

RESEARCH ARTICLE

Obstacles facing teacher of students with learning disabilities in applying curriculum-based measurement at learning disabilities resource rooms

Ahmed Khaled Khazaleh¹, Mo'en Salman Alnasraween^{2, 6,*}, Faisal Khlaif Naser ALshraah³, Wafa' Acid Aleid⁴, Hanada Omar Mohammad Abzakh⁵

¹ Department of Educational Sciences and special Education Al al-Bayt University

² Department of Educational Psychology and Psychological and Educational Counselling, Amman Arab University, Amman 00962, Jordan

³ Department of Basic and Applied Sciences, Al-Balqa Applied University, Amman 00962, Jordan

⁴ Department Special Education, Amman Arab University, Amman 00962, Jordan

⁵ Department Special Education, Al-Balqa Applied University, Amman 00962, Jordan

⁶ Department of counseling and education psychology, Yarmouk University, 00962, Irbid, Jordan

* **Corresponding author:** Mo'en Salman Alnasraween, mueen@aau.edu.jo, moen.na@yu.edu.jo

ABSTRACT

This study aimed to identify the obstacles facing teachers of students' with learning disabilities in applying curriculum-based measurement in learning disabilities resource rooms. The study sample consisted of 121 male and female teachers. To achieve the objectives of the study, a questionnaire was used, which in its final form consisted of 24 items. Its validity and reliability were verified before it was applied to the study sample. The results of the study showed that the level of obstacles facing learning disabilities teachers in applying curriculum-based measurement in learning disabilities resource rooms was moderate. The results also showed that there were no statistically significant differences due to the variables: gender, level of education, and years of experience in the level of obstacles facing teachers of students with learning disabilities. However, the results showed that there were statistically significant differences on the two dimensions roles and responsibilities of teachers of students with learning disabilities, the school administration attributed to those with experience categories less than 5 years, and 5 years to 10 years.

Keywords: learning difficulties; obstacles; curriculum-based measurement; learning difficulties resource rooms

1. Introduction

Measurement and evaluation are used in the educational learning process as essential components of making educational decisions, as decision-making is part of the educational system, and is of utmost importance in determining the success or failure of this system and judging its quality. Therefore, educational decisions must be based on accurate and sufficient information, and teachers themselves must take responsibility for collecting and using it.

ARTICLE INFO

Received: 20 December 2023 | Accepted: 29 January 2024 | Available online: 28 April 2024

CITATION

Khazaleh AK, Alnasraween MS, N-AL FK, et al. Obstacles facing teacher of students with learning disabilities in applying curriculum-based measurement at learning disabilities resource rooms. *Environment and Social Psychology* 2024; 9(7): 6184. doi: 10.59429/esp.v9i7.6184

COPYRIGHT

Copyright © 2024 by author(s). *Environment and Social Psychology* is published by Arts and Science Press Pte. Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), permitting distribution and reproduction in any medium, provided the original work is cited.

Assessing students with learning difficulties and diagnosing them is the main approach to identifying this group, requiring the availability of appropriate sorting and diagnostic tools with acceptable validity and reliability that can be trusted in assessment and diagnosis processes. Sorting is considered the first step in assessment and plays a fundamental role, as it identifies students at risk of learning difficulties and contributes to decision-making, such as the effectiveness of the teaching process and predicting future academic performance^[1].

Shinn^[2] consider Curriculum-based measurement as a set of procedures that examine the skills of a student with learning difficulties based on his actual performance according to the curriculum^[3]. Many studies and research have proven that there is no other assessment that can match curriculum-based measurement. In terms of its validity and reliability, in addition to its codification procedures, it can be used to make various decisions in special education, whether related to sorting, referral, classification, planning, performance monitoring, and other educational decisions.

The curriculum-based measurements have been successfully used for assessment, referral, and diagnosis purposes, and have proven their efficiency as an alternative means of identifying individuals with learning difficulties. Monitoring students' progress through repeated measurements has shifted the early research in the curriculum-based measurement system from being just a tool for monitoring student progress to being used for sorting, decision-making, and benchmarking for students with learning difficulties. Curriculum-based measurement has become significantly important as a form of standardized measurement associated with understanding students' progress levels. Consequently, curriculum-based measurement has become an entry point for assessing students' academic growth, with its primary goal being to assist teachers in evaluating the learning process for students with learning difficulties. Early research in curriculum-based measurement (CBM) has thus focused on the academic performance of students with learning difficulties^[4,5].

Despite the importance of using curriculum-based measurement and the effective role that teachers of learning disabilities play within the school, it faces many obstacles that limit its effective application, as teachers of learning disabilities face problems related to how to deal with students with learning difficulties, school administration, and the cooperation of education teachers^[6].

In general, during the application of curriculum-based measurement, Marchand & Furrer^[7] indicated that there are personal obstacles specific to teachers of learning disabilities, represented by the perceptions and attitudes of teachers of learning disabilities towards using curriculum-based measurement, as some teachers of learning disabilities consider that curriculum-based measurement is not measurable. Quantitative and requires more time to apply and extract results, and its application must be with ordinary students with high achievement and not students with learning difficulties, not to mention the need for teachers with learning difficulties for adequate training, and the lack of cooperation of the school administration in providing all the facilities to enable them to apply measurement based on the curriculum effectively, and as a result, this research came to know the obstacles facing teachers of learning disabilities in applying curriculum-based measurement in learning disabilities resource rooms.

Curriculum-based measurement (CBM) emerged in the early 1980s, when the Learning Disabilities Research Center at the University of Minnesota developed and evaluated the technical efficiency of methods for measuring curricular performance in order to be used in the educational decision-making process for special education teachers with primary school students, as it proved its effectiveness in making educational decisions in areas of reading, dictation, reading and writing expression, and mathematics^[8].

As a result, curriculum-based measurements were designed, and therefore curriculum-based measurements can be defined as tools that show their effectiveness towards direct assessment and monitoring

of the student's academic level, and it can be used repeatedly to monitor the level of academic growth in an evaluative manner^[9,10].

It is also an assessment tool with regular procedures that result in a database that helps in making educational decisions that develop the educational process and helps students and teachers to achieving the educational objectives required in the curriculum, and it has three types: measuring general outcomes, skills-based measurements, and level measurements for students^[11].

Clarke^[12] Hosp et al^[13], have pointed out a set of features of curriculum-based measurement, which are: it saves time for teachers, is standardized in the process of applying and correcting it, is a reference source where the student's performance is compared to himself, and is effective in that it is applicable once practiced, follows regular repeated measurement, gives feedback to teachers, and displays results in the form of graphs.

Curriculum-based measurements have been developed in order to provide those interested with recurring information, especially on what should be focused on in teaching students the various curriculum skills. Curriculum-based measurements have also been designed to provide efficient means for teachers to know and monitor students' progress towards achieving important educational outcomes^[14].

As a result of collecting educational evidence about students who are subject to curriculum-based measurement, teachers are able to make more frequent decisions about changing or continuing their teaching. Consequently, teachers who apply curriculum-based measurements make their students achieve greater progress in reading, decoding, and comprehension. As a result of repeatedly making decisions. The presence of educational changes by teachers as a result of curriculum-based measurements has increased significantly in response to the unsatisfactory progress of students^[13].

Many studies, such as Espin et al^[15], Graney&Shinn^[16] have proven that teachers who use (CBM) to monitor the effectiveness of educational intervention have their students' progress at a much higher level than those who rely on traditional tests.

By applying curriculum-based measurement, students with learning difficulties are compared with the performance of their peers in the same classroom. Deno^[17] suggests that the teacher take random measurements from ordinary students so that comparison can be made and conducted. Comparison with a transitional group at the grade level is one of the best comparisons with national groups used as a standard in standardized tests.

Curriculum-based measurement is considered an indicator of a student's possession of the direct academic skill because it works to target specific academic skills, which means that it has a high prediction of possession of the skill. Curriculum-based measurement is also more sensitive to identifying academic weakness at an early age than other measurements in various skills. Academic skills, such as reading, writing, and mathematics are applied in standardized procedures through which the skills likely to be acquired by students are measured. Curriculum-based measurement can be used repeatedly, and its application sometimes requires one teacher in most of its procedures. It has reliable and valid psychometric properties during teaching intervention^[5, 18].

The importance of using curriculum-based measurement becomes clear through the early identification of students who are at risk for academic risk, as it represents a source of confidence when used to determine the probability that these students are likely to be successful or at risk of learning difficulties, as studies indicate the importance of early detection of students who are at risk for learning difficulties in Different academic subjects, and teachers should be able to quickly and efficiently identify students who are facing academic difficulties, as this early intervention can change the course of students' performance^[19].

One of the main goals of curriculum-based measurement in reading from the beginning is to determine the level of real academic development of students in the field of reading. Studies Deno et al.(2001), Chirst(2003), Marston(1989) indicated that the most widespread use of curriculum-based measurement is to monitor students' progress in reading performance, when the teacher monitors students with reading weakness to document their progress and uses measurement data to track Students' performance toward academic goals and objectives. Each student's progress is compared to his or her own goal and previous performance or to the performance of peers at the same age. Because data is taken repeatedly, the teacher determines how well the child is performing at any given time.

Popham ^[20], Deno^[21] also explain that reading progress can be monitored through actual measurement of performance individually, and over different time periods, as it begins by determining the baseline of skills for each student, then following up on his progress through repeating measurements and comparing actual reading performance with expected performance and standards. Universal, codified and specified for each academic level. Curriculum-based measurement also relies primarily on the use of Oral Reading Fluency, which appears simple in form and quick to apply and administer, but its results are more sensitive to students' short-term gains in reading skills and to predicting long-term reading success, which makes it a tool. Ideal for monitoring progress for use in the classroom, as Hospe et al^[13] explains, a student's accuracy and speed in reading aloud are a clear, easily observed indicator of a student's reading ability.

Mathematics is one of the important applications of curriculum-based measurement in the academic field, as curriculum-based measurements in mathematics have emerged as an indicator of students' progress towards achieving educational goals^[22]. Curriculum-based measurement in mathematics is characterized by a standardized method and specific standards, and uses tests. Equitable to monitor students' progress. It is also one of the assessments that can help teachers review their teaching and remedial procedures, direct them to specific skills, and then improve the level of achievement for students with learning difficulties^[23]. One of the most important features of curriculum-based measurements in mathematics is that they are easy to apply and record results. It can be applied individually or collectively to students, and it can also be designed to measure three areas of mathematics: early numerical ability, arithmetic operations, and mathematical concepts and applications.

There are two types of curriculum-based measures in mathematics that are used as screening tools for students at risk of academic difficulty. The first type is measurements based on mathematical arithmetic, which is used to measure a student's ability to perform mathematical calculations for his grade level, and the second is measurements based on mathematical concepts and applications, which is used to evaluate applied skills where concept and application measures are used by teachers and school specialists, for the purposes of rapid surveying and monitoring students' progress in mathematics. These standards evaluate different journals in mathematics, namely: numerical arithmetic and operations on numbers, patterns and relationships, data and probability, and geometry and algebra, which represent the fields most used by teachers in teaching mathematics^[11].

The mechanism for implementing and applying curriculum-based measurements faces many challenges and obstacles that prevent teachers of students with learning disabilities from implementing them to the fullest extent. Despite the effective role provided by teachers of students with learning difficulties, they face many obstacles in applying curriculum-based measurement that affect the outcome of the educational and pedagogical process, where a teacher with learning difficulties faces different problems and pressures to a greater extent than other teachers, which affects his performance and results with students with learning difficulties. Among these challenges are those related to the administrative aspects of the school and the lack of support from supervisors and administrators^[23].

Many teachers with learning difficulties feel unprepared, or lack good numbers, qualifications, training, and practices to work with students with learning difficulties, which makes the advanced preparation process for teachers with learning difficulties an urgent necessity^[24].

1.1. Other assessment methods

Providing accurate and effective assessment of students with learning disabilities represents an important challenge in the field of special education. Assessment for these students varies according to their needs and reflects the diverse nature of the learning difficulties they may face. One common type of assessment is diagnostic assessment, which is based on gathering detailed information about the student's level of academic and behavioral performance and skills. This type of assessment aims to accurately identify learning problems, enabling teachers to provide appropriate support^[25].

Moreover, performance-based assessment can be used to determine the level of students' progress in academic and applied skills. This includes evaluating their performance on daily tasks and tests, with a focus on understanding each student's individual learning methods. This type of assessment contributes to directing educational guidance to achieve optimal results^[26].

As for integrated assessment, it includes evaluating multiple aspects of learning, such as mental, social, and emotional aspects. This type of assessment helps in a deeper understanding of students' needs and aspirations, which leads to the application of integrated educational strategies that enhance their comprehensive development^[27].

Providing effective assessment for students with learning disabilities also includes the use of various assessment techniques. Formal assessment can be used to examine students' progress in specific skills at specific time intervals, enabling teachers to identify strengths and weaknesses and direct instructional efforts more effectively. In addition, continuous assessment techniques can be used to monitor students' progress periodically, allowing educational programs and support measures to be adjusted according to their changing needs^[25].

Life skills assessment, such as social interaction and self-skills, can also be used to understand comprehensive aspects of learning. Life skills assessment is an essential part of identifying students' needs and providing interventions that help them develop their personal and social capabilities^[28].

Velasco & Campbell^[29] pointed out that it is important to consider evaluating students' response to educational measures, as response assessment techniques can be used to determine the effectiveness of educational programs and adjust them to students' needs. This type of assessment helps provide quick feedback and modify instructional strategies to improve the learning experience for students with learning disabilities.

High-stakes assessments can also be used to assess students on tasks that contain significant challenges and complexity, and are intended to measure their ability to be flexible and solve problems in advanced learning contexts. This type of assessment enhances the development of students' intellectual and analytical skills^[30].

Summative assessment is considered vital to the teaching and learning process, as it is conducted at the end of a specific educational period to measure students' performance and achieve specific educational goals. This type of assessment aims to provide a comprehensive overview of students' development over the specified period of time and their ability to achieve specified educational goals^[25].

Informal feedback provided by teachers can also be used. These assessments represent a vital part of communication between teacher and student. These feedback reflect details of the student's personal performance and progress, and provide immediate guidance to improve their performance. This type of

assessment promotes effective communication between teacher and student, which contributes to stimulating effective learning^[28].

Peer assessment is also based on the principle of evaluating students by their peers. These assessments provide a diverse and independent point of view on students' performance, and contribute to developing communication and cooperation skills among students. These assessments can be effective in enhancing self-awareness and developing teamwork skills^[26].

1.2. Difficulties facing teachers of students with learning disabilities

Teachers of students with learning disabilities face many challenges in applying curriculum-based measurement within learning resource rooms. First and foremost, difficulties arise in determining the level of academic achievement of these students as a result of their different needs and learning styles. This is partly because abilities and skills vary among students, making assessment challenging and requiring different methods to be tailored to suit each individual's needs^[31].

Second, providing an appropriate environment for assessment is an additional challenge, as this requires careful attention to providing additional support for students with learning difficulties, whether this is providing appropriate tasks or customized assessment techniques. In addition, teachers must carefully analyze data generated from assessments to understand students' progress and weaknesses, which requires a deep understanding of the needs of students with learning disabilities^[32].

Applying curriculum-based measurement requires teachers to continuously work to develop assessment strategies that meet the needs of diverse students; processing data resulting from assessment processes is one of the important challenges facing teachers of students with learning disabilities in applying curriculum-based measurement. Analyzing this data requires a deep understanding of students' needs and interactions with educational content. Standard, paper-based assessment can be ineffective in this context, as teachers need to adopt comprehensive assessment methods that include a variety of skills and abilities^[33].

In this context Kontu&Pirttima^[34] pointed out that interactive and continuous assessment techniques are vital tools for addressing the challenges of assessing students with learning disabilities. These techniques can be integrated into daily classroom work, allowing teachers to identify students' strengths and weaknesses over time and thus guide teaching effectively. Moreover, the influence of the educational environment on assessment processes poses another challenge.

Teachers must ensure a supportive and stimulating environment for students, taking into account their individual differences in learning needs. Achieving this requires close cooperation with all faculty members and parents to ensure comprehensive support for students^[31].

Welch^[23] also believes that teachers of students with learning disabilities suffer from ambiguous and contradictory responsibilities, unclear expectations from the administration, lack of administrative support, and the huge amount of written work carried out by the learning disability teacher, in addition to the barriers between teachers of learning disabilities and general education teachers, all of them limit the possibility of employing method-based measurement in a systematic, scientific manner. The need for teachers of learning difficulties to invest time, information, and skills in implementing curriculum-based measurement, and that teachers do not receive adequate training in the curriculum, nor do they receive data-based evaluation results in a timely manner that enables them to make decisions regarding the intervention process early, teachers with learning disabilities do not receive sufficient support from students' families, general education teachers, and educators to effectively implement curriculum-based assessments.

Werts et al.^[35] study aimed at finding out teachers' perceptions of the benefits and obstacles of responding to intervention, also indicated that there is a lot of paper work, a lack of sufficient time, and that there is weakness in training and a lack of knowledge about the processes of responding to intervention. Therefore, the use of existing curriculum-based measurement (CBM) may pose a challenge to public and private education teachers in several aspects:

First: Teachers' participation and training in professional development: This is represented by the unwillingness of many teachers to participate in professional development as a result of the lack of incentives for this development, according to their point of view, despite the efforts of educational institutions to reform the education system through the participation of school principals and teachers in developing the educational process, students, and curricula, to improve the educational environment and learning resources in accordance with scientific standards, however, there is a division in teachers' perceptions of professional development into two halves: the first is aware of the importance of development and supports it, and the other is opposed to it, due to their lack of participation in determining educational topics and the content of training activities^[36].

Second: Building and applying curriculum-based measurement tests: Most educational systems rely on the use of informal tests derived from the reading, writing, and mathematics curriculum as a diagnostic assessment tool for students with learning difficulties, although studies have proven that the effectiveness of using standardized official tests returns more reliable results^[36].

1.3. Previous studies

There is a scarcity of Arab and foreign studies that have addressed the obstacles facing teachers of learning difficulties in applying curriculum-based measurement. Therefore, researchers will address studies directly related to the topic. Below are some of the studies that were accessible:

Welch^[23] conducted a study in the United States aimed to identify the challenges facing teachers when using curriculum-based measurement. The study was applied to (10) teachers who teach students with learning difficulties. The results concluded that teachers of students with learning difficulties suffer from responsibilities. Ambiguous, contradictory, unclear expectations from the administration, lack of administrative support, and the huge amount of written work performed by the learning disabilities teacher, in addition to the barriers between learning disabilities teachers and general education teachers, all limit the possibility of employing curriculum-based measurement in a systematic, scientific manner.

Alshammari^[37] conducted a study aimed at identifying the Difficulties of applying the continuous evaluation to the upper primary students from the point of view of teachers in. The study population consisted of all primary school teachers, so the study sample consisted of (354) teachers. The study found that there is difficulty in applying continuous measurement due to the lack of financial and technical support provided to teachers, and the large number of students in the classes. The results also indicated that there are differences attributed to the variable of specialization and the absence of differences attributed to the variable of experience among teachers.

Adams^[38] also conducted a study that aimed to determine teachers' acceptance of curriculum-based measurement and the extent of using curriculum-based measurement as a global testing tool in reading. The study sample consisted of (83) teachers for grades one to five in primary school in the state of Washington. A questionnaire was applied to them using the Internet measures the degree of their acceptance of using curriculum-based measurement and its effectiveness as a means of testing reading. The study found that teachers had little acceptance of curriculum-based measurement to identify students at risk of reading difficulty.

Zhao^[39] aimed to identify the viewpoints of mathematics teachers in Chinese primary schools. The study sample consisted of (1101). The results concluded that the most important difficulties facing the application of continuous measurement are the presence of negative attitudes among teachers towards the application of continuous measurement due to their lack of conviction in it, in addition to the weakness of communication between the administration and teachers to provide them with continuous evaluation mechanisms. The study also found that 20% of teachers do not meet the conditions and criteria for evaluation.

Seymour^[40] carried out a study to identify the practices of special education teachers for the primary stage and their perceptions regarding the use of curriculum-based measurement. The study sample consisted of (86) teachers with special needs in USA. A questionnaire was used to collect data from the study sample. The results were as follows: The majority of the study sample (92%) have confidence in using curriculum-based measurement, especially which reflects positively on students' achievement. The results also indicate some obstacles in using curriculum-based measurement, which are the lack of sufficient time for teachers, and the lack of knowledge of some teachers about curriculum-based measurement.

Abongdia et al.^[41] conducted a study entitled the challenges facing teachers in identifying students with learning difficulties in two primary schools in East London. The study sample included (10) teachers with learning difficulties. The study used a qualitative case study approach based on semi-personal interviews. The results of the study concluded that the most important challenges facing teachers of learning difficulties in identifying students with learning difficulties is the lack of actual training among teachers and the methods used in identifying students with learning difficulties, and the lack of cooperation between teachers.

Swain & Allinder^[42] conducted a study that included (517) psychologists practicing in schools. 18.3% of those with more than 12 years of experience received training in curriculum-based measurement, while it was reported 90.8 of the new graduates with less than 4 years of experience reported receiving training in curriculum-based measurement. The results indicated that although more than 60% of experienced school psychologists had received training in curriculum-based measurement in the form of service presentations or conferences, recent graduates who received training in curriculum-based measurement were more likely to use this type of curriculum-based measurement than school psychologists with long experience.

2. The study problem

Learning difficulties teachers are responsible for providing educational and pedagogical services to students who have learning difficulties in resource class rooms. These services include the measurement process in basic learning subjects such as reading, writing, and mathematics, through which the progress achieved by students in these subjects is known. Especially if we know that teachers with learning difficulties find it difficult to define an evaluation system that helps them monitor the performance levels of students with learning difficulties and improve their educational achievement because they encounter many obstacles, and in the absence of tools based on the results of scientific research, the process of identifying the levels of students with difficulties becomes Learning is fraught with risks, and the use and application of modern measurement tools, such as curriculum-based measurement, by teachers of learning disabilities may face some obstacles and challenges, and this is aligned with what Rowe et al^[43] indicated that teachers of learning disabilities feel concerned about the possibility of applying measurement based on The curriculum in light of the many obstacles they face.

Swain & Allinder^[42] reported that less than half of the teachers of students with learning disabilities who had knowledge of curriculum-based measurement (CBM) did not use it for any educational purpose with students with learning difficulties, due to the presence of some obstacles. Which limit its application, such as

the lack of time to implement curriculum-based measurement procedures, the lack of the necessary skills to implement it, and teachers' perceptions of the validity of curriculum-based measurement procedures^[43].

From the above, the study problem can be formulated in the following questions:

(1) What are the obstacles that teachers of learning disabilities face in applying curriculum-based measurement in learning disabilities resource rooms?

(2) Are there statistically significant differences at ($\alpha= 0.05$) in obstacles facing teachers of student with learning disabilities according to the variables (gender, educational qualification, and experience)?

2.1. Objectives of the study

- Identifying the obstacles facing teachers of students with learning disabilities in resource rooms
- Identifying the obstacles facing teachers of student with learning disabilities in resource rooms according to variables (gender, academic qualification, and experience)

2.2. The importance of the study

The importance of this study can be displayed in two forms as following:

2.2.1. Theoretical importance

Curriculum-based measurement receives great attention due to its effectiveness in sorting and monitoring the progress of students with learning difficulties and determining the level, remedial methods, and appropriate educational strategies for students with learning difficulties. In light of the limited Arab studies that addressed curriculum-based measurement, studying the issue of obstacles facing teachers of learning difficulties is In applying curriculum-based measurement and identifying its concept, practices, and content, it may help teachers of learning difficulties to overcome those obstacles that may prevent them from identifying the levels of students with learning difficulties, monitoring their progress, and appropriate strategies for them, and this is the important role played by curriculum-based measurement, as these are The study is one of the first studies in this field in Jordan.

2.2.2. Practical importance

The practical importance of this study is to direct attention towards curriculum-based measurement and practical obstacles for the purpose of activating and applying it to students with learning difficulties. Moreover, addressing curriculum-based measurement may contribute to raising the efficiency of teachers of learning difficulties in applying curriculum-based measurement to their students, and it is expected this study contributes to preparing a scale to detect the obstacles facing teachers of learning difficulties in applying curriculum-based measurement that has acceptable psychometric properties.

2.3. Study Limitations

2.3.1. Spatial boundaries

This study was applied to teachers of learning difficulties in Mafraq Governorate.

2.3.2. Temporal boundaries

This study was applied during the second semester of the academic year (2022-2023).

2.3.3. Objectivity border

The current study included the obstacles facing teachers of learning disabilities in applying curriculum-based measurement

2.3.4. Human limits

The study includes all teachers of students with learning disabilities in Mafraq Governorate, whom numbered 121.

2.4. Procedural and conceptual definitions

2.4.1. Obstacles

Operationally defined as elements that act as barriers to the implementation of curriculum-based assessment as required, hindering the educational path of students with learning difficulties.

2.4.2. Learning difficulties teachers

A specialized teacher in special education with a bachelor's or postgraduate degree in learning difficulties, providing therapeutic education programs for students with learning difficulties in the Mafraq Governorate.

2.4.3. Curriculum-based assessment

An evaluation tool that provides direct and continuous information about students' performance in various areas such as reading, spelling, mathematics, and other subjects. Derived from the prescribed curriculum, it generates a database that aids in making educational decisions and understanding the needs and capabilities of students^[8, 44].

3. Method and procedures

This study adopted the descriptive survey method, which is one of the forms of organized scientific analysis and interpretation.

3.1. Study population and sample

The members of the study population consisted of all male and female teachers working in the resource rooms and affiliated with the Directorate of Education in the city of Mafraq, who numbered (121) male and female teachers during the first semester of the academic year 2022/2023. All members of the study were selected using a comprehensive survey method, thus forming the study population. **Table 1** shows the distribution of the study sample participants.

Table 1. The study sample according to its demographic variab.

Variable	Category	No	Total
Gender	Male	73	121
	Female	48	
Scientific Qualification	Bachelor's degree or less	87	121
	Postgraduate	34	
Years of Experience	Five years or less	57	121
	5 years-10 years	38	
	More than ten years	26	

3.2. Study instrument

To collect data about the obstacles facing teachers of students with learning disabilities in applying curriculum-based measurement in learning disabilities resource rooms, researchers developed a scale to identify these obstacles by reviewing theoretical background and the previous studies such as Seymour^[40] and

Nevenkosky^[45] the study of Kate et al^[46] and Welch^[23] study, the scale in its initial form consisted of (28) items.

3.2.1. The instrument validity

A- Content Validity:

The content validity of the scale, which initially contained (28) items, was verified by (10) arbitrators with experience and expertise in psychology, psychological counseling, and special education in a Jordanian universities. The proposed amendments, which were approved by 80% of the arbitrators, were taken into account, as (5) item were deleted for not being suitable for the scale purposes at the end the scale consisted of (23) divided on three dimension (Roles and responsibilities of teachers of students with learning disabilities, The school administration, and Collaboration of general education teachers with learning disabilities teachers).

3.2.2. The instrument reliability

Reliability was verified by applying the scale to a pilot sample consisting of (30) male and female teachers from outside the study primary sample over two time periods separated by two weeks between the first application and the reapplication (test-retest), then the reliability coefficient was calculated using the Pearson correlation coefficient. The reliability equation using Cronbach Alpha was also extracted from the pilot study data and from the final sample n=121, as **Table 2**, illustrate.

Table 2. Cronbach alpha coefficients and test-retest values

No	Dimension	Cronbach Alpha, n=30	test-retest	Cronbach Alpha, n=121
1	Roles and responsibilities of teachers of students with learning disabilities	0.83	0.79	0.87
2	The school administration	0.80	0.83	0.88
3	Collaboration of general education teachers with learning disabilities teachers	0.85	0.80	0.89

It is noted from the results of **Table 2**, that all reliability values using Cronbach Alpha and test-retest were all acceptable for the purposes of the current study.

3.3. Correcting the study instruments

The scale items were answered using the following five-point Likert grading: very large, large, moderate, little, very little. The arithmetic means of the sample members' responses were classified into three levels by using the statistical criterion, using the following equation: (Sekaran & Bougie ,2016).

Category length = highest alternative of values - lowest alternative of values = 5 - 1 = 4 = 1.33, Number of levels 3 3.

Therefore, the arithmetic mean can be judged according to the following cut scores:

1 to 2.33: Low 2.34 to 3.67 : Moderate, 3.68 to 5 :High.

3.4. Statistical procedures

- To answer the first and second questions, arithmetic means and standard deviations were used.
- To answer the second question, the multiple two-way analysis of variance test was used

4. Study findings

4.1. Results related to the first question which state: What are the obstacles that teachers of learning disabilities face in applying curriculum-based measurement in learning disabilities resource rooms?

To identify the obstacles facing teachers of learning difficulties in applying curriculum-based measurement, arithmetic means and standard deviations were calculated for the responses of the study individuals to the dimensions of the obstacles facing teachers of learning difficulties in applying curriculum-based measurement, as shown in the following table as **Table 3**, demontstrate.

Table 3. Arithmetic means and standard deviations of the study members’ responses to the areas of obstacles facing the application of curriculum-based measurement.

No	Domain	Rank	Mean	STD	Level
1	Roles and responsibilities of teachers of students with learning disabilities	1	4.32	0.37	High
2	The school administration	2	4.08	0.46	High
3	Collaboration of general education teachers with teachers of student with learning disabilities	3	3.47	0.31	High

It is clear from **Table 3**, that the most prominent obstacles facing the application of curriculum-based measurement were the obstacles related to the dimension “roles and responsibilities of teachers of students with learning disabilities”, with an arithmetic mean of (4.32) and a high degree, followed by the obstacles related to school administration, with an arithmetic mean of (4.08) and also a high degree, and finally came dimension three which state” Collaboration of general education teachers with teachers with a mean of (3.47) and a moderate degree. This means that most of the obstacles facing teachers of students with learning disabilities are related to the roles and responsibilities of teachers of students with learning disabilities. The arithmetic means and standard deviations were also calculated for each dimension as following:

Roles and responsibilities of teachers of students with learning disabilities

The means and the standard deviation and the level this dimensión ítems were calacluated as **Table 4**, demonstrate.

Table 4. Arithmetic means and standard deviations of the domain “roles and responsibilities of teachers of students with learning difficulties” items arranged in descending order.

No	item	Mean	Std. Deviation	level
q1	A large quorum of learning difficulties teachers from classes	4.55	0.56	high
q2	The many administrative burdens assigned to teachers of learning disabilities	4.40	0.76	high
q5	Lack of participation of learning disability teachers in the participatory teaching process at school to implement curriculum-based assessments	4.40	0.56	high
q3	Learning disability teachers do not receive adequate training in curriculum-based measurement to implement it effectively	4.31	0.90	high
q4	Weak knowledge of learning disabilities teachers about curriculum-based teaching methods	4.26	0.60	high
q8	Lack of awareness of learning difficulties teachers about the importance of using curriculum-based measurement in the evaluation process	4.26	0.64	high
q6	I find it difficult to evaluate and monitor continuously using curriculum-based measurement	4.21	0.65	high
q7	Learning disabilities teachers do not receive the results of curriculum-based assessment directly to enable them to make appropriate decisions	4.14	0.78	high

Table 4 shows that the arithmetic means ranged between 4.55 to 4.14, where item 1, which states “a large quorum of teachers with learning difficulties in classroom lessons”, came with an arithmetic mean of (4.55), while ítem 7, which state “Learning disabilities teachers do not receive the results of curriculum-based assessment directly to enable them to make appropriate decisions” came with the lowest arithmetic mean reaching 4.14, Which means that the large quorum of teachers with learning disabilities in the classroom is one of the most important obstacles for teachers with learning disabilities to applying curriculum-based measurement. This may be attributed the fact that the increase in the academic load placed on teachers with learning disabilities depletes their energies and abilities and consumes a lot of time from them in teaching students with learning disabilities, which It constitutes an obstacle to the application of curriculum-based measurement. This result is consistent with the findings of Welch^[23] study which showed that the suffering of teachers of students with learning difficulties in applying curriculum-based measurement is due to the huge amount of written work performed by the learning disability teacher.

Dimension: The school administration

The means and the standard deviation and the level this dimensión ítems were calacluated as Table 5, demonstrate.

Table 5. Arithmetic means and standard deviations of the dimension “The school administration” items arranged in descending order.

No	Item	Mean	Std. Deviation	Level
Q1	The school administration ignored the needs of learning disability teachers to help them implement curriculum-based measurement	4.20	0.86	high
Q7	The school administration has limited information about the nature of curriculum-based measurement	4.18	0.74	high
Q5	Lack of material and moral incentives provided by the school administration to teachers of learning difficulties	4.17	0.95	high
Q3	Lack of knowledge (ignorance) of the school administration about the nature of the work of teachers of learning disabilities in applying curriculum-based measurement	4.11	0.86	high
Q2	The school does not conduct training activities that increase the ability of teachers with learning disabilities to apply curriculum-based measurement	4.08	0.69	high
Q4	Lack of school administration awareness of the importance of curriculum-based measurement	4.02	0.71	high
Q6	Class time is insufficient to apply curriculum-based measurement to students with learning difficulties	3.77	0.67	high

Table 5 shows that the arithmetic means ranged between 4.20 to 3.77 , where ítem 1 , which states: “The school administration ignores the needs of teachers with learning difficulties to help them apply curriculum-based measurement,” came with a arithmetic mean of 4.20 , while ítem 6, which state “Class time is insufficient to apply curriculum-based measurement to students with learning difficulties,” with the lowest arithmetic mean reaching 3.77 . Which means that the lack of awareness of the school administration and its neglect of the needs of teachers with learning disabilities is one of the most important obstacles to the school administration for teachers with learning disabilities in applying curriculum-based measurement, and it may be attributed to the school administration’s belief that teachers with learning disabilities do not differ in their tasks and roles from general education teachers and that they have special needs. Educational materials, tools, educational means, and training and psychological needs must be provided. Therefore, ignoring such needs is an obstacle for teachers of learning difficulties to implement curriculum-based measurement. This result is

consistent with some of the results of Welch^[23] study which found that teachers of students with learning difficulties suffer from ambiguous and contradictory responsibilities, unclear expectations from the administration, and the lack of administrative support, which are among the obstacles to applying curriculum-based measurement.

The third Dimension: Collaboration of general education teachers with teachers of student with learning disabilities

The means and the standard deviation and the level this dimension ítems were calacluated as Table 6 demonstrate.

Table 6. Arithmetic means and standard deviations of the dimension “Collaboration of general education teachers with teachers of student with learning disabilities” ítems, ranked in descending order.

NO	Item	Mean	Std. Deviation	Level
Q1	Lack of participation of general education teachers in implementing curriculum-based measurement for students with learning difficulties	3.80	0.59	high
Q7	The scarcity of training courses received by general education teachers on the importance of curriculum-based measurement	3.60	0.99	moderate
Q2	Lack of sufficient time for general education teachers to communicate with teachers of learning disabilities	3.53	0.71	Moderate
Q5	Lack of experience of general education teachers in dealing with students with learning difficulties	3.51	0.53	Moderate
Q4	General education teachers neglect their role in implementing curriculum-based measurement	3.37	0.80	Moderate
Q6	Learning disability teachers do not receive adequate support from general education teachers to implement curriculum-based measurement	3.34	0.63	Moderate
Q3	There are negative attitudes among general education teachers towards teachers with learning disabilities	3.33	0.66	Moderate
Q8	Lack of general education teachers’ knowledge of the importance and objectives of curriculum-based measurement	3.26	0.54	Moderate

Table 6 shows that the arithmetic mean ranged between (3.80 to 3.26, where item 1, which states “Lack of participation of general education teachers in implementing curriculum-based measurement for students with learning difficulties”, came with a arithmetic mean of 3.80, while item 8, which state “Lack of general education teachers’ knowledge of the importance and objectives of curriculum-based measurement “ came in the last rank with 3.80 mean and 0.54 standard deviation.

Which means that the lack of participation of general education teachers of students with learning disabilities is one of the obstacles to the application of curriculum-based measurement, and may be due to the lack of cooperation between general education teachers and teachers of students with learning disabilities within the school or to their lack of knowledge at all about curriculum-based measurement despite the important role it plays. General education teachers support teachers with learning disabilities in following up students with learning disabilities in the regular classroom and implementing various educational activities in cooperation with teachers with learning disabilities. This study is consistent with the study ^[23], which indicated the presence of barriers between teachers of learning disabilities and general education teachers in implementing curriculum-based measurement.

4.2. Findings of the second study question: Are there statistically significant differences at ($\alpha=0.05$) in obstacles facing teachers of student with learning disabilities according to the variables (gender, educational qualification, and experience)?

To answer this question, the arithmetic means and standard deviations of the obstacles facing teachers of learning disabilities in learning disabilities resource rooms were extracted according to the variables (gender, educational qualification, and experience), and the **Table 7** shows this.

Table 7. Arithmetic means and standard deviations of “obstacles facing teachers of students with learning disabilities according to variables (gender, education level, and experience).

Dependent Variable	gender	Mean	Std. Error
Roles and responsibilities of teachers of students with learning disabilities	male	4.30	.045
	female	4.30	.055
The school administrati	male	4.02	.045
	female	3.98	.055
Collaboration of general education teachers with teachers of student with learning disabilities	male	3.42	.038
	female	3.48	.046

Dependent Variable	Education Level	Mean	Std. Error
Roles and responsibilities of teachers of students with learning disabilities	Bachelor's degree or less	4.23	.067
	Postgraduate	4.37	.092
The school administration	Bachelor's degree or less	3.96	.067
	Postgraduate	4.04	.092
Collaboration of general education teachers with teachers of student with learning disabilities	Bachelor's degree or less	3.43	.057
	Postgraduate	3.47	.078

Dependent Variable	Years of experience	Mean	Std. Error
Roles and responsibilities of teachers of students with learning disabilities	1 to 5	4.51	.086
	5 to 10	4.27	.072
	More than 10	4.12	.100
The school administration	1 to 5	4.43	.086
	5 to 10	3.81	.072
	More than 10	3.76	.100
Collaboration of general education teachers with teachers of student with learning disabilities	1 to 5	3.56	.073
	5 to 10	3.47	.061
	More than 10	3.32	.085

It is noted from the results of **Table 7**, that there were apparent differences between the arithmetic averages of the obstacles facing teachers of learning difficulties according to the variables (gender, academic qualification, and experience). To find out whether these differences are statistically significant, the multiple analysis of variance (MANOVA) test was extracted as **Table 8** illustrate.

Table 8. The results of Manova test to examine the significance of the differences between the arithmetic means of the obstacles facing teachers of learning difficulties according to the variables (gender, educational qualification, and experience).

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
gender	Roles and responsibilities of teachers of students with learning disabilities	.002	1	.002	.013	.909
	The school administration	.040	1	.040	.314	.576
	Collaboration of general education teachers with teachers of student with learning disabilities	.091	1	.091	.990	.322
Education	Roles and responsibilities of teachers of students with learning disabilities	.129	1	.129	1.014	.316
	The school administration	.043	1	.043	.337	.563
	Collaboration of general education teachers with teachers of student with learning disabilities	.006	1	.006	.070	.792
Experience	Roles and responsibilities of teachers of students with learning disabilities	1.240	2	.620	4.871	.009
	The school administration	7.664	2	3.832	30.004	.000
	Collaboration of general education teachers with teachers of student with learning disabilities	.305	2	.152	1.665	.194
Error	Roles and responsibilities of teachers of students with learning disabilities	14.770	116	0.127		
	The school administration	14.815	116	0.128		
	Collaboration of general education teachers with teachers of student with learning disabilities	10.615	116	0.092		
Total	Roles and responsibilities of teachers of students with learning disabilities	2273.734	121			
	The school administration	2036.714	121			
	Collaboration of general education teachers with teachers of student with learning disabilities	1466.734	121			

It is noted from the results of **Table 8** that there are no statistically significant differences between the arithmetic averages of the obstacles facing learning difficulties teachers in learning difficulties resource rooms according to the variable of gender and practical qualification, as the significance values for the “F” values were greater than 0.05 for each case.

While the results showed that there were statistically significant differences between the arithmetic averages depending on the experience variable on the two dimensions: “roles and responsibilities of teachers of students with learning disabilities” and “school administration.” To determine the reliability of the differences on these dimensions, the Scheffé test was extracted, and **Table 9** shows this.

Table 9. Scheffé test results to examine the returns of differences between the arithmetic means of the obstacles facing teachers of students with learning disabilities in resource rooms according to the variable of experience.

Dependent Variable	Experience	Mean	1 to 5	6 to 10	More than 10 years
Roles and responsibilities of teachers of students with learning disabilities	1 to 5	4.51	-	**0.24	**0.29
	6 to 10	4.27	-	-	0.15
	Greater than 10	4.12	-	-	-
The school administration	1 to 5	4.43	-	0.62**	0.67**
	6 to 10	3.81	-	-	0.05
	Greater than 10	3.76	-	-	-

It is noted from the results of **Table 9** that the differences between the arithmetic averages of the obstacles in the dimension “roles and responsibilities of teachers of students with learning disabilities” and the dimension “school administration” that teachers of students with learning disabilities face in resource rooms according to the experience variable are attributed to those with less than five years of experience, and from 5 to 10 years.

5. Discussion

The most prominent obstacles facing the application of curriculum-based measurement were the obstacles related to the roles and responsibilities of teachers of students with learning disabilities, followed by the obstacles related to school administration. General Education teachers cooperated with learning disabilities teachers and a moderate degree. This means that most of the obstacles facing teachers of learning disabilities are related to the roles and responsibilities of teachers of learning disabilities. This may be due to the fact that teachers of learning disabilities lack appropriate experience and sufficient training to apply and implement curriculum-based measurement, not to mention the large teaching and administrative burdens assigned to them and the lack of knowledge of some of them in existing measurement methods. On the curriculum makes it difficult to apply this type of repeated measurement in an effective practical manner and the field of school administration is one of the clear obstacles to learning disability teachers’ application of curriculum-based measurement. This may be due to the school administration’s low knowledge of the characteristics of students with learning disabilities and not giving them adequate educational attention. Compared with ordinary students, in addition, the school administration ignores the needs of teachers with learning disabilities to help them apply curriculum-based measurement, and the school administration does not provide training programs and financial incentives to teachers with learning disabilities in order to encourage them to apply curriculum-based measurement.

As for the dimension of general education teachers’ cooperation with teachers of learning disabilities, the obstacles were to a moderate degree, which means that there is a type of obstacle that affects the application of curriculum-based measurement, which may be attributed to the lack of participation of general education teachers in implementing curriculum-based measurement for students with learning disabilities, in addition to the neglect of teachers. General education for their role in applying curriculum-based measurement and their lack of knowledge of the nature of the tests applied to students with learning disabilities.

These results are consistent with the results of the study (Seymour, 2016), in which the results indicate some obstacles in using curriculum-based measurement, which are the lack of sufficient time for teachers, and the lack of knowledge of some teachers about curriculum-based measurement, and the Zhao (2018) study, which indicated a weak communication between the administration and teachers to provide them with mechanisms for continuous evaluation. The study also found that 20% of teachers do not meet the conditions and standards for continuous evaluation.

Moreover, Manov test showed that teachers of students with learning disabilities whom experience is less than five years, and from 5 to 10 years, face many different obstacles that limit their application of curriculum-based measurement, which may be due to their weak competence in applying curriculum-based measurement on the one hand, or their lack of exposure to courses. Adequate training is provided for adequate training in applying curriculum-based measurement, while more experienced teachers are able to overcome the obstacles that limit their application of curriculum-based measurement. This result was not consistent with the study of Swain & Allinder^[42], which found that although more than 60% of experienced school psychologists had received training in assessment-based In the form of in-service presentations or conferences, recent graduates who received training in curriculum-based measurement were more likely to use this type of curriculum-based

measurement than school psychologists with long experience this findings aligned in a with Alshammari^[37] study which indicated that there are no differences due to the variable of experience among teachers.

In addition the finding of the Manova test showed that teachers of students with learning disabilities face the same difficulties in classroom, regardless of the variables of gender and academic qualification, which means they are all exposed to the same obstacles that limit their application of curriculum-based measurement in learning difficulties resource rooms. This may be due to the fact that male and female teachers with different educational qualifications suffer from the lack of training and knowledge of curriculum-based measurement, in addition to the administrative obstacles within the school represented by administrative and teaching burdens and the lack of cooperation of general education teachers, in addition to the obstacles related to teachers of learning difficulties, which limit their application of curriculum-based measurement.

6. Recommendation

- Reducing the educational and administrative burdens assigned to teachers of learning disabilities, so that they can implement curriculum-based measurement programs.
- Activating cooperation between the school administrations on the one hand and general education teachers on the one hand with teachers of students with learning disabilities to successfully implement curriculum-based measurement.
- Providing training courses and educational workshops for teachers of learning disabilities to introduce and train them on applying curriculum-based measurement.

7. Limitation

While the study used the complete population as a sample, the sample's homogeneity may limit the findings' applicability to other varied groups. The findings may be more applicable to the unique qualities and attributes of the examined population, reducing the generalizability of conclusions to larger and more diverse populations.

Conflict of interest

The Authors of this study declare no conflict of interest

References

1. Yarbrough, J., Cannon, L., Bergman, S., Kidder-Ashley, P., & McCane-Bowling, S. (2017). Let the data speak: Gender differences in math curriculum-based measurement. *Journal of Psychoeducational Assessment*, 35(6), 568-580.
2. Shinn, M. (2013). Curriculum-based measurement. In B. J. Irby, G. Brown, R. Lara-Alecio, & S. Jackson (Eds.), *The handbook of educational theories* (pp. 783–791). IAP Information Age Publishing.
3. Stecker, P., Fuchs, L., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of the research. *Psychology in the Schools*, 42(8), 795-819.
4. Keller-Margulis, M., Mercer, S. & Shapiro, E. (2014). Differences in growth on math curriculum-based measures using triannual benchmarks. *Assessment for Effective Intervention*, 39(3), 146-155. <https://doi.org/10.1177/1534508412452750>
5. Jiban, C., Deno, S. & Foegen, A. (2009, September). Developing measures for monitoring progress in elementary grade mathematics: An investigation of desirable characteristics. Retrieved from <http://www.progressmonitoring.org/pdf/TR5MathDev.pdf>
6. Hale, A., Skinner, C., Williams, J., Hawkins, R., Neddenriep, C. , & Dizer, J. (2007). Comparing comprehension following silent and aloud reading across elementary and secondary students: Implication for curriculum-based measurement. *The Behavior Analyst Today*, 8(1), 9-23. <https://doi.org/10.1037/h0100101>

7. Marchand, G.& Furrer,C.(2014). Formative, Informative, and Summative Assessment: The Relationship among Curriculum-Based Measurement of Reading, Classroom Engagement, and Reading Performance. *Psychology in the Schools*, 51, 659-676. <https://doi.org/10.1002/pits.21779>.
8. Espin, B., Liende, R., Beutick, L & Mol. S.(2021). A Systematic Review of CBM Professional Development Materials: Are Teachers Receiving Sufficient Instruction in Data-Based Decision-Making?, *J Learn Disabil.*;54(4):256-268, doi: 10.1177/0022219421997103
9. Hall-Mills, S. (2009). Linguistic Feature Development in Elementary Writing: Analysis of Microstructure and Macrostructure Features in a Narrative and an Expository Genre. *Electronic Theses, Treatises and Dissertations ProQuest Dissertations Publishing*.
10. Jitendra, A., Sczesniak, E., & Deatline-Buchman, A. (2005). An exploratory validation of curriculum-based mathematical word problem-solving tasks as indicators of mathematics' proficiency for third graders. *School Psychology Review*, 34(3), 358-371.
11. Hosp, J., Hensley, K., Huddle, S& Ford, J.(2014). Using Curriculum-Based Measures with Postsecondary Students with Intellectual and Developmental Disabilities. *Remedial and Special Education*, 35(4), 247-257. doi:10.1177/0741932514530572
12. Clarke, S. (2009). Using curriculum-based measurement to improve achievement. *Principal*, 88(3), 30-33. https://www.naesp.org/sites/default/files/resources/2/Principal/2009/J-F_p30.pdf.
13. Hosp, M., & Hosp, J. & Howell ,K. (2016).*The ABCs of CBM: A Practical Guide to Curriculum Based Measurement*. New York: The Guilford Press.
14. Fuchs, L. & Fuchs, D. (2002). Curriculum-based measurement: Describing competence, enhancing outcomes, evaluating treatment effects, and identifying treatment nonresponders. *Peabody Journal of Education*, 77, 64–84.
15. Espin C. , Wayman M., Deno S., McMaster K., de Rooij ,M. (2017). Data-based decision-making: Developing a method for capturing teachers' understanding of CBM graphs. *Learning Disabilities Research & Practice*, 32(1), 8-21.
16. Graney, S & Shinn, M.(2005). Effects of Reading Curriculum-Based Measurement (R-CBM) Teacher Feedback in General Education Classrooms. *School Psychology Review*, 34(2), 184-201.
17. Deno, S. (1989). Curriculum-based measurement and alternative special education services: A fundamental and direct relationship. In M. R. Shinn (Ed.), *Curriculum-based measurement: Assessing special children* (pp. 1-17). New York: Guilford Press.
18. Gersten, R., Chard, D., Jayanthi, M., Baker, S., Morphy, P., & Flojo, J. (2009) *Mathematics Instruction for Students with Learning Disabilities: A Meta-Analysis of Instructional Components*. *Review of Educational Research*, 79(3), 1202-1242.
19. Popham, W.(2009). A process-not a test. *Educational leadership: journal of the Department of Supervision and Curriculum Development*. 66(7):85-86.
20. Deno, S.(2003). Curriculum-based measures: Development and perspectives. *Assessment for Effective Intervention*, 28(3-4): 3-12, DOI:10.1177/073724770302800302
21. Foegen, A., Espin, C., Allinder, R. & Markell, M. (2001). Translating research into practice: Preservice teachers' beliefs about curriculum-based measurement. *The Journal of Special Education*, 34, 226-236.
22. Welch,K.(2020). Teachers' Challenges with Implementing Curriculum-Based Assessment in Secondary Students with Disabilities, *Walden Dissertations and Doctoral Studies*. 8817.
23. Al-Bitar, A, Al-Asiri, H. (2023). Obstacles to the Application of the Intervention Response Model from Teachers' Point of View of Students with Learning Disabilities and General Education at Primary Level, *Journal of Education and Rehabilitation*, 12(50), pp. 52-100.
24. Fletcher, J. , Lyon, G., Fuchs, L., & Barnes, M. (2018). *Learning disabilities: From identification to intervention*. Guilford Publications.
25. Richards, S. (2015). Characteristics, assessment, and treatment of writing difficulties in college students with language disorders and/or learning disabilities. *Topics in Language Disorders*, 35(4), 329-344.
26. Syamsi, I., & Dharma, D. (2023). Identification and academic assessment models for students with specific learning difficulties in inclusive elementary schools. *Jurnal Prima Edukasia*, 11(1), 16-29.
27. Sahoo, M. , Biswas, H., & Padhy, S. (2015). Psychological co-morbidity in children with specific learning disorders. *Journal of Family Medicine and Primary Care*, 4(1), 21. <https://doi.org/10.4103/2249-4863.152243>.
28. Velasco, A., & Campbell, M. (2020). Assessment of academic difficulties in culturally and linguistically diverse school students. *Journal of Psychologists and Counsellors in Schools*, 30(1), 25-42. <https://doi.org/1010.1017/jgc.2020.5>.

29. Dueker, S. & Day J. (2022). Using standardized assessment to identify and teach prerequisite numeracy skills to learners with disabilities using video modeling. *Psychology in the Schools*, 59, 1001-1014. <https://doi.org/10.1002/pits.22473>.
30. Hargis, C. H. (2013). *Curriculum-based assessment: A primer*. Charles C Thomas Publisher.
31. Hosp, M. K., Hosp, J. L., & Howell, K. W. (2016). *The ABCs of CBM: A practical guide to curriculum-based measurement*. Guilford Publications.
32. Kovaleski, J. ., VanDerHeyden, A. Runge, T. , Zirkel, P., & Shapiro, E. (2022). *The RTI approach to evaluating learning disabilities*. Guilford Publications.
33. Kontu, E. & Pirttimaa, R. (2016). Teaching children with intellectual disabilities: Analysis of research-based recommendations. *Journal of Education and Learning*, 5(2), 318-336.
34. Werts, M., Carpenter, E & Fewel, C. (2014). Barriers and benefits to response to intervention: Perceptions of special education teachers. *Rural Special Education Quarterly*, 33(2), 3-11.
35. Sywelem.M,& Witte,J.(2013). Continuing Professional Development: Perceptions of Elementary School Teachers in Saudi Arabia, *Journal of Modern Education Review*, 3(12), pp. 881–898.
36. Alshammari,M.(2020). Difficulties of applying the continuous evaluation to the upper primary students from the point of view of teachers in Saudi Arabia, *Journal of Educational and Psychological Sciences* ,4(9), P: 80-94
37. Adams, B.,(2019).Teacher Acceptability of Curriculum Based Measurement as a Universal Screener in Reading.All Master's Theses. 1125, <https://digitalcommons.cwu.edu/etd/1125>
38. Zhao, Xiaoyan (2018). Chinese Primary School Mathematics Teachers' Assessment Profiles: Findings from a Large-Scale Questionnaire Survey, *International Journal of Science and Mathematics Education*, 16(7), p1387-1407 Oct 2018. 21 pp.
39. Seymour, S.(2016). Elementary Special Education Resource Teachers' Practices And Perceptions Of Curriculum-Based Measurement. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/4000>.
40. Abongdia, J., Foncha, J., & Dakada, A. (2015). Challenges Encountered by Teachers in Identifying Learners with Learning Barriers: Toward Inclusive Education. *International Journal of Educational Science*, 8(3), 493-501. <https://doi.org/10.1080/09751122.2015.11890271>.
41. Swain, K. & Allinder, R. (1998). An Exploration of the Use of Curriculum-Based Measurement by Elementary Special Educators. *Diagnostique*, 23(2), 87–104. <https://doi.org/10.1177/073724779702300203>.
42. Foegen, A., Jiban, C., & Deno, S. (2007). Progress monitoring measures in mathematics: A review of the literature. *The Journal of Special Education*, 41(2), 121–139.
43. Rowe, S, Witmer, S, Katelin,(2014). Teachers' Attitudes about Using Curriculum-Based Measurement in Reading (CBM-R) for Universal Screening and Progress Monitoring, *Journal of Applied School Psychology*, 30(4), p305-337 2014.
44. Robinson, C.(2020).Curriculum Based Measures for Screening English Language Learners: What We Know and Future Directions. Masters Theses & Specialist Projects. Paper 3169. <https://digitalcommons.wku.edu/theses/3169>.
45. Nevenglosky, E., Cale, C., & Aguilar, S.(2019). Barriers to Effective Curriculum Implementation. *Research in Higher Education Journal*, 36, Article ID: 182882
46. Kate,L, Rena, D, Adrea,T &, Meagan,W.(2023). An evaluation of a decision - making model on preservice teachers' instructional decision - making from curriculum - based measurement progress monitoring graphs, *Psychology in the Schools*, 60(7), Pages: 2129-2609.