

# Developing a Scale for Teachers to Identify Gifted Students with Learning Disabilities in the Primary Stage in the Eastern Province of Saudi Arabia

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This research aimed to develop a scale of validity and reliability to identify gifted students with learning disabilities among primary school students in the Eastern Province of Saudi Arabia using a sample of 311 students. The study sample was divided into three categories (gifted students, students with LD, ordinary students). The descriptive analytical research methodology was used to achieve the research goal. The researchers prepared a list of characteristics and indicators for the gifted class with learning disabilities, which was divided into five dimensions. The validity and reliability of the scale were confirmed in appropriate ways by the researchers. The final form of the scale consisted of three sub-dimensions, which determined the characteristics of the gifted category with learning disabilities: the first dimension (cognitive characteristics), the second dimension (emotional characteristics) and the third dimension (the self-concept, or concept). One important recommendation is that this scale is suitable for identifying gifted students with learning disabilities (GLD) among primary students. The researcher suggests using the G/LD scale for the purposes of study in the Saudi environment because of its high validity and reliability.

**Key words:** *Gifted student with learning disability (G/LD), Emotional characteristics, Conceptual characteristics, Self-concept.*

## Introduction

Gifted students in the Kingdom of Saudi Arabia have received a great deal of attention and support since 1999, when the state was keen to establish the King Abdulaziz & His Companions Foundation for Giftedness & Creativity, which deals with gifted and creative people, and state support has continued as the Kingdom believes in the importance of fostering talent and creativity. The Foundation also seeks to establish a national system of giftedness and creativity in the Kingdom of Saudi Arabia in an effort to contribute effectively to achieving the objectives of the Kingdom's Vision 2030.

The prevailing idea identifies the gifted student as one who scores high on the scales of intelligence and high academic achievement. Unfortunately, this idea has reinforced the difficulty of accepting the concept of gifted students with learning disabilities (G/LD), especially as it is difficult for some to believe that talent and a learning disability can be present in the same person.

When educators first began to describe children who showed evidence of having a learning disability (LD) yet also appeared to be gifted, many viewed this as contradictory. The stereotype that had prevailed since Tyerman's (1925) time was that gifted children scored uniformly high on intelligence tests and performed well in school. How could a child be considered gifted when they had serious enough learning problems to be characterised as having a learning disability? ( Abadi, 2008; Al-Hroub, 2010; Invasion, 2002; Jarwan, 2014; Zayyat, 2002).

A gifted student with a learning disability may perform below their abilities in a particular academic field; their performance may be low relative to their own abilities but not low compared with their intermediate level peers in the classroom. Thus the detection of gifted children with learning disabilities is a very complicated matter and needs to occur responsibly.

Researchers and those interested in Arab and foreign research have pointed to the importance of qualitative analysis to assess students' performance, combining gifted criteria and diagnostic criteria for learning disabilities, and discussing the effects of having higher mental abilities and learning disabilities in order to detect them among the following categories: gifted students enrolled in talent programs between these categories; gifted students enrolled in talent programs; those with LD enrolled in resource rooms who were classified as having learning disabilities; and students in ordinary classes (Assouline, Nicpon & Whiteman, 2010; Maddocks, 2018; Zayat, 2002).

Kennedy (2005) provides further evidence of there being no clear consensus on how the detection of and referral procedures for learning disabilities are made. The detection process becomes more difficult if a gifted student has learning disabilities because gifted students have very high abilities and if they are having any difficulties tend to reduce their capabilities to appear at the same level as their ordinary peers, which is known as the phenomenon of masking. These students thus need special education services to address two aspects: enrichment services for their excellence and talent, and therapeutic education services for their disability.

Akhil R. Athul Soori (2017) conducted a study that aimed to develop a web-based tool to predict whether children (aged eight to 10 years) in Kerala were at risk of difficulties. The results indicated that the lack of early detection of G/LD students and the lack of appropriate assistive techniques led to psychological stress, low self-concept and reluctance to attend school.

Many researchers, such as Al-Hajri (2015), Abu Naser (2018), Abu Jadu (2013), Al-Bakhit (2012), Al-Hroub (2010) and Jarwan (2014), have agreed about the need to develop scales that identify gifted students who have learning disabilities and accelerate the provision of appropriate educational services and programs for them. Moreover, the identification of G/LD students makes teachers more able to manage the class, and the teaching process will thus be of more value.

### **The Study Problem**

The interest in gifted students with LD in the Saudi environment is increasing, since they have the right to access special education services because of their gift and the learning disabilities from which they suffer. However, this area lacks the appropriate tools of validity and reliability that will detect this category of student, and it is one of the prominent issues facing gifted students with LD when attaining their rights of services that are granted by law.

The main question of this study is, ‘What are the implications of validity and reliability of the teachers’ scale for the detection of gifted students with LD on a sample of male and female students in primary school in the Eastern Province in Saudi Arabia?’

## **The Study Questions**

The following sub-questions arise from the main question of the research problem:

- What are the implications of the validity of the teachers' scale to identify gifted students with learning disabilities between a sample of primary school students in the Eastern Province in Saudi Arabia?
- What are the implications of the reliability of the teachers' scale to identify gifted students with learning disabilities among a sample of primary school students in the Eastern Province in Saudi Arabia?

## **Study objectives**

The research aimed to build a scale for teachers that would assist in identifying gifted students with learning disabilities from primary students in the Eastern Province.

## **The significance of the study**

The significance of this research is shown in two aspects:

### ***Theoretical significance***

1. Its interest is in an important segment of society, children who need to obtain special education services as they are gifted students and at the same time have learning disabilities. The goal is to provide them with educational services that are both commensurate with their talents and suitable for their educational needs.
2. Contributing to the detection of G/LD students will lead to the provision of appropriate services and assisting teachers to identify this category of student.
3. Teachers will be able to provide knowledge of the challenges faced by students, recognise their points of weakness and understand their needs.
4. It will assist teachers to distinguish between G/LD students and low-achieving students.

### ***Practical significance***

1. It will achieve the development of a Saudi standard that has indications of validity and reliability to detect gifted students with LD in the primary stage.
2. It will provide teachers, specialists, researchers and university students with a measuring instrument that has validity, reliability and acceptable standards to be used in relevant studies and research.
3. It will provide a detection and diagnostic tool that assists in detecting gifted students with LD and provide appropriate educational services.

## **Study Limitations**

### ***Objective limits***

The subject of research is limited to a scale to detect gifted students with learning disabilities.

### ***Time limits***

The research was conducted in the second semester of the academic year 1439/1440 AH.

### ***Spatial limits***

The research was conducted in the primary schools in the Eastern region.

### ***Human limitations***

The research was limited to a group of primary school students.

## **Study Terminology**

The researcher defines gifted students with learning disabilities as students who show indicators and signs of high mental abilities, while at the same time showing indications and signs of educational difficulties or problems. In addition to some characteristics that are related to emotional characteristics, the concept of self – resulting from the conflict of talent and difficulty within the individual – enables them to achieve high scores on all dimensions of the G/LD scale. This is expressed in the performance of students on the scale of detection of gifted students with learning disabilities.

## **Previous Studies**

The literature on this subject is divided into two categories.

### ***Arabic Studies***

Bakhit (2012) conducted a study aimed at identifying G/LD students among students enrolled in the programs of learning disabilities in Riyadh. It also sought to investigate the relationship of the phenomenon with some educational and demographic variables. The sample consisted of 244 pupils tested using four tools: (1) the standard sequential matrices test ; (2) test circles (one of the activities of the Torrens test for creative thinking – formal); (3) a list of teacher appreciation of behavioural characteristics; (4) student records. Results indicated that the percentage of G/LD students was 3 per cent. This emphasizes the need to develop assessment and diagnostic processes so this category of students is accurately identified in order to receive appropriate services, and to take into account some educational and demographic variables in the evaluation process.



Al-Hajri's (2015) study aimed to build a scale for detecting G/LD students from the first cycle at the primary level in the Kingdom of Bahrain. The sample consisted of (654) students with learning disabilities. An analytical descriptive approach was used.

The researcher prepared a list of two dimensions: gift indicators and learning disabilities indicators. The final form of the scale consisted of four sub-scales: attention and concentration characteristics; emotional characteristics; cognitive; and self-esteem. The results revealed that the percentage of G/LD students was 1.1 per cent, and that this scale is valid for detecting G/LD students from the first cycle at the primary level. The researcher recommended using this study to conduct a study on a random sample of pupils in ordinary classes.

Mohammed's (2016) study focused on detecting learning difficulties (academic/cognitive) in gifted and mentally superior students in the talent and excellence schools at Khartoum. To achieve its goals, the researcher used the achievements of the outstanding students as an indicator of learning difficulties, their high scoring in IQ tests and their ability to solve problems, as well as the application of the learning difficulties measure prepared by Sartawi, which includes academic difficulties, behavioural characteristics and cognitive difficulties. The study sample consisted of 43 gifted students in talent and excellence schools in Khartoum State, aged from eight to 12 years. The results revealed that the learning difficulties of gifted and talented schools were low and the percentage of gifted students with learning disabilities among the gifted and mentally superior was 2.5 per cent, which is considered an acceptable percentage and similar to the percentage indicated by the Arab studies.

Abu Nasser (2018) aimed to identify the levels of implicit theories of intelligence and talent possessed by gifted students with learning difficulties in the primary stage, as well as to determine the level of dimensions of academic self-efficacy. The intentional sample consisted of 30 students. Several measures were used: the Behavioral Traits Scale for Gifted Students with Learning Disabilities, diagnostic tests, IQ tests, sequential matrices of Raven, the Implicit Theory Scale for Intelligence, and the Academic Proficiency Assessment Scale. It was concluded that the levels of implicit theories of intelligence and talent came above the default mean of the sample. The study recommended the development of standards and tests to reveal G/LD students in Saudi Arabia to reach the quality of the detection and study their characteristic difficulties.

### ***Foreign Studies***

Kennedy (2005) studied the referral method for G/LD students in an investigation of inter-school practices and the use of an experimental approach. The study sample consisted of a

multidisciplinary team to fit the study purposes and to be able to collect and analyse data clearly. The team included a school principal, ordinary classroom teacher, special education teacher, psychologist and social worker. Several methods were used: a comprehensive survey, questionnaire, observations and interviews. The results indicated that the regular classroom teacher had more information regarding the gifted students with learning disabilities, and that the team did not agree on the referral process because talent convinces the difficulty, so the referral process becomes very difficult.

Assouline et al.'s (2010) study followed the experimental method for 14 gifted students with writing difficulties. It concluded that comprehensive assessment played a crucial role in identifying gifted student with learning disabilities, as well as identifying psychosocial problems and educational needs.

Lovett (2011) conducted a study on the diagnosis of learning disabilities in gifted students, in response to the Assouline study (2010); the results indicated that gifted students often fail to achieve a higher level in one or more academic disciplines. The study reviewed different interpretations using the descriptive approach. The researcher stated that several factors affected students' achievement and hindered their mental abilities and achievement, including motivation, learning experiences, measurement errors and disparities between ability and achievement.

McCallum and colleagues (2013) present a model for screening for twice-exceptional students (i.e. gifted students who have a learning disability). Curriculum-based measures (Monitoring Instructional Responsiveness: Reading and Monitoring Instructional Responsiveness: Math) were used. The sample comprised of 1242 students in the third grade. The results indicated a need to address all the academic aspects of the difficulty of detecting gifted student with learning difficulties because of the masking effect. It also stated that the proposed method did not monitor the psychological and cognitive aspects of students.

Maddocks (2018) conducted a study of 4783 students using criteria that measured cognitive abilities and achievement, and undertook a detailed analysis of cognitive strengths and weaknesses. The researcher noted that gifted students with learning disabilities could not be identified due to the lack of agreement on appropriate diagnostic criteria. The results suggest improving practices and the need to conceptualise evaluation as an integrated process that simultaneously focuses on the individual and examines the strengths and weaknesses of students.

Beckmann and Minnaert's (2018) study of research into gifted students with learning disabilities aimed to conduct an in-depth review of the non-cognitive characteristics of these students for identification and intervention purposes. Detailed analysis of 23 publications was



performed. It identified many non-cognitive factors that play an important role in student achievement and should be taken into account when detecting gifted student with learning disabilities. The study reveals that these students show considerably duality in their non-cognitive characteristics, which requires tailored counselling skills to provide effective support for their learning needs. It recommended the use of a list of non-cognitive characteristics as a guiding principle for evaluation to identify the weaknesses and strengths of G/LD students.

### ***Comment on Previous Studies***

After a logical review of the latest research and studies of Arab and foreign literature until 2018 that dealt with G/LD students, it is clear that all scholars point to the lack of tools with sufficient the validity and reliability in this category – in particular, for detection and diagnosis. There is a need for the educational field to provide these tools and standards, and to provide services and educational programs in accordance with the specificity of this category.

What distinguishes the current research is that it deals with the detection of gifted students with learning disabilities from all relevant categories, and it also provides a tool to detect their cognitive and emotional characteristics and self-concept .

### **Research Methodology and Procedures**

#### ***Research Methodology***

The researcher used the descriptive analytical approach to describe the current situation, clarifying and interpreting the reality of events and things on the determination of its current facts as they are. Interpreting, analysing them for the purpose of useful conclusions and correcting and updating reality.

#### ***Study Population***

The study population consisted of all students enrolled in the general education classes, students with learning disabilities who enrolled in the resource room and gifted students who passed the IQ test from the Ministry of Education to be enrolled in the gifted programs of the Ministry of Education, and whose primary grades ranged between the third, fourth, fifth and sixth in the Eastern Province of Saudi Arabia.

### ***Study Sample***

The study sample was selected randomly and divided into three categories, with each including males and females as shown in Table 1.

**Table 1:** Distribution of study sample according to mental and gender variables, number of teachers and the participating schools (n = 311)

Gender	Mental status	No. Students	No. teachers	No. schools
Male	Ordinary	57	20	5
	LD	52	12	6
	Gifted	51	12	4
Female	Ordinary	52	20	3
	LD	49	5	3
	Gifted	50	6	1
Total		311	75	22

### **Study Variables**

#### ***Independent Variables***

1. *Categories:* There were three categories: gifted, learning disabilities and ordinary students.
2. *Age group:* Represented in four levels (third, fourth, fifth, sixth grades).
3. *Gender:* Represented in two levels: male, female.

#### ***Dependent Variables***

Performance on the scale to identify gifted people with learning disabilities.

#### ***Study tool***

The study tool is based on the following:

#### ***Literature review and theoretical framework for gifted students with learning disabilities***

The researchers studied and reviewed the literature which dealt with G/LD students in both foreign and Arabic languages to identify the categories of gifted students with LD and their characteristics. Indicators were also collected to assist in detecting these categories.

It is worth mentioning here that studies and research on gifted students with learning disabilities indicate that these students have special educational needs from both sides, requiring enrichment programs that develop their talents and programs that address their weaknesses and difficulties. These studies also indicate the need for tools that address qualitative analysis of students' performance in order to detect them properly.

#### *The Steps Used to Develop and Build the Tool*

The following steps were used to develop this tool for identifying G/LD students:

1. Reviewing a scale prepared by Al-Hajri (2015) to detect G/LD students.
2. Collecting and classifying academic and behavioural indicators and their characteristics from the theoretical framework that was specified by foreign and Arab research and studies examining gifted students with learning disabilities.

#### *The Initial Image of the Scale of Detection for G/LD Students*

A tool was built to identify G/LD students. The paragraphs were divided into five dimensions as follows:

1. *Cognitive characteristics*: This dimension includes 21 paragraphs varied between the weaknesses and strengths characteristic of G/LD students, including the ability to abstract visual reasoning, suffers from handwriting difficulties, has disorders in reading and spelling, has disorders of written expression, has skill and ability to speak.
2. *Attention and focus characteristics*: This dimension includes eight paragraphs dealing with attention and focus, including the distraction of attention, and weakness in the implementation and selection of appropriate words despite the existence of vocabulary, faces difficulty in performing simple and sequential tasks.
3. *Memory*: This dimension addresses memory in gifted students with learning disability and consists of four paragraphs as follows: Has a high eidetic memory; has a limited short-term digital memory; has a decrease in the level of auditory memory; has a weakness in the retrieval of information when asked by the teacher.
4. *Emotional characteristics*: This dimension addresses the emotional characteristics, which are summarised in 10 points, including perseverance, possesses leadership characteristics, has the flexibility to solve problems and creative thinking, threshold of frustration is generally low (frustrated quickly).
5. *The self-concept*: This dimension includes eight paragraphs dealing with a set of indicators, including self-awareness, unacceptable self-expectations, has negative feelings about himself.

The tool has a total of 51 paragraphs divided by the above-mentioned dimensions shown in front of each paragraph related to the gift or difficulty. A pentagon scale was used for the calendar: never (1), rarely (2), sometimes (3), often (4), always (5).

### *Exploratory Sample*

After the researchers explained the mechanism of applying a scale to identify gifted students with LD and clarified the concept of (G/LD) students, all paragraphs of the scale were reviewed before they were applied. The researchers then distributed the scale to 10 primary school teachers to apply the scale to the exploratory sample of 20 male and female students in order to ensure the clarity of the paragraphs of the scale and the procedures for its application.

The study tool consists of its initial form: 50 paragraphs measure the property of the gift and some measure the property of difficulty, divided by five dimensions as shown in Table 2, and the scale as its initial Appendix number.

**Table 2:** Data of the dimensions for the scale of (G/DLS) students

Dimensions	Measured area	No. of paragraphs
1. Cognitive characteristic	Gift	1-2-5-7-11-12-13-14-15-18-19-20-21
	Disability	1-3-4-6-8-9-10-16-17
2. Attention and focus characteristic	Gift	-
	Disability	22-23-24-25-26-27-28-29
3. Memory	Gift	30
	Disability	31-32-33
4. Emotional characteristic	Gift	34-35-3-37-39
	Disability	38-40-41-42-43
5. Self-concept concept	Gift	44-45-50
	Disability	46-47-48-49

### *Study Procedures*

1. A letter was sent from the University of Imam Abdulrahman bin Faisal to facilitate the task of the researcher in the application of the current research.
2. Communication was made with the education departments in the Eastern Region, boys' and girls' section, to determine the schools and guidance for the location of the sample

and distributed by cluster random manner by departments on several schools in the region.

3. Meetings were held with the school administration and teachers to clarify the method of using the scale, answer queries in case of lack of understanding or confusion of the paragraphs, clarify the importance of the teachers' role and increase their accuracy in completing the scale.
4. The scale was applied to the sample, which took two weeks.

### **Study Results and Discussion**

This chapter includes a presentation of the results of the current study, a detailed discussion, answers for the questions of the study through statistical processing and interpretation considering the previous studies and theoretical frameworks that deal with gifted students with learning disabilities.

#### ***Results Related to the First Question***

*What are the implications of the validity of the teachers' scale to detect gifted students with learning disabilities between a sample of primary school students in the Eastern Province in Saudi Arabia?*

The validity of the teachers' scale for the detection of G/LD students in a sample of primary school students in the Eastern Region was verified through the following methods:

#### ***Content Validity***

The scale was presented to a group of 10 arbitrators of special education and talent professors in Saudi universities, supervisors in the Department of Education for the Gifted and Special Education, and learning disabilities specialists with experience and knowledge of gifted students with learning disabilities, to examine the relevance between the paragraphs and the dimensions of the scale and to determine the appropriateness and relevance of the language. The amendment was based on their remarks directed towards the language of some paragraphs; the language of the paragraph was modified without deletion.

#### ***Concurrent Validity***

The correlative validity was verified by the application of Al Hajiri (2015) Scale (Sahab Scale) to Detect (G/LD) students. The correlation of students' scores was calculated on a sample of 30 students on each of the dimensions of the Sahab Scale and the dimensions of the current scale to detect the gifted students.

Table 3 shows that the correlation coefficients ranged from 0.87 to 0.67. The highest is 0.87 among the paragraphs related to the dimension of cognitive characteristics on the Sahab scale prepared by Al-Hajri (2015). The table also shows that all correlation coefficients are at an acceptable level for the purposes of this study.

**Table 3:** Correlation coefficients between the scores of the sample members on each dimension of the G/LD scale and their scores on the paragraphs of a Sahab Scale for G/LD students (n = 30)

<b>Dimensions of GLD students</b>	<b>Correlation between performance on the G/LD scale and Sahab Scale (2015)</b>
1. Cognitive <b>CHARCS</b>	0.87
2. Attention and focus	0.81
4. Emotional <b>CHARCS</b>	0.67
5. Self-concept concept	0.75

The construct validity of the scale construction of G/LD students was verified through the following methods:

#### *Factorial Validity*

Factor analysis was used to verify the validity of the construction of the scale, and the data entry of the rationing sample (n = 311) to find out the number of factors measured by the scale using the Basic Component (PC) method and the orthogonal rotation (Varimax).

Table 4 shows the Eigenvalue and the proportion of variance explained after rotation. disability and gift paragraphs were analysed separately because the paragraphs are contradictory.

**Table 4:** The Eigenvalue and the percentage of explanation variance after rotation for both gift and disability paragraphs (n = 311)

Factors of the scale	Results of factor analysis/ Gift paragraphs		
	Relative value	Explained contrast ratio	The cumulative interpreted contrast ratio
Cognitive CHARCS	7.349	34.996	34.996
Emotional CHARCS	3.757	17.889	52.885
Self-concept concept	2.645	12.596	65.481

Factors of the scale	Results of factor analysis/ disability paragraphs		
	Relative value	Explained contrast ratio	The cumulative interpreted contrast ratio
Cognitive CHARCS	11.151	38.450	38.450
Emotional CHARCS	3.443	11.872	66.938
Self-concept concept	4.819	16.616	55.067

The results of the factor analysis of each of the paragraphs related to Gift show that three factors interpret 65.48 per cent of the variance explained by all dimensions related to Gift on the scale. The results of the factor analysis of each of the paragraphs related to the disabilities show that three factors explain 66.93% of the variation explained by all dimensions related to the difficulties on the scale. These ratios indicate a factor validity of the G/LD scale, and the scale is considered one-dimensional if the proportion of the first factor is more than approximately 20 per cent (Reckase, 1979, cited in Lee, 2004) as reported in Rababa'a (2015). By this criterion, the scale was one-dimensional, where the explained variance of the first factor was high and more than 20 per cent. The ratio proportion explained by the first factor of Gift was (34.99) of the total variation and the ratio proportion of the first factor of the disability (38.45) of the total variation.

Table 5 shows the Loading of the paragraphs of the scale of Gift and disability on the various factors after rotation, and after the deletion of all Loadings that are less than (0.30). A congruence was found between the theoretical division of the scale paragraphs on different dimensions and factor analysis. It was discovered that several factors formed each of the three dimensions of the scale, which indicates the existence of sub-dimensions of each of the three main dimensions, and clustered factors to form the three dimensions.

**Table 5:** Loadings of paragraphs of G/LD students on various factors (n = 311)

Loadings of paragraphs/ Gift				Loadings of paragraphs/ disabilities			
No.	Factors			No.	Factors		
	Cognitive CHARCS	Emotional CHARCS	Self-concept Concept		Cognitive CHARCS	Emotional CHARCS	Self-concept Concept
Q35	.794			Q9	.871		
Q13	.773			Q8	.868		
Q14	.772			Q3	.864		
Q12	.740			Q4	.834		
Q15	.740			Q25	.793		
Q36	.699			Q10	.793		
Q34	.690			Q23	.783		
Q20	.669			Q6	.779		
Q37	.662			Q29	.766		
Q2	.655			Q17	.755		
Q11	.643			Q28	.743		
Q18	.618			Q24	.741		
Q19	.605			Q33	.710		
Q21	.597			Q32	.695		
Q39	.491			Q27	.694		
Q30	.422			Q22	.647		
Q7		.761		Q31	.557		
Q5		.751		Q1	.500		
Q50		.466		Q48			.787
Q45			.775	Q49			.716
Q44			.739	Q47			.689
				Q42			.636
				Q46			.582
				Q26			.532
				Q40			.464
				Q43		.670	
				Q16		.613	
				Q38		.598	
				Q41		.560	

*Correlation Coefficients Between Dimensions*

The validity of the building validity coefficients was also determined by calculating the correlation of the paragraph with the total score to which the dimension belongs, and its correlation with the total score on the scale as shown in Table (6) shows that.

**Table 6:** Correlation coefficients between all dimensions of the gifted scale with learning disabilities (n = 311)

DIM	Para	Corr/Par a-DIM	Corr/Par a-total	DIM	Para	Corr/Par a-DIM	Corr/Par a-total
Cognitive	1	.113*	.448**	Memory	30	.032	.037
	2	.338**	-.117-		31	.773**	.599**
	3	.164**	.579**		32	.795**	.590**
	4	.165**	.605**		33	.753**	.498**
	5	.408**	-.027-		34	.489**	-.292-**
	6	.408**	-.027-	Emotion	35	.563**	-.348-**
	7	.396**	.017		36	.473**	-.240-**
	8	.085	.571**		37	.578**	-.146-**
	9	.085	.580**		38	.149**	.320**
	10	.051	.510**		39	.443**	-.222-**
	11	.373**	-.158-**		40	.062	.473**
	12	.417**	-.151-**		41	.148**	.424**
	13	.296**	-.206-**		42	.234**	.621**
	14	.419**	-.194-**		43	.252**	.528**
	15	.360**	-.211-**		Self	44	.158**
	16	.204**	.487**	45		.242**	-.045-
	17	.114*	.537**	46		.578**	.523**
	18	.429**	-.103-	47		.674**	.493**
	19	.465**	-.075-	48		.582**	.541**
	20	.393**	-.180-**	49		.488**	.581**
	21	.439**	-.059-	50		.225**	-.037-
Attention	22	.812**	.548**				
	23	.882**	.580**				
	24	.865**	.585**				
	25	.868**	.560**				
	26	.681**	.528**				
	27	.870**	.654**				
	28	.892**	.563**				
	29	.869**	.571**				



Table 6 shows the correlation coefficients between the dimensions of the scale, which ranged from (.032) in paragraph 30 of the (memory) dimension, (.892) in paragraph 28 of the attention dimension and all correlation coefficient values were a function. Also, the results of the correlation coefficients between the dimensions indicated that they were acceptable correlation coefficients, based on the correlation of the paragraphs with the dimension, with the exception of 16 paragraphs showing weak correlation coefficients with the dimension: (1, 3, 4, 8, 9, 10, 16, 17, 30, 38, 40, 41, 43, 44, 45, 50), some of these paragraphs were treated with a logical revision and others made a significant correlation with the overall score of the scale. And the remaining paragraphs have been deleted.

### *Discriminatory Validity*

Discriminatory validity was calculated by examining the differences in the dimensions of the gifted scale with learning disabilities according to the state variable (ordinary, gifted, disabilities) as the scale was able to distinguish between the performances of the three categories; using a single variance analysis as shown in Table 7.

**Table 7:** Mean and standard deviations of the study sample score on the dimensions of the gifted scale with learning disabilities and the total score, according to the category variable .(ordinary, gifted, disability)

<b>DIM</b>	<b>Categories</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
<b>Cognitive CHARCS</b>	1 ordinary	109	2.9253	.34899
	2 disability	101	3.0009	.42121
	3 gifted	101	2.9298	.42178
	<b>Total</b>	<b>311</b>	<b>2.9513</b>	<b>.39779</b>
<b>Attention &amp; Focus</b>	1 ordinary	109	1.9014	.88847
	2 disability	101	3.5730	.87147
	3 gifted	101	1.2611	.51995
	<b>Total</b>	<b>311</b>	<b>2.2363</b>	<b>1.24041</b>
<b>Memory</b>	1 ordinary	109	2.3739	.73016
	2 disability	101	3.1386	.63882
	3 gifted	101	2.0198	.53931
	<b>Total</b>	<b>311</b>	<b>2.5072</b>	<b>.79041</b>
<b>Emotional CHARCS</b>	1 ordinary	109	2.7963	.46307
	2 disability	101	2.5752	.56805
	3 gifted	101	2.8723	.39928
	<b>Total</b>	<b>311</b>	<b>2.7492</b>	<b>.49578</b>
<b>Self-concept concept</b>	1 ordinary	109	2.7326	.42418
	2 disability	101	2.9321	.60629
	3 gifted	101	2.6011	.43860
	<b>Total</b>	<b>311</b>	<b>2.7547</b>	<b>.51130</b>
<b>Total</b>	1 ordinary	109	2.6646	.23399
	2 disability	101	3.0087	.36341
	3 gifted	101	2.5325	.30203
	<b>Total</b>	<b>311</b>	<b>2.7334</b>	<b>.36141</b>

Table 8 shows that there are significant differences in all scales in all its dimensions except for cognitive characteristics. Their discriminatory ability is weak according to the three categories. This is an indication that the scale of G/LD students has distinguished performance among the three categories: gifted students, students with learning disabilities, and ordinary students.

**Table 8:** The results of ANOVA to examine the differences in the mean of dimensions of the scale and the total score according to the category variable( Ordinary, gifted, disability)

DIM	Source of variance	SS	DF	MS	F	p value
Cognitive CHARCS	Between groups	.370	2	.185	1.169	.312
	Inside groups	48.685	308	.158		
	Total	49.054	310			
Attention & Focus	Between groups	288.741	2	144.370	236.229	.000
	Inside groups	188.232	308	.611		
	Total	476.973	310			
Memory	Between groups	66.198	2	33.099	79.974	.000
	Inside groups	127.473	308	.414		
	Total	193.671	310			
Emotional CHARCS	Between groups	4.828	2	2.414	10.418	.000
	Inside groups	71.369	308	.232		
	Total	76.197	310			
Self-concept concept	Between groups	5.614	2	2.807	11.461	.000
	Inside groups	75.429	308	.245		
	Total	81.043	310			
كلي	Between groups	12.249	2	6.125	66.792	.000
	Inside groups	28.242	308	.092		
	الكلي	40.491	310			

### ***The results related to the second question***

*What are the implications of the reliability of the teachers' scale to detect gifted students with learning disabilities between a sample of primary school students in the Eastern Province in Saudi Arabia?*

This question was answered in two ways: test–retest; and the Cronbach's alpha method for internal consistency.

#### ***Test–Retest Reliability***

The test–retest reliability coefficient of the scale was verified by applying the scale to the sample, which consisted of 30 male and female students. The scale was reapplied after a period of 20 days, then the correlation coefficient of Pearson was calculated between the degrees of the two applications. Table 9 shows the results of the test–retest reliability coefficient for each dimension of the scale.

**Table 9:** Test-retest reliability coefficient for each dimension of scale (n = 30)

<b>DIM</b>	<b>No. Paragraph</b>	<b>Coefficient reliability</b>
Cognitive CHARCS	1 -2-5-7-11-12-13-14-15-18-19-20-21-3-4-6-8-9-10-16-17	0.912
Attention & focus	22-23-24-25-26-27-28-29	0.890
Memory	31- 30-32-33	0.820
Emotional CHARCS	34-35-36-37-39 38-40-41-42-43	0.875
Self-concept concept	44-45-50- 46-47-48-49	0.801

Table 9 indicates that the highest value of test–retest reliability coefficient was the dimension of the cognitive characteristics (0.91), the lowest coefficient of the re-reliability was the dimension of Self-concept (0.80). The table also indicates that test–retest reliability coefficients on all dimensions of gifted students with learning disabilities are high, indicating that the scale has high reliability.

#### *Cronbach's Alpha Method*

The Reliability Coefficient of internal consistency of the scores of the study sample (n = 311) on each dimension of the scale was calculated using the Cronbach alpha equation.

Table 10 illustrates this, indicating that the highest value of the reliability coefficient of internal consistency was for the dimension of cognitive characteristics and the paragraphs dealing with disabilities (0.95) and the lowest internal consistency coefficient was for the dimension of seeking self-esteem on the part of gift (0.67). It was also shown that the reliability coefficients of internal consistency on all dimensions were high, indicating that the scale had high reliability and consistency of its paragraphs.

**Table 10:** The Reliability Coefficient of internal consistency of the scores of the study sample (n = 311) on each dimension of the scale was calculated using the Cronbach alpha equation.

DIM	Categories	No. Para	The Reliability Coefficient of internal consistency
Cognitive CHARCS	Gift	12	.943
	disability	9	.951
Attention & focus	Gift	-	-
	disability	8	.942
Memory	Gift	-	-
	disability	3	.807
Emotional CHARCS	Gift	5	.895
	disability	5	.802
Self-concept concept	Gift	3	.676
	disability	4	.826

## Discussion of Results

### *The First Question*

*What are the implications of the validity of the teachers' scale to detect gifted students with learning disabilities between a sample of primary school students in the Eastern Province in Saudi Arabia?*

According to the results, it is clear that all the validity coefficients indicate that the scale of GLD has acceptable indicators of validity, where (16) paragraphs showed relatively weak correlation coefficients in the way the paragraph is related to the dimensions which are (1, 3, 4, 8, 9, 10, 16, 17, 30, 38, 40, 41, 43, 44, 45, 50); they were reviewed as follows. •

- With regard to paragraphs 1, 4, 8, 9, 10 and 43, after reviewing the paragraphs scientifically, it appeared that these paragraphs of the original paragraphs, but this scale has a contradictory specificity, therefore it shows a lower correlation coefficient, but its correlation with the overall scale is acceptable.
- Paragraph 16 is considered one of the original paragraphs in the scale, and fits into the emotional dimension according to factor analysis; accordingly, it was transferred from the cognitive characteristics to the dimension of emotional characteristics.
- Paragraph 30, which was associated with the dimension of memory, is weak but belongs to the overall dimension. By the factor analysis, the paragraph is loaded with

the cognitive characteristics dimension and has shifted to the dimension of cognitive characteristics.

- Paragraphs 40 and 42 indicate that their correlation with the dimension was weak and the two paragraphs were shifted from the emotional dimension to the self-concept dimension based on factor analysis. The correlation of paragraphs with the overall scale is acceptable.
- Paragraph 41 has been scientifically revised as it is one of the original paragraphs. According to the factor analysis, the paragraph was loaded with the dimension, but this may be due to the need for the paragraph to be reformulated.
- Paragraphs 44 and 54 are related to the self-dimension based on factor analysis. These paragraphs were revised, and accordingly Paragraph 44 was redrafted and deleted and accommodated to paragraph 45 because its correlation was somewhat higher and acceptable; the paragraph became (has a high awareness and concept).
- Paragraphs 3, 17, 38 and 50 showed a weak correlation coefficient in the dimension to which they belong and it did not change in the factor analysis, so it was deleted.

Thus, the final scale comprised 45 paragraphs divided into three dimensions: (1) cognitive characteristics; (2) emotional characteristics; and (3) the self-concept concept according to factor validity of the scale and the scientific review of the paragraphs.

### ***The Second Question***

*What are the implications of the reliability of the teachers' scale to detect gifted students with learning disabilities between a sample of primary school students in the Eastern Province in Saudi Arabia?*

Generally, the results of the calculation of reliability showed that the scale of G/LD students has high significance of reliability in two ways: the test–retest method and the method of Cronbach’s alpha for internal consistency.

In the light of all the previous indicators, it appears that the tool has high and acceptable reliability factors, and this scale can be trusted and used.

Diagnosis on the GLD scale is done according to the arithmetic averages of the three categories: gifted, learning disability, ordinary. It is logical that the performance of G/LD students on this scale is high compared with the three other categories.

**Table 12:** Arithmetic averages and standard deviations for the three study categories

DIM	Categories	N	Mean	SD
Overall	1 ordinary	109	2.6646	.23399
	2 disability	101	3.0087	.36341
	3 gifted	101	2.5325	.30203
	Total	311	2.7334	.36141

For the diagnosis on the scale, the statistical model of the relative gradient of Likert 5 was adopted, with the aim of judging the averages of the study tool and its paragraphs. The statistical standard was adopted using the following equation:

Category range = (highest value - lowest value) divided by number of options

The range of the class =  $5-1 = 4 \div 5 = 0.8$ .

Less than 1.8 degrees is very low. From 1.8 to less than 2.6 degrees is low. From 2.6 to less than 3.4 is an average score. From 3.4 to less than 4.2 degrees is high. A score of 4.2 and above is very high. Based on this equation, students who have achieved high averages considered to have a high attribute may be gifted with learning disabilities. After reviewing the current research sample  $n = 311$  and looking at the averages, several students had high averages and nine G/LD students are shown in Table 13.

**Table 13:** G/LD students based on averages

No.stude nts	Gender	Category	Mean
	male	disability	3.84
	male	disability	3.84
	female	disability	3.54
	female	disability	3.58
	male	disability	3.54
	male	disability	3.68
	male	disability	3.54
	female	ordinary	3.62
	female	disability	3.62
$\text{النسبة} = 100x \frac{\text{العدد الجزئي}}{\text{العدد الكلي}}$			
$3\% \approx \%2.89 = 100x \frac{9}{311} \text{ G/LDs}$			

It is clear from the averages of the rationing sample that the group shown in Table 13 achieved high scores, and the averages indicate that they may be gifted with learning disabilities. To apply the previous equation to the current research sample, the percentage of gifted students with learning disabilities identified on the basis of these data is 3 per cent of the study sample.

The percentage in the current research is consistent with Bakhit's findings in his survey of gifted students with learning disabilities; these results show that the percentage of G/LD students is 3 per cent; it is also consistent with Chamberlain and colleagues' 2–7 per cent of total special education students (AIOTAIBI, 2017).

Statistical estimates (Bakhit, 2012) indicate that between 2 and 10 per cent of children enrolled in gifted programs have learning disabilities (Brody & Mills, 1997; Morrison & Rizza, 2007).

In addition, the rationing sample students who scored high are males, and this result is consistent with the findings of the Caliph and Attallah (Al-Hajri, 2015) that the proportion of gifted males with learning disabilities (4 per cent) is twice the proportion of females (2 per cent). This is a simple indicator of the high proportion of males among the G/LD students. These data should be considered, but further research and studies are required for verification and detection.

## **Recommendations**

### ***Educational Recommendations***

1. Utilise the current research scale to detect G/LD students, in order to provide educational programs and provide appropriate educational services for them.
2. Conduct training courses for teachers to explain the scale and explain the mechanism of correction in order to detect gifted people with learning disabilities.

### ***Research Recommendations***

1. Rationalise the scale for the detection of G/LD students at the primary level in Saudi Arabia
2. Use the gifted scale with learning disabilities for the purposes of study and research in the Saudi environment as the scale proved to be of validity and high reliability.

## REFERENCES

### Arabic References

- Abadi, Z, H, A. (2008). The impact of an educational program based on the model of creative problem-solving in the development of creative thinking skills of gifted students with learning difficulties. Amman Arab University. Jordan.
- Abu Gado, M, M, A. (2013). The Tenth Arab Scientific Conference for the Care of the Gifted and Outstanding, 2, 539-557.
- Abu Nasser, F,M. (2018). Implicit theories of intelligence and talent and their relationship to academic self-efficacy among gifted students with learning disabilities in the Eastern Region. International Specialized Educational Journal, 7 (8), 105-117.
- Bakhit, S, F. (2012). A survey study to detect gifted children with learning disabilities in learning disabilities programs in Riyadh. Journal of Educational and Psychological Sciences, 13 (4), 307--332.
- Balawi, W,M. (2016). Characteristics of gifted students with lower learning disabilities enrolled in special programs in Saudi Arabia from the point of view of their teachers. Journal of the Faculty of Education (Al-Azhar University), 169 (3), 638-669.
- Dababneh, KH, Attiyah, A. (2015). Gifted children with learning disabilities discover intervention and nurture challenges and practices. Towards a National Strategy for the Welfare of Innovators (pp. 188-206). UAE: United Arab Emirates University.
- Ghazo, I, M .(2002). Learning disabilities among gifted students: diagnosis and treatment. The Fifth Scientific Conference of the Faculty of Education, Assiut University (Education of the Gifted and Outstanding, Introduction to the Age of Excellence and Creativity).
- Hajri, A, ,H. (2015). Constructing a scale to detect gifted people with learning disabilities from the first cycle pupils in the Kingdom of Bahrain. Journal of Educational and Psychological Sciences, 16 (1), 13-42.
- Hassan, M, M, Sh.(2017). Gifted with Learning Disabilities: Classification of Learning Disabilities - Definition of Gifted with Learning Disabilities - Detection criteria for gifted people - Categories of gifted with learning disabilities - Characteristics. Journal of Educational Sciences, (31), 35-50
- Jarwan, F,A .(2014). The impact of an educational program based on the strategy of creative solution to problems in the development of creative thinking skills of gifted students with learning disabilities. Journal of the Union of Arab Universities for Education and Psychology. 12 (1), 11-34.
- Karam El-Din, L. El-Sayed,A .(2017). Effectiveness of a program to develop cognitive abilities in a sample of gifted children with learning disabilities from 9 to 12 years. Childhood Studies, 20 (75), 44-35.
- Khalili, Kh, Y .(2012). Fundamentals of Educational Scientific Research. Dubai: Dar Al Qalam Publishing & Distribution.



- Mokhtar, Gh. (2016). Diagnostic Criteria Related to Learning Disabilities in Gifted Children: A Case Study. *Generation of Scientific Research Center*, 17 (18), 293-299.
- Mohammed, A, A .(2003). Gifted children with learning disabilities. *Journal of the Faculty of Education in Zagazig*, (43), 1-35.
- Mohammed, A. Abu Kassem,M.(2016) .Detection of learning difficulties (academic / cognitive) in gifted and mentally superior children in schools of talent and excellence in Khartoum State. *International Specialized Educational Journal*, 5 (5), 324-337.
- Oweidi, A,M, S .(2009). A comparative study between the performance of ordinary, gifted and learning-disabled students on the Jordanian image of Bar-On Emotional Intelligence Scale in a Jordanian sample (Ph.D.). Jordan.
- Rababa, A, A .(2015). Develop a Jordanian image of the Conners Scale to estimate ADHD with hyperactivity. *Journal of Special Education and Rehabilitation: Foundation of Special Education and Rehabilitation*, 2 (7), 253-306.
- Zayat, F, M .(2002). Mentally superior people with learning disabilities Identification, diagnosis and treatment issues. Egypt: University Publishing House.
- Zayat, F, M.(2000). Mentally superior people with learning disabilities Issues of identification, detection and diagnosis. Annual Conference of the Faculty of Education, Mansoura University. Egypt.

### Foreign references

- Alotaibi, N, R.(2017). overview on preparing teachers to understand twice-exceptional students. *International Interdisciplinary Journal of Education*, 6(3),359-370
- Beckmann, E . Minnaert , A(2018). Non-cognitive Characteristics of Gifted Students with Learning Disabilities: An In-depth Systematic Review .*Frontiers in psychology*,9 (504).
- Hroub, A.(2010). Developing Assessment Profiles for Mathematically Gifted Children with Learning Difficulties at Three Schools in Cambridgeshire, England. *Journal for the Education of the Gifted*, 34(1), 7–44.
- Kara B, K.(2005). The Gifted Learning Disabilities Referral Process: An Investigation of Practices Among School-Based Practitioners. Proquest
- Lovett , J, B.(2010(. On the Diagnosis of Learning Disabilities in Gifted Students: Reply to Assouline et al. (2010). *Gifted Child Quarterly*, 55(2) 149 –151.
- Maddocks, L. S.(2018). The Identification of Students Who Are Gifted and Have a Learning Disability: A Comparison of Different Diagnostic Criteria. *Gifted Child Quarterly*, 62(2) 175 –192.
- McCallum ,R. Bell, Sherry. Coles, Jeremy. Miller, Kelli. Hopkins, Michael.
- Prillhart, A.(2013). A Model for Screening Twice-Exceptional Students (Gifted with Learning Disabilities) Within a Response to Intervention Paradigm. *Gifted Child Quarterly*, 57(4) 209 –222.



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Susan , Assouline. Megan, Nicpon. Claire, Whiteman.(2010). Cognitive and Psychosocial Characteristics of Gifted Students with Written Language Disability. *Gifted Child Quarterly*, 54(2), 102 –115.