Research Article
Araştırma Makalesi

https://doi.org/10.21764/maeuefd.1885813

The Effectiveness of Education Program Adapted for Improving the Competence Levels of Teachers Who Work With Students With Intellectual Disabilities in Terms of Teaching Methods and Techniques

Zihin Engelli Öğrencilerle Çalışan Öğretmenlerin Öğretim Yöntem ve Teknikleri ile İlgili Yeterlik Düzeylerinin Geliştirilmesinde Uygulanan Eğitim Programının Etkililiği

Bekir BURAL [1*] **Hakan SARI** [2]

[1] Burdur Mehmet Akif Ersoy University, Faculty of Education, Burdur, Türkiye
[2] Necmettin Erbakan University, Ahmet Keleşoğlu Faculty of Education, Konya, Türkiye

Abstract: This research investigates the effectiveness of a teacher education program aimed at improving the competencies of educators working with students with intellectual disabilities, with a particular emphasis on teaching methods and techniques. A mixed-methods design was employed, integrating both qualitative and quantitative approaches. Thirty teachers were assigned to the experimental group and another thirty to the control group. Both groups completed a pre-test prior to the training. Subsequently, the experimental group participated in the "Methods and Techniques Field Teacher Competence Program," while the control group received no formal training, though they attended supervisory meetings. Following the program, a post-test was administered to both groups, and the data were analyzed using independent sample t-tests. The findings indicate that teachers of students with intellectual disabilities demonstrated deficiencies in direct teaching methods, chain teaching methods, applied behavior analysis, and errorless teaching strategies. The training program was effective in enhancing teachers' competencies in these areas. While no significant differences were observed between pre-test scores of the experimental and control groups, post-test results revealed a significant advantage for teachers who participated in the program. Participants also reported that the training was beneficial and contributed to their professional development.

Keywords: Special education, intellectual disability, teacher competencies, teaching methods and techniques, teacher training program

Özet: Bu çalışmanın amacı, zihin engelli öğrencilerle çalışan öğretmenlerin öğretim yöntem ve teknikleriyle ilgili yeterlik düzeylerinin geliştirilmesinde uygulanan eğitim programının etkililiğini belirlemektir. Araştırmada nitel ve nicel yöntemlerin yer aldığı karma yöntem kullanılmıştır. 30 öğretmen deney grubu için 30 öğretmen kontrol grubu için seçilmiştir. Bu aşamada deney ve kontrol gruplarına ön-test uygulanmıştır. Uygulanan ön-testten sonra deney grubuna "Yöntem ve Teknikler Alanı Öğretmen Yeterliği Programı" uygulanmıştır. Kontrol grubuna hiçbir eğitim verilmemiş ancak, kontrol altında tutulabilecek biçimde toplantılar yapılmıştır. Eğitim programı deney grubuna uygulandıktan sonra deney ve kontrol gruplarına son-test uygulanmıştır. Uygulama sonucu ortaya çıkan sonuçların analizinde bağımsız örneklem t testi kullanılmıştır. Araştırma sonucu zihin engelli öğrencilerle çalışan öğretmenlerin, doğrudan öğretim yöntemi, zincirleme öğretim yöntemi, uygulamalı davranış analizi ve yanlışsız öğretim yöntemlerinde yetersizliklerinin olduğunu göstermektedir. Eğitim programı öğretmenlerin bu alandaki yeterliklerini artırmada etkili olmuştur. Deney ve kontrol gruplarının öntest puanları arasında anlamlı bir fark olmadığı, son test puanları arasında deney grubu lehine anlamlı bir fark olduğu görülmüştür. Katılımcılar eğitim programının çok faydalı olduğu ve mesleki gelişimlerine katkıda bulunduğunu belirtmişlerdir.

Anahtar Kelimeler: Özel Eğitim, zihin engelli, öğretmen yeterlikleri, öğretim yöntem ve teknikleri, öğretmen eğitim programı

*Corresponding author: bekirbural@mehmetakif.edu.tr
Received: *11/02/2026*
Revised: *08/06/2026*
Accepted: *16/07/2026*

1. Introduction

Education has a significant obligation for individuals to acclimate to contemporary advancements. Advancements in information, communication, and computer technology have revolutionized human life. Skilled human resources are a crucial element in both the material and spiritual aspects of transformation and progress. This element introduces the notion of competent education (Tuğluk, 2007). Education is a continuous process of acculturation that induces behavioral modifications in individuals (Aydın & Karkaç, 2015) and prepares individuals for specific objectives.

Education aims to ensure that all individuals can effectively access learning opportunities. To achieve this, it is necessary to make adaptations and provide support services that are appropriate to individuals' characteristics, needs, and competencies. Educational practices designed and implemented for individuals who require such adaptations are referred to as special education. Special education encompasses the educational services provided to individuals with special needs in order to support their development and maximize their independence and participation in society (Çağlayan, 2014). Every individual possesses the right to education, necessitating the provision of special education for those unable to benefit from general education. Ataman (2003) defines special education as the instruction tailored for individuals with unique needs, delivered by specially trained professionals, aimed at maximizing the potential of gifted individuals and mitigating the impact of disabilities. Special education, provided by specially trained personnel, implies that educators working with Students with intellectual disabilities must possess adequate knowledge and skills in this area. Erbaş and Yücesoy (2002) assert that the integration of disabled individuals into society is facilitated by specially trained and qualified teachers, enabling these individuals to achieve independence and productivity.

Teachers play a pivotal role in the academic, social, and behavioral development of students with disabilities. In special education, teacher competence is considered one of the most influential factors affecting the quality of educational services and student outcomes. Research indicates that well-prepared special education teachers contribute significantly to students' academic achievement and learning progress through the effective implementation of evidence-based instructional practices (Theobald et al., 2022). International organizations also emphasize that inclusive and equitable education depends largely on teachers' ability to address diverse learner needs and implement inclusive instructional strategies (UNESCO, 2024). Therefore, the effectiveness of special education services is closely associated with the qualifications, competencies, and continuous professional development of teachers.

Teaching competencies encompass the knowledge, skills, and attitudes essential for teachers to perform their profession effectively. Competence refers to the possession of advanced attributes necessary for effective job performance (Akbulut, 2012). Enhancing teacher competencies is essential for improving student success and fostering personal development. Consequently, fostering teacher development and enhancing their competencies is increasingly crucial.

In inclusive and special education settings, teachers may work with students diagnosed with intellectual disabilities. Since these students often require individualized instruction and support, teachers play a crucial role in helping them acquire the skills necessary for independent participation in daily life and society. Therefore, teachers are expected to possess knowledge and competencies related to evidence-based instructional methods, strategies, and practices that address the educational needs of students with intellectual disabilities. Such competencies contribute to the effective teaching of academic, social, daily living, and functional skills, thereby supporting students' independence and quality of life (Friend & Bursuck, 2002; Hallahan et al., 2022).

In Türkiye, teacher education undergraduate programs traditionally included a two-hour special education course related to individuals with special needs during the eight-semester teacher preparation process. However, this course was not available in all teacher education programs. Following the revisions made by the Council of Higher Education (CoHE), all teacher education undergraduate programs now include a compulsory two-hour Special Education and Inclusion course. In addition, elective professional knowledge courses such as Inclusive Education, Individualized Instruction, Learning Disabilities, and Attention Deficit Hyperactivity Disorder are offered to prospective teachers (YÖK, 2019).

Despite these developments, findings from studies on inclusive education indicate that teachers often perceive themselves as inadequately prepared to meet the educational needs of students with special needs (Woodcock et al., 2023). Similarly, research involving teachers appointed from fields other than special education has revealed that they frequently report insufficient knowledge and skills regarding instructional practices and express a need for further professional training (Byrd & Alexander, 2020; Tveitnes et al., 2026).

In Türkiye, teachers from various disciplines may work with students diagnosed with intellectual disabilities in special education schools, special education classrooms, and inclusive educational settings. These teachers play a critical role in helping students acquire the academic, social, daily living, and independent living skills necessary for effective participation in society. Therefore, it is essential that teachers possess competencies related to evidence-based instructional methods, teaching strategies, behavior support practices, and individualized educational planning for students with intellectual disabilities.

Although previous studies have examined teachers' perceptions, attitudes, and self-efficacy regarding inclusion and special education, a review of the literature indicates that there is limited research specifically focusing on improving the competencies of teachers working with students with intellectual disabilities. This gap in the literature highlights the need for further investigation into the professional competencies and training needs of these teachers.

This study aims to determine the opinions of teachers working with students with intellectual disabilities regarding their competencies in teaching methods and techniques. The sub-objectives of the study are outlined below in accordance with this purpose.

1. What are the opinions of teachers working with students with intellectual disabilities regarding their competencies in teaching methods and techniques?
2. Is there a significant difference in the pre-test and post-test scores between the experimental and control group teachers working with students with intellectual disabilities?
3. What are the opinions of teachers working with students with intellectual disabilities regarding the contribution of the teaching methods and techniques teacher competence program they participated in to their professional competencies?

2. Methodology

2.1. Research Model

This study employed a mixed methods approach. In this context, teacher needs were identified using a semi-structured interview format. The researcher chose this method to acquire more detailed information regarding teachers' instructional methods and techniques (Büyüköztürk et al., 2012). Following the analysis of teachers' perspectives on

their competence in employing teaching methods and techniques for the education of individuals with mental disabilities through a semi-structured interview form, a training program was developed. The implementation of the teacher training program and the development of the achievement test involved administering a pre-test to both experimental and control groups, applying the teacher training program to the experimental group, and subsequently administering a post-test to both groups. The research model is shown in Table 1.

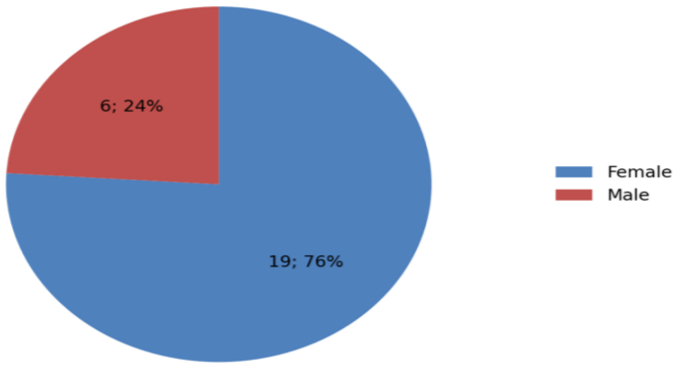
Table 1
Research Model

Group	Pre Test	Process	Post Test
Experimental Group	Methods and techniques Achievement test (30 teachers)	Instruction (20 hours)	Methods and techniques Achievement test (30 teachers)
Control Group	Methods and techniques Achievement test (30 teachers	No instruction	Teaching methods and techniques Achievement test (30 teachers)

2.1. Study Group

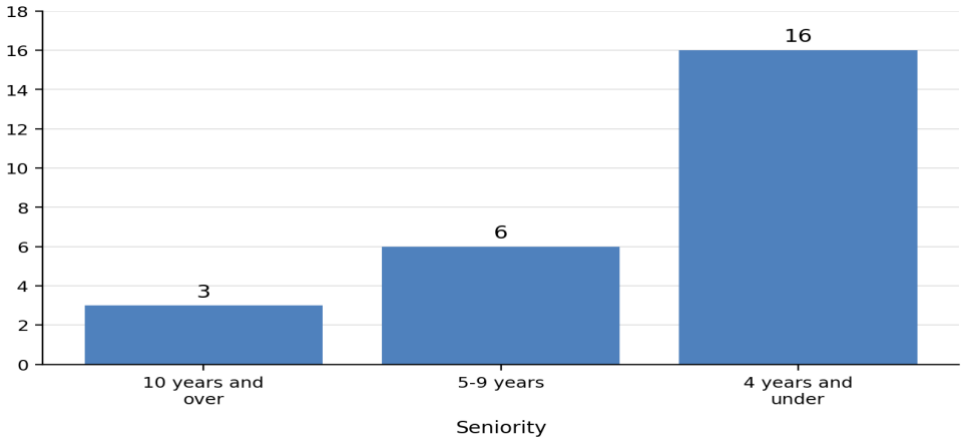
In the initial phase of the research, 25 volunteer teachers from schools associated with Bucak, Ağlasun, and Çeltikçi District National Education Directorate in Burdur Province were interviewed, yielding qualitative data through a semi-structured interview format. In the second stage of the research, 30 teachers working with students with intellectual disabilities in special education schools and classes within Bucak, Çeltikçi, and Ağlasun districts of Burdur Provincial National Education Directorate during the 2018-2019 academic year were selected for the experimental group. The experimental group teachers were chosen on a voluntary basis. A needs analysis was conducted involving 25 teachers following the interviews. A total of 28 teachers from Bucak District, one teacher from Çeltikçi District and one from Ağlasun District constitute the final study group. Teachers employed in the special education school and classes were individually interviewed to ascertain their willingness to participate in the study. The feedback from the teachers was assessed, resulting in the selection of 30 teachers for the experimental group. In the same vein, control group was comprised of 30 teachers who worked with students with intellectual disabilities across three distinct special education institutions located in central Burdur. Information about the participants is presented in the Figures and tables below.

Figure 1
Distribution by Gender



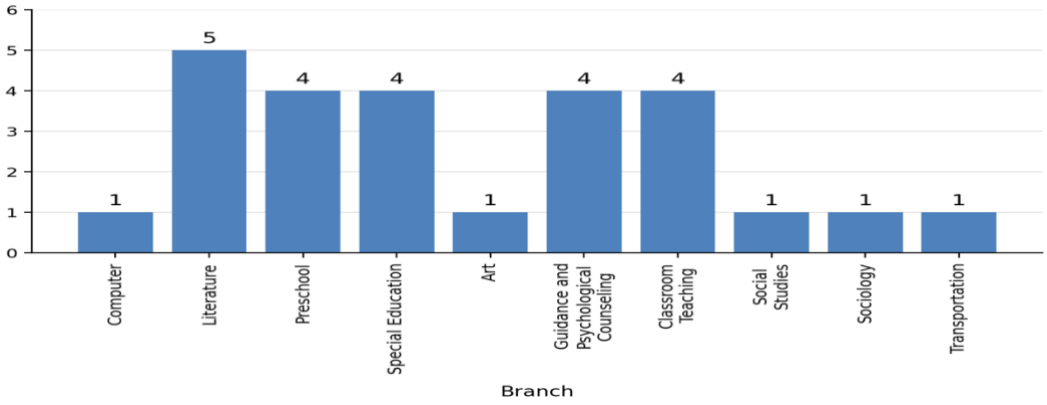
WhenFigure1 is examined, it is seen that the interviewed teachers consisted of 25 teachers in total: 19 (76%) women and 6 (24%) men.

Figure 2
Distribution by Seniority



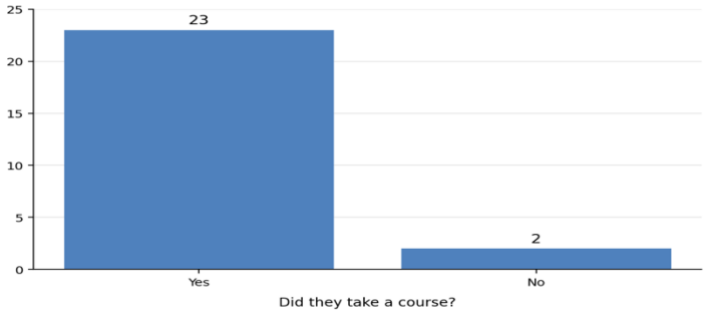
Looking at Figure 2, it is understood that 3 (12%) teachers had 10 years and above, 6 (24%) teachers had between 5 and 9 years, and 16 (64%) teachers had 4 years and below of teaching experience.

Figure 3
Distribution by Branch



Looking at Figure 3, it is seen that the teachers who participated in the interviews were from different branches. Five teachers from the literature branch; four teachers each from the preschool, special education, guidance and psychological counseling, and classroom teaching branches participated in the interviews. It is seen that one teacher each from the computer, art, social studies, sociology, and transportation branches participated in the interviews.

Figure 4
Distribution by Special Education Course Attendance Status



The majority of the teachers who participated in the interviews (23 teachers, 92%) had previously attended special education courses, while 2 (8%) teachers had not attended special education courses, as shown in Figure 4.

In the second stage of the study, during the 2018-2019 academic year, 30 teachers working with students with intellectual disabilities in both special education schools and special education classrooms in the Bucak, Çeltikçi, and Ağlasun districts affiliated with the Burdur Provincial Directorate of National Education were selected for the experimental group. The experimental group teachers were selected on a voluntary basis. Of the teachers, 28 were selected from Bucak District, one from Çeltikçi District, and one from Ağlasun District. Teachers working in special education schools and special education classrooms were interviewed individually and asked whether they would take part in such a study. After evaluating the feedback from the teachers, 30 teachers were selected for the experimental group. Similarly, 30 teachers working with students with intellectual disabilities in three different special education schools in the center of Burdur were selected for the control group. The demographic characteristics of the experimental and control groups are shown in Table 2.

Table 2
Demographic Characteristics of Participants

Variable	Category	Experimental Group n (%)	Control Group n (%)
Gender	Female	22 (73.3)	19 (63.3)
	Male	8 (26.7)	11 (36.7)
Teaching Branch	Classroom Teacher	7 (23.3)	9 (30.0)
	Special Education Teacher	5 (16.7)	16 (53.3)
	Preschool Teacher	3 (10.0)	–
	Other	15 (50.0)	5 (16.7)
Teaching Experience	1–5 years	19 (63.3)	6 (20.0)
	6–10 years	7 (23.3)	7 (23.3)
	11–15 years	3 (10.0)	4 (13.3)
	16–20 years	–	3 (10.0)
	≥21 years	1 (3.3)	10 (33.3)
Experience Working with Students with Intellectual Disabilities	0–1 year	11 (36.7)	3 (10.0)
	2–3 years	13 (43.3)	8 (26.7)
	4–6 years	3 (10.0)	4 (13.3)
	7–10 years	2 (6.7)	7 (23.3)
	≥11 years	1 (3.3)	8 (26.7)
Previous Training in Teaching Methods and Techniques	Yes	23 (76.7)	22 (73.3)
	No	7 (23.3)	8 (26.7)
Educational Level	Associate Degree	–	2 (6.7)
	Bachelor's Degree	26 (86.7)	26 (86.7)
	Master's Degree	4 (13.3)	2 (6.7)

When we look at Table 2, it is seen that female participants constitute the majority of the participants in the experimental and control groups. It is notable that 50% of the experimental group participants were from other branches, whereas 53.3% of the control group participants were from the special education branch. The majority of the experimental group (63.3%) consisted of those with 1-5 years of teaching experience, while 33.3% of the control group consisted of those with 21 years or more of teaching experience. Most teachers in both groups had previously received training related to teaching methods and techniques. It is seen that the majority of participants in both the experimental group and control group (86.7%) had undergraduate-level education.

2.3. Data Collection Instruments

The data for this study were collected through a Semi-Structured Interview Form and an Achievement Test developed by the researcher.

Semi-Structured Interview Form

A semi-structured interview form was developed to determine the training needs of teachers working with students with intellectual disabilities regarding teaching methods and techniques and to obtain their opinions about the training program implemented during the study.

The development process of the interview form consisted of several stages. First, a comprehensive review of the literature on instructional methods and techniques used in special education was conducted. Based on the literature review and the objectives of the study, an initial pool of interview questions was created. The draft form was then submitted to experts in special education, curriculum and instruction, and educational measurement and evaluation to establish content validity. Based on expert feedback, several questions were revised for clarity, redundancy was eliminated, and the final version of the form was prepared. Examples of interview questions are presented below:

> *As a teacher working with students with intellectual disabilities, what are your views on your competence regarding teaching methods and techniques?*
>
> *What are your suggestions/opinions for improving teachers' competence in teaching methods and techniques?*

Achievement Test

An achievement test was developed by the researcher to evaluate teachers' knowledge of teaching methods and techniques before and after the implementation of the training program. The test was administered to both experimental and control group participants as a pre-test and post-test.

The test items were developed based on the objectives and content of the training program. Following item development, expert opinions were obtained from specialists in special education and educational measurement. Necessary revisions were made according to expert recommendations to ensure content validity. Pilot testing was conducted to examine item clarity and functionality before the final administration.

Development of the Training Program for Teacher Competencies in Teaching Methods and Techniques

The training program was developed systematically based on the findings obtained from the needs assessment process. A needs analysis was conducted through semi-structured interviews with teachers working with students with intellectual disabilities. The data obtained from these interviews were analyzed and used to identify the priority competence areas requiring professional development.

Following the needs analysis, program objectives were determined in accordance with the identified needs and relevant literature. Learning outcomes were written at the knowledge, comprehension, application, and evaluation levels. The program content was then developed to address these outcomes and included evidence-based instructional methods and techniques commonly used in special education settings. The draft program was reviewed by experts in special education, curriculum development, and educational measurement and evaluation. Based on expert recommendations, revisions were made regarding content organization, instructional activities, duration, and assessment procedures. The final program included instructional objectives, content, teaching-learning activities, instructional materials, and assessment procedures. The program was implemented through interactive presentations, case studies, modeling, guided practice activities, group discussions, and feedback sessions. Detailed information regarding the program development process is presented in Table 3.

Table 3

Stages in the Development of Teacher Competencies Curriculum in Methods and Techniques

Stages	Process
Phase 1.	Needs Analysis
Phase 2.	Establishing Objectives
Phase 3.	Identifying the Program Content
Phase 4.	Training-Instruction Process
Phase 5.	Assessment

Implementation of the Teacher Competence Program in Methods and Techniques for the Experimental Group

Prior to implementing the “Teacher Competence Program in Methods and Techniques” with the experimental group, requisite permissions were obtained from Burdur Provincial Directorate of National Education. A work plan was developed in collaboration with the administrators of Burdur Bucak Şehit Akif Altay Special Education School to implement the teacher training program. The training schedule and venue have been established, and all necessary preparations have been finalized. Sixty educators working with students with intellectual disabilities in Burdur Province took part in the training. Thirty teachers who participated in the training constituted the experimental group, while another thirty formed the control group. The training consisted of 10 sessions, each totaling 20 hours per week, conducted from April 29, 2019, to June 10, 2019. Prior to the initiation of the “Teacher Competence Program in Method and Techniques,” the “Teaching Methods and Techniques Achievement Test” was administered to both the experimental and control groups. The experimental group underwent the implementation of the "Method and Techniques in Teacher Competence Program." The control group received no training during this process. Following the implementation of the teacher training program, the “Teaching Methods and Techniques Achievement Test” was administered once more to both the experimental and control groups.

Development Process of the Teaching Methods and Techniques Content Knowledge Achievement Test

The Teaching Methods and Techniques Content Knowledge Achievement Test was developed prior to the implementation of the Teacher Competence Program for Methods and Techniques. The purpose of the test was to determine teachers’ baseline knowledge levels and to evaluate the effectiveness of the training program through pre-test and post-test applications. The development process of the achievement test was conducted in several systematic stages. First, a comprehensive review of the literature on teaching methods and techniques used in special education was carried out. Based on this review and the findings of the needs analysis, a table of specifications (test blueprint) was prepared to ensure content validity. The blueprint included the key content areas and cognitive levels to be assessed.

Accordingly, an initial pool of 64 multiple-choice items was developed. The items were constructed to measure different cognitive levels, including knowledge, comprehension, and application, in line with Bloom’s revised taxonomy. The content areas of the test included instructional methods used in special education, behavior management strategies, individualized instruction, and evidence-based teaching techniques. To ensure content validity, the draft test was reviewed by a panel of five experts, consisting of specialists in special education, curriculum and instruction, and educational measurement and evaluation. Expert feedback indicated that some items were unclear, overlapped in content, or did not adequately reflect the targeted objectives. Based on these suggestions, 1 items were removed, several items were revised for clarity and linguistic accuracy, and the response options of some questions were improved.

Following expert review, the revised test consisted of 39 multiple-choice items. Each item had five options with one correct answer. A pilot application was conducted with a group of teachers similar to the study sample to examine item clarity, difficulty level, and administration time. Based on the pilot results, minor revisions were made to improve item comprehensibility. The final version of the Teaching Methods and Techniques Content Knowledge Achievement Test was used both as a pre-test and post-test in the experimental and control groups. The test aimed to measure changes in teachers' knowledge levels following the implementation of the training program.

Table 4

Phases of Development for the "Teaching Methods and Techniques Achievement Test"

Stages	Process
1st phase	Forming Question Pool
2nd phase	Consulting Expert Opinions
3rd phase	Developing an Initial Trial Form
4th phase	Implementation of the Pilot Application
5th phase	Re-consulting Expert Opinions
6th phase	Conducting Item Analysis
7th phase	Finalizing the Test

2.4. Data Analysis

In the qualitative phase of the study, data obtained from teachers working with students with intellectual disabilities were analyzed to examine their opinions regarding their competencies in teaching methods and techniques, as well as their evaluations of the Teacher Competence Program in Methods and Techniques. The qualitative data collected through semi-structured interviews were analyzed using descriptive analysis. In this process, the data were first transcribed verbatim and organized systematically. Subsequently, the data were coded based on predetermined research questions and emerging meanings from participants' responses. Following the coding process, related codes were grouped under categories, and these categories were further organized into overarching themes and sub-themes. The analysis focused on two main themes: (1) teachers' perceived competencies in teaching methods and techniques, and (2) teachers' evaluations of the training program. Under the first theme, sub-themes such as perceived adequacy of instructional knowledge, difficulties in implementing teaching methods, and professional development needs were identified. Under the second theme, sub-themes included program content adequacy, applicability of training, and perceived contribution to professional skills. To ensure the credibility of the qualitative findings, several strategies were employed. Member checking was conducted by sharing summarized findings with participants to confirm accuracy. In addition, peer debriefing was used during the coding process, and expert review was obtained from a specialist in qualitative research and special education to validate the consistency of themes. To enhance dependability, the data analysis process was documented in detail, allowing for an audit trail of coding decisions.

Furthermore, triangulation was achieved by comparing findings from pre-implementation interviews with post-implementation feedback from the experimental group. The consistency between these data sources contributed to the trustworthiness of the findings. The results were then presented in a structured format supported by thematic organization and interpreted in relation to the research questions. In the quantitative phase of the research, t-tests were utilized alongside the experimental model method. The data analysis was carried out using the SPSS 21.0 package program (Simon & Burstein, 1985, cited by Balcı, 2009).

3. Results

The instructional methods included in this study—direct instruction, chaining, Applied Behavior Analysis (ABA), and errorless teaching—were selected based on the findings of the needs analysis and a review of the special education literature, which identifies these approaches as fundamental evidence-based practices in teaching students with intellectual disabilities. Data regarding teachers' knowledge and implementation levels of these methods were collected through structured interview questions. Teachers were asked whether they were familiar with each method (knowledge/awareness) and whether they actively used these methods in their instructional practices (application/use).

Figure 5

Knowledge and Application of Methods

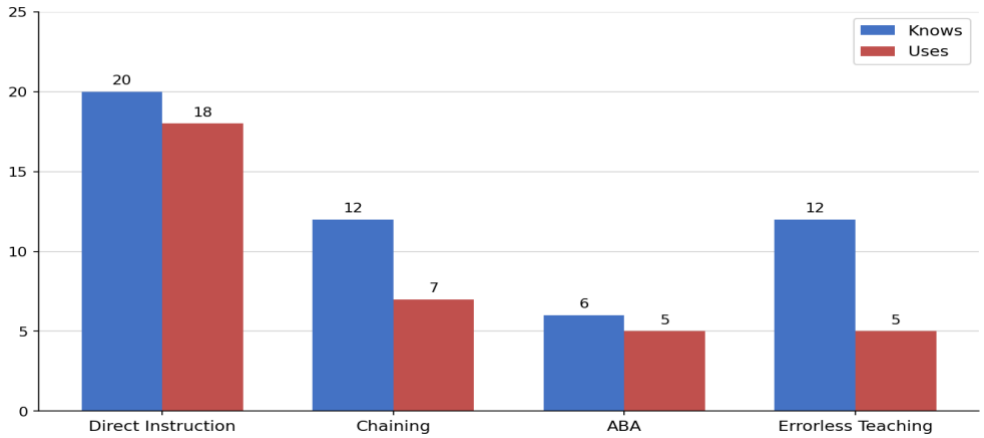


Figure 5 presents the participants' reported knowledge and implementation levels of these instructional methods. Although 30 teachers constituted the experimental group, complete and analyzable responses were obtained from 25 teachers; therefore, the analysis was conducted on this subgroup. The findings indicate that direct instruction is the most widely recognized method, with 80% of teachers reporting familiarity and 72% reporting implementation. However, 28% of teachers reported not using this method in their instructional practices. Chaining was reported to be known by 48% of teachers, while only 28% reported its application in classroom settings. Regarding Applied Behavior Analysis (ABA), 24% of teachers reported familiarity, whereas 20% reported using this approach in practice. Despite being a widely recommended evidence-based practice for behavior management, its implementation remains limited among participants. Similarly, 48% of teachers reported knowledge of errorless teaching, while only 20% indicated that they actively implement this method. The instructional methods included in the teacher competence training program were directly aligned with these findings and consisted of direct instruction, chaining, ABA, and errorless teaching strategies. The following sections present teachers' qualitative perspectives regarding these methods and the training program.

> *"I am a substitude teacher and started working here after receiving a certificate. It is indeed implemented in the classroom setting. The adjacent teacher implements the method, and I attempt to adopt a similar approach by observing him. I am unfamiliar with the names of these methods; I assist the other teacher in practical applications. I am unable to provide an example. I am unfamiliar with these methods. We implement these in our classroom; however, I am uncertain whether this pertains to one aspect or another. Another teacher in the classroom implemented a strategy to modify behavior, resulting in a change in the child's conduct; however, the specific methods employed remain unclear to me." (Teacher,6).*

"I believe I may not meet the required standards." (Teacher, 20).

"I employed the direct teaching method. Instruction occurs through demonstration and explanation in modeling. This is represented in red. I am unsure. The grading status is uncertain. Peer mentoring is not frequently utilized. I possess knowledge regarding the implementation of drama techniques or role-playing. I lack knowledge regarding cooperation. I have not utilized the chain method. This method has not been fully comprehended by me. I employed extinction. I implemented it by disregarding and taking a pause. I lack precise knowledge regarding applied behavior analysis. Errorless teaching methods have been noted in educational discourse. I employed constant time delay teaching, for instance. I possess limited knowledge." (Teacher, 13).

Perspectives of Educators Working with Students with Intellectual Disabilities on Enhancing Competence in Teaching Methods and Techniques

Figure 6

Suggestions/Expressions

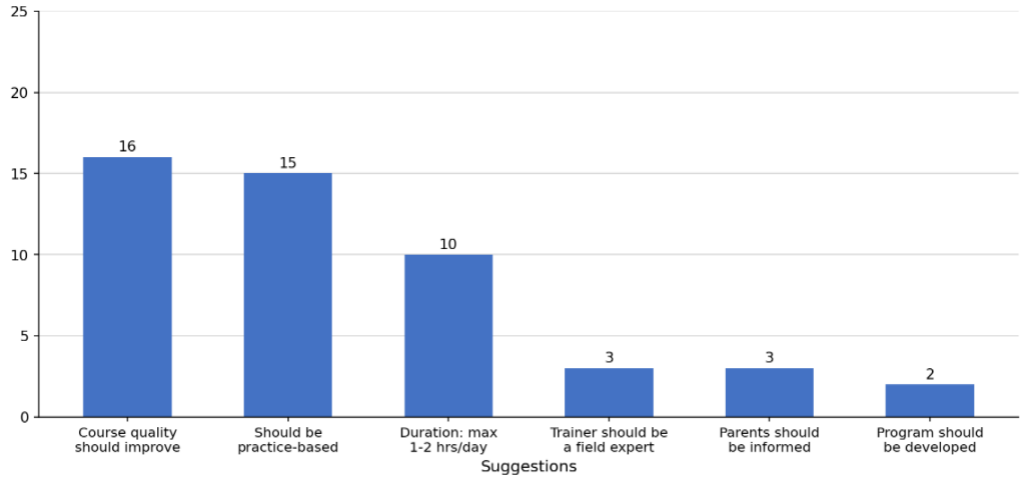


Figure 6 illustrates the participating teachers' perspectives and recommendations regarding the improvement of a training program aimed at enhancing their competencies in teaching methods and techniques. The data represent teachers' perceived needs and expectations rather than the effectiveness of the implemented program. Sixteen teachers (64%) stated that the efficiency and quality of courses should be improved. Fifteen teachers (60%) emphasized that training sessions should be practice-oriented, highlighting the importance of applied activities rather than theoretical instruction. Ten teachers (40%) reported that the duration of training sessions should be limited to one or two hours per day to ensure better attention and engagement. In addition, three teachers (12%) indicated that training should be delivered by field experts and suggested that parents should also be informed and included in the process when necessary. These findings reflect teachers' expectations for a more practice-based, well-structured, and professionally delivered training program. The following sections present qualitative findings related to teachers' views in more detail.

"Courses ought to be systematically organized. We attended a course, but it has been forgotten. It should remain unarticulated and untransmitted. It is supposed to be implemented. It is not recalled otherwise." (Teacher, 13).

"Practical demonstration is feasible. Praxis through seminars would be advantageous. The duration of these seminars ranges from 1.5 to 2 hours daily. A longer duration may not yield productive outcomes." (Teacher, 1).

"In-service training is critically important. This service ought to be extended to both staff and substitude teachers. Particularly during the summer season. Providing practical training will yield greater benefits for both our organization and the students. Instructors of these courses must possess knowledge, experience, and expertise in their respective fields. (Teacher, 2).

"Educators are supposed to receive training in sign language, including Braille. A presentation on these topics would be beneficial. An external instructor should be engaged to deliver training, as they may possess specialized expertise. Practical training is crucial. Should a teacher at our level administer it, the outcome is unlikely to be productive. Daily training should be allocated 1 to 2 hours. This approach appears to be the most advantageous."(Teacher, 5).

"The continuation of the courses would be appreciated. We exhibit shortcomings in numerous subjects. I regularly observe the practices of fellow educators. I will participate if there is a daily course lasting 1-2 hours. It is essential to inform parents as well. Parents often perceive us not as educators, but rather as babysitters. (Teacher, 12).

Table 5
Pre-Test Independent Samples t-Test Results of Experimental and Control Groups According to Achievement Test Scores

Group	N	Mean	Sx	T	P	P
Experiment PRE	30	14,80	4,752	-,714	58	,478
Control PRE	30	15,63	4,271			

Table 5 presents the pre-test results of the experimental and control groups based on the achievement test scores obtained prior to the intervention. The findings indicate that the mean pre-test scores of the experimental and control groups were close to each other. This result suggests that the two groups were initially equivalent in terms of their knowledge levels before the implementation of the training program.

Table 6
Post-Test Independent Samples t-Test Results of Experimental and Control Groups According to Achievement Test Scores

Group	N	Mean	Sx	T	SD	P
Experiment Post	30	34,77	1,942	21,036	58	,000
Control Post	30	16,33	4,389			

Table 6 presents the results of the independent sample t-test for the post-test scores of the experimental and control groups based on the achievement test scores following the intervention. Table 6 indicates that both the experimental and control groups consisted 30 participants. The post-test mean for the experimental group was 34.77, with a standard deviation of 1.942. The control group's post-test mean was 16.33, with a standard deviation of 4.389. The calculated T value was 21.036, and the significance (P) value was .000. The results of the applied t-test indicated a significant difference in post-test scores ($P < 0.05$). The teachers in the experimental group answered an average of 34.77 out of 39 questions correctly, whereas the teachers in the control group answered an average of 16.33 out of 39 questions accurately.

Table 7

Perspectives of Educators Working with Students with Intellectual Disabilities on the Teaching Methods and Techniques within the Teacher Competence Program They Participate in

Teachers' Opinions	f
Useful	16
Good to be practical	14
Contributes	12
Developmental	11
Understood methods and techniques	7
Saw mistakes in IEP preparation	7
This type of training is beneficial	6
Trainer should be prepared	5
Learned IEP preparation	5
Learned how to reduce negative behaviors	4
Applied to my students	3
Sharing ideas was beneficial	3
Improved permanence	3
Learned how to positively increase behaviors	3
Materials used and training quality increased	2
Including this course in undergraduate education would be beneficial	2

Note. f = frequency. Teachers could express more than one opinion; therefore, the total frequency exceeds the number of participants.

A written open-ended question was posed to 30 teachers in the study group, who also were the experimental group of the research, regarding the effectiveness of the program (What are your opinions about the training you received?). The results were analyzed using descriptive analysis. A sample loss occurred as a result of nine (30%) teachers leaving the open-ended question unanswered, as the evaluation was dependent on volunteering. The perspectives of the remaining 21 teachers, representing 70%, are illustrated in table 7. Analysis of teacher responses reveals that 16 (53%) found the program useful, while 14 (46%) indicated that the program's practicality was beneficial. 12 teachers (40%) indicated that the program contributed to their development, while 11 teachers (36%) reported that the program facilitated their growth. Seven teachers, representing 23%, acknowledged that they recognized errors in the preparation of the IEP plan.

4. Discussion

The primary sub-objective of this study is to assess teachers' perceptions of their competence in teaching methods and techniques when working with students with intellectual disabilities. A needs analysis was conducted to assess the teachers' competence in teaching methods and techniques prior to their training. The majority of interviewed teachers reported familiarity with and application of the direct teaching method. They indicated that, despite their familiarity with this method, it ought to be incorporated into the training program. A subset of teachers reported a lack of knowledge and application of the direct teaching method, while a larger group indicated unfamiliarity and non-application of the chaining method, applied behavior analysis, and errorless teaching methods. Conversely, they demonstrated familiarity with and implementation of the interactive unit method, peer-assisted teaching method, drama method, and cooperative teaching method. Eratay et al. (2012) indicated in their research that educators lack familiarity with the methods and techniques employed in special education, which aligns with our findings. Research by Karasu et al., (2014) and Kızılkaya (2015) indicates that educators working with students with intellectual disabilities require training in classroom management, behavioral regulation, and instructional methodologies. The findings of this

study align with the conclusions drawn by Eratay et al. (2012) and Cora (1997), which indicate that classroom teachers working with intellectual disabled students lack adequate expertise of special education approaches.

This study's second sub-objective is to assess the significant differences between the pre-test and post-test scores of teachers in the experimental and control groups working with students with intellectual disabilities. There was no statistically significant difference between the groups of teachers who participated in the "Teaching Methods and Techniques Field Teacher Competence Program" and those who did not regarding pre-test scores on the "Teaching Methods and Techniques Field Achievement Test" given to teachers of students with intellectual disabilities. The similarity in pre-test scores between the experimental and control group teachers indicates a lack of adequate knowledge regarding teaching methods and techniques. A notable difference was observed in the post-test scores of the "Teaching Methods and Techniques Field Achievement Test" administered to teachers working with students with intellectual disabilities compared to those who did not engage in the "Teaching Methods and Techniques Field Teacher Competence Program". The disparity in post-test scores between the experimental and control group teachers indicates that the teacher training program enhanced the teachers' knowledge levels. The training program designed for the teachers demonstrates effectiveness. The findings are further corroborated by various studies referenced in the literature (Kaya, 2016; Sazak Pınar, 2009; Şahin, 2012; Gültekin Seylan, 2010; Kış, 2007; Cavkaytar, 1998). Önen et al., (2009) conducted in-service training for 104 teachers, focusing on methods and techniques through their single-group pre-test and post-test studies. The notable enhancement in teachers' understanding of methods and techniques following in-service training substantiates this study. Bay and Karakaya (2009) assessed the efficacy of program applications grounded in the constructivist approach within teacher education. The research employed a pre-test post-test control group experimental design. The research involved 67 prospective teachers. The study's post-test results indicated that the experimental group outperformed the control group, aligning with the study's findings. Khalil and Mohamed (2015) conducted a study to assess the knowledge of special education teachers regarding the "behavior modification technique" and the impact of training provided to these educators on this topic. The notable disparities observed in the knowledge levels and practices of the teachers post-training program substantiate this research.

The third sub-objective of the study focuses on the perspectives of educators who work with students with intellectual disabilities regarding the impact of the teacher competence program on their teaching methods and techniques, as well as its influence on their professional competencies. During the interview with the teachers from the experimental group following the training, the majority expressed that the training program was both beneficial and adequate. They also indicated that such training programs should be conducted periodically. It can be concluded that the teacher training programs attended by educators, regardless of the subjects covered, were highly beneficial. The limited number of studies conducted in Turkey and internationally regarding the training of teachers who work with students with intellectual disabilities, coupled with the absence of specialized teacher training programs focused on methods and techniques for this demographic, underscores the significance of the developed training program. A considerable number of the teachers interviewed indicated that the practical aspects of the teacher training program enhanced their experience and fostered greater retention. This may indicate that the training previously provided to teachers lacked practical application. Günbayı and Taşdöğen (2012) conducted a study to gather teachers' opinions regarding in-service training programs, emphasizing the necessity for these programs to be practical. This finding indicates that educators who work with students with mental disabilities should be provided with both theoretical and practical training. A number of educators expressed that sharing ideas during the training was highly beneficial for teachers. This finding

indicates that such training will be advantageous for teachers and enhance their competence. Several teachers from the experimental group indicated that they acquired strategies to enhance positive student behaviors and mitigate negative behaviors. This finding suggests that the teacher education program demonstrates effectiveness. Several educators expressed that incorporating courses on teaching methods and techniques into undergraduate education would be beneficial. This finding indicates that it is essential to incorporate courses on teaching methods and techniques into the curricula of education faculties. Several educators reported observing shortcomings in the individualized education plan (IEP). The teacher education program is an effective initiative as it enhances teachers' preparation for Individualized Education Programs (IEP). Several teachers from the experimental group whose insights were gathered indicated that it would be advantageous to periodically conduct the teacher education program. The study conducted by Türkoğlu (2007) revealed that, through information activities with primary school teachers, the educators indicated that information could be effectively disseminated by organizing seminars, panels, and meetings at regular intervals. In a separate investigation, Sarı (2003) posited that ongoing training for special education teachers is essential to enhance their communication skills with children and to deliver effective educational experiences. He asserted that continuous in-service training is essential for teachers to enhance their skills and professional development. The studies align with the findings of the research. The findings of this study indicate a necessity for enhancing the competencies of teachers who work with students with intellectual disabilities in teaching methods and techniques via an in-service training program.

5. Conclusions and Recommendations

The findings of the study indicate that educators working with students with intellectual disabilities demonstrate insufficient knowledge and limited application of direct instruction methods, chaining techniques, applied behavior analysis, and errorless learning strategies. The “Teaching Methods and Techniques Teacher Competencies Training Program” implemented for the experimental group was found to be effective in improving the competencies of teachers working with individuals with intellectual disabilities in relation to instructional methods and techniques.

The analysis of pre-test scores from the “Teaching Methods and Techniques Field Knowledge Achievement Test” revealed no statistically significant difference between the experimental and control groups. This suggests that both groups had comparable levels of baseline knowledge regarding teaching methods and techniques for students with intellectual disabilities prior to the intervention. A statistically significant difference in favor of the experimental group was found in the post-test scores of the “Teaching Methods and Techniques Field Knowledge Achievement Test.” This indicates that teachers who participated in the specialized training program demonstrated greater improvement in their knowledge of instructional methods and techniques compared to those who did not participate, confirming the effectiveness of the training program. Participants in the training program reported high levels of satisfaction and perceived improvement in their professional competencies, indicating positive experiential outcomes associated with the intervention.

1. The Ministry of National Education should prioritize the appointment of teachers who have graduated from special education programs to positions serving students with special needs in order to ensure that these students receive instruction from appropriately qualified professionals.

2. In-service training programs should be developed and implemented by the Ministry of National Education based on the professional development needs of non-specialist teachers working in special education settings. These programs

should focus on evidence-based instructional methods, behavior management, individualized education planning, and other competencies required for effective teaching.

3. A special education consultancy system could be established within the Ministry of National Education to provide ongoing professional support and on-the-job guidance for teachers working with students with intellectual disabilities and other special educational needs.

4. Greater collaboration should be encouraged between special education teachers and non-specialist teachers through joint planning, co-teaching opportunities, professional learning communities, and mentoring practices. Such collaboration may contribute to the improvement of instructional quality and teacher competencies in special education settings.

Declaration of Conflicts of Interest

The authors report no conflict of interest for the publication.

Declaration of Generative AI Use

No generative artificial intelligence tools (e.g., ChatGPT, Gemini, Claude, etc.) were used in the preparation of this study. All text, analysis, and content were produced solely by the author through human effort.

Ethical Statement

This study was approved by the Necmettin Erbakan University Social and Human Sciences Scientific Research Ethics Committee (Ethics Committee Approval Number: 2020/52 Date: 13.01.2020).

Author Contributions

The authors contributed equally to the completion of the study.

Acknowledgements

This study is derived from a doctoral thesis and was presented as an oral presentation at the 5th ELMIS International Special Education Congress.

References

Akbulut, E. (2012). Müzik öğretmenleri mesleki yeterlikleri ölçeği çalışması. Fine Arts, 7(4), 334-346. https://izlik.org/JA83BR83JM

Ataman, A. (2003). *Özel gereksinimli çocuklar ve özel eğitime giriş*. Gündüz Eğitim ve Yayıncılık.

Aydın, A., & Karkaç, N. N. (2015). Özel eğitim alanında çalışan öğretmenlerin empatik eğilim düzeylerinin çeşitli değişkenlere göre incelenmesi. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, (24), 43–65. https://izlik.org/JA36SR28EW

Bay, E., & Karakaya, Ş. (2009). Öğretmen eğitiminde yapılandırmacı yaklaşıma dayalı uygulamaların etkililiğinin değerlendirilmesi. *Elektronik Sosyal Bilimler Dergisi, 8*(28), 40–55. https://izlik.org/JA84HZ52GK

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2012). *Bilimsel araştırma yöntemleri*. Pegem Akademi.

Byrd, D. R., & Alexander, M. (2020). Investigating special education teachers' knowledge and skills: Preparing general teacher preparation for professional development. *Journal of Pedagogical Research, 4*(2), 72–82. https://doi.org/10.33902/JPR.2020059790

Cavkaytar, A. (1998). *Zihin engellilere öz bakım ve ev içi becerilerinin öğretiminde bir aile eğitimi programının etkililiği* [Yayımlanmamış doktora tezi]. Anadolu Üniversitesi.

Cora, N. (1997). *Zihin engellilerin eğitimleri alanında çalışan öğretmenlerin yeterlilik düzeylerinin belirlenmesi* [Yayımlanmamış yüksek lisans tezi]. Abant İzzet Baysal Üniversitesi.

Çağlayan, N. (2014). Zihinsel engelli bireylerin eğitiminde görsel sanatlar dersinin yeri ve önemi. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 4*(1), 91–101. https://doi.org/10.14230/joiss63

Eratay, E., Çifçi Tekinarslan, İ., & Yıkmış, A. (2012). Zihin engelliler sınıf öğretmenlerinin eğitim uygulama okulu programına ve öğretimde kullandıkları yöntemlere ilişkin görüşleri. *AİBÜ Sosyal Bilimler Enstitüsü Dergisi, 12*(12), 137–158.

Erbaş, D., & Yücesoy, Ş. (2002). Özel eğitim öğretmenliği programlarında yer alan uygulama derslerini yürütürken kullanılan iki farklı dönüt verme yönteminin karşılaştırılması. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 109–120.

Friend, M., & Bursuck, W. D. (2002). *Including students with special needs: A practical guide for classroom teachers* (3rd ed.). Allyn and Bacon.

Gültekin Seylan, E. (2010). *Öğretmen performansına dayalı doğrudan öğretim yaklaşımıyla sunulan aile eğitimi hizmet içi eğitim programının etkililiği* [Yayımlanmamış doktora tezi]. Gazi Üniversitesi.

Günbayı, İ., & Taşdöğen, B. (2012). İlköğretim okullarında çalışan öğretmenlerin hizmet içi eğitim programları üzerine görüşleri: Bir durum çalışması. *İnsan ve Toplum Bilimleri Araştırmaları Dergisi, 1*(3), 87–117. https://izlik.org/JA79GT94UG

Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2022). *Exceptional learners: An introduction to special education* (15th ed.). Pearson.

Karasu, N., Aykut, Ç., & Yılmaz, B. (2014). Zihin engelliler öğretmenlerinin hizmet içi eğitim ihtiyaçlarının belirlenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 15*(1), 41–56. https://doi.org/10.1501/Ozlegt_0000000191

Kaya, N. G. (2016). *Üstün yetenekli öğrencilerin öğretmenlerine yönelik seçim teorisi temelli öğretmen eğitim programının etkililiği* [Yayımlanmamış doktora tezi]. Gazi Üniversitesi.

Khalil, A. S., & Mohamed, S. A. (2015). Training teachers on practicing behavior modification strategies for children with special needs at Tanta Intellectual School. *IOSR Journal of Nursing and Health Science, 4*(4), 79–88.

Kış, A. (2007). *Eğitimci çalışma grup modelinin kaynaştırılmış sınıflarda çalışan sınıf öğretmenlerinin mesleki gelişimlerine etkisinin incelenmesi* [Yayımlanmamış doktora tezi]. Ankara Üniversitesi.

Kızılkaya, S. (2015). *Zihin engelli çocuklarla çalışan ücretli zihin engelliler sınıf öğretmenlerinin yaşadıkları sorunlar: İstanbul ili Avcılar ilçesi örneği* [Yayımlanmamış yüksek lisans tezi]. İstanbul Aydın Üniversitesi ve Yıldız Teknik Üniversitesi.

Önen, F., Mertoğlu, H., Saka, M., & Gürdal, A. (2009). Hizmet içi eğitimin öğretmenlerin öğretim yöntem ve tekniklerine ilişkin bilgilerine etkisi: ÖPYEP örneği. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, 10*(3), 9–23. https://izlik.org/JA36KL38MP

Sarı, H. (2003). *Özel eğitime muhtaç öğrencilerin eğitimleriyle ilgili çağdaş öneriler*. Pegem Yayıncılık.

Sazak Pınar, E. (2009). *Kaynaştırma sınıfı öğretmenlerinin sosyal becerilere ilişkin beklentileri ve sosyal beceri öğretim programının öğretmen çıktıları üzerindeki etkililiğinin incelenmesi* [Yayımlanmamış doktora tezi]. Ankara Üniversitesi.

Şahin, F. (2012). *Sınıf öğretmenlerinin üstün yetenekli öğrenciler ve özellikleri hakkında bilgi düzeylerini artırmaya yönelik eğitim programının etkililiği* [Yayımlanmamış doktora tezi]. Ankara Üniversitesi.

Theobald, R. J., Goldhaber, D. D., Holden, K. L., & Stein, M. L. (2022). Special education teacher preparation, literacy instructional alignment, and reading achievement for students with high-incidence disabilities. *Exceptional Children, 88*(4), 397–416. https://doi.org/10.1177/00144029221081236

Tuğluk, M. N. (2007). *Okul öncesi öğretmen adaylarının öğretmenlik uygulamalarında karşılaştıkları problemlerin değerlendirilmesi* [Yayımlanmamış yüksek lisans tezi]. Atatürk Üniversitesi.

Türkoğlu, Y. K. (2007). *İlköğretim okulu öğretmenleriyle gerçekleştirilen bilgilendirme çalışmalarının öncesi ve sonrasında öğretmenlerin kaynaştırmaya ilişkin görüşlerinin incelenmesi* [Yayımlanmamış yüksek lisans tezi]. Anadolu Üniversitesi.

Tveitnes, M. S., Lied, S. I., Berge, R. L., & Olsen, M. H. (2026). Mainstream teachers' competence in inclusive special education: A study of Norwegian teachers' self-reported professional knowledge. *European Journal of Special Needs Education, 41*(2), 1–18. https://doi.org/10.1080/08856257.2025.2511353

UNESCO. (2024). *Global education monitoring report 2024/25: Leadership in education*.

Woodcock, S., Gibbs, K., Hitches, E., & Regan, C. (2023). Investigating teachers' beliefs in inclusive education and their levels of teacher self-efficacy: Are teachers constrained in their capacity to implement inclusive teaching practices? *Education Sciences, 13*(3), Article 280. https://doi.org/10.3390/educsci13030280

Yıldız, S. (2008). *Özel eğitim sınıflarında çalışan sınıf öğretmenlerinin matematik öğretiminde kullanılan öğretim yöntemlerine ilişkin görüşlerinin değerlendirilmesi* [Yayımlanmamış yüksek lisans tezi]. Selçuk Üniversitesi.

Yükseköğretim Kurulu. (2019). http://www.yok.gov.tr/web/guest/icerik/-/journal_content/56_INSTANCE_rEHF8BIsfYRx/10279/41807946