obtained from these theses and articles were analysed and tabulated using descriptive statistics and number/percentage values, and graphs were created and interpreted.

2.3. Analysing the Data

Content analysis was used in the qualitative research method for data collection. The main purpose of content analysis is to organise the collected data in a way that the reader can understand by grouping them around certain themes using coding in accordance with certain rules, and it is a technique in which inferences are made as a result of defining certain features with an objective and systematic approach (Büyüköztürk, Kılıç Çakmak, Akgün, Karadenizli & Demirel, 2022).

In this context, 1247 theses and 86 articles were accessed with the keywords "special education", "individuals with special needs", "in-service training in special education", "training needs", "teacher opinions", "professional competence/self-efficacy", and "problems they experience" in the National Thesis Centre, Google Academy, and Dergi Park pages. Theses and articles between 2008 and 2022 in line with the in-service training needs of special education

teachers, as well as 1202 theses and articles, were excluded from the research subject when analysed in terms of the in-service training needs of special education teachers. Accordingly, 99 theses and 56 articles were analysed. Firstly, nine general titles were determined according to the subject headings of the analysed theses and articles. In addition, theses and articles suitable for the sub-objectives of the research were classified separately according to year, type, university and journal, method, design/model, sample size, data collection, data analysis, subject, suggestions according to the findings of the studies, and keywords. After the classification process was completed, the collected data were defined and then expressed in numbers and percentages, visualised through graphs, analysed, and interpreted.

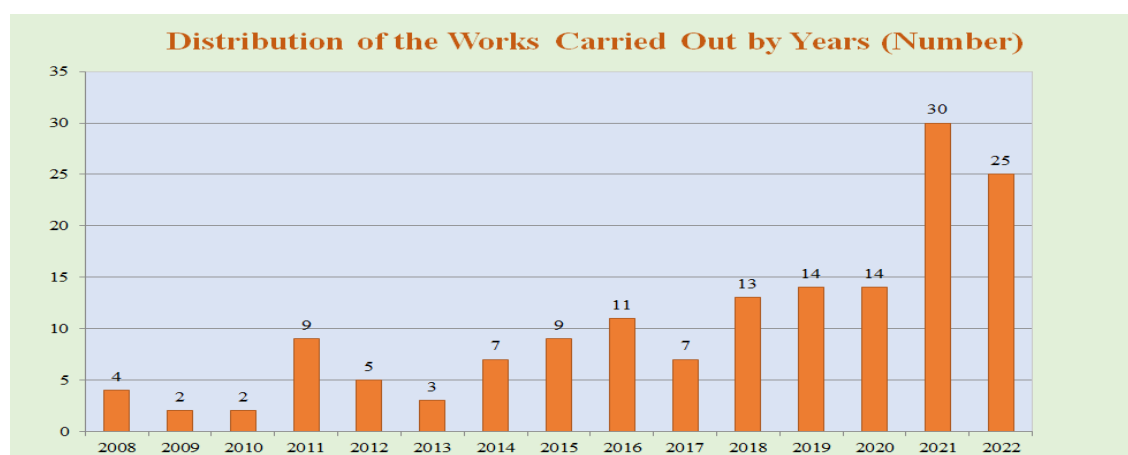
2.4. Ethics

Ethical rules have been followed in this research. Since the study is a document review study and a systematic literature review, it is not included in the group of studies that require Ethics Committee Permission. Therefore, Ethics Committee Permission was not declared.

3. Findings

3.1. Findings and Interpretation Related to the First Sub-Problem

The data collected for the sub-problem "How is the distribution of articles and theses on special education teachers according to years in line with their in-service training needs?" are shown in Graph 1.



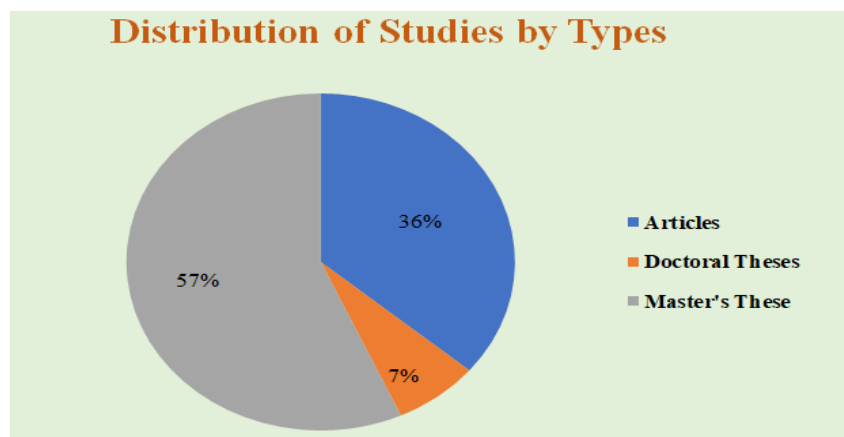
Graph 1. *Distribution of the Studies by Years*

Graph 1, which includes the distribution of theses and articles related to the field according to years, shows a change according to years. In 2009 and 2010 (2), 2013 (3), 2008 (4), 2012 (5), 2014 and 2017 (7), 2011 and 2015 (9), 2016 (11), 2018 (13), 2019 and 2020 (14), 2022 (25), and 2021 (30) studies were conducted. It was observed that most studies in this field were conducted in 2021 and 2022.

3.2. Findings and Interpretation Related to the Second Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to their in-service training needs?" are shown in Graph 2. In this

regard, it is noteworthy that in recent years, there has been an increase in studies on the in-service training needs of special education teachers.

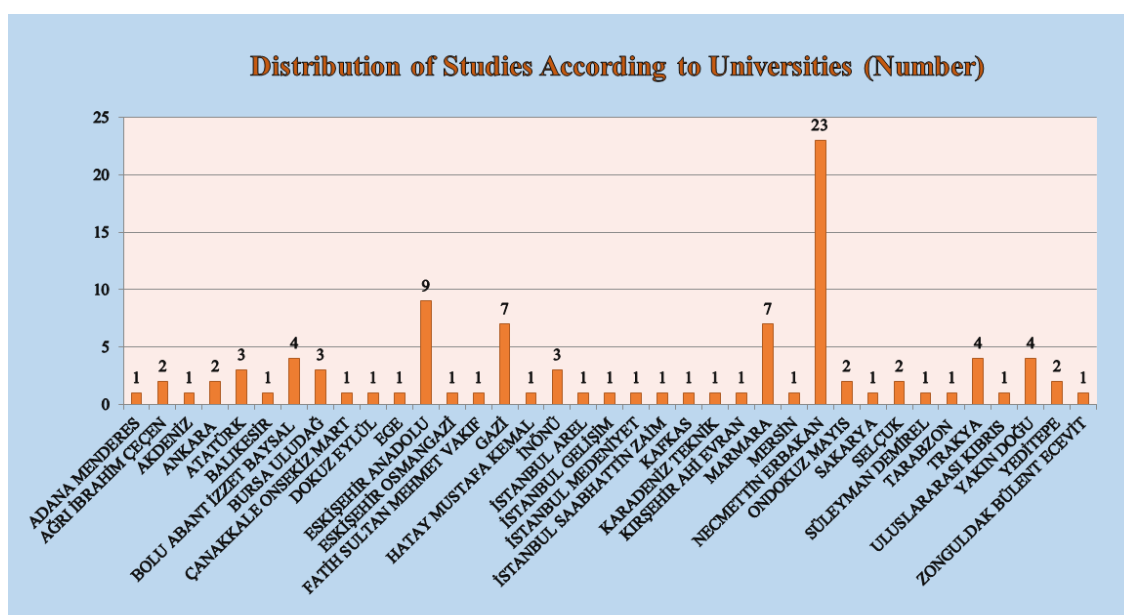


Graph 2. *Distribution of Studies According to Types*

When Graph 2, which includes the data according to the types of studies on in-service training needs of special education teachers, is examined, it is seen that 7% of them are doctoral theses; 36% are articles; 57% are master's theses. It is seen that there are mostly master's theses and articles in the field of in-service training needs of teachers and the least number of doctoral thesis studies.

3.3. Findings and Interpretation Related to the Third Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to universities in line with their in-service training needs?" are shown in Graph 3.

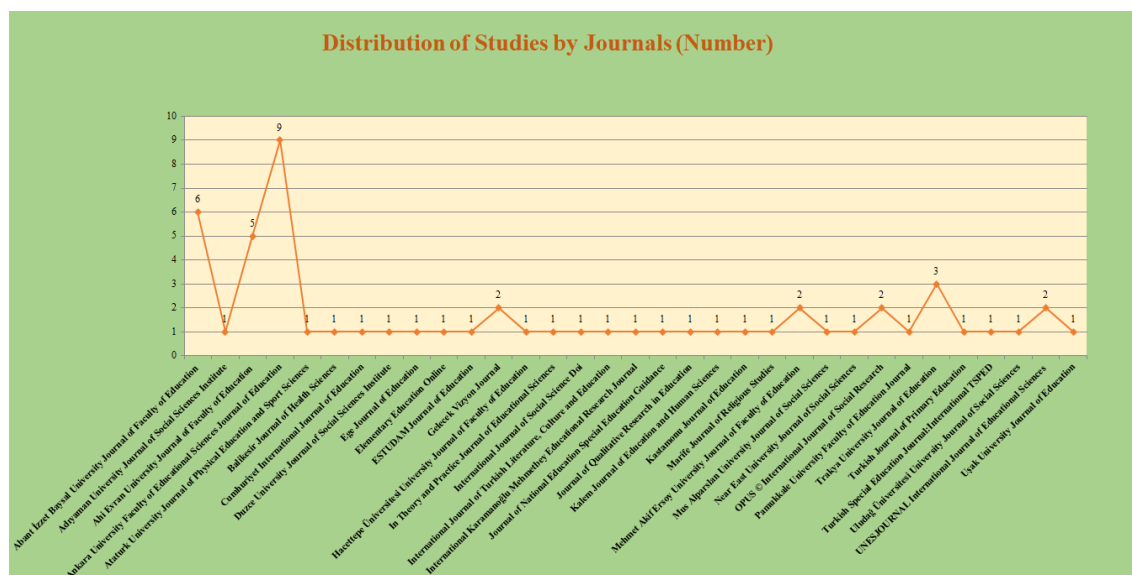


Graph 3. *Distribution of Studies According to Universities*

When Graph 3, which includes the data according to the university distribution of the studies on in-service training needs of special education teachers, is analysed, it is seen that Necmettin Erbakan University (23) has the majority of the distribution. Necmettin Erbakan University is followed by Anadolu University (9), Gazi University and Marmara University (7), Bolu İzzet Baysal University, Trakya University and Near East University (4), Atatürk University, Bursa Uludağ University, and İnönü University (3), Ağrı İbrahim Çeçen University, Ankara University, Ondokuz Mayıs University, Selçuk University and Yeditepe University (2), and other universities (1).

3.4. Findings and Interpretation Related to the Fourth Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to the journals in line with their in-service training needs?" are shown in Graph 4.

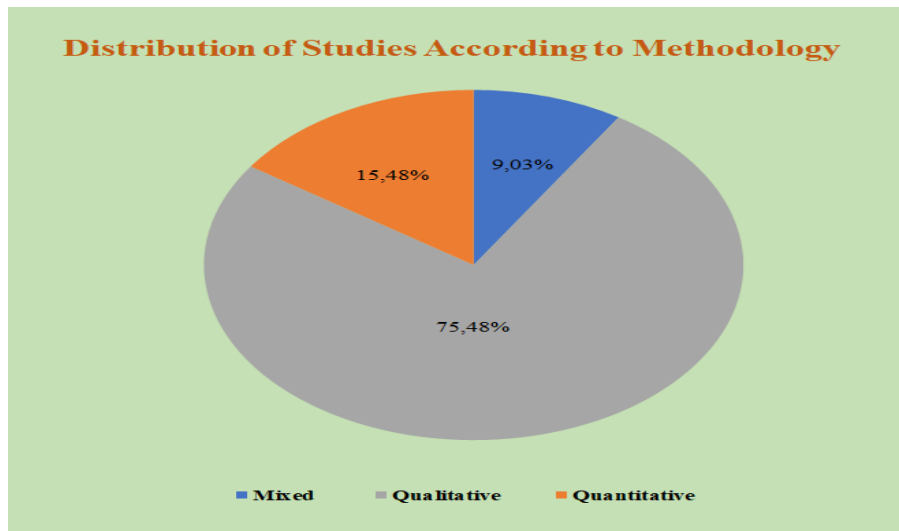


Graph 4. Distribution of Studies According to Journals

Graph 4, which includes the data according to the journal distribution of the studies on in-service training needs of special education teachers, is analysed, it is seen that Ankara University Faculty of Educational Sciences Journal of Special Education (9) has the majority of the distribution. Ankara University Faculty of Educational Sciences Journal of Special Education is followed by Bolu Abant İzzet Baysal University Journal of Faculty of Education (6), Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (5), Trakya Journal of Education (3), Future Visions Journal, Mehmet Akif Ersoy University Journal of Education Faculty, OPUS Journal of Society Research, The Journal of International Educational Sciences (2), and other journals (1).

3.5. Findings and Interpretation Related to the Fifth Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to their methods in line with their in-service training needs?" are shown in Graphic 5.

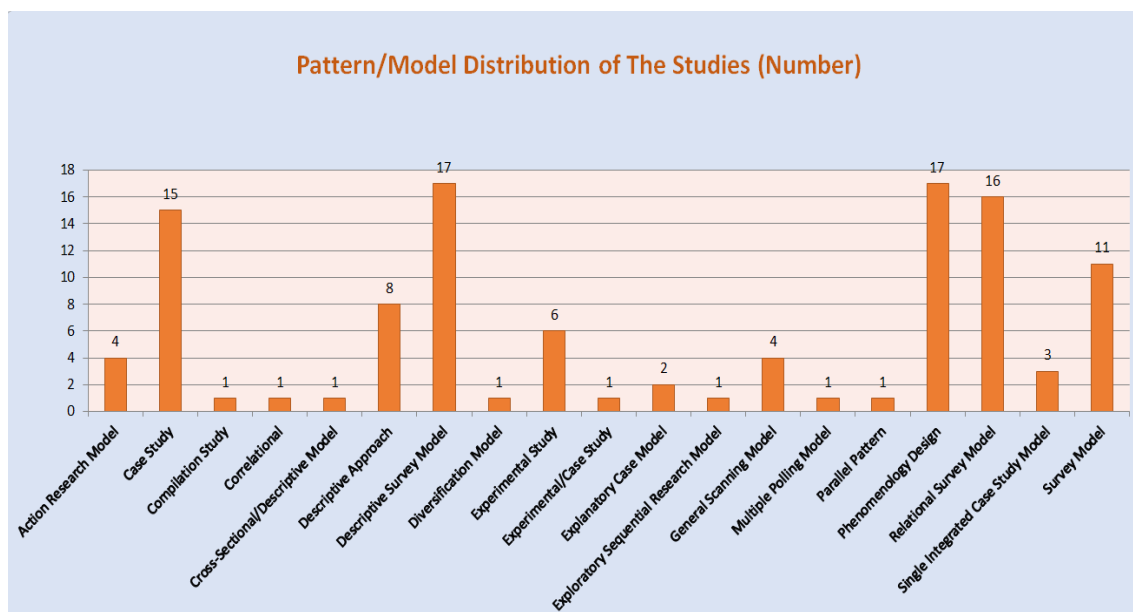


Graph 5. *Distribution of Studies According to Methods*

According to the methods of the studies, the distribution of the studies on in-service training needs of special education teachers in Graphic 5 shows that 9,03% used the mixed method; 15,48% used the quantitative method; 75,48% used the qualitative method, and the qualitative method was used most. Qualitative methods focus on examining a specific field in-depth and require the development of a unique research design and data analysis strategy for each research problem, as there are no specific rules and standard approaches in qualitative methods (Yıldırım & Şimşek, 2021). Therefore, qualitative research has its own unique characteristics.

3.6. Findings and Interpretation Related to the Sixth Sub-Problem

The data collected for the sub-problem "How is the distribution of special education teachers according to their pattern/model distribution in line with their in-service training needs?" are shown in Graph 6.

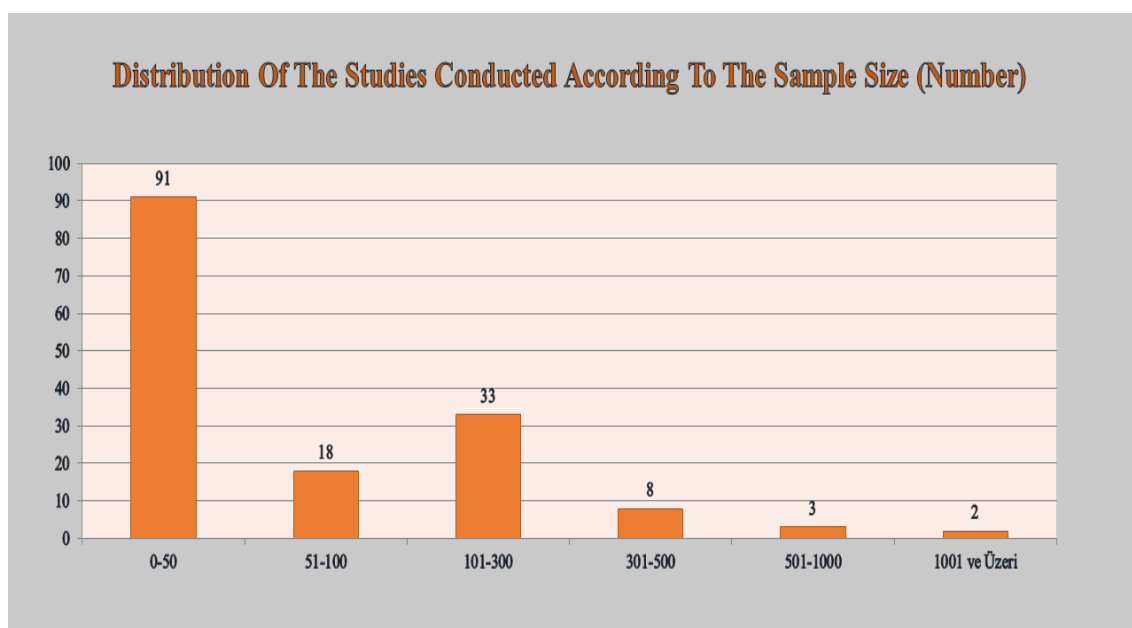


Graph 6. *Distribution of Studies According to Pattern/Model Distribution*

When the distribution of the studies on in-service training needs of special education teachers in Graph 6 is analysed according to their methods, it is seen that 20 different designs/models were used. Looking at Graph 6, it is seen that the most commonly used design/model is the interview technique model (37), phenomenology design and descriptive screening model (17), relational survey model (16), case study (15), and survey model (11).

3.7. Findings and Interpretation Related to the Seventh Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to the sample size in line with their in-service training needs?" are shown in Graph 7.

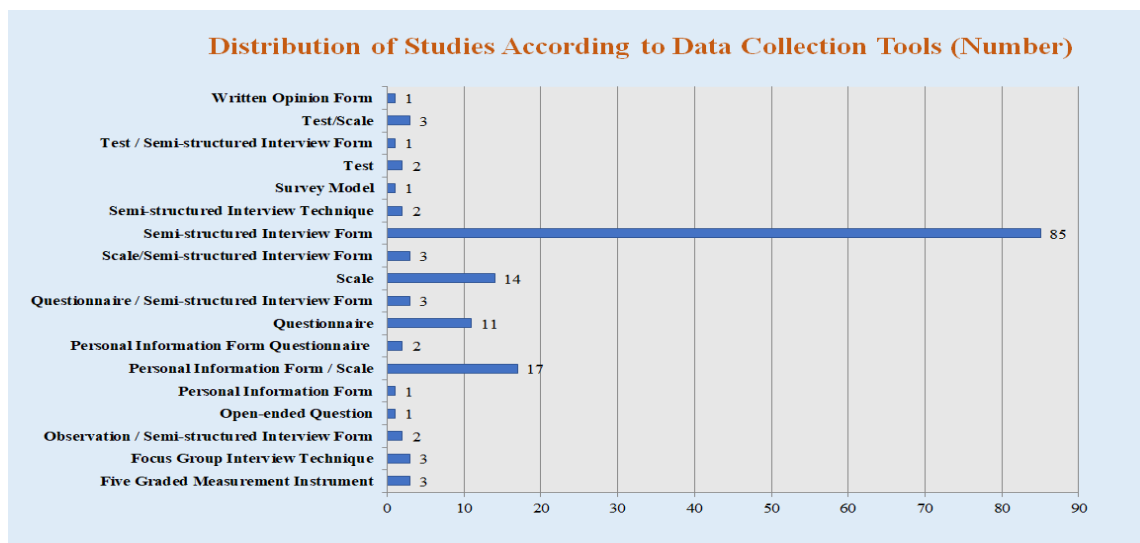


Graph 7. *Distribution of Studies According to The Sample Size*

When the distribution of the data obtained in Graph 7 according to the sample size of the studies on in-service training needs of special education teachers is examined, it is seen that the majority is between 0-50 (91), followed by 101-300 (33), 51-100 (18), and 301-500 (8) sample groups. However, it is noteworthy that the number of theses with a sample size of 501-1000 (3) and 1001 and above (2) is quite limited.

3.8. Findings and Interpretation Related to the Eighth Sub-Problem

The data collected for the sub-problem "How is the distribution of special education teachers according to their in-service training needs?" are shown in Graph 8.

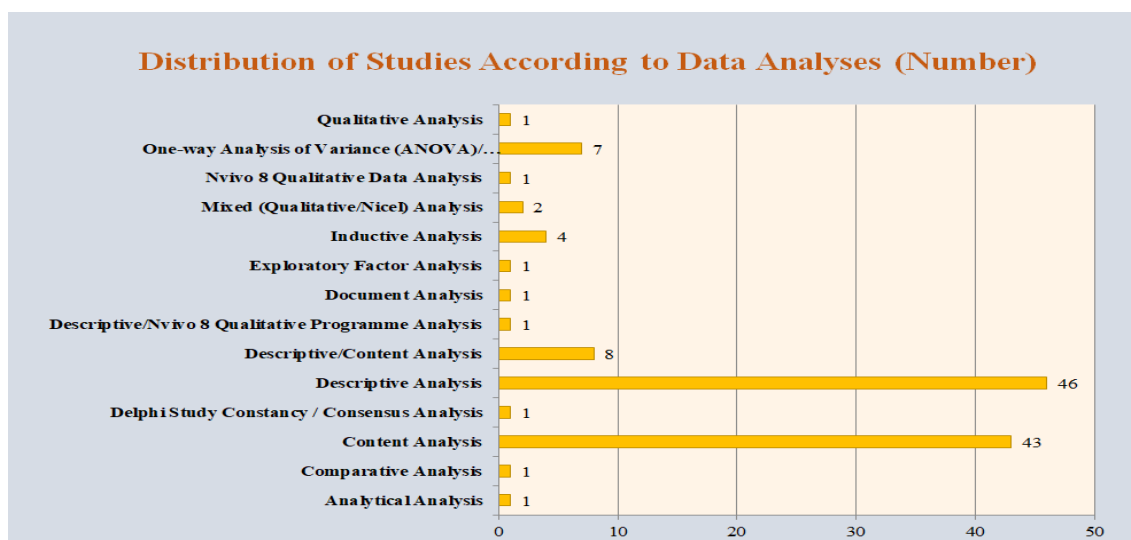


Graph 8. *Distribution of Studies According to Data Collection Distribution*

When the distribution of the studies on in-service training needs of special education teachers in Graph 8 is analysed according to the methods, it is seen that 20 different data collection tools were used. Looking at Graph 8, it is seen that the most commonly used semi-structured interview form (85) and compared to other data collection tools, the semi-structured interview form is more commonly preferred.

3.9. Findings and Interpretation Related to the Ninth Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles on special education teachers according to data analyses in line with their in-service training needs?" are shown in Graph 9.



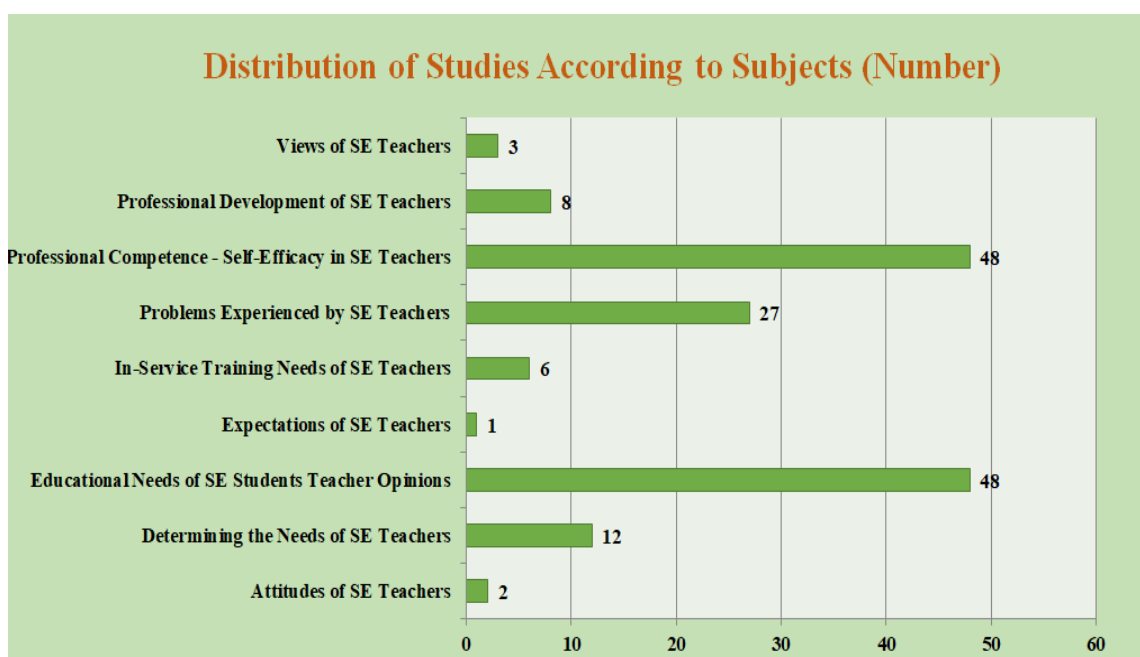
Graph 9. *Distribution of Studies According to Data Analyses*

When the distribution of the studies conducted in line with the in-service training needs of special education teachers in Graph 9 is examined according to their methods, it is seen that

they were analysed in the context of 15 different data analyses. Looking at Graph 9, it is seen that the most commonly used data analysis methods are descriptive analysis (46) and content analysis (43) analysis methods, and they are used to a greater extent than other data analysis methods.

3.10. Findings and Interpretation Related to the Tenth Sub-Problem

The data collected for the sub-problem "How is the distribution of the studies on in-service training needs of special education teachers according to their subject distribution?" are shown in Graph 10.



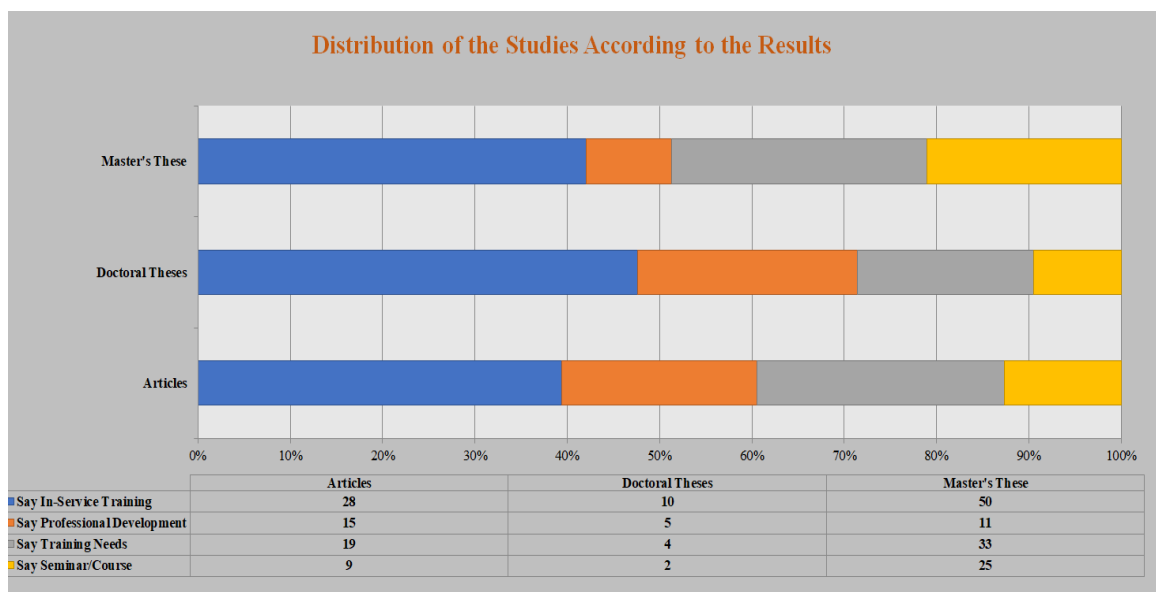
Graph 10. *Distribution of Studies According to Subject Distribution*

In Graph 10, the subject distributions of the studies conducted in line with the in-service training needs of special education teachers are grouped under nine titles. When the distribution according to the data obtained in Graph 10 is analysed, it is seen that the studies under the title of "Professional Competence-Self-Competence of Special Education Teachers (48) and Teacher Opinions on Special Education Students' Education (48)" are in the majority.

Twenty seven studies were conducted under the title of 'Problems Experienced by Special Education Teachers'. This is followed by 'Determining the Needs of Special Education Teachers (12)', 'Professional Development of Special Education Teachers' (8), 'In-Service Training Needs of Special Education Teachers' (6), 'Opinions of Special Education Teachers' (3), 'Attitudes of Special Education Teachers' (2), and 'Expectations of Special Education Teachers' (1).

3.11. Findings and Interpretation Related to the Eleventh Sub-Problem

The data collected for the sub-problem "How is the distribution of the theses and articles related to the findings according to the results in line with the in-service training needs of special education teachers?" are shown in Graph 11.



Graph 11. *Distribution of the Findings of the Study According to the Results*

When the distribution of the data in Graph 11 according to the suggestions of the studies carried out in line with the in-service training needs of special education teachers is analysed, it is seen that most of them need "In-Service Training" (88). "Training Needs" (56), "Seminar/Course" (36), and "Professional Development" (31) needs and suggestions were made.

3.12. Findings and Interpretation Related to the Twelfth Sub-Problem

The data collected for the sub-problem "How is the distribution of theses and articles about special education teachers according to keywords in line with their in-service training needs?" are shown in Figure 2.



Figure 2. *Distribution of the Study According to Key Words*

According to the word cloud in Figure 2, it is seen that in most of the studies, words such as special education, individual with special needs, special education teacher, IEP (Individualised Education Programme), inclusion, autism, individual with mental disabilities, in-service training, educational need, education, professional competence, professional development, self-efficacy, educational problems, teacher opinions, candidate teacher, mentor teacher, administrators, music education, visual arts education, cooperation, and qualitative study, were used intensively.

4. Discussion and Conclusion

In this study, 99 postgraduate theses and 56 articles conducted between 2008 and 2022 regarding the studies conducted in line with the in-service training needs of special education teachers, research years, types of research, universities, journals, methods, design/model used, sample size, data collection tools, data analysis, subject distributions, recommendations of the studies according to the findings and keywords were examined. The data were analysed by document analysis, one of the qualitative research methods, and analysed by content analysis method.

As a result of the research, when the distribution of the studies conducted in line with the in-service training needs of special education teachers according to years was examined, a total of 99 postgraduate theses and 56 articles were examined, and it was seen that the most studies were conducted in 2021 and 2022. In this context, the increase in the importance of special education in recent years is striking. In the 2023 vision document of the Ministry of National Education published in 2018, under special education, strengthening the justice-based approach was emphasised. This approach prioritises protecting the rights of students with mental or physical disadvantages. At the same time, it is emphasised that for the success of the reforms to be made in special education in Turkey, problems should be correctly identified, and effective solution strategies should be developed. Studies carried out in recent years support the increasing efforts made in special education and the results obtained.

When the distribution of the studies conducted in line with the in-service training needs of special education teachers was examined according to their types, it was seen that 57% were master's theses,; 36% were articles, and 7% were doctoral theses. These findings suggest that the studies conducted in our country in line with the in-service training needs of special education teachers are mostly master's theses, followed by articles, and least doctoral theses. According to the statistical information published by the higher education institution in our country, the number of master's programmes is higher than the number of doctoral programmes, and the highest number of thesis studies between 2008 and 2022 were carried out in 2021 and 2022, respectively (Higher Education Board HEB, 2023). In addition, according to the 2023 higher education information management system (2023) statistical results, the number of students enrolled in master's programs is significantly higher than the number of students enrolled in doctoral programs. Ayvacı and Altınok, (2019); Başaran et al., (2021); Coşkun, Dündar, and Parlak (2014) stated in their studies that the difficulty of admission requirements for doctoral education and the fact that the doctoral process is more laborious in terms of financial, time and psychological aspects compared to master's degree might be effective in the number of doctoral theses being less than master's theses. In addition, the lack of doctoral programs in special education programs in every university may have been effective in the lack of studies on the in-service training needs of special education teachers. These data seem to confirm the findings of our own research.

It is the opinion that the postgraduate thesis studies conducted in line with the in-service training needs of the special education teachers examined in this research were conducted by Necmettin Erbakan University (23), followed by Gazi University (9), Anadolu University and Marmara University (7), and other universities conducted four or less than four studies. It can be said that most of the studies conducted in this context were conducted at Necmettin Erbakan University. Coşkun, Dündar, and Parlak (2014); Erol and İlhan-Ildız (2020); Gölünay, Çalımlı, and Karakelle (2022); Kaya et al. (2022); Sönmez and Özcan (2020) reached the findings that Gazi University, Anadolu University, Marmara University, and Necmettin Erbakan University were the most common universities in terms of the distribution of postgraduate studies on special education and in-service training needs. In this context, the studies conducted in the literature support this study.

When the distribution of the studies conducted in line with the in-service training needs of special education teachers according to the journals is analysed, it is seen that Ankara University Faculty of Educational Sciences Journal of Special Education (9), followed by Bolu Abant İzzet Baysal University Journal of Faculty of Education (6) and Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (6), other journals published three or less than three articles. The Department of Special Education, which was established in 1965 within the Faculty of Educational Sciences of Ankara University to train the expert staff needed in the field of special education, was transformed into a department under the Department of Psychological Services in Education with a new regulation made in 1981, and then continued to serve as Education of the Mentally Handicapped, Education of the Hearing Impaired and Education of Maladaptive Children with the decision of the Council of Higher Education since 1995. Today, the Department of Education of the Mentally Handicapped trains teachers in mental disabilities at the undergraduate level (Ankara University, 2023). In this context, when the historical development process of Ankara University Faculty of Educational Sciences, Department of Special Education (2024), and the objectives of Ankara University Faculty of Educational Sciences Journal of Special Education which is one of the scientific publishing organs established for the development of the field of special education and the publication of scientific information, and the distribution of the studies conducted in line with the in-service training needs of special education teachers according to the journals in which they are published are examined, the fact that the researchers of Ankara University Faculty of Educational Sciences Journal of Special Education show more tendency confirms the finding we obtained as a result of the research.

Another finding of the study is that when the distribution of the studies conducted in line with the in-service training needs of special education teachers is analysed according to the methods, it is seen that the qualitative method is used at a rate of 75%. Qualitative research aims to explain a phenomenon in depth and its own context (Yıldırım, 1999). These studies investigate why people behave in certain ways in the face of events and phenomena, the reasons behind their attitudes and behaviors, how individuals and societies are affected by their environment, how and why cultures are formed and developed, and how social groups communicate (Tekindal & Arsu, 2020). According to Kaya et al. (2022), in-service training includes activities organized to improve teachers' professional competencies and skills and to support their career development. The roles expected of teachers in educating individuals with special needs require research in unique and ever-changing environments. Therefore, it can be justified that more qualitative research is conducted to determine the in-service training needs of special education teachers and conduct in-depth studies.

The other finding of the study was that the interview technique was used the most when analyzed according to the pattern/model distribution in line with the in-service training needs of special education teachers, followed by phenomenology design and descriptive screening

model, relational screening model, case model and survey model, and that this pattern/model was mostly used. It is stated in the literature that there is no single definition of qualitative research method. Qualitative research method is used as a broad umbrella concept and includes a number of sub-concepts that are closely related to various disciplines. Qualitative research encompasses many different concepts such as "case research", "interpretive research", "descriptive research", "action research", and "content analysis". In addition, this approach includes techniques such as observation, interview and document analysis, which are carried out through qualitative data methods, thus enabling perceptions and events to be handled more realistically. In other words, this method emphasizes the process of investigating and understanding social phenomena within their environment and context (Yıldırım & Şimşek, 2021).

Another finding of the research is that when the distribution of special education teachers according to the sample size in line with their in-service training needs is examined, it is seen that the majority (91) is between 0-50. Very few studies have sample sizes between 501-100 and 1000 and above. In line with the high use of the semi-structured interview technique, the sample size of the data may be between 0-50. The semi-structured interview technique is an approach that offers flexibility for the interviewer to have the opportunity to ask predetermined questions and, at the same time, to learn more in-depth information about the subject in this process. This flexibility allows the interviewer to open up the topic further with additional questions. In addition, this method gives the interviewer flexibility in terms of time, and the interviewer can keep the sample size under control while dealing with each participant individually. According to the research findings, the maximum sample size was kept between 0-50, which can be shown as a justification for this situation.

It can be said that the fact that the majority of the studies on the subject are qualitative methods has an impact on the ways of data collection. Qualitative methods focus on examining a specific field in depth (Yıldırım & Şimşek, 2021). This type of research investigates why people behave the way they do in the face of events and phenomena, the reasons behind attitudes and behaviors, how individuals and societies are affected by each other and their environment, how and why cultures are formed and developed, and how social groups communicate by addressing social aspects (Baltacı, 2019). It can be said that the qualitative research method, design/model, and data collection techniques were effective in determining the qualitative research method, design/model, and data collection techniques because the entire study consisted of adults and the data obtained were examined in line with the in-service training needs of special education teachers trying to make sense of the events in their own environment and various social skills, communicating with people, collecting detailed data in the form of notes, figures, tables, pictures of data collection methods and conducting the process naturally without trying to change the environment.

In the study, when the in-service training needs of special education teachers were examined according to the distribution of topics, it was gathered under nine main headings, and it was concluded that most of the studies were conducted on the professional competence-self-efficacy of special education teachers, teacher opinions on the educational needs of special education students, and the problems experienced by special education teachers. However, very few studies have been conducted on the in-service training needs of special education teachers. Erol and Merze (2023); Karasu et al., (2014), stated that the fact that teachers who graduated before 2000 did not take special education courses during their undergraduate education, the low number of faculty members and staff trained in the field of special education in universities, and the fact that the courses on special education are given by faculty members who are not trained in this field are stated as a necessity to support special education teachers. In addition,

classroom teachers and branch teachers work in special education schools and are limited according to the need. In this context, the Ministry of National Education organizes short-term special education certificates and meets the necessary needs of out-of-field graduates who have received pedagogical formation. Therefore, the majority of teachers working in special education schools are out-of-field graduates and participated in the course program. As a result of the research, it can be shown as a justification that most thesis studies were conducted on professional competence and self-efficacy and the problems experienced by special education teachers.

Another finding of the research is that when the distribution of the findings according to the suggestions in line with the in-service needs of special education teachers is examined, all studies were grouped under four main headings, and 100% made at least one suggestion under this heading. According to the findings of the research, it is seen that the majority of special education teachers need in-service training; one-third of them need training, followed by professional development and courses/seminars for teachers. The need for special education teachers was met by classroom teachers in special education schools until 1983, and the majority of these teachers were trained through special education course programs and in-service training, the opening of the special education teaching program at Anadolu University Faculty of Education and its first graduates in the 1986-1987 academic year, the opening of special education departments in universities after 1990, the efforts to train special education teachers continued with the opening of new departments, and many legal processes supporting these efforts began (Akçamete & Kargın, 1996). Today, 15% of the world's population is made up of people with disabilities. In Turkey, it is thought that 39 thousand people work in early childhood, primary and secondary education, higher education, non-formal education, special education, and rehabilitation centers within the scope of special education services regulation. In the studies of Erol and Merze, (2023); Gönüldaş and Gümüşkaya, (2022); Sarı, Atbaşı and Çitil, (2017); Sivrikaya and Yıkılmış, (2016), the majority of the need for teachers who provide education in special education institutions in the Ministry of National Education is met with out-of-field graduates and the maximum level of competencies expected from special education teachers is a field that requires expertise in many areas such as family education and guidance. apart from skills such as teaching method techniques or classroom management. In this direction, as a result of the findings, it is vital to suggest training needs such as professional development, in-service training needs, training needs, and courses/seminars for teachers in special education.

According to the findings of the study, when examined according to the keywords in line with the needs of special education teachers, the words special education, in-service training, educational need, candidate teacher, IEP (Individualized Education Program), professional competence/self-efficacy, individual with special needs, special education teacher, mainstreaming, autism, mentally disabled individual, educational problems, teacher opinions, guidance teacher, administrators, music education, visual arts education, and cooperation were used predominantly. The intensity of many different keywords, as a result of the increasing and differentiating needs of individual characteristics in special education, Cavkaytar (2018) and Özsoy et al. (2002) stated that many disciplines, such as educational administrators, special education teachers, counselors, workplace coordinator teachers, workshop teachers, and master instructor, should be together in special education, where many staff with different areas of expertise are involved according to the Special Education Services Regulation (MoNE, 2018).

As a result, it was seen that qualitative research methods and semi-structured interview forms were used intensively in line with the needs of individuals with special needs and special education teachers. In this context, quantitative and mixed-design research methods can be conducted. Data collection tools can be developed to examine in-depth the in-service training

needs of special education teachers and reveal the needs of teachers on their needs and to be applied. In-service training needs of all special education, classroom, and branch teachers working in special education can be determined, and more studies can be conducted in this field. In the study conducted by Doğrul, Gülle, and Akay (2022), it was concluded that teachers in Turkey focus on various in-service training needs, such as professional needs, in-service training programs, and technology-based needs. Yıldırım, Ünsal, and Tolunay (2015) concluded that rapid developments in science and technology cause great changes in social, economic, and cultural areas. To adapt to these changes, individuals need lifelong education because the education received in schools alone is insufficient. Şahin and Güler Kardeniz (2023) emphasized the need for new research on in-service needs that will contribute to the literature to increase education success and ensure continuous professional development of teachers. As a result of the findings of the theses and articles conducted in line with the in-service training needs of special education teachers, according to their suggestions, most of them suggest that there is a need for in-service training. There are suggestions for training needs, professional development, and seminar/course training, and if at least one of the suggestions of each study is recommended, studies can be conducted intensively in line with the in-service training needs of special education teachers.

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Ethics Committee Permission:

Ethical rules have been followed in this research. Since the study is a document review study and a systematic literature review, it is not included in the group of studies that require Ethics Committee Permission. Therefore, Ethics Committee Permission was not declared.