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The Degree to which the Developed Jordanian Mathematics Curricula for the Basic Stage Include the Requirements of Students with Special Needs

Dr. Ghunaimat Mohammad Ali[1]

Abstract

The study aimed to verify the degree to which the Jordanian mathematics curricula developed for the basic stage include the requirements of students with special needs (gifted, learning difficulties) from the point of view of mathematics teachers in the Bani Ubaid Directorate of Education in Irbid Governorate - Jordan. The study relied on the descriptive statistics approach (questionnaire), in which (135) teachers participated in answering it, and they were selected by a simple random method. The results showed that the degree to which the developed Jordanian mathematics curricula included the requirements for gifted students and students with learning difficulties were medium, and the highest of these requirements for gifted students was: "The mathematics curriculum develops new positive attitudes among students related to scientific and technological progress". The highest of requirements for students with learning difficulties was: "The mathematics curriculum requires mathematics teachers to provide immediate feedback". The study recommended that curriculum designers in Jordan need to focus on the requirements of students with special needs.

Keywords: *gifted students, learning difficulties, mathematics curriculum, special needs.*

INTRODUCTION

The evolving world is working on a new and decisive phase in its handling of the special needs group in many countries, where serious attempts have been made to find scientific, practical and effective methods to meet their needs as much as possible. The concept of special educational needs has evolved in recent decades, and Al-Absi (2016) mentioned groups with special needs: mental disability, visual disability, hearing disability, emotional disability, motor disability, communication disorders, autism, gifted and learning difficulties. Therefore, in this study we will focus on the two categories: gifted students and students with learning difficulties. Ulva, & Amalia (2020) explained that there are several reasons why people with special needs need to learn mathematics: (a) mathematics is learning problem-solving skills; (b) developing thinking skills; (c) mathematics opens up insights into understanding other academic subjects; (d) mathematics provides broad and promising employment opportunities; and (e) mathematics makes them smart at work. Students with special needs need to learn mathematics because it can help them in everyday life, and develop students' creativity.

[1] Jordan, M_ghnemat@hotmail.com, ORCID ID: 0000-0002-8719-3700

UCLES (2017) noted "Special education is a means of providing inclusive education for students with special needs, and the term learning disabilities refers to students with learning disabilities, making it difficult for them to learn compared to children of the same age group." Dfes (2016) also defined it as a "learning difficulty requiring special education." Courtade, Test & Cook (2015) explained that Learning difficulties in mathematics have different forms, such as difficulty acquiring mathematical procedures or mathematical concepts. Some students may have difficulty with any subject of calculation, algebra or geometry (Khing, 2016). Some students may show mathematical difficulties in numerical and computational deficiencies such as counting and calculation (Hornigold, 2015). It creates environmental factors, such as lack of attendance, inappropriate teaching, lack of practice, poor curriculum, and low level of athleticism (Sharma, 2020). Similarly, others experience difficulties in learning mathematics, including delays in learning numbers, confusion in numbers, difficulty solving problems, understanding mathematical language and forgetting the basic concepts of mathematics.

Students' learning difficulties can be overcome through appropriate intensive educational intervention that is easily used for a certain period of time. Students with learning difficulties may not be intellectually weak, instead, their learning problems may be the result of an inappropriate design for teaching in subjects (Carnie, Jitendra, & Silbert, 1997). Mathematical difficulties refer to students' poor Academic achievement due to a variety of factors from poor teaching to environmental factors, but presumably due to inherent impairment in mathematical cognition not due to sociocultural or environmental causes (Soares, Evans, & Patel, 2018). In some points, during mathematics learning, some common difficulties may occur in mathematics, such as recalling the facts of numbers, fractures, decimal fractures, percentages, calculation, and these difficulties can be overcome by additional support and appropriate intervention.

Chapman (1998) cited six factors that disrupted efforts to increase the effectiveness of teaching for students with learning disabilities. One of these factors is curriculum. Chapman described that students who doubt their abilities (a) tend to blame their academic failure on those deficiencies, (b) generally consider their low abilities immutable, (c) generally expect future failure, and (d) give up easily when faced with difficult tasks.

The other category that we will focus on in this study are gifted students, which Khalil, & Accariya (2016) defined “gifted students can be defined as a group of students who can get the highest 1.5% of their age based on unique and high-quality cognitive and emotional perspectives as well as intelligence and creativity”. In other words. Moreover, some may consider them to be those who have achieved a high level of excellence in academic intelligence testing (Nevo & Rachmel, 2009) and those who differ from other students in terms of their cognitive, emotional and social needs (Shaywitz et al. ،2001). Accordingly, the definition of gifted students should not only be understood for their academic performance but also for their mental and social values such as self-esteem, motivation and social effects because these can support or eliminate their talent (Vidergor & Reiter, 2008). While in the atmosphere that supports their enjoyment, motivation and acceptance, they will be encouraged to learn and think more. As a result, their mental and social circumstances are equally important factors and must be taken into account for the development of techniques and methods that support their creative thinking in mathematics (Fraser-Seeto, Howard, & Woodcock, 2013).

Rotigel, & Fello (2004) illustrated the characteristics of gifted students in mathematics, most notably: they are often able to discern answers with extraordinary speed and accuracy, i.e. they have speed of achievement. Whether mathematical issues require computational skills, or problem-solving strategies, or conclusive thinking skills, and mathematically gifted students can see the relationships between subjects, concepts and ideas without interfering with official instructions specifically directed to this specific content, and they have an intuitive understanding of mathematical procedures, they may

skip steps and be unable to explain how they get to the right answer, Gifted math students often show an uneven pattern of mathematical understanding and evolution, always asking how, and why. I appreciate the development of concepts and more procedures. They have their own understanding about numerical sense, sequences, patterns, problem solving and computational strategies. However, those characteristics but the curriculum for gifted students has represented a progressive approach over the years.

Sak (2016) noted that the Education Program for Gifted Students (EPTS) is a global model for developing rich and enhanced curriculum programs for gifted students in most subject areas at all grade levels. The EPTS curriculum model includes the four principles that are important factors in the design of the curriculum for gifted students.

- The principle of universality, gifted curricula must be applicable across a variety of integration processes, such as private schools and independent classrooms.

- The principle of privacy, indicates that the curriculum must contain well-defined educational outcomes determined based on the learning needs of gifted students.

- The principle of utility, allows the curriculum to be applied to most subjects, such as science and mathematics.

- The principle of flexibility, the curriculum model must be applicable at all grade levels.

Woodward (1991) identified empirically supported principles relating to curriculum content that contribute to the quality of teaching: the nature of examples, and clarification of curriculum design. To illustrate the importance of examples in mathematics learning, Jones, Wilson, & Bhojwani (1997) noted that students learn from examples, where students can solve problems they face outside teaching. Unfortunately, current mathematics curricula often do not adequately manage the selection or organization of educational examples. This is due to: firstly, the number of educational examples and the organization of practice activities are often insufficient for students to achieve mastery as a result, although gifted students may quickly achieve near-perfect performance.

Clarification of curriculum design refers to the clear presentation of important concepts, skills and relationships between them. Curriculum clarification is influenced by the quality of teachers' decisions and actions taken at the following five stages of the educational design process: identifying concepts and skills to be learned, and identifying important relationships between concepts and skills. The organization of facts, concepts and skills in a hierarchy, the development of sets of educational examples that unequivocally illustrate the set of concepts and skills to be mastered, and the presentation of educational examples to the student (woodward, 1991). The curriculum and its organization also play critical roles in determining quality and outcomes. Unfortunately, mathematics curricula often cease to provide sufficient opportunities to learn to solve math problems involving working contexts and daily attitudes. Successful student performance on algorithms and summarized word problems does not always solve real-life mathematical problems (Jones, Wilson, & Bhojwani, 1997).

The Hashemite Kingdom of Jordan firmly believes in the importance of developing Jordanian human capabilities and arming them with science and knowledge; The National Centre for Curriculum Development (NCCD), in cooperation with the Jordanian Ministry of Education (JME), has endeavoured to modernize and develop the curriculum in order to improve students' level of knowledge. Since mathematics is one of the most important subjects that develops students' thinking and problem-solving skills, and is keen to prepare mathematics books in accordance with the best methods used globally by Jordanian expertise. To ensure that they are consistent with well-established national values, meet students' needs, and that the preparation of mathematics books takes into account the smooth presentation of content, and within difficult life contexts, increases students' willingness to learn, highlights the plan to resolve the issue, and assigns separate lessons to them that allow students to train in different types of such plans and apply them

in various issues. The basic stage mathematics curriculum contained a project for each unit; To promote students' learning and enrichment of the concepts and skills contained therein (NCCD, 2022).

Hence the idea of this study, in which we tried to demonstrate the degree of inclusion in Jordan's developed mathematics curricula in accordance with Collins' international standards for the basic stage of the requirements of students with special needs. The study was limited to students with learning disabilities and gifted students only.

The development of mathematics curricula in Jordan began from 2019 until 2022, so studies related to it are not sufficiently available. Therefore, previous literature was reviewed, which focused on curricula for gifted students and students with learning difficulties. So Antoun, Younes, & Salloum (2023) conducted an enrolment study that current curricula and teaching methods do not support our highly capable students to reach their potential. In this research, we explore how national policy documents, curricula and central textbooks in mathematics and science meet the needs of highly capable students. The perceptions of mathematics teachers and their role in providing educational needs for gifted students are known. Through qualitative methods, the following data sources have been used to address the research objective: policy document analysis, curriculum analysis and teacher interviews. The results pointed to the lack of a specific policy for gifted students in Lebanon, and the lack of evidence of curriculum provision and attention to the needs of gifted students in national curricula and textbooks in mathematics and science. The resulting data also provided important insights into the limited knowledge of teachers in supporting gifted students.

Darwis, Yendra, & Marizal (2022) conducted a study with a view to comprehensively evaluating the curriculum from kindergarten to 13th grade (curriculum 2013) in each government secondary school in order to improve the quality of education. The study used spatial analysis to evaluate the curriculum and determine the evolution of NEM grades in the school year. Furthermore, the kriging fulfillment method has been used via the Server program to extract scores. The results showed that the 2015 mathematics curriculum from kindergarten to 13th grade did not yield good results based on the interval of 36-68 scores for the entire Picanbaro region. In addition, the curriculum gives good results only to a small area in the north and south. In 2016, the curriculum accompanied by the entry of the new curriculum showed a significant change. The overall review of the curriculum from kindergarten to 13th grade implemented and used in 2017 showed a significant increase in grades for all regions at a interval of 68-84 degrees. The study showed that revising the curriculum from kindergarten to 13th grade is the right step to produce high-quality mathematics learning.

The aim of the Alrawwad study (2022) was to evaluate Jordan's basic eighth grade mathematics curriculum developed based on TIMSS-2019 criteria. The study used the analytical descriptive approach. The study community will be the content of the developed mathematics book in 2021, and the study sample consisted of the content of the first part of the curriculum. The researcher developed the content analysis tool in the light of the TIMSS-2019 's standards. The results showed that the list of criteria for TIMSS-2019 to be available in the basic eighth grade mathematics curriculum consisted of two dimensions: content dimension, dealing with three criteria (numbers, algebra, geometry), cognitive processes, and three criteria (knowledge, application, reasoning), and the results regarding the content dimension showed that the standard for numbers came first. Followed by the standard of algebra dimension. The geometry standard was third, and results with respect to the operations dimension showed that the knowledge standard was first, followed by the application standard, and the reasoning standard was third. In the light of the findings, the study recommended that the results of this study should be taken and used in the development of mathematics books to upgrade their content according to TIMSS-2019 standards.

The study of Sa Ngiamsunthorn (2020) aimed to learn about the different teaching and learning curricula designed for gifted students, and to shape appropriate techniques that enhance their creative thinking in mathematics. Participants in this study were gifted first-year students enrolled in basic mathematics courses in undergraduate geometry programs at a university of science and technology in Thailand. This study discovered that the appropriate use of challenging learning, problem-solving process, project-based learning, well-designed questions and in-depth learning style in the classroom effectively enhanced their insightful and creative thinking. Furthermore, an online tool such as Facebook can be used as an educational platform outside the classroom to engage them in online discussion and collaboration and challenge their thinking. Ultimately, based on students' feedback and assessment, this study found that a range of these techniques and methods have created a more comfortable and motivating atmosphere that has helped them to think creatively and is compatible with their needs and satisfaction. The study showed that gifted students need some form of special education through extra-curricular and learning experiences, because they have extraordinary potential in terms of intelligence, creativity, social and mentality.

In his study, Leikin (2011) identified three methods of guiding gifted education: first, acceleration, an advanced learning that exceeds academic content at its normal level. This acceleration usually takes the form of extracurricular activities because they have faster rates of growth on the academic side, and different needs compared to their peers of the same age. Secondly, expansion is a pattern of learning more subjects and subjects than the curriculum requires. Finally, in-depth learning is to ensure students develop their expertise in subjects. The study explained that these methods are teachers to do the following: 1) focus on conceptual content, 2) emphasize survey and production, 3) encourage high-level thinking, and 4) support learning within and among individuals. Provide speed, diversity and choice. In practice, teachers typically apply a combination of these three methods, while a particular curriculum may be given more weight than others depending on its effectiveness in promoting creative thinking in gifted students.

Bottge & Hasselbring (1993) undertook innovative work on teaching students with learning disabilities to solve contextual mathematical problems using video disks and direct instruction techniques to introduce complex mathematical problems embedded in portraying real-life situations. The results of their studies are encouraging and clearly demonstrate that students with learning disabilities can be taught to solve more complex problems than teachers generally expect of them. On the other hand, this study also shows that unless students are directed to solve complex math problems and are also given sufficient opportunities to try to solve these problems independently, they will not usually learn enough generalized problem-solving skills.

Statement of the Problem

The topic of students with special needs, despite its recent emergence at the educational level, has become one of the most important subjects among researchers. The results of many studies have indicated the requirements of students with special needs and what should be included in the curriculum related to mathematics. Mathematics is one of the basic subjects taught in all classes in Jordan. Jordan's NCCD the Jordanian curriculum for the basic level of education. The curriculum for mathematics was updated in 2019 according to the Collins World Series in stages beginning with the updating of the mathematics curriculum for the basic first grade and the basic fourth grade and then the rest of the classes were updated in sequential and sequential stages.

Groups of students with special needs are considered as rights as any other category in society, as is reported in the total number of students enrolled in government schools in Jordan and in the study of those with mathematical learning difficulties about 7% of the total sample of 422 basic fifth grade students.

Mathematics is one of the most commonly experienced subjects for students, and Giannis, & Baccaglini-Frank (2014) explained that mathematics learning disabilities are common and meaningful and deserve serious educational attention at all levels of school. Eric D. Jones, Rich Wilson, and Shalini Bhojwani (1997) stated that the collection of studies on mathematics education for students with learning disabilities had not been sufficiently developed to describe a specific and comprehensive set of well-studied practices.

From a historical overview, the way math curricula are offered to students has not received the same level of attention and testing by researchers, policymakers and teachers (Owen & Fuchs, 2002). Moreover, regular curricula are insufficient in depth, breadth and speed to meet the needs of a gifted child, and the formal school mathematics curriculum often lacks the challenge for gifted people, as these curricula contain minimal investigation of concepts, training and frequent practice (Rotigel, & Fello, 2004). The curriculum of gifted students has represented a progressive approach over the years, does not contain a coherent sequence of content and skills across grades, and lacks detailed elements such as a specific philosophy and well-defined goals (Tomlinson, 2009). The Darwis A, Yendra R, Marizal M. (2022) study also recommended that revising the curriculum from kindergarten to 13th grade is the right step to produce high-quality mathematics learning.

Al-shawara (2021) cited numerous complaints from teachers, students and their parents about considerable difficulty in the math curriculum for the fourth grade basic part (developed) whose trial version was applied in the 2019-2020 academic year. Alrawwad (2022) believes that mathematics curricula have been developed hastily, relying on cosmetic formalities only, and that the curriculum must take into account integration in different fields.

Based on the above, Considering that mathematics curricula in Jordan have been recently developed, the studies that focus on them are still few, so this study was conducted. the idea of this study, in which we tried to show the degree of inclusion in developed Jordanian mathematics curricula of the basic stage of the requirements of gifted students, and students with learning difficulties, as well as the impact of the type of scientific qualification (higher degree of mathematics teacher) in determining the degrees of inclusion, has been divided into the following categories: educational qualification, and non-educational qualification.

Significance of the Study

The importance of this study is that there is increasing attention to the requirements of students with special needs in general, gifted students and students with learning disabilities in particular, as well as the adoption of integrated learning based on the integration of these categories with ordinary students in Jordanian schools. Due to the novelty of the mathematics curriculum, studies on Jordan's curriculum developed to study the requirements of persons with special needs (gifted students, learning difficulties) are still few - according to the researcher - and these curricula have been introduced since 2019 from the development of the framework of the mathematics curriculum according to the Collins global series. The study also draws attention to the group of gifted students and students with learning disabilities in his attempt to help them meet the requirements they need in learning mathematics.

The results of the study help supervisors and mathematics teachers to focus on the requirements of students with special needs. They also help curriculum planners and educational leaders with regard to the requirements of the curriculum, to take advantage of them when planning and designing the content of mathematics curricula, teaching methods, curricula and supporting programmers, and to provide educational interventions to assist them in learning. The study's importance in providing mathematics teachers and academic researchers with measurements (study Instrument) may be useful in developing

similar relevant metrics. The importance of the study is that it studies the variable of scientific qualification (higher degree of mathematics teacher) for mathematics teachers in the following categories: educational qualification, and non-educational qualification, to illustrate the importance of the preparation and educational qualification of mathematics teachers in Jordan.

Research Question

This study was aimed at demonstrating the degree of inclusion in developed Jordanian mathematics curricula of the basic stage of the requirements of gifted students and students with learning disabilities from the point of view of mathematics teachers. The study attempted to verify the answer to the following questions:

1. What is the degree to which developed Jordanian mathematics curricula for the basic stage include the requirements of gifted students?

2. What is the degree to which developed Jordanian mathematics curricula for the basic stage include the requirements of students with learning disabilities?

3. Are there statistically significant differences at an indicative level ($\propto = 0.05$) in the scores of inclusion in developed Jordanian mathematics curricula of the basic stage of the requirements of students with special needs on the scale of use according to the variable scientific qualification of mathematics teachers?

Procedural Concepts

Jordanian mathematics curricula developed for the basic stage: mathematics curricula to be taught in Jordan in the first semester of the academic year 2023-2024. The JME approved its teaching for the basic stage, which was developed by NCCD in accordance with Collins' international standards and the activities, exercises, examples and concepts contained therein.

Students with special needs: Students who need special learning suited. The study was limited to gifted students and students with learning disabilities.

Study Delimitation

The study was limited to all mathematics teachers studying at all government schools of the Directorate of Education, Bani Obaid region, Irbid Governorate, Jordan, who study math curricula developed according to Collins' basic stage. That is the first academic year of 2023-2024. The number of State basic schools is 54. The study attempted to ascertain the degree to which developed Jordanian mathematics curricula for the basic stage included the requirements of students with special needs (gifted students, learning difficulties). The study was limited to the view expressed by mathematics teachers according to their scientific qualification variable.

Study methodology

The researcher followed a descriptive research curriculum by distributing the study identification, calculating repetitions and means of the values of math teachers' responses, and descriptive research used in field research, and helping to determine the degree to which developed Jordanian mathematics curricula the basic stage of the requirements of gifted students and students with learning difficulties from the perspective of mathematics teachers with accuracy and clarity. Abu Saleh & Awad, 2012, noted that quantitative data can be disseminated to all members of society, and that the results of the study are very reliable.

Study population and its sample

The study community is made up of all mathematics teachers who study the math curricula developed for the basic stage in the Directorate of Education, the Bani Obeid region in Irbid governorate for the year 2023-2024, where the number of mathematics

teachers (179) according to the data of the Directorate of Education was the Bani Obeid region in Irbid governorate for the same year. The selection of the study sample according to the simple random sample method, consisting of (135) was a teacher; That is, 75.4% of the study population, Abu Saleh & Awad, 2012, indicated that the higher the sample, the better it represents the community. Table (1) shows repetitions and percentages by scientific qualification.

Table 1 Repetitions and percentages of mathematics teachers by type of scientific qualification (educational qualification, non-educational qualification)

Groups	Repeated	percentage
educational qualification	25	18.5
non-educational qualification	110	81.5
All	135	100.0

Study Instrumentation

The researcher developed the questionnaire of the study in the light of the study literature, where the identification consisted of two parts, part I: the degree to which developed Jordanian mathematics curricula the basic stage of the requirements of gifted students, and the number of paragraphs in part I (25) paragraph. The second part was the degree of inclusion in developed Jordanian mathematics curricula of the basic stage of the requirements of students with learning disabilities, and contained a paragraph (25). The total number of paragraphs in the questionnaire is 50. The questionnaire resolution was Likert Five Scale. The fifth level indicates that the degree to which the developed Jordanian mathematics curricula for the basic stage include the requirements of gifted students or those with learning difficulties is high, and the higher the teacher's answer. Closer to the first level, the degree to which the Jordanian mathematics curricula for the basic stage included requirements for gifted students or those with learning difficulties decreased. The arithmetic averages for the degree of inclusion were classified into five levels: very high, high, medium, little, and very little, according to the following equation:

(Highest value - minimum value) ÷ Number of levels.

$\frac{5-1}{5} = \frac{4}{5} = 0.8$

This value is equal to the length of the category, and therefore:

1.8 -1.00 Very few

2.6 -1.8 few

3.4 -2.6 Medium

4.2 -3.4 High

5.00 -4.2 Very High

Validity

To ensure the veracity of the questionnaire, the researcher presented the preliminary picture of it to a group of arbitrators with knowledge and experience in this field. The preliminary picture of the identification was 10 arbitrators. The arbitrators' observations included a number of suggestions, such as redrafting some paragraphs, increasing the number of subparagraphs, clarifying some paragraphs, shortening some paragraphs, and the paragraph should be of a single and uncomplicated purpose, and suggesting that the paragraphs should be linked to mathematics curricula. Subsequently, an amended

questionnaire was prepared in accordance with the previous arbitrators' suggestions and was again submitted to eight former arbitrators. Their suggestions were limited and few, and the final identification was prepared by the researcher on the basis of the suggestions and guidance of all arbitrators.

To extract the indicators of validity construction of the scale, the coefficients of each paragraph and between the overall grade, between each paragraph and its attachment to the area to which it belongs, and between the areas and the total degree, were extracted in a survey sample from outside the study sample consisting of (30) student, the correlation coefficients of the paragraphs with the tool as a whole ranged from (0.38-0.89) to (0.39-0.89).

It should be noted that all Correlation coefficients were of acceptable scores and statistically relevant, and therefore none of these paragraphs were deleted. The field correlation coefficients have also been extracted at the overall level, the Correlation coefficients between the fields and each other and the following table (2) shows this.

Table 2 Correlation coefficients between each other's fields and overall

	Gifted Students' Requirements	Requirements for students with learning disabilities	overall
Gifted Students' Requirements	1		
Students with learning disabilities Requirements	.741**	1	
overall	.928**	.938**	1

Table (2) shows that all Correlation coefficients were of acceptable and statistically relevant scores, indicating an appropriate degree of construction validity.

Reliability

To ensure the reliability of the study tool, it was verified using the test-retest method by applying the scale, and re-applying it two weeks later to a group of (30) outside the study sample, and then the Pearson correlation coefficient was calculated between their estimates the two times.

The reliability coefficient was also calculated using the internal consistency method according to the Cronbach Alpha equation, and Table (3) shows the internal consistency coefficient according to the Cronbach Alpha equation and the repetition reliability of the domains and the total score. These values were considered appropriate for the purposes of this study.

Table 3 Cronbach's alpha internal consistency coefficient and repeat reliability of the domains and the total score

domains	repeat reliability	internal consistency coefficient
Gifted Students' Requirements	0.88	0.83
Students with learning disabilities Requirements	0.84	0.80
overall	0.89	0.87

FINDING

The study presents its results, as the number of study questions was three, and they were answered through the questionnaire prepared for this study.

The first question:

To answer this question, the arithmetic means and standard deviations were extracted for the degree to which the developed Jordanian mathematics curricula for the basic stage include requirements for gifted students, and the table (4) below shows this.

Table 4 Arithmetic means and standard deviations for the degree to which developed Jordanian mathematics curricula for the basic stage include requirements for gifted students, arranged in descending order according to the arithmetic means.

Rank	Number	Paragraphs	Arithmetic mean	standard deviation	Degree
1	2	The mathematics curriculum develops new positive attitudes among students related to technological progress.	3.74	.819	High
2	20	The mathematics curriculum provides students with motivation to learn more about mathematics.	3.67	.743	Medium
3	6	The mathematics curriculum encourages gifted students to use inquiry methods to understand mathematical ideas.	3.66	.601	Medium
4	19	The mathematics curriculum includes challenging exercises for students.	3.64	.796	Medium
5	9	The mathematics curriculum presents open-ended mathematical questions.	3.62	.771	Medium
6	3	The mathematics curriculum focuses on curricular and extracurricular activities that encourage gifted students to demonstrate their mathematical talents	3.50	.863	Medium
7	25	The mathematics curriculum includes the use of various assessment strategies appropriate for gifted students.	3.50	.742	Medium
8	16	The mathematics curriculum encourages students to think mathematically and its skills such as reasoning, and proof.	3.48	.761	Medium
9	17	The mathematics curriculum provides activities that expand students' understanding.	3.47	.731	Medium
10	23	The mathematics curriculum	3.47	.827	Medium

		includes the use of teaching strategies appropriate for gifted students.			
11	8	The mathematics curriculum supports project-based learning.	3.46	.620	Medium
12	15	The mathematics curriculum encourages students to possess critical thinking skills.	3.46	.790	Medium
13	18	The mathematics curriculum contains mathematical puzzles that motivate students to think and show their talents.	3.45	.844	Medium
14	12	The mathematics curriculum requires students to memorize mathematical facts algorithms.	3.44	.835	Medium
15	4	The mathematics curriculum focuses on higher-order thinking skills.	3.41	1.010	Medium
16	5	The mathematics curriculum invites gifted students to use enrichment activities that encourage discovery and problem solving.	3.40	.883	Medium
17	26	The mathematics curriculum is linked to the curriculum of other academic subjects.	3.40	.830	Medium
18	13	The mathematics curriculum requires students to generate creative ideas in some mathematical situations.	3.37	.991	Medium
19	22	The mathematics curriculum requires students to have a responsibility to their community and to use their talents constructively.	3.33	.845	Medium
20	21	The mathematics curriculum provides guidance for students to develop their mathematical talents.	3.30	.744	Medium
21	1	The mathematics curriculum takes into account the psychological foundations of gifted students	3.29	.945	Medium
22	7	The mathematics curriculum encourages students to engage in deductive reasoning.	3.19	.857	Medium
23	11	The mathematics curriculum uses activities based on abstraction.	3.19	.877	Medium
24	24	The mathematics curriculum provides additional rich	3.03	.782	Medium

		mathematics books and articles to help gifted students.			
25	14	The mathematics curriculum calls on students to search for mathematical information by reviewing some sources and references.	2.81	1.114	Medium
26	10	The mathematics curriculum requires students to do mathematical research.	2.70	1.031	Medium
Gifted Students' Requirements			3.38	.563	Medium

Table (4) shows that the arithmetic means ranged between (2.70-3.74), where paragraph No. (2), which states, "The mathematics curriculum develops new positive attitudes among students related to scientific and technological progress," came in first place, with a arithmetic average of (3.74). While Paragraph No. (10), which reads, "The mathematics curriculum requires students to do mathematical research," came in last place, with a mean of (2.70). The arithmetic average for the degree to which the developed Jordanian mathematics curricula for the basic stage include requirements for gifted students as a whole was (3.38). It`s rank Medium.

The second question:

To answer this question, the arithmetic means and standard deviations were extracted for the degree to which the developed Jordanian mathematics curricula for the basic stage include the requirements for students with learning difficulties, and the table below shows this.

Table 5 Arithmetic means and standard deviations for the degree to which developed Jordanian mathematics curricula for the basic stage include requirements for students with learning difficulties, arranged in descending order according to the arithmetic means.

Rank	Number	Paragraphs	Arithmetic mean	standard deviation	Degree
1	39	The mathematics curriculum requires mathematics teachers to provide immediate feedback.	3.26	.828	Medium
2	52	The mathematics curriculum is linked to the curriculum of other academic subjects.	3.22	.798	Medium
3	29	The mathematics curriculum presents a smooth transition of mathematical ideas.	3.20	.780	Medium
4	30	The mathematics curriculum takes into account individual differences among students.	3.14	.874	Medium
5	45	The mathematics curriculum requires teachers to progress from simple to complex in explaining mathematical material.	3.14	.830	Medium
6	40	The mathematics curriculum offers daily review to link the mathematical concepts and	3.13	.667	Medium

		principles studied.			
7	42	The mathematics curriculum calls for the use of continuous assessment to identify learning difficulties and follow appropriate procedures.	3.13	.777	Medium
8	46	The curriculum links mathematics to the reality of students and their daily lives.	3.13	.777	Medium
9	51	The mathematics curriculum explains mathematical ideas in slow, segmented steps.	3.08	.829	Medium
10	38	The mathematics curriculum provides exercises to ensure the success of students with learning disabilities in mathematics.	2.98	.851	Medium
11	36	The mathematics curriculum requires teachers to diagnose students at the beginning of each unit of study to identify students with learning difficulties.	2.96	.841	Medium
12	41	The mathematics curriculum provides a treatment plan for students who suffer from learning difficulties in any mathematical field.	2.96	.863	Medium
13	43	The mathematics curriculum includes the use of teaching strategies appropriate for students with learning difficulties.	2.96	.732	Medium
14	48	The mathematics curriculum calls for the use of educational methods that suit the needs of students with learning difficulties.	2.93	.971	Medium
15	47	The mathematics curriculum simplifies abstract concepts so that they become meaningful.	2.90	.941	Medium
16	28	Mathematics curriculum activities take into account the abilities of students with learning disabilities.	2.87	.853	Medium
17	44	The mathematics curriculum includes the use of various assessment strategies suitable for students with learning difficulties.	2.82	.800	Medium
18	32	The mathematics curriculum uses simple language to help students with learning disabilities understand mathematical ideas.	2.79	.915	Medium
19	27	The mathematics curriculum takes	2.77	.753	Medium

		into account the psychological foundations of students with learning difficulties.			
20	50	The mathematics curriculum requires teachers to communicate with parents to explain the student's learning difficulties.	2.74	.962	Medium
21	35	The mathematics curriculum takes into account language and speech disorders (for example: difficulty building a complete mathematical sentence).	2.72	.895	Medium
22	34	The mathematics curriculum takes into account difficulties in auditory perception (for example: confusion between some words).	2.65	.840	Medium
23	37	The mathematics curriculum takes into account the limited thinking processes of students with learning disabilities.	2.64	1.003	Medium
24	31	The mathematics curriculum provides additional mathematics books and articles to help students with learning difficulties.	2.56	1.005	Medium
25	49	The mathematics curriculum develops self-reliance.	2.56	.951	Medium
26	33	The mathematics curriculum takes into account difficulties in visual perception (for example: not distinguishing the relationship between objects)	2.31	.885	Medium
Students with learning disabilities Requirements			2.91	.608	Medium

Table (5) shows that the arithmetic averages ranged between (2.31-3.26), where paragraph No. (39), which states, “The mathematics curriculum requires mathematics teachers to provide immediate feedback,” came in first place, with a arithmetic average of (3.26). While Paragraph No. (33), which reads, “The mathematics curriculum takes into account the difficulties of visual perception (for example: not distinguishing the relationship between objects),” ranked last, with a mean of (2.31). The arithmetic average for the degree to which the developed Jordanian mathematics curricula for the basic stage include requirements for students with learning difficulties as a whole was (2.91). It`s rank Medium.

The third question:

To answer this question, the arithmetic means and standard deviations were extracted for the degrees of inclusion in the developed Jordanian mathematics curricula for the basic stage of the requirements for students with special needs on the scale of use according to the academic qualification variable. To show the statistical differences between the arithmetic means, the “t” test was used, and the table (6) below shows this.

Table 6 Arithmetic means, standard deviations, and the "t" test for the effect of academic qualification on the degrees of inclusion in the developed Jordanian mathematics curricula for the basic stage of the requirements of students with special needs on the usage scale.

	Qualification	Numbers	Arithmetic mean	standard deviation	F Value	Degrees of freedom	statistical significance
Gifted Students' Requirements	Non-educational	110	3.43	.539	1.899	133	0.060
	Educational	25	3.19	.637			
Students with learning disabilities Requirements	Non-educational	110	2.94	.598	1.419	133	0.158
	Educational	25	2.75	.643			
Overall	Non-educational	110	3.18	.516	1.801	133	0.074
	Educational	25	2.97	.604			

It is clear from table (6) that there are no statistically significant differences (a = 0.05) due to the effect of academic qualification in all fields and in the total grade.

DISCUSSION

Discussing the results of the first question

The degree to which the Jordanian mathematics curricula developed for the basic stage included requirements for gifted students was moderate. This value is considered acceptable but insufficient, as gifted students need many requirements that enhance their talents, sustain their abilities, and direct them toward more creative thinking, critical thinking, abstraction, and deduction. As stated in the study of Alrawwad (2022), which recommended the necessity of taking the results of its study and employing them in developing mathematics books to improve their content in accordance with the TIMSS-2019 standards.

The highest score for these requirements was paragraph (2). This is due to the fact that the Jordanian mathematics curricula developed for the basic stage focused on the use of technology and e-learning methods, through the use of activities based on Technology, and activating e-learning tools such as drawing programs, mathematical representation, and others. The curricula keep pace with mathematical ideas and scientific progress that have emerged recently, as gifted students search for what is new and create positive trends in them. This was reflected in the students' motivation to learn more about mathematics, as stated in Paragraph No. (20), which ranked second among the requirements for gifted students. Paragraph (6) came in third place. Rotigel, & Fello (2004) showed that one of the characteristics of gifted students in mathematics is that they are able to distinguish answers with extraordinary speed and accuracy. Whether mathematical problems require arithmetic skills, problem-solving strategies, or deductive reasoning skills, mathematically gifted students can see relationships between topics, concepts, and ideas without the intervention of formal instruction directed specifically at

that specific content, and they have an intuitive understanding of mathematical procedures and processes.

The requirements for gifted students came in last place was paragraph (10). As the developed Jordanian mathematics curricula did not require students to conduct mathematical studies and research related to mathematical fields, this limits the abilities of the gifted, and does not give them sufficient opportunities to delve into learning mathematics. Leikin (2011) demonstrated in his study the importance of delving into the education of the gifted, to ensure the development of students. For their expertise in the topics, and the role of expansion in learning more topics and materials than what the curriculum requires was Paragraph (14). The developed Jordanian mathematics curricula neglected the role of mathematical research and review of mathematical books and articles in developing the capabilities of gifted students, enhancing their abilities, and expanding their mental awareness, which helps them generate serious creative ideas and highlight their mathematical talents. Sa Ngiamsunthorn (2020) noted that gifted students need some form of special education through extracurricular experiences, because they have extraordinary potential in terms of intelligence, creativity, social and mental development.

Discussing the results of the second question

The degree to which the Jordanian mathematics curricula developed for the basic stage included the requirements for students with learning difficulties was moderate, and this value is considered an unacceptable degree, as students with learning difficulties need special learning, as indicated by ucles (2017). It is necessary to pay more attention to the requirements of students with learning difficulties, especially since the degree of learning difficulties in mathematics varies, ranging from mild to severe, as explained by Giannis, & Baccaglini-Frank (2014).

The highest score for these requirements was paragraph (39). Students with learning difficulties need immediate review and feedback, to determine the degree of their understanding and identify their weak points. This gives mathematics teachers opportunities to redirect and explain if some unclear aspects of students with learning difficulties emerge. Ensure that mathematical concepts and procedures are not forgotten, and this is what students with learning disabilities suffer from, as indicated by Courtade, Test & Cook (2015). Paragraph (52) came in second place. The developed Jordanian mathematics curricula contained one of the scientific standards in school mathematics, which is the linking standard, by linking all mathematical ideas to the other academic curricula, such as physics, computers, and culture. Finance and others. This indicates the importance of mathematics in the daily lives of students in general and students with learning disabilities in particular, which makes students feel that mathematical ideas are meaningful. While paragraph (29) came in third place. There is no doubt that students with learning difficulties need a simple transmission of mathematical ideas, so that they can comprehend them according to their abilities and capabilities, as the mathematics curriculum developed by Mathematics teachers move from simple to complex in explaining mathematics, to suit students with learning difficulties.

In last order were the requirements for people with learning difficulties was paragraph (33), while paragraph (49) came in the penultimate order. It was preceded by paragraph (31), as the developed mathematics curriculum did not include additional resources that support the learning of students with learning difficulties, or remedial interventions to address the problems and difficulties they face. Carnie, Jitendra, & Silbert, (1997).

Discussing the results of the third question

The results showed that there were no statistically significant differences due to the effect of academic qualification in all fields and on the total grade. The academic qualification

represents the higher academic degree obtained by mathematics teachers, which is: an educational qualification, and a non-educational qualification.

The lack of effect may be due to the variable of academic qualification held by mathematics teachers, as it did not play a role in causing differences in the degrees of inclusion in the Jordanian mathematics curricula developed for the basic stage of the requirements of students with special needs (gifted, learning difficulties). This indicates that there is no effect of graduate programs in increasing inclusion scores. This may be due to the neglect of graduate studies programs and educational qualifications on the practical side of the requirements of students with special needs (gifted, learning difficulties), and the nature of the content of university study programs and the number of university hours that teachers receive in their university studies do not focus on teaching people with special needs, especially those with special needs and difficulties. Learning, noting that most of the teachers on whom this study was conducted were graduates of non-educational colleges. Al-Shawara (2021) pointed out many complaints from teachers, that mathematics curricula were developed hastily, and relied on only cosmetic formalities, and that the curriculum must take into account integration in different fields.

CONCLUSIONS

Based on the results of the study, the study concluded the following:

1. The most prominent requirements for gifted students included in the Jordanian mathematics curricula developed for the basic stage was: The mathematics curriculum develops new positive attitudes among students related to scientific and technological progress.

2. The most prominent requirements for students with learning difficulties included in the Jordanian mathematics curricula developed for the basic stage was: The mathematics curriculum requires mathematics teachers to provide immediate feedback.

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