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The Reality of the Diagnosis of Learning Disabilities among Students with Hearing Impairment in Saudi Arabia

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Abstract

This study aimed to identify the reality of diagnosing learning disabilities among students with hearing impairments from the point of view of their teachers. The descriptive survey method was used. The study sample included (152) male and female teachers from deaf schools in Saudi Arabia. The results of the study showed that the level of reality of diagnosing learning disabilities among students with hearing impairments from their teachers' point of view was moderate, and no statistically significant differences were attributable to the gender variable. Statistically, significant differences were attributed to the occupation variable in favor of the teacher of deaf students, the differences in the diagnostic methods used in favor of the specialist diagnosing deaf and hard-of-hearing students, and the differences in the diagnostic scales used were in favor of the teacher of deaf students. and found no differences due to years of experience. There were statistically significant differences in the reality of diagnosing learning disabilities among students with hearing impairment due to the educational qualification in favor of a Bachelor's in Special Education, but there were no differences attributable to the educational qualification variable. and statistically significant differences in the reality of diagnosing learning disabilities among students with hearing impairments attributable to the type of institution to which the teacher belongs, in favor of teachers affiliated with a public school or institute, and no differences in (the reality of diagnosing learning disabilities among deaf and hard-of-hearing students, and the diagnostic measures used) due to the type of institution to which he belongs. The study recommends training teachers to use multiple scales for diagnosing learning disabilities in categories of hearing impairment and conducting studies related to diagnosing deaf people with learning disabilities.

Keywords: Deaf, Hearing Impairment, Learning disabilities, Diagnosis, Multi-Disability.

Introduction

One of the most major challenges that deaf and hard-of-hearing people encounter, particularly in the diagnosing process, is hearing impairment combined with (Learning Disabilities, LD), such as dual disability. Furthermore, according to the researchers' knowledge, this specialized research for the (Deaf with Learning Disabilities, DLD) is one of the few Arabic types of research, which confirms that the category of hearing impairment is among the heterogeneous groups, depending on the degree of hearing loss, and many books specialized in the hearing impaired and theoretical literature that almost That it is similar and was not educationally discovered, which led to the emergence of the problem.

Hence, the current study came to explain the problems of diagnosing deaf people with learning disabilities.

Literature Review

Diagnostics in Special Education

In special education, diagnosis is defined as an accurate evaluation procedure that aims to determine the likelihood of a student having a specific disability, using appropriate tools and measures for each disability. If the student has a disability, special and appropriate educational procedures and services are provided for each child. (Al-Khatib, 2002).

Because the inaccurate diagnosis may deprive the student of some of the services he needs, diagnosis is the foundation on which therapeutic and educational plans are created. A misdiagnosis can also be a waste of time, effort, and money. (Al Rousan, 2009). Also (Abdul-Wahab, 2003) pointed out the importance of correct and accurate diagnosis whose results are relied upon in building remedial programs for students with (LD), and the importance of these programs being directed to those who suffer from (LD), and not to those who have been improperly and accurately classified. A problem for the diagnostician is how to properly communicate with students with hearing impairment.

When a kid has more than one handicap at the same time, it has been observed that diagnosing them can be more difficult. Some studies have discovered a scarcity of assessment methodologies and diagnostic criteria for diagnosing pupils with (DLD), as well as a scarcity of qualified teachers who can effectively deal with this population. (Powers et al., 1987; Roth, 1990; Miller & Kiani, 2008).

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Special education specialists hope to create a process for accurately measuring and diagnosing students with disabilities by developing measurement and diagnostic tools, as well as training specialists and teachers, in order to arrive at a correct judgment and prepare an appropriate individual educational plan for each student. Assist in elevating it to the required level.

Learning Disabilities

A learning disability is defined as the presence of a developmental disorder in one or more of the basic processes such as understanding, using language, speaking, reading, writing, spelling, arithmetic, or one of the other educational subjects, caused by a slight impairment in the brain or behavioral or emotional problems (kirk et al., 1997).

Also, according to (Catherine, Susan, Bruce, 2019), the two main types of (LD) are developmental (LD), which refer to a defect in the development of some psychological and language functions, such as attention, perception, and memory difficulties as primary difficulties, and thinking and language difficulties as secondary difficulties. The second form of (LD) is academic learning disabilities, which relate to difficulties in core academic disciplines including reading, writing, and mathematics.

Also (Burgaddad, 2017) indicated that there are many diagnostic criteria used in the field of (LD), including the criterion of distance or discrepancy, the criterion of special education, the criterion of neurological signs, the most recent of which is the criterion of response to intervention.

The criterion for responsiveness to intervention (the three-tier model), which is the most recent criterion for identifying learning difficulties, states that the instructor must provide effective instructional assistance to all pupils in general, and their progress must be closely monitored. If a pupil does not follow the general guidelines, the instructor or another expert must supply them with an intensive curriculum, and their progress must be closely evaluated. If a student does not react to the intense curriculum, he or she may be sent to a special education expert for examination, diagnosis, and confirmation of eligibility for special education services. (Brown-Chidsey,Steege, 2011)

Hearing Impairment

A person with a hearing impairment is defined as "someone who cannot rely on their sense of hearing to learn a language or benefit from the various educational programs available to hearing persons, and who need educational approaches to compensate for their hearing loss" (Youssef, Darba, 2007).

Hearing impairment has been connected to deaf people's mental capacities and has been shown to harm language development, reducing their ability to achieve academic achievement and fully integrate with the outside world. (Abu Drei, 2020). According to (Spencer, 1993), deaf children's cognitive development differs from that of normal children, and deaf children have substantial difficulty in social communication with others as a result of others' inability to comprehend them and the sign language they employ.

The difference between a deaf person and a hard of hearing person can be summarized as follows: a deaf person is someone who has completely lost their sense of hearing (a severe or very severe level of hearing loss) to the point where they are unable to communicate effectively with others unless they use special sight-based communication methods. The hard-of-hearing of hearing individual is losing part of his sense of hearing, but he still has remnants of hearing that he may utilize to converse with others through the use of hearing aids and equipment. (Obeid, 2000).

The study (Lederberg, 2001) reveals that hearing impaired and hard-of-hearing students' educational levels are not comparable to their hearing peers of the same age group. Students with hearing impairment and hard-of-hearing students learn new words and vocabulary at a slower rate than their hearing counterparts due to a lack of dictionaries.

Diagnostic problems for students with Hearing Impairment and Learning Disabilities

Due to the heterogeneity of the characteristics of individuals with (LD), the process of diagnosis in the field of (LD) is difficult, and as stated in the study of the (AL Shaks, 2011), there are several reasons that make the process of diagnosing students with (LD) more complex, including When a child is born with a handicap (LD) are often linked and overlapped with this disability, and attention is typically focused on diagnosing this disability and ignoring (LD).

According to various studies, hearing impairment or hard-of-hearing is a very common problem among those who have (LD). This frequent condition, however, goes unrecognized and unidentified by caretakers and professionals due to the existence of additional problems. On the one hand, this group's complicated medical diagnosis is a problem, as is the scarcity of specialist services for those with hearing loss or difficulty accessing those services. (Miller, Kiani, 2008).

It is well known that students with hearing impairment have great difficulty achieving significant levels of academic achievement. Recently, many professionals have advanced the concept that some deaf students' delays in academic achievement may be due to (LD) in addition to hearing impairment. (Bunch & Melnyk, 1989).

According to (Blennerhasset, 1985), the evaluation of (DLD) has become more difficult due to a lack of approved evaluation and diagnostic instruments for use. Furthermore, due to the wide range of deaf people, classification is impossible. Hearing loss can be caused by many variables,

including the age at which it first appears, the severity of the loss, the nature of early treatments that may affect the test's development, and other brain processes. As a result, experts and examiners who work with deaf children have a limited set of guidelines to follow to understand the learning process and develop acceptable teaching methods. It's past time for professionals in this sector to get together to work on improving communication with deaf persons who also have other disabilities.

According to (Bat-Chava, 2000; Mitchell, Karchmer, 2011), the deaf or hard of hearing are linguistically and culturally diverse groups.

Adding to this diversity is the possibility that deaf and hard of hearing people may also have disabilities that affect their academic fields, with (The National Association of School Psychologists, NASP) stating that there is a need for school psychologists to recognize and address this disparity in deaf students to better support their education and service delivery. (NASP, 2021).

However, there is rising concern that children with hearing impairment are wrongly diagnosed as a result of faulty testing techniques and difficulty with interpreting results, and assessment and identification of (DLD) is a challenging process. Educators who work with deaf and hard-of-hearing students have expressed dissatisfaction with the assessment procedure and the results' trustworthiness. (Soukup, Feinstein, 2007)

In addition to the lack of appropriate criteria for deaf students, other factors complicate the process of determining (LD) in this community, as many of these factors affect the definition of a (LD) in language and communication issues, including differences in language and communication, affect the learning support of students who have hearing impairment as well as an accompanying disability, which is estimated to be 50% of the deaf community. (Mitchell, Karchmer, 2011).

Finally, In contrast to the above, (Qi, Mitchell, 2012) claimed that the standard achievement assessments used to detect (LD) are not standard for deaf kids. This means that the test's reference groups do not include these students.

It's uncommon to come across Arabic studies on (DLD). However, there are a few types of research worth mentioning here.

In this section, we'll go over many of the previous studies that were related to the study's main goal, which was to look at the reality of diagnosing (DLD) students and the most pressing issues that arise during the process, especially when there are multiple disabilities.

(Alzahrani, Almadaoj, 2018) conducted a study entitled "The reality and problems of diagnosing students with hearing impairment and hearing impairment in special education institutes in Riyadh from the point of view of specialists of students with hearing impairment and their teachers." The questionnaire consisted of two copies, one for students with hearing impairment, and another version for the hard of hearing. The study sample included (300) specialists and teachers, the results showed

- All members of the sample agreed that the reality of the diagnosis of students with hearing impairment has some professional and ethical aspects, despite the presence of some professional deficiencies related to the quality of the diagnostic services provided to students with hearing impairment.
- The absence of material problems that negatively affect the diagnosis process, while the results showed the presence of some administrative and human problems.

Besides, (Jacqueline et al., 2016) conducted a study entitled "A Comparison of Student Achievement: Deaf, Learning disabilities, and Deaf People with Learning Disabilities" aimed at knowing a diagnosis mechanism. The sample included (1140) students distributed over (366) deaf and hard of hearing and (666) of (LD) and (111) (DLD), their ages ranged from (13-16) years, as nearly half of the deaf or hard of hearing students have associated disabilities. Although it is difficult to assess and diagnose (LD) specifically in this category, it is important to correctly identify students who may qualify for academic interventions or accommodations. This study analyzed samples of students who were categorized as: (LD), deaf and hard of hearing, and (DLD). The three samples were compared in terms of their performance on a standardized measure of academic achievement. Where the results showed: - Mathematics skills and semester grades were useful in classifying (DLD).

Also (Abu Al-Rub, 2016) conducted a study entitled "Diagnosing problems of students with learning disabilities from the viewpoint of specialists with learning disabilities in the Kingdom of Saudi Arabia", where the study sample reached (63) specialists in (LD). The study tool used was a questionnaire that includes four main axes: (learning environment, standards, pre-diagnostic procedures, and the student). The results showed:

- There are problems in diagnosing students with (LD) on all four axes of the questionnaire.
- There are no statistically significant differences attributable to the variable of experience and the educational qualification of a learning disability specialist in determining the diagnosis problems of students with learning disabilities.

Math skills and semester grades were useful in classifying (DLD).

And (Souliman, 2012) conducted a study entitled "Learning disabilities among the deaf and hard of hearing, an analytical study" that aimed to know the diagnosis problems of learning

disabilities and their prevalence among students with hearing impairment and the extent to which parents and teachers perceive (LD) among students with hearing impairment and hard of hearing. and how to benefit from learning disabilities programs and their suitability for the nature of students with hearing impairment. The results showed:

- The necessity of making use of the resource rooms in the integration schools and the schools of hope provided that these rooms include all the tools and tests and everything that facilitates the process of teaching students with hearing impairment and hard of hearing.
- The importance of training and qualifying resource room workers on how to deal in a sound educational manner with all beneficiaries of resource room services.

Both (Soukup, Feinstein, 2007) conducted a study entitled "Identification, evaluation and intervention strategies for deaf and hard of hearing students with learning disabilities" aimed at ascertaining the diagnostic methods and tools used by teachers of deaf and hard of hearing for diagnosing learning disabilities, and the quality of training. What these teachers have received, and the facilities and modifications they have implemented for their students in the United States of America. Where the sample included (91) teachers in four states in the Midwest region. Results showed:

- They agreed that different diagnostic criteria and tools were used to diagnose (DLD).
- That (50%) of the respondents did not feel sufficiently prepared to teach students (DLD).
- Teachers expressed their desire to receive more training for the correct practice of detection, referral, assessment, and diagnosis.

Although there is a dearth of studies that explore diagnostic problems in people with (DLD), deafness is described in the learning disability community as a "double risk"; because the difficulties are compounded to be more complex. (Timehin, Timehin, 2004) conducted a study entitled "The prevalence of hearing impairment in a community of adults with learning disabilities: access to hearing and influence on behavior" which aimed to ascertain the extent of hearing impairment among learning disabilities and then verify their access to the necessary audio services. The study also aimed to collect information about the prevalence of behavioral problems in this group and to explore the association between hearing impairment, the use of hearing aids, and the emergence of behavioral problems. The results showed: -The prevalence of hearing impairment was (9.2%), and the rate of those who had access to hearing services was (70%), but only (24%) had continuous assessments and maintenance of hearing aids.

- That (62%) of the community have behavioral problems and that (34%) have self-harming behavior.
- The results of this study reveal that the hearing status of people with learning disabilities is ignored, as deafness is often missed among their other problems.

Also (Powers et al., 1987) conducted a study entitled "Learning Hearing Impaired Students: Are They Recognized?" It aimed to identify ways to determine the condition (injury, identification, assessment, and educational programming) for deaf students with learning difficulties. The sample included (63) directors of programs for students with hearing impairments throughout the United States of America; Data about the characteristic behaviors of these children was also requested in this study, and information was obtained about the preparation and certification of teachers who serve students with hearing impairment. The results showed:

- Lack of criteria for identification and diagnosis as well as adequate resources for assessment and programming.
- The need for properly qualified teachers to serve this category of students.
- The study confirmed that the best way to serve these students is through collaborative efforts between deaf teachers and learning disabilities specialists. This can be achieved through the training of professionals and the development of educational programs.
- Those interested should begin to reconsider the educational and professional qualifications that must be possessed by metrology and diagnostic specialists; In order to obtain reassuring and more accurate results.

Research Questions

The study answers the following questions:

What is the diagnosis of Learning Disabilities among students with Hearing Impairment from Saudi Arabia?

The following sub-questions emerge from the study problem:

1. What is the significance of the Validity of the diagnosis of Learning Disabilities in students with Hearing Impairment from the point of view of teachers and diagnosticians?
2. What is the significance of the Reliability of the diagnosis of Learning Disabilities in students with Hearing Impairment from the point of view of teachers and diagnosticians?
3. What is the reality level of the diagnosis of Learning Disabilities among students with Hearing Impairment from the point of view of teachers and diagnosticians?
4. Are there statistically significant differences ($\alpha = 0.05$) between the respondents' perspectives regarding the reality of diagnosing academic difficulties among

students with Hearing Impairment due to the following variables: (Gender, Occupation, Years of experience, Educational qualification, Type of institution they belong to)?

Study Significant

Knowing the reality of the diagnosis of (DLD), through Theoretical importance:

1. Arousing interest in knowing the reality of the diagnosis of (DLD).
2. Clarifying the relationship between learning disabilities and hearing impairment.
3. Assisting researchers in using the findings of this study to interact with and communicate with students (DLD).

Second: The practical importance:
Where this study represents:

1. Determining the diagnostic problems of double disability, its dimensions, and manifestations.
2. Helping researchers and parents to benefit from the results of this study in dealing with students.
3. Benefiting from the results of this study in making appropriate decisions through the use of student measurement and diagnosis (DLD).

Study limitations

- The results of this study are determined by the available indications of validity and reliability of the study tools that are applied to students.
- The results of this study are determined by the limited sample to be studied.

Definitions of Terms

1. **Diagnosis:** After a phenomenon or topic has occurred, the process of passing judgment on it is based on criteria relevant to that phenomenon.
2. **Learning Disabilities** Academy: They are the difficulties of cognitive school performance, which are represented in reading, writing, spelling, written expression, and arithmetic. These difficulties are largely related to developmental learning difficulties.
3. **Students with hearing impairment:** A person who cannot rely on his sense of hearing to learn a language or benefit from different education programs, and needs special educational programs to compensate for his hearing loss.

Methodology: Method and Procedures

Method of study

The researchers used the survey method was followed to achieve the objectives of the study.

The sample of study

According to the researcher's work as a specialist in sign language for the deaf and an expert and assessor of the level of deaf intelligence, when the researcher pursued the study community of (180) teachers of students with hearing impairment in the eastern region of the Kingdom of Saudi Arabia (Department of Special Education, 2021). The study sample was randomly selected from the study population of teachers of deaf students and diagnostic specialists, and the final sample consisted of (152) participants. The following table (1) shows the demographic distribution of the study sample members by gender, occupation, years of experience, academic qualification, and type of institution. and Table (1) shows that:
The study tool
The study tool, which is a scale of the reality of the diagnosis of (DLD) from the point of view of their teachers, was built by reference to the

Table 1: Distribution of study sample members according to demographic variables

Variable	*Repetition*	*Percentage*
Gender		
Male	69	45.4
Female	83	54.6
Total	152	100.0
Occupation		
Deaf student teacher	97	63.8
Hearing impaired student teacher	48	31.6
Diagnostic specialist for deaf and hard of hearing students	7	4.6
Total	152	100.0
Years of Experience		
Less than 4 years old	23	15.1
More than 4 years to 10 years	59	38.8
More than 10 to 15 years	42	27.6
More than 15 years	28	18.4
Total	152	100.0
Qualification		
Bachelor's degree in Special Education	25	16.4
Educational diploma	12	7.9
Master's	69	45.4
PhD	7	4.6
Other	39	25.7
Total	152	100.0
The type of organization it belongs to		
Private school or institute	14	9.2
School or government institute	132	86.8
Other	6	3.9
Total	152	100.0

theoretical literature and previous studies. The study scale has two parts: The first part: includes demographic information: gender, occupation, years of experience, educational qualification, and the type of institution it belongs to.

The second part: includes the study questions consisting of (25) paragraphs, related to gender, occupation, years of experience, educational qualification, and the type of institution to which it belongs.

The instrument was designed using a quadrilateral Likert scale.

- The first dimension: is the reality of diagnosing the difficulties of students with (DLD), and it includes (7) items.
- The second dimension: is the diagnostic methods used, and it includes (4) items.
- The third dimension: is the diagnostic measures used, and it includes (11) items.
- The fourth dimension: Measures the stage of diagnosis and eligibility, and includes (3) items.

Scale correction key

It was taken into account that the scale (Likert quadruple) used in the study should be graded according to the rules and characteristics of the scales as follows:

Answer alternatives			
Strongly Disagree	*Not agree*	*Agree*	*Strongl y Agree*
1	2	3	4

Based on the foregoing, the values of the arithmetic averages reached by the study were dealt with according to the following equation:

Maximum value - the minimum value of the answer alternatives divided by the number of levels, by:

$\frac{(4-1) = 3}{3} \quad \frac{3}{3} = 1.00$ and this value is equal to the length of the category.

Thus, the low level is from (1.00 - less than 2.00), the medium level is from (2.00 - less than 3.00), and the high level is from (3.00 - 4.00).

Research procedures

To achieve the objectives of the study, measures were taken to:

- Previous research on the subject of the study was examined.
- Counting the number of teachers who work in deaf schools to diagnose deaf students with learning disabilities.
- Choosing which tests to use to diagnose dheaf people with learning disabilities.
- A panel of specialized arbitrators assessed the scale, and proposed changes were adopted in light of their findings.
- The study tool was made available to study participants via a link on the (Google survey) website.
- The two researchers completed the application by clarifying some aspects of the study, explaining its objectives and importance, emphasizing the confidentiality of the information and its use for scientific research purposes only, and emphasizing the importance of seriousness and accuracy when dealing with the measurement tool.
- After the completion of the application, what was not valid for statistical analysis was excluded, then the responses were converted into raw scores.

The Study Results

Study questions will be answered in the following order:

Results for the first question: What is the significance of the validity of the diagnosis of learning disabilities in students with hearing impairment from the point of view of teachers and diagnosticians?

The validity of the study tool was verified by:

1. **Content Validity:** After preparing the initial version of the scale, the scale was presented to (6) members of the teaching staff in the Department of Special Education with the specialization of hearing impairment and learning disabilities at Imam Abdul Rahman bin Faisal University, to express their opinions on the validity of the content, linking the phrases with the scale, and their suitability for measuring what they were designed to measure. and the degree of its clarity, and then appropriate amendments were proposed, and the criterion (80%) was adopted to indicate the validity of the paragraph and based on the opinions of the arbitrators. some paragraphs were modified in terms of wording to increase their clarity, and some paragraphs were deleted due to their similarity and closeness to their meaning with other paragraphs, or for lack of suitability for the study and the inappropriateness of some of them to the dimension to which they belong. As a result, the scale consists of (25) items distributed over four main dimensions, which indicate the Content Validity of the tool.
2. **Concurrent Validity:** By calculating the correlation of the paragraph's degree with the dimension to which it belongs, among the members of the current study sample, Table (2) shows these results:

Table (2) shows that the values of the correlation coefficients between the scale items and the total score of the dimension to which it belongs were higher than (0.30), and this is the minimum and acceptable to distinguish the items, indicating that all items contribute to the total score of the scale effectively, and that all The items of the scale measure the same characteristic, which confirms the Concurrent Validity of the scale, and that the scale consists of (25) items.

Table 2: Correlation coefficients of the item with the total score of the dimension to which it belongs, using the Pearson Correlation test to identify the construct validity of the study scale.

Diagnostic stage		*Diagnostic measures used*		*Diagnostic methods used*		*The reality of diagnosing students with (DLD)*	
Correlation Coefficient with the Total Score	*Item Number*	*Correlation Coefficient with the Total Score*	*Item Number*	*Correlation Coefficient with the Total Score*	*Item Number*	*Correlation Coefficient with the Total Score*	*Item Number*
.785**	1	.696**	1	.798**	1	.540**	1
.813**	2	.772**	2	.744**	2	.406**	2
.792**	3	.779**	3	.782**	3	.502**	3
		.752**	4	.725**	4	.654**	4
		.790**	5	6		.693**	5
			.738**	7		.651**	6
			.796**	8		.580**	7
			.715**	9			
				.529**			
				10			
				.530**			
				11			
				.646**			

**: Statistical significance at (0.01) level.

3. **Factor Validity:** The Factor Validity was verified by the Varimax method, where the important and explanatory factors for the scale as a whole were determined by four factors. The first factor, which is the reality of diagnosing learning difficulties among deaf and hard of hearing students, was explained (65.467%) of the total variance of the instrument. The diagnostic methods used factor (13.671%) came from the variance explained by the tool, the third was the diagnostic measures factor used (12.194%) from the variance explained by the tool, and the fourth was the diagnosis stage factor (8.668%) from the variance explained by the tool as a whole, and all four factors were (100 %) of the variance explained for the tool as a whole, and Table No. (3) Shows this:

Table (3) shows that the Eigen values ranged between (2.619 - .347), and that the first factor explained what was (65.467%) of the total variance of the scale, and the second factor came to explain (13.671%) of the total variance, and (12.194%) of the scale were interpreted through the third factor, and finally, the fourth factor came to explain the percentage (8.668%) of the total variance of the test, and that what was interpreted It reached (100%).

Results related to the second question: What is the significance of the Reliability of the diagnosis of learning disabilities in students with hearing impairment from the point of view of teachers and diagnosticians?

The Reliability of the study tool was verified by:

Cronbach's alpha test: By extracting the values of Cronbach's alpha and Table (4) shows the test results.

Table (4) shows that the values of the Cronbach's alpha coefficient for the sub-dimensions of the scale ranged between

Table 3: Factor analysis by Varimax method to determine the important and explanatory factors for the study scale

Factors	*Eigen Value*	*of variance %*	*Cumulative %*
The first factor	2.619	65.467	65.467
The second factor	.547	13.671	79.138
The third factor	.488	12.194	91.332
Fourth factor	.347	8.668	100.000

Table 4: Reliability coefficients for the study tool items using Cronbach's alpha test

Factors	*Cronbach Alpha Method*
The reality of diagnosing learning disabilities among deaf and hard of hearing students	0.668
Diagnostic methods used	0.760
Diagnostic measures used	0.897
Diagnostic stage	0.708
Total	0.913

(0.668 - 0.897), and the value of the reliability coefficient using Cronbach's alpha for the total score of the scale was (0.913).

Results related to the third question: What is the reality level of the diagnosis of learning disabilities among students with hearing impairment from the point of view of teachers and diagnosticians?

Arithmetic means and standard deviations were extracted to know the responses of the study sample members to the reality of diagnosing (DLD) from the point of view of their teachers, and table (5) shows that:

Table (5) shows that the arithmetic averages of (the reality of learning disabilities among students with hearing

impairment from the point of view of their teachers), ranged between (2.94 and 2.64), with an arithmetic mean of (2.78), which is of the Moderate level. The first is after the diagnostic methods used, with arithmetic mean (2.94) and a standard deviation (0.60), which is of the Moderate level, and secondly after the reality of diagnosing (DLD) students, with arithmetic mean (2.78) and a standard deviation (0.49), which is of the Moderate level, and in The third rank came after the diagnosis stage, with arithmetic mean (2.76) and a standard deviation (0.64), which is of the Moderate level, and in the last rank came after the diagnostic measures used with arithmetic mean (2.64) and a standard deviation (0.55), which is of the low level.

To identify the level of the sub-paragraphs for each of the dimensions of the reality of (DLD) from the point of view of their teachers, the arithmetic means and standard deviations were calculated, and the following are the results:

1. The reality of the diagnosis of (DLD):

Table (6) shows that the arithmetic averages of (the reality of diagnosing learning difficulties among deaf and hard of hearing students), ranged between (3.03 and 2.58), a total mean of (2.78), which is of the Moderate level, and paragraph No. (7) was awarded On the highest arithmetic mean (3.03), and with a standard deviation (0.86), which is of the high level, and the paragraph stated (there is a scarcity of studies dealing with the diagnosis of (DLD)), and in the last place paragraph No. (1) came with an average Arithmetic (2.58) with a standard deviation (0.90), which is of the Moderate level, where the paragraph states (the reality of diagnosing (DLD) students in schools and institutes in the Kingdom of Saudi Arabia was at the desired level).

2. Diagnostic methods used:

Table (7) shows that the arithmetic averages of (the diagnostic methods used) ranged between (3.05 and 2.86), a total arithmetic average of (2.94), which is of the Moderate level, and Paragraph No. (4) has the highest arithmetic average (3.05).), with a standard deviation of (0.74), which is of a high level, and the paragraph stipulated (information about the deaf and hard of hearing students is collected by teachers),

Table 5: Shows that the arithmetic averages and standard deviations of the responses of the study sample members are arranged in descending order.

Number	*The reality of diagnosing learning disabilities among deaf and hard of hearing students*	*Level*	*Ranking*	*Arithmetic mean*	*standard deviation*
2	Diagnostic methods used	Moderate	1	2.94	0.60
1	The reality of diagnosing learning difficulties among deaf and hard of hearing students	Moderate	2	2.78	0.49
4	Diagnostic stage	Moderate	3	2.76	0.64
3	Diagnostic measures used	Moderate	4	2.64	0.55
	Total	Moderate		2.78	0.46

Table 6: Arithmetic averages and standard deviations of the responses of the study sample members to the items "The Reality of Diagnosing (DLD)" arranged in descending order

Number	Item	Level	Ranking	Arithmetic mean	Standard deviation
7	There is a dearth of studies diagnosing deaf and hard of hearing students with learning disabilities	Moderate	1	3.03	0.86
3	Diagnostic errors of learning disabilities in students who are deaf and hard of hearing are a shared responsibility of special education specialists and teachers.	Moderate	2	2.97	0.85
2	There are errors in diagnosing the learning disabilities of students who are deaf and hard of hearing.	Moderate	3	2.88	0.74
5	The application of diagnostic tools shall be by a multidisciplinary team.	Moderate	4	2.78	0.87
4	The family is aware of their right to legal action when a misdiagnosis is discovered.	Moderate	5	2.66	0.89
6	There is an oversight committee on the specialized diagnostic team.	Moderate	7	2.59	0.86
1	The reality of diagnosing learning disabilities among deaf and hard-of-hearing students in schools and institutes in the Kingdom of Saudi Arabia is up to the desired level.	Moderate	8	2.58	0.90
	Total	Moderate		2.78	0.49

and in the last rank came Paragraph No. (1) with arithmetic mean (2.86) and a standard deviation (0.86). which is of the Moderate level, where the paragraph states (information is collected about the deaf and hard of hearing student through observation and interview).

3. Diagnostic measures used:

Table (8) shows that the arithmetic averages of (the diagnostic measures used), ranged between (3.90 and 2.47), a total arithmetic average (2.64), which is of the Moderate level, and paragraph No. (10) has the highest arithmetic average (2.90).), with a standard deviation of (0.77), which is of the Moderate, and the paragraph stipulates (specialists and teachers of special education prefer to apply performance tests), and in the last place paragraph No. (5) came with arithmetic mean (2.47) and a standard deviation (0.81), which is from Intermediate level, where the paragraph states (the scales used with deaf and hard of hearing students are appropriate for their culture).

4. Diagnostic stage:

Table (9) shows that the arithmetic averages for (the diagnosis stage) ranged between (2.80 and 2.71), a total arithmetic average of (2.76), which is of the Moderate level, and paragraph

Table 7: Arithmetic averages and standard deviations of the responses of the study sample members to the items "used diagnostic methods" arranged in descending order

Number	*Item*	*Level*	*Ranking*	*Arithmetic mean*	*Standard deviation*
4	Information about the deaf and hard-of-hearing students is collected by teachers.	High	1	3.05	0.74
3	Information about the deaf and hard-of-hearing students is collected from the family.	Moderate	2	2.98	0.81
2	Information about the deaf and hard-of-hearing students is collected both formally and informally.	Moderate	3	2.87	0.75
1	Information about the deaf and hard-of-hearing students is collected by observation and interview.	Moderate	4	2.86	0.86
	Total	Moderate		2.94	0.60

Table 8: Arithmetic averages and standard deviations of the responses of the study sample members to the items "used diagnostic scales" arranged in descending order

Number	*Item*	*Level*	*Ranking*	*Arithmetic mean*	*Standard deviation*
10	Specialists and teachers of special education prefer the application of performance tests.	Moderate	1	2.90	0.77
9	Some specialists or teachers rely on the results of a single scale to judge the eligibility of deaf and hard-of-hearing students to receive special education services.	Moderate	2	2.76	0.80
11	Specialists and teachers of special education prefer to apply verbal tests.	Moderate	3	2.75	0.78
4	There are standardized scales used to measure the achievement (academic) abilities of deaf and hard-of-hearing students.	Moderate	4	2.70	0.71
1	There are standardized scales used to measure the mental abilities of deaf and hard-of-hearing students.	Moderate	5	2.63	0.88
3	There are standardized scales used to measure the developmental abilities of students who are deaf and hard of hearing.	Moderate	6	2.61	0.76
7	The scales used are appropriate for the language characteristics of deaf and hard-of-hearing students.	Moderate	7	2.61	0.79
2	There are standardized scales used to measure the adaptive behavior of deaf and hard-of-hearing students.	Moderate	8	2.60	0.77
6	The scales used are appropriate for deaf and hard-of-hearing students with learning disabilities (such as multiple disabilities).	Moderate	9	2.52	0.82
8	The scales used to diagnose deaf and hard-of-hearing students with learning disabilities are available and adequate.	Moderate	10	2.49	0.76
5	The scales used with deaf and hard-of-hearing students are culturally appropriate.	Moderate	11	2.47	0.81
	Total	Moderate		2.64	0.55

Table 9: Arithmetic averages and standard deviations of the responses of the study sample to the "diagnostic stage" items arranged in descending order

Number	*Item*	*Level*	*Ranking*	*Arithmetic mean*	*Standard deviation*
2	The family actively participates in diagnosing their deaf or hard of hearing child	Moderate	1	2.80	0.74
1	The medical diagnosis of the deaf and hard-of-hearing student is made prior to the psychiatric diagnosis (psychometric).	Moderate	2	2.78	0.87
3	The multidisciplinary team prepares a comprehensive report on the current level of performance of the deaf and hard-of-hearing students according to the results of the assessment.	Moderate	3	2.71	0.82
	Total	Moderate		2.76	0.64

Table 10: The MANOVA test to identify the significance of the differences in the reality of diagnosis of (DLD) from the point of view of their teachers due to gender, educational qualification, years of experience, and the institution in which he works.

Variables		*Sum of squares*	*Degrees of freedom*	*Average squares*	*Value (F)*	*Statistical significance*
Gender	The reality of diagnosing learning disabilities among deaf and hard of hearing students	.316	1	.316	1.329	.251
	Diagnostic methods used	.183	1	.183	.680	.411
	Diagnostic measures used	.263	1	.263	.888	.348
	Diagnostic stage	.222	1	.222	.654	.420
	Total	.067	1	.067	.361	.549
Occupation	The reality of diagnosing learning disabilities among deaf and hard of hearing students	1.605	2	.803	3.376	*.037
	Diagnostic methods used	3.748	2	1.874	6.947	*.001
	Diagnostic measures used	2.127	2	1.064	3.588	*.030
	Diagnostic stage	1.772	2	.886	2.612	.077
	Total	2.107	2	1.053	5.707	*.004
Years of experience	The reality of diagnosing learning disabilities among deaf and hard of hearing students	.429	3	.143	.601	.615
	Diagnostic methods used	1.922	3	.641	2.375	.073
	Diagnostic measures used	.188	3	.063	.211	.889
	Diagnostic stage	.623	3	.208	.612	.608
	Total	.170	3	.057	.308	.820
Educational qualification	The reality of diagnosing learning disabilities among deaf and hard of hearing students	.847	4	.212	.891	.471
	Diagnostic methods used	7.320	4	1.830	6.784	*.000
	Diagnostic measures used	1.360	4	.340	1.147	.337
	Diagnostic stage	7.064	4	1.766	5.206	*.001
	Total	2.333	4	.583	3.160	*.016
Type of institution they belong to	The reality of diagnosing learning disabilities among deaf and hard of hearing students	1.343	2	.671	2.824	.063
	Diagnostic methods used	2.135	2	1.067	3.957	*.021
	Diagnostic measures used	1.065	2	.532	1.796	.170
	Diagnostic stage	3.959	2	1.979	5.836	*.004
	Total	1.870	2	.935	5.067	*.008

*: A function at the significance level (0.05) or less.

No. (2) has the highest arithmetic average (2.80). , with a standard deviation of (0.74), which is of the Moderate, and the paragraph states (the family participates in diagnosing their deaf or hard of hearing children effectively), and in the last place paragraph No. (3) came with arithmetic mean (2.71) and a standard deviation (0.82), It is of the Moderate level, as the paragraph states (the multidisciplinary team prepares a comprehensive report on the current level of performance of the deaf and hard of hearing student according to the results of the assessment).

Results related to the fourth question: Are there statistically significant differences (α = 0.05) between the respondents' perspectives regarding the reality of diagnosing academic difficulties among students with hearing impairment due to the following variables: (gender, occupation, years of experience, educational qualification, type of institution they belong to)?

The MANOVA test was used to identify the significance of the differences in the reality of diagnosing (DLD) from the point of view of their teachers, due to gender, occupation, years of experience, educational qualification, and the institution to which they belong. Table (10) shows this:

Table (10) shows that there are no statistically significant differences at the significance level (0.05) in the reality of diagnosing (DLD) from the point of view of their teachers due to gender, where the statistic values (F) reached (1.329, 0.680, 0.888, 0.654, 0.361) respectively for the dimensions (The reality of diagnosing learning disabilities among deaf and hard of hearing students, the diagnostic methods used, the diagnostic criteria used, the stage of diagnosis and the overall measurement). They are nonfunctional values.

The results showed that there were statistically significant differences at the significance level (0.05) in the reality of diagnosing learning disabilities related to (the reality of diagnosing learning disabilities among deaf and hard of hearing students, the diagnostic methods used, the diagnostic scales used, and the overall measurement) for students with hearing impairment from the point of view of Their teachers are attributed to the occupation, where the statistic values (F) reached (3.376, 6.947, 3.588, 5.707) for the dimensions, respectively, which are significant values at the significance level (0.05), and using Scheffe's test for dimensional comparisons, it was found that the source of differences in the reality of (DLD) diagnosis was In favor of (teacher of deaf students), and it was found that the source of differences in the diagnostic methods used was in favor of (specialist diagnosing deaf and hard of hearing students), and it turned out that the source of differences in diagnostic scales used was in favor of (teacher of deaf students), and it was noted that the source of differences in the overall measurement was for (Teacher of Deaf Students).

It was found through the results that there were no statistically significant differences at the significance level (0.05) in the diagnosis stage due to the occupation, where the statistical value (F) reached (2.612), which is a non-significant value.

The results showed that there were no statistically significant differences at the significance level (0.05) in the reality of diagnosis of (DLD) from the point of view of their teachers due to years of experience, where the statistical values (F) reached (0.601, 2.375, 0.211, 0.612, 0.308) respectively for the dimensions (The reality of diagnosing learning difficulties among deaf and hard of hearing students, the diagnostic methods used, the diagnostic measures used, the stage of diagnosis and the overall measurement), which are not significant values.

The results showed that there were statistically significant differences at the significance level (0.05) in the reality of diagnosing learning disabilities related to (the diagnostic methods used, the stage of diagnosis, and the overall measurement) among students with hearing impairment from the point of view of their teachers due to the educational qualification, where the statistical values (F) reached) (6.784, 5.206, 3.160) for the dimensions, respectively, which are significant values at the significance level (0.05), and using the Scheffe test for dimensional comparisons, it was found that the source of the differences in those dimensions was in favor of the academic qualification (Bachelor of Special Education), and the results showed that there were no differences In (Diagnostic Reality (DLD), and Diagnostic Scales used) attributed to the scientific qualification, where the statistical values (F) reached (0.891, 1.147), respectively, which are non-significant values at the significance level (0.05).

The results showed that there were statistically significant differences at the significance level (0.05) in the reality of diagnosing learning disabilities related to (diagnostic methods used, diagnosis stage, and overall measurement) among students with hearing impairment from the point of view of their teachers due to the type of institution to which the teacher belongs. Statistical (F) (3.957, 5.836, 5.067) for the dimensions, respectively, which are significant values at the significance level (0.05), and by using the Scheffe test for dimensional comparisons, it was found that the source of the differences in those dimensions was in favor of teachers affiliated with a school or government institute, and the results showed that there were no Differences in (the reality of diagnosis (DLD), and the diagnostic measures used) attributed to the type of institution to which it belongs, where the statistic (F) values reached (2.824, 1.796), respectively, which are non-significant values at the significance level (0.05).

Discussion

Discussion of the results of the first question: What is the significance of the validity of the diagnosis of learning disabilities in students with hearing impairment from the point of view of teachers and diagnosticians?

The results of the study showed that there were indications about the validity of the scale represented by Content Validity (80%), Concurrent Validity for the values of the correlation coefficients between the items of the scale and the total score for the main test was higher than (0.30), as well as Factor Validity where the values of (Eigen value) ranged between (2.619 - .347). In light of the results of this study, this is a good indication of the validity of the scale, as it encourages its use. And that the results of the current study indicated that there is a correlation between the paragraphs and the sub-degree and the overall degree, as well as that the indications of validity varied well, which shows that the scale has a good degree of effectiveness in the paragraphs.

Discussion of the second question: What is the significance of the reliability of the diagnosis of learning disabilities in students with hearing impairment from the point of view of teachers and diagnosticians?

The results of the study showed that the scale has high-Reliability indications, whether on the total degree or on the sub-dimensions, where the results of calculating the stability coefficients by the Cronbach Alpha method reached (0.913), and thus, the Reliability coefficients in any of the previous methods are considered acceptable and good. This indicates that the scale has indications of Reliability that encourage its use.

Discussion of the third question: What is the reality level of the diagnosis of learning disabilities among students with hearing impairment from the point of view of teachers and diagnosticians?

The results of the study showed that the rea level of the diagnosis of (DLD) from the point of view of their teachers was Moderate and that the level of the sub-paragraphs for each of the dimensions of the scale showed that the reality of the diagnosis of (DLD) was the Moderate level, the diagnostic methods used were the Moderate level, and the diagnostic measures used were the Moderate level. And the diagnosis stage was Moderate Level.

- The results of this study agreed with (Alzahrani, Almadaoj, 2018), which showed that the reality of the diagnosis of students with hearing impairment was moderate due to the availability of some professional and ethical aspects in the diagnosis process, but it did not come to a high degree due to some shortcomings in the quality and quality of diagnostic services. Offered to students with hearing impairment.
- The results of this study agreed with (Timehin, Timehin ,2004) that the hearing condition of people with learning disabilities is ignored as deafness is often missed among their other problems.

The researchers explain this result by saying that the level of reality of the diagnosis (DLD) came to a degree of moderate in general due to the efforts made by the Kingdom of Saudi Arabia, represented by the Ministry of Education, which provides all of the tools for accurate measurement and diagnostic tools to contribute effectively to the diagnosis of students with single or double disabilities and to provide them with appropriate services. However, some expected problems are inseparable from the process of diagnosing students with a single disability, which intensifies when the student has a disability, which intensifies when the student has another disability.

Discussion of the fourth question: Are there statistically significant differences ($\alpha = 0.05$) between the respondents' perspectives regarding the reality of diagnosing academic difficulties among students with hearing impairment due to the following variables: (gender, occupation, years of experience, educational qualification, type of institution they belong to)?

Gender variable: The results of the study showed that there were no statistically significant differences in the reality of the diagnosis of (DLD) from the point of view of their teachers' favor for the gender variable.

Occupation variable: The results showed that there were statistically significant differences related to (the reality of diagnosis (DLD), diagnostic methods used, diagnostic scales used, and the overall measure) due to occupation in favor of (teacher of deaf students), and that the differences in the diagnostic methods used were in favor of (the specialist diagnosing deaf and hard of hearing students), and that the differences in the diagnostic scales used were in favor of (the teacher of deaf students), and it was noted that the source of the differences in the overall measurement was in favor of (the teacher of deaf students). And there were no statistically significant differences in favor of occupation.

Years of experience variable: The results showed that there were no statistically significant differences attributable to years of experience.

- The results of this study agreed with (Abu Al-Rub, 2016), which showed that there were no statistically significant differences due to the experience variable of the (LD) specialist in identifying the diagnosis problems of students with (LD).

Educational qualification variable: The results showed that there were statistically significant differences in the reality of diagnosing (DLD) related to (the diagnostic methods used, the stage of diagnosis, and the total measurement) due to the scientific qualification in favor of (Bachelor of Special Education), and there were no differences in (the reality of diagnosing (DLD) , and Diagnostic measures used) attributed to the academic qualification.

- Part of this result agreed with the study of (Abu Al-Rub, 2016), which showed that there were no statistically significant differences due to the educational qualification variable of learning disabilities in

identifying the diagnosis problems of students with learning disabilities.

The researchers explain this finding by stating that those with a bachelor's degree in special education are better familiar with and can apply diagnostic approaches used with people with impairments more correctly than others.

Variable for the type of institution they belong to: The results showed that there were statistically significant differences in the reality of diagnosing (DLD) related to (the diagnostic methods used, the stage of diagnosis, and the overall measurement) due to the type of institution to which the teacher belongs in favor of teachers affiliated with a school or government institute, and there were no differences in (the reality of diagnosing (DLD), and diagnostic scales used) due to the type of institution, they belong to.

- The results of this study agreed with (Jacqueline et al.,2016), Difficulty evaluating and diagnosing learning disabilities with hearing impairments.
- The results of this study agreed with (Souliman, 2012) It is necessary to make use of the resource rooms in the integration schools, provided that these rooms include all the tools, tests, and everything that facilitates the process of teaching students with hearing impairments. also, the importance of training and qualifying resource room workers on how to deal in a sound educational manner with all beneficiaries of resource room services.
- The results of this study agreed with (Soukup, Feinstein, 2007) respondents did not feel sufficiently prepared to teach deaf and hard of hearing students and those who suffer from learning disabilities at the same time. the teachers also expressed their desire to get more training in the process of detection, referral, assessment, and diagnosis.
- The results of this study agreed with (powers et al., 1987) to the lack of criteria for identification and diagnosis, as well as appropriate resources for evaluation. also, the need for properly qualified teachers to serve this category of students. also, those who are interested should start reconsidering the educational and professional qualifications that must be available in metrology and diagnostic specialists; In order to obtain reassuring and more accurate results.

The researchers clarify that while the Ministry of Education has standardized the diagnostic criteria used in diagnosing (DLD), there may be differences in the manner of application and diagnostic procedures employed by each specialist and teacher, whether in public schools or private colleges. as well as the scarcity of this type of disability, especially when using sign language.

Recommendations

Based on the findings: Educational recommendations:

1. Developing specialized measurement and diagnostic tools to diagnose (DLD).
2. Training teachers to use multiple scales to diagnose categories of hearing impairment.

Research Recommendations

1. Conducting more studies related to the diagnosis of (DLD).
2. Conducting studies related to deaf people with learning disabilities, reading, writing, and arithmetic.
3. Researching to create an assessment and diagnostic tools for (DLD).

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