

## Research Article

# Developing of in-service training program for teacher working with gifted learning disabled students<sup>1</sup>

Hasan Said Tortop<sup>2\*</sup> and Gokhan Ilgaz<sup>3</sup>

*Interdisciplinary Disabled Program, Social Sciences Institute, Trakya University, Edirne, Türkiye*

Article Info	Abstract
<p><b>Received:</b> 23 May 2023 <b>Accepted:</b> 09 August 2023 <b>Available online:</b> 30 Sept 2023</p> <p><b>Keywords</b> Curriculum development Gifted learning disabled In-service training program Teacher training Twice exceptionality</p>	<p>It is noteworthy that there is little research on the education of twice exceptional students. In fact, most of these studies are descriptive studies. The rarity of studies on twice exceptionality is due to the problems in diagnosis and the lack of knowledge and experience of teachers on this subject. There is no in-service training program for teachers on this subject. This research is a research on the problem of designing an in-service training program for teachers of gifted learning disabled students. This research is action research model because the researcher is both the practitioner and the researcher of the research and takes the role of an active solver for the solutions to the problem. Fifteen special education teachers working in this institution formed the study group of the research. Data collection tools are Teacher Needs Analysis Determination Form, Metaphoric Perception Test for Twice Exceptional Students, Word Association Test (WAT) for Twice Exceptional Students, and Documents. Teacher In-Service Training Program Preparation Process; In the preparation of the in-service training program, the Taba Model, in which the inductive approach is used, was used. The program, designed as a result of the research, consists of 6 sessions and 11 instructional stages. In this program, there are 17 outcomes that are expected to be developed by teachers. For the realization of these outcomes, 15 instructional designs (activities) were created. The duration of the training program was determined as 10 hours, with an average of 40 minutes for each activity. The in-service training program prepared for students who twice exceptionality has the feature of improving teachers' self-regulation and exhibits a program approach to direct their own learning. Therefore, the activities progress on the worksheets and by giving instructions.</p>

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## To cite this article:

Tortop, H.S., & Ilgaz, G. (2023). Developing of in-service training program for teacher working with gifted learning disabled students. *Journal for the Education of Gifted Young Scientists*, 11(3), 263-279. DOI: <http://dx.doi.org/10.17478/jegys.1329220>

## Introduction

Twice exceptionality studies, definition of twice exceptionality, describing accompanying disability, modeling of twice exceptionality (Ronksley-Pavia, 2015), the role of teacher and parent in the phenomenon of twice exceptionality (Baum et al., 2017; Besnoy, 2015), psychological aspect of twice exceptionality (Amiri, 2020). Twice exceptionality studies, from the first studies (Baum, 1989) to the period when the increase in research was observed (2000-2015), is considered holistically, it is seen that the researches are mostly focused on the specific learning disability (SLD) and there

<sup>1</sup> This research partially was presented at 3rd International Congress on Gifted Youth and Sustainability of Education (ICGYSE). This article was produced at first author doctoral thesis.

<sup>2</sup> Corresponding author: PhD student, Interdisciplinary Disabled Program, Social Sciences Institute, Trakya University, Edirne, Türkiye. E-mail:hsaidtortop@trakya.edu.tr ORCID: 0000-0002-0899-4033

<sup>3</sup> Assoc.Prof., Curriculum Development and Instruction Department, Faculty of Education, Edirne, Türkiye. E-mail: gokhani@trakya.edu.tr ORCID: 0000-0001-8988-5279

are few experimental studies (Foley-Nicpon, 2015; Lovett & Sparks, 2008). 2013). In order for the situation of twice exceptional students not to turn into a serious obstacle by the social environment and society, first of all, awareness and understanding should be developed. Teachers play a key role in recognizing and identifying these students, as well as in their education (Bianco, 2005; Foley-Nicpon et al., 2011; Baldwin et al., 2015; Alsamani, Alsamiri & Alfaidi, 2023).

It is known that the teachers of twice exceptional students have deficiencies in terms of their knowledge and experience about their education (Sumaia et al., 2020). This is due to the deficiencies in teacher training on twice exceptionality. In Turkey, there is no course for the education of these children in the classroom and special education teacher education programs that are most likely to encounter twice exceptional students (Council of Higher Education of Türkiye, 2023a-b). However, it is seen that there are new studies on creating elective courses recently (Sakar and Köksal, 2022). Teachers have twice exceptional in-service deficiencies regarding the education of students (Sumaia et al., 2020; Bianco, 2005). There are not many studies on developing and implementing an in-service training program for teachers (Sumaia et al., 2020). It has been determined in many studies that teachers' knowledge and self-efficacy regarding the education of special talents is not sufficient and that they need in-service training (Kaya & Ataman, 2017; Şahin & Kargın, 2013; Güneş, 2015). It was also determined that the in-service training program that primary school teachers liked and was most interested in was the training of special talents (Ergin, Akseki, & Deniz, 2012; Serin & Korkmaz, 2014).

In this study, it is aimed to give the details of the preparation of the in-service training program for the education of gifted learning disabled from the group of twice exceptional students and the details of the relevant program. In addition to this main purpose, the following sub-objectives are;

- Creating a needs analysis form for the in-service training program for teachers interested in the education of gifted learning disabled students,
- Creating in-service training program sessions and learning stages for teachers interested in the education of gifted learning disabled students
- To determine the achievements of the in-service training program for teachers who are interested in the education of gifted learning disabled students,
- Creating in-service training program instructional designs (activity) and features for teachers interested in the education of gifted learning disabled students,
- It is to create an instructional design (activity) and worksheet for the in-service training program for teachers who are interested in the education of gifted learning disabled students.

## Method

### Research Model

In this research, it is in the action research model because the researcher is both the practitioner and the researcher of the research and takes the role of an active solver for the solutions to the problem. In addition, it is suitable for the case study model in terms of describing an existing situation. At the same time, it is suitable for the document analysis research technique in terms of creating the training program by scanning and examining the relevant literature of the needs analysis related to the in-service training program.

### Participants

Bursa province, which is a medium-development province in Turkey, was chosen for the research. In the study, a special special education rehabilitation center was selected where learning disability and giftedness are seen together and the probability of being seen is very high. 15 special education teachers working in this institution formed the study group of the research.

**Table 1.** Structures of participants

No	Seniority (years)	Graduation	Education	Gender	Code
1	0-2 years	Child development	Graduated	Female	P1-C-F
2	10-15 years	Special education	Master	Male	P2-S-M
3	5-10 years	Other	Graduated	Male	P3-O-M
4	5-10 years	Child development	Graduated	Female	P4-C-F
5	0-2 years	Other	Graduated	Male	P5-O-M
6	0-2 years	Child development	Graduated	Female	P6-C-F
7	10-15 years	Classroom teacher	Graduated	Male	P7-CT-M
8	0-2 years	Child development	Graduated	Female	P8-C-F
9	0-2 years	Classroom teacher	Graduated	Female	P9-TC-F
10	0-2 years	Other	Graduated	Female	P10-O-F
11	2-5 years	Other	Graduated	Female	P11-O-F
12	5-10 years	Classroom teacher	Graduated	Female	P12-CT-F
13	0-2 years	Other	Graduated	Female	P13-O-F
14	0-2 years	Other	Graduated	Male	P14-O-M
15	5-10 years	Child development	Graduated	Female	P15-C-F

As seen in Table 1, it is seen that the teachers in the experimental group have 0-2 years and 2-5 years of work experience, and there is only one teacher with 10-15 years of experience. Considering the graduations of the teachers, it is 1 person as a special education teacher, 5 people for child development, 1 person for classroom teaching, 6 people who have graduated from different fields and completed the certificate programs organized by the Ministry of National Education regarding special education. Most of the teachers are undergraduate graduates (14 people) and only one teacher has a graduate degree. 5 of the teachers are male and 10 of them are female.

### Data Collection Tools

#### Teacher Needs Analysis Determination Form

Twice was created to determine the knowledge, experience and competence levels of teachers who are interested in the education of exceptional students. In the creation of this form, first of all, a literature review was made, a draft form was created, and then the form was finalized by referring to the expert opinion. Teacher needs analysis form This form consists of six dimensions and 12 questions. This form was delivered to the participants with the help of a Google survey.

#### Documents

Since there are not many documents about the education of twice exceptional students, documents suitable for gifted education and teacher training for learning difficulties were selected. These; differentiated education of gifted students in their education (Tortop, 2018) and in the training program module to be prepared; The following modules in the "Twice-Exceptional Students Gifted Students with Disabilities" booklet published by Colorado Education Affairs in 2009 were used. In the research, the modular structure and content of the two related documents were examined. After the examination, a draft was created on basic subjects such as diagnosis and features, preparing instructional design, preparing instructional materials, individualized education (mentoring), preparing a strategy plan, and family guidance.

#### Data Analysis

Content analysis method was used in the analysis of the answers given by the teachers in the needs analysis form and their views on the in-service training program after the application.

#### Validity and Reliability

In the qualitative dimension of the research, some concepts put forward in the literature regarding validity and reliability are as follows; Transferability is a concept that explains the generalizability of research as in quantitative research. In order to ensure transferability, all processes of the research should be described in detail. In this respect, all the details such as the sampling method chosen in the research, the conditions of inclusion in the sampling, the characteristics of the participants, and the questions about the semi-structured interviews are presented.

#### Ethics

For the research, first of all, the research proposal was applied for the permission of the Ethics Committee, together with the scales for which the permissions were obtained. E-29563864-050.04.04-2323318 numbered E-29563864-050.04.04-2323318 and dated 28.03.2022 permission of Trakya University Social and Human Sciences Research Ethics Committee. Afterwards, applications were made to Bursa Provincial Directorate of National Education for research permission. This permission was obtained on 23.05.2022.

## Results

### Implementation of Need Analysis

Data were collected with the needs analysis form, which is a semi-structured interview form, for teachers who are likely to work with students diagnosed with special learning disabilities and giftedness. Opinions were received from two field experts in the creation of the needs analysis form. When the expert opinions were confirmed, a teacher needs analysis form was created.

**Table 2.** Gifted learning disabled needs analysis form for teachers working with students

Dimensions	Dimension title	QN	Question examples
D1	Identification gifted learning disabled	3	Question 2. What are the characteristics of gifted learning disability, different from just special learning disability or just giftedness? Do you have any lack of knowledge and experience on this subject? If so, what are they?
D2	Preparing Instructional Designs for Gifted Learning Disabled Students	4	Question 6. Should the instructional design for gifted learning disabled students differ from the instructional design for gifted learning disabled students? What is your level of knowledge and experience on this subject? Do you have any shortcomings?
D3	Preparing Instructional Material for Students with Gifted Learning Disabled	1	Question 8. What is your competence in preparing instructional materials for gifted learning disabled students? Do you have any shortcomings in this regard? What are they?
D4	Mentoring, Effective Educational Leadership for Gifted Learning Disabled Students	2	Question 10. What is your level of knowledge and experience in effective mentoring for gifted learning disabled students? What points do you think are missing?
D5	Approaching for Gifted Learning Disabled Students' Parents	2	Question 11. Do you have sufficient knowledge and experience about the approach of families of gifted learning disabled students? In which areas do you think you have deficiencies?
D6	Other Issues	1	Question 13. Are there any other things that you think are insufficient in terms of knowledge and experience about gifted learning disabled students and their education? Please explain.

D: Dimension QN: Question Number

As seen in Table 2, this form consists of six dimensions and 12 questions. Excerpts from the opinions of the participants about the data obtained with the needs analysis form are presented.

### Dimension 1. Identification of the Gifted Learning Disabled Student

As stated in the literature (Niselsen, 2022), it was obtained from the interview forms that most of the participants had insufficient knowledge and experience about the diagnosis and characteristics of two different students. Quotations from the participants on this subject are presented below.

*I am not well equipped to define and adequately support it. (P14-O-M)*

*I have very little knowledge of what their strengths and weaknesses are. (P1-C-F)*

*I have no knowledge about this. I have a hard time recognizing and describing it. I don't know what its features are. (P2-CT-M)*

Within the framework of the opinions of the participants, it is seen that there is a lack of knowledge and experience about the characteristics of gifted learning disabled children. Teachers in the working group give education to students with special learning difficulties in special education. These teachers are more likely to encounter different students twice. However, there are no procedures for identifying different students twice in Turkey. Tortop and Ilgaz (2022) in the practices in Turkey on the identification of different students twice; They stated that there is no diagnostic procedure, and that there is a possibility that some students may be eliminated in the group screening stage in the diagnosis of gifted students due to the fact that they have other special education needs. In this respect, a student who can be a gifted student may also be a student with a diagnosis of special learning disability in the institutions where these teachers work. Because of this situation, it is necessary to include content related to the characteristics and diagnosis of students who show gifted learning disabled for their educational needs for the service.

### **Dimension 2. Preparing Instructional Design for Gifted Learning Disabled Students**

It has been obtained from the interviews that the teachers who are involved in the education of gifted learning disabled students have low level of knowledge about how their education will be and lack of experience. Some excerpts from these interviews are presented.

*I think I am lacking in supporting these children (P14-O-M)*

*I have no knowledge and experience on this subject (P12-TC-F)*

*I think that the design and strategy to be prepared should be planned individually. At this point, I think that I do not have enough knowledge to create this design yet (P5-O-M)*

*I have never prepared such a form before. I would like to receive information (P3-O-M)*

*I can't answer because I don't know enough (P1-C-F)*

It is seen that the teachers stated that they are insufficient in terms of knowledge and experience about the education of students with gifted learning disabled and preparing instructional designs. A teacher's response that teaching should be individual may have been given because they did individual work with students with special learning disabilities. He stated that he did not have enough information about the individual teaching to be done with these students.

### **Dimension 3. Preparation of Instructional Materials for Gifted Learning Disabled Students**

In student groups with special educational needs (such as autism spectrum disorder, attention deficit and hyperactivity disorder (ADHD), special learning disability) materials that will provide effectiveness in teaching are used, and there are courses related to this in undergraduate education periods (YÖK, 2022). However, there are no elective courses related to gifted learning disabled students in areas such as classroom teaching and special education teaching. However, courses have started to be opened in some education faculties related to this (Sakar and Koksall, 2023). Since in-service training will be planned for students with giftedness and special learning difficulties in our research, content should be created about materials that can be prepared in these two areas. Excerpts from teachers' views on material preparation are presented.

*Although I think that I have clear information about the need for an individual-oriented approach to children, I do not think that this information is at a sufficient level yet (P5-O-M)*

*They do not have a tendency to prepare instructional materials for these students (P12-CT-F)*

*I would like to be informed. I've never worked with a twice-qualified child before (P8-C-F)*

### **Dimension 4. Gifted Learning Mentoring for Disabled Students, Effective Educational Leadership**

In the education of gifted learning disabled students, students need effective individualized teaching in terms of emotional-behavioral, psychological, interests and abilities, strengths and weaknesses. In the education of these students, who also have a giftedness aspect, the most important instructional strategy that supports their emotional-social development and increases their knowledge and abilities is mentoring (Sak, 2009). Strategy teaching is very important for students with special learning difficulties (Girli, 2014). Educators use tutoring (Tortop, 2018), which is a method

for individualizing teaching in gifted students. There is a need for information content on the effective use of these individualized instructional strategies. Some of the teachers' views on the effective management of gifted learning disabled students' instructional processes and their knowledge and experience in mentoring are presented below.

*My knowledge and experience are insufficient (P1-Q-F)*

*I am not knowledgeable about this (P9-CT-F)*

*I don't have much experience (P14-O-M)*

### **Dimension 5. Approach to Families of Gifted Learning Disabled Students**

The importance of family education and guidance in the education of students with special educational needs is emphasized in studies (Barber & Mueller, 2011; Besnoy et al., 2015; Dare & Nowicki, 2015). There is a false belief in society that gifted children can solve their problems because of their abilities (Tortop, 2018). Gifted learning disabled situation is an area where families and children have serious difficulties due to their special education needs, and families face problems even in getting the necessary educational support. There are studies on the positive contributions of informing and supporting families about their situation and teaching rights advocacy (Dare, & Nowicki, 2015; Besnoy et al., 2015). In this respect, it should be included in the content of the in-service training program. Some quotations from the teachers' views on their knowledge and experience in approaching the families of gifted learning disabled students are presented below.

*No I don't have it (P13-O-F)*

*Although I think that the approaches of families will differ greatly, I think that I lack information on what the appropriate approach is and the strategies that should be applied to guide this approach (P5-O-M)*

*In this regard, I need to improve myself in general (P9-TC-F)*

*I do not have enough knowledge and experience (P1-C-F)*

### **Dimension 6. Other Issues**

In the research, the participating teachers were asked to indicate which other subjects they lacked knowledge and experience about the education of gifted learning disabled students. Eker (2020)'s in-service training program includes the use of technology as well as material design, as sustainability and technological developments in education lead to changes in our educational and instructional approaches, as well as the lack of knowledge and competence development of teachers in these new fields. The opinions of the teachers were asked to indicate their different educational needs, as in this example. Excerpts from some of his views are presented below.

*I feel inadequate about how to work with different students twice, what the expectations should be, how the process should be planned (P10-O-F)*

*I wish I was more competent in the emotional field (P3-O-M)*

*On their psychology (P13-O-F)*

It is seen that the teachers who participated in the research stated that they had incomplete knowledge and experience in other subjects, especially the psychology of gifted learning disabled students and the provision of their emotional support. Therefore, it was thought that it would be appropriate to consider this aspect in the in-service training program to be created, rather than the subject of family education and guidance.

### **Determining Teachers' Perceptions of Gifted Learning Disabled Students**

It was determined that the teachers' perceptions about gifted learning disabled students consisted of metaphors in 4 categories (needing to be understood, needing care, having different aspects and having difficulty). The fact that the number of metaphors in the category of having difficulty is the lowest may give an idea that the participants have deficiencies in the approach to the families of the students who are different twice, and their psychological states (Amiri, 2020) and guidance. It is seen that areas of disability such as ADHD, Autism, Asperger's and other special education needs such as talent are associated in the minds of the participants.

### Development of In-Service Training Program

As a result of the needs analysis, it was determined that the teachers had deficiencies in knowledge and experience in the six dimensions determined. Then, the stage of creating the training program was started. In the in-service training program, the topics that emerged in line with the needs analysis were planned in six sessions, one of which was the content that plans the strategies for intervention. In order to meet these educational needs, achievements were created and the number of sessions, session name and instructional stages were determined in order to realize these gains. Accordingly, it was decided that the in-service training program would consist of six sessions. These sessions and the gradualness of the sessions are shown in Table 3.

**Table 3.** Sessions and stages in the in-service training program for gifted learning disabled students

SN	Session Title	ISN	Instructional Stage Name
Session 1	Overview of Giftedness and Special Learning Disability	2	Developing knowledge and awareness about gifted students
			Developing knowledge and awareness about students with special learning difficulties
Session 2	Recognizing Gifted Learning Disabled Students	2	Awareness development for students showing gifted learning disabled
			Knowing the diagnostic procedures of gifted learning disabled students
Session 3	Instructional Design for Gifted Learning Disabled Students	2	Awareness development for instructional strategies for gifted learning disabled students
			Developing awareness of differentiation strategies and principles for gifted learning disabled students
Session 4	Instructional Material Design for Gifted Learning Disabled Students	2	Awareness and skill development about instructional material design for gifted learning disabled students
			Awareness and skill development about being a teacher who promoting creativity
			Developing awareness of effective instructional material features for students with specific learning difficulties
Session 5	Guidance and Psychological Support for Gifted Learning Disabled Students	2	Psychological support and guidance for gifted learning disabled students, awareness about parent education
			Psychological support strategies for gifted learning disabled students (such as bibliotherapy, film therapy, short-term dynamic therapy) awareness development
Session 6	Intervention-Strategies Plan for Gifted Learning Disabled Students	1	Developing awareness and skills about preparing an intervention strategy plan for gifted learning disabled students

SN: Session No ISN: Instructional Stage Number

As seen in Table 4, an in-service training plan was created with six sessions and eleven instructional stages. The instructional designs of these sessions (with activities) were started to be planned.

### Creating Instructional Designs (Activities)

After the sessions and instructional stages were determined, the stage of creating instructional designs (activities) for the relevant acquisitions was started. Accordingly, the activities created in Table 4, their relationship with the outcome, activity type, activity task and material are given.

**Table 4.** Activities in in-service training for the education of gifted learning disabled students

Activity Name and Number	Activity Type	Activity Tasks	Relation to Outcomes	Material
A1. Create Your Own Theory of Giftedness	Independent study, research	Analyzing theories and introducing new theory	O1. Explains the theories of giftedness	Puzzle
A2. Create Own Giftedness Rating Scale	Observation	Identifying giftedness traits	O2. Explains the characteristics of giftedness.	Fragment of Faraday's life: movie section
A3. Alice in the Land of Learning Disabilities	Independent study, research	Making cartoons describing learning difficulties	O3. Explains the characteristics of students with learning difficulties	Worksheet
A4. Gifted Learning Disabled Fashion Designer: How Do I Look?	Exploratory individualized study	Combining pieces and interpretation	O4. Tells the characteristics of gifted learning disabled students.	Worksheet

			<b>O5.</b> Makes the definition of gifted learning disabled student	
<b>A5.</b> My Diagnostic Tool Bag	Exploratory individualized study	Get to know the features of diagnostic tools	<b>O6.</b> Explains the identification of gifted learning disabled students	Presentation Worksheet
<b>A6.</b> Find the Appropriate Instructional Strategy	Exploratory individualized study	Teaching with problem scenario	<b>O7.</b> Explain the educational strategies of gifted students (such as grouping, acceleration)	Presentation Worksheet
<b>A7.</b> Can You Offer Me My Appropriate Differentiation Menu?	Exploratory individualized study	Teaching with problem scenario	<b>O8.</b> Knows the principles of curriculum differentiation for gifted students <b>O9.</b> Knows curriculum differentiation models for gifted students	
<b>A8.</b> I Find Talent Points	Exploratory individualized study	Teaching with problem scenario	<b>O10.</b> Explains how to organize family and environmental environments for gifted learning disabled students	Worksheet
<b>A9.</b> Is the Material I Designed Suitable for the Gifted?	Exploratory individualized study Group discussion	Teaching with problem scenario	<b>O11.</b> Explains the characteristics of the teaching materials to be prepared for gifted students.	Presentation Worksheet
<b>A10.</b> Produce My Difficulty Easier Material	Exploratory individualized study Group discussion	Filling in the worksheet Material design	<b>O12.</b> Explain the characteristics of the instructional materials to be used in the education of students with special learning difficulties.	Presentation Worksheet
<b>A11.</b> What Level of Creativity Promoter Am I a Teacher?	Exploratory individualized study Group discussion	Filling the observation form	<b>O13.</b> Knows teacher characteristics that promoting creativity	Presentation Worksheet
<b>A12.</b> I'm Gifted, But I May Have Psychological Problems	Group discussion	Watching movie Discussion	<b>O14.</b> Knows the psychological problems experienced by gifted students.	Film Articles
<b>A13.</b> I'm Doing a Film Therapy Intervention	Problem scenario Group discussion	Filling in the worksheet	<b>O15.</b> Knows psychological support strategies for gifted learning disabled students.	Film
<b>A14.</b> I'm Learning Effective Parent Education Programs	Group discussion	Teaching with problem scenario	<b>O16.</b> Gifted learning disabled students know how to organize family and environmental environments	Worksheet
<b>A15.</b> I'm Designing an Intervention Strategies Plan for the Gifted Learning Disabled Student	Narrative Question answer Group discussion	Filling in the worksheet	<b>O17.</b> Knows the stages of preparing a strategy plan for gifted learning disabled students	Worksheet

A: Activity O: Outcome

The descriptions of the activities prepared are as follows;

### Activity 1. Create Your Own Theory of Giftedness

A worksheet is given in which the theories of giftedness and related concepts are written on geometric figures. If they had created their own theory of giftedness, they are asked to write and explain the puzzle which concepts they would use and the reason for it.

### Activity 2. Create Own Giftedness Rating Scale

A rating scale related to the behavioral characteristics of gifted students is given to the participants. First, they are asked to review it. Then, they are asked to mark the features they see while watching the documentary, which includes a section from the life of Faraday, who may be gifted in the academic field. Then you will be asked what features you would get if you created your own list. Ask them to explain why.

### Activity 3. Alice in the Land of Learning Disabilities

They are asked to imagine a universe with examples of dyslexia, dysgraphia, and dyscalculia, describe (with cartoons) how different appearances will be compared to normals in this universe, and interpret how they can correct it.

### Activity 4. Gifted Learning Disabled Fashion Designer: How Do I Look?

Giftedness and special learning disability areas are likened to a model and the clothes on it. It symbolizes the behavioral and emotional feature that will occur due to learning difficulties of each garment. Participants comment on the appearance of the model on which they dress.

### Activity 5. My Diagnostic Tool Set

Diagnostic tools for measuring intelligence and its components are described in the worksheet as different tools (hammer, saw, pliers). Participants are asked to make designs about which of these tools will be used to reveal the unknown aspect of two different individuals, and their reasons are interpreted.



**Activity 6. Find the Appropriate Instructional Strategy**

It explains how instructional strategies, grouping, acceleration and mentoring strategies are applied for gifted students. For students whose case studies are presented, worksheets on which strategy should be applied and why are given.

**Activity 7. Can You Offer Me My Appropriate Differentiation Menu?**

Differentiation strategies and principles are briefly explained. The student prototypes, whose student characteristics are given in the worksheet, are given the task that asks them to make a choice about which differentiation strategy to apply. The reasons and consequences of this choice to write down are on the worksheet.

**Activity 8. I Find Talent Points**

Participants are given a worksheet showing the out-of-school learning environments and their characteristics, with an example. After the student's interests and tendencies are written, they are asked to search for appropriate learning, research centers, and environments that support talent development, such as individuals, on the internet. 5 minutes are given. It is then discussed.

**Activity 9. Is the Material I Designed Suitable for the Gifted?**

A worksheet with the characteristics of a teaching material that needs to be developed for gifted students and an equalizer display is presented to the participants. First, a teaching material is presented to them and they are asked to paint the indicator of which direction it is on the equalizer. They are asked to explain why the sound, that is, the material, will be appropriate.

**Activity 10. Produce My Difficulty Easier Material**

Worksheets are provided explaining specific learning difficulties and reasons for suggestions and materials for dealing with those difficulties. Discussion is made on the example. He is then given 5 minutes to develop instructional material that will address many of these learning difficulties. The selected design is discussed with all participants.

**Activity 11. What Level of Creativity Promoter Am I a Teacher?**

The characteristics of promoting creativity and the teacher's use or creation of teaching materials with his student are explained. Each participant is then asked to make their own self-assessment.

**Activity 12. I'm Gifted, But I May Have Psychological Problems**

There is a group discussion on the psychological problems seen in the movie Little Man Tate and Vitus, which was given homework to be watched before. They are asked to read movie review articles about these movies.

**Activity 13. I'm Doing a Film Therapy Intervention**

Participants are asked to create an imaginary student case related to previously determined psychological problems, find the movie they will choose for this, and write down how they will design a therapy application with relevant sections from this movie.

**Activity 14. I'm Learning Effective Parent Education Programs**

Participants are provided with worksheets showing effective family education programs, features, and implementation procedures. This is discussed about training programs. Discussions are held about their own family approaches and the aspects that may be wrong with them.

**Activity 15. I'm Designing an Intervention Strategies Plan for the Gifted Learning Disabled Student**

Participants are shown an intervention strategy plan based on a case study. It explains all the components of the plan and how it was created. They are asked to create a plan like this plan on their own students.

It is planned as a teaching hour for each activity. A total of 15 hours of in-service training program has been established. Some of these activities are given as examples (Figure 1, Figure 2).

**Use of Differentiation Approaches in Instructional Design**

Since the developed activities will be created for teachers who take part in the education of students with giftedness and special learning difficulties, it has been paid attention to use differentiated teaching strategies, especially for gifted

students. While applying the activities, teachers will also be able to raise awareness about the pedagogical approaches that should be applied for gifted students. This situation is explained through sample activities.

**Activity 4.** Gifted Learning Disabled Fashion Designer: How Do I Look?

First, let's examine the behavioral and emotional characteristics of gifted children and children with learning disabilities. Thus, we can describe gifted learning disabled students with these features together.

**Behavioral-Emotional Appearances of the Gifted Student**

**Bored, Disinterested**

**Explanation:** These situations are very common, especially when they are told about the subjects they know.

**Aggressive, Willing**

**Explanation:** Especially in the environments where there is competition, aggressive and eager attitudes and selfish tendencies are seen in order to put themselves forward.

**Introverted, Irresponsible**

**Explanation:** The situation explained by the concept of masking and normalization may occur, especially when the student is put into high expectations and encounters some problems by family, teacher. (See Vitus movie)

**Sensitive, Emotional**

**Explanation:** While imagining the story, it can cause very strong emotional impact (See Little Man Tate movie, mother earth melting scene and his tolerance for his mother). Example: While I was telling my student group that a phenomenon related to space would harm our world, the student got emotional because my parents didn't know about my words, jokingly, that you should be in your bed at that hour or the temperature would drop too much.

**Arrogance, Conceit**

**Explanation:** To despise others, to make fun of them. For example, the boy wearing the magician costume from the movie Little Man Tate

**Playful, Witty, Energetic**

**Explanation:** I have never seen children with such characteristics in the children I have worked with until now. It may be in children of broken families, but it manifests itself with instability. It can sabotage the activity where it isn't.

**Behavioral-Emotional Appearances of Students with Special Learning Disabilities**  
**Contradictory, Unstable**

**Explanation:** In particular, doubts about her own performance, worrying about what their peers will think of them, may cause her to display a contradictory and indecisive attitude.

**Overly Excited and Disturbing**

**Explanation:** Sometimes when placed in a reading group with their peers he may struggle to read like them. This can make him overly excited and uncomfortable.

**Extremely Angry, Aggressive**

**Explanation:** The students who can do the multiplication difficult may have a nervous breakdown when she cannot do it, and when they cannot focus on reading, they may close her book and display an angry and aggressive attitude.

**Anxious, Introverted**

**Explanation:** Anxiety, depression and introversion can be seen due to failure and difficulty in learning areas where they have difficulty.

**Challenger**

**Explanation:** Attention-altering, objectionable and rule-challenging behaviors can be seen to mask failure in learning areas.

**Masker**

**Explanation:** They may exhibit a concealing, masking attitude to prevent the emergence of weakness and failure in learning.

Examine these and other features.

*Continue*

**Figure 1.** Worksheet of Activity 4. Gifted Learning Disabled Fashion Designer: How Do I Look? (first page)

Now let's suggest some clothes for these behavioral-emotional traits.

**Bored, Disinterested**



Hooded t-shirt or cardigan

**Aggressive, Willing**



Long boots, skinny jeans

**Introverted, Irresponsible**



Ripped jeans

**Sensitive, Emotional**



Suit

**Arrogance, Conceit**



Tuxedo

**Playful, Witty, Energetic**



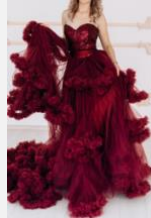
Sneakers

**Contradictory, Unstable**



Combination dress

**Overly Excited and Disturbing**



Evening dresses

**Extremely Angry, Aggressive**



Leather jacket

**Anxious, Introverted**



Full length dress

**Challenger**



Leather bracelets

**Masker**










Mask

Now think of someone who you think may be gifted learning disabled, make a design according to his features and draw it below. What could be the reasons for having those features/clothes? Discuss.

**Figure 2.** Worksheet of Activity 4. Gifted Learning Disabled Fashion Designer: How Do I Look? (Second page)

When the activity example in Figure 1 is examined; It is seen that the activity has a cascading and gradual nature. It is emphasized that the gradualness of Learning Contracts, Tiered Instruction and Independent Study strategies, which are among the differentiated teaching strategies, should be used for the development of the student's self-regulation skills (Tortop, 2018: p.54). In the first stage, the emotional-behavioral situation that a gifted student may experience is briefly

explained. In this way, it is aimed that teachers understand this situation. In the second stage, it is aimed to understand how these situations can be experienced together to a certain extent or there may be intersections, so that it can occur in gifted learning disabled students. The activity was constructed on the basis of the fact that the teacher, who tries to understand these phenomena with metaphorical analogies made on dresses, is a fashion designer. As it is very important to develop metaphorical, creative thinking and empathy among the differentiated teaching strategies for the gifted (Kaplan, 1993; Tortop, 2018: p.185), the instructional designs to be developed for the gifted should not be didactic but develop skills and abilities. In this activity, it was tried to be shown through the phenomenon of being a fashion designer that gifted learning disabled students are doing activities to design and develop their imagination. At the last stage of the event, the need to explain how the fashion design will be created by the participants and what the reasons might be, and to feel the need to do research for these explanations, even for a short time, were taken into consideration. The development of research skills is supported by revealing the interests and curiosity of gifted learning disabled students by using immersive question generation and thought-provoking question generation strategies (Maker, 1982; Tortop, 2018: p.62).

<b>Activity 5. My Diagnostic Tool Set</b>		
Below are some tests that can help you identify the student, their brief descriptions, and some of the repair tools that can be compared to them. Match these repair tools and test simulations yourself. You can suggest repair tools by researching different diagnostic tools in the blanks.		
Developmental Visual-Motor Coordination Test	It is a test to measure sensory-motor skills. (Deniz, Hamarta ve Akdeniz, 2014, p.59).	 <p>Ruler</p>
Visual Aural Digit Span Test	It is a test that measures attention, short-term memory, sequencing, intra-sensory and inter-sensory integration. (Deniz, Hamarta ve Akdeniz, 2014, p.59).	 <p>Hammer</p>
Bender Gestalt Test	It is a test that allows measuring visual motor perceptions. It measures performances such as distortion, rotation, merging, integration, copying. (Deniz, Hamarta ve Akdeniz, 2014, p.59).	 <p>Saw</p>
Mangina Test	In this test, a stimulus is asked to find the same one in complex shapes, such as space orientation, direction, magnitude, and size. Visual perception and learning skills are determined (Turgut, 2008, p.31).	 <p>Wrench, Pincers</p>
Frostig Test	It measures the ability of visual perception to manifest itself in different performances (visual motor coordination, figure-ground relationship, shape constancy, location in space, space relations). (Deniz, Hamarta ve Akdeniz, 2014, p.59).	 <p>Spirit level</p>
Ankara Developmental Screening Inventory	It is an inventory that allows the measurement of the developmental areas (language, fine motor skills, gross motor skills, etc.) in children (Deniz, Hamarta ve Akdeniz, 2014, p.60).	 <p>Handsaw</p>
Specific Learning Disorder Clinical Observation Battery	This battery assess reading, writing, and math skills, and identifies the disorders frequently encountered in learning difficulties (visual perception, sequencing and sequencing, right-left discrimination, clock drawing, lateralization, and fine motor). (Çelik, 2019, p.97)	 <p>Tool Set</p>
Suggest a few as well.		

Continue

Figure 3. Activity 5. My Diagnostic Tool Set (first page)

<p>Features; what it provides; Make an analogy of the repair tool used.</p> <p>Now we are given resources such as wood, timber; for building the stairs.</p> <ul style="list-style-type: none"> <li>➤ Whether splintered or flat (Handsaw and Spirit level)</li> <li>• Whether it turns the nail - its hardness (Hammer and nail)</li> <li>• Division into certain parts (Saw)</li> </ul> <p>You can make a repair or carpenter's tool analogy to identify other features.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>According to the above analogy; describe what specific learning disability you have in a student you meet and which test tool you can use to diagnose it.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Suggest practices and exercises to improve these characteristics. If there are related websites, write them below</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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**Figure 2.** Activity 5. My Diagnostic Tool Set (second page)

In the activity sheet example in Figure 2, some information is given at a certain rate, but whether these are correct and whether the analogies are appropriate is left to the teacher. In this respect, it is aimed to develop critical thinking skills (VanTassel-Baska & Wood, 2009) in terms of both learning by discovery and testing the accuracy of information and analogies (Tortop, 2018: p.82, 185). In addition, the gradualness of the activity sheet also makes the Learning Centers strategy (Tortop, 2018: p.49). The problem situation in the student and the development of research skills (Williams, 1993; Tortop, 2018: p.138) by doing research during the practice and exercise proposition for its solution, and the suggestion of something new by themselves improves the creative thinking skills (Sak, 2009, 2010; Tortop, 2010). 2018: p.185) shows that it has a supportive aspect to its development.

It has been prepared in accordance with the "self-regulated learning" principles approach in order for teachers to understand that the development of self-regulation skills, which is one of the most important problems of students who experience gifted learning disabled phenomenon in all activities, is Tortop, 2018: p.292). Because, in order for the teacher to be able to develop self-regulation in gifted learning disabled students, they must first develop their own self-regulation (Tortop & Eker, 2014). In order to improve themselves in the education of gifted learning disabled students, teachers need to be self-developing, researching, experimenting, implementing and monitoring people as in self-regulated learning. In the worksheets, attention was paid to the fact that the teacher was an active learner.

### Conclusion and Recommendations

Since there are not many sample programs for developing in-service training programs for the education of gifted learnign disabled students, the principles and stages of program development were taken into consideration in the development of the in-service training program in the research. The created in-service training program is planned to consist of 6 sessions, 15 activities and 15 hours. These activities were associated with 15 outcomes. In the creation of instructional designs (activities), it has been prepared in the form of worksheets suitable for the application of the

principles of instructional differentiation of gifted students and the self-regulated learning approach for teachers to improve themselves. This in-service training program is the first in-service training program prepared for teachers of gifted learning disabled students.

It can be suggested that this in-service training program be developed for different teacher groups as well. This in-service training program and instructional designs have been prepared for students with gifted learning disabled intelligence. It may be suggested to prepare in-service training programs for other groups in the definition of twice exceptional.

### Biodata of Author



**Hasan Said Tortop** graduated from Celal Bayar University, Faculty of Education, Science Teaching undergraduate program. He graduated from the same university in the field of Science Education. He graduated from Suleyman Demirel University, Institute of Science and Technology, with a PhD in Physics. PhD thesis topic; It is the use of project-based learning and meaningful field trips in the teaching of solar energy and its applications. Tortop also graduated from Anadolu University Open Education Faculty, undergraduate program in Philosophy. In 2014, he received the title of associate professor from the field of science education. His fields of study are science education, gifted education and special education. He works as an editor and managing editor in many journals. E-mail: hasansaidfen@gmail.com ORCID: 0000-0002-0899-4033



Assoc. Prof. **Gokhan Ilgaz** works at Trakya University Educational Sciences Department. He received his bachelors degree in Science Teaching Department from Trakya University in 2004. He completed his masters degree in Curriculum and Instructions programme in Trakya University in 2006. He received his doctorate certificate in Science Teaching Department from Gazi University in 2011. He has studies in areas Self-efficacy, self-regulation, science teaching, curriculum designing. He is currently working as deputy head of Science Department, Head of Curriculum and Instruction also Director of Institute of Roma Language and Culture Studies in Trakya University. Affiliation: Trakya University, Edirne, Türkiye. E-mail: gokhani@trakya.edu.tr ORCID: 0000-0001-8988-5279

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