

Teaching Mathematics Remotely for the Middle School: Challenges and Proposals Development from the Perspective of Mathematics Teachers in the Kingdom of Saudi Arabia

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Abstract

The study aimed to identify the challenges of distance learning mathematics for the middle school and recommendations for development from the point of view of mathematics teachers. The study used the descriptive approach and questionnaire as a tool for the study. The study sample consisted of (129) Mathematics teachers engaged in the intermediate stage in the Makkah Administration Education Office, and the results showed that there are major challenges in teaching mathematics remotely for the intermediate stage, and that the most important challenge is "the dependence of some learners on others in the login processes and completing tasks." In distance learning mathematics, the frequent absence of learners and their neglect of mathematics lessons in distance learning, which affects their academic level, the weak follow-up and feedback by families to their children in learning mathematics remotely, and there is a great need to develop distance learning mathematics for the middle stage, and one of the most important results is What the study concluded was providing technical devices and an Internet connection to those who do not have them, and reducing educational content in terms of focusing on quality and not quantity in the learning systems used to teach mathematics remotely, including assignments, activities, etc. School principals, teachers, school principals, and supervisors focus on learning outcomes through Distance education. The study recommended establishing distance education centers in education departments, working to develop adaptive learning management systems, Entrusting supervision and management of distance education to specialists in the field of educational technology,

reducing administrative burdens on mathematics teachers in middle schools, and activating the role of distance learning communities. Professional learning, working to add a virtual mathematics laboratory, providing continuous qualitative training for mathematics teachers.

Keywords: Distance Learning, challenges, development proposals, teaching mathematics.

الملخص باللغة العربية

هدفت الدراسة إلى تحديد تحديات تعلم الرياضيات عن بعد بالنسبة للمدرسة المتوسطة والتوصيات المتعلقة بالتطوير من وجهة نظر معلمي الرياضيات، استخدمت الدراسة المنهج الوصفي، والاستبيان كأداة للدراسة. تألفت عينة الدراسة من (١٢٩) معلم ومعلمة رياضيات يعملون في المرحلة المتوسطة في مكتب التعليم الإداري في مكة المكرمة، وأظهرت النتائج أن هناك تحديات كبيرة في تدريس الرياضيات عن بعد للمرحلة المتوسطة، وأن التحدي الأكثر أهمية هو «اعتماد بعض المتعلمين على الآخرين في عمليات تسجيل الدخول وإكمال المهام». وفي تعلم الرياضيات عن بعد، وكثرة غياب المتعلمين وإهمالهم لدروس الرياضيات في التعلم عن بعد، الذي يؤثر على مستواهم الأكاديمي، وضعف المتابعة والتغذية المرتدة من جانب الأسر لأطفالهم في تعلم الرياضيات عن بعد، وهناك حاجة كبيرة لتطوير تعلم الرياضيات عن بعد للمرحلة المتوسطة، وأحد أهم النتائج هو ما خلصت إليه الدراسة من توفير أجهزة تقنية والإنترنت لمن لا يملكونها، والحد من المحتوى التعليمي من حيث التركيز على النوعية وليس الكمية في نظم التعلم المستخدمة لتدريس الرياضيات عن بعد، بما في ذلك المهام والأنشطة وما إلى ذلك، يركز مديرو المدارس والمعلمون والمشرفون على نتائج التعلم من خلال التعليم عن بعد، وأوصت الدراسة بإنشاء مراكز للتعليم عن بعد في إدارات التعليم، والعمل على تطوير نظم لإدارة التعلم التكيفي، وإسناد الإشراف على التعليم عن بعد وإدارته إلى المتخصصين في مجال تكنولوجيا التعليم، وتخفيض الأعباء الإدارية على معلمي ومعلمات

الرياضيات في المدارس المتوسطة، وتفعيل دور مجتمعات التعلم عن بعد، التعلم المهني، والعمل على إضافة مختبر افتراضي للرياضيات، وتوفير التدريب النوعي المستمر لمعلمي الرياضيات.

الكلمات الرئيسية: التعلم عن بعد، التحديات، مقترحات التطوير، تدريس الرياضيات.

Introduction

Increased interest in the recent times Last by Distance Learning in all the countries advanced educationally whether in stage Medium or high school, until University. but rather and it extended interest in Distance Learning in Institutes Training And courses that Its progress, and all that He was product for effectiveness Distance Learning in Crises like crisis pandemic corona. Distance Learning is Instrument To provide Environments education Rich With sources Multiple For education Self And diversity Methods And methods and means education, where I became Subject Educational Available on Devices Technology with What In which from Programs And applications Motivating To learn and Meet To develop skills Educated people According to needs market the job instead of from Sufficiency By knocking Traditional (Abdulkarim, Almudkhaly, 2022).

And I have I knew UNESCO Distance Learning That it is: that is practical Educational no He is in which communication direct between learner and the teacher, so that They are Far apart Chronologically And spatially and it is done Connection between them on road Media Educational (Electronic or printed). And from here It is worth it Signal to that Learning Email from Most important tools Distance Learning And not Himself, Distance Learning may be Complete using tools Traditional And he has He is in a way electronic (Al-Ubaid, Alshaya, 2018).

And it is distinguished Distance Learning With several Advantages Of which Suitability Which Means Its suitability For all Levels educational, And the effect where that Technology used in Distance Learning she has impact And impression good I have educated people, And from Most important Advantages that Characterized

With it Distance Learning also flexibility, And he means With it Students Freedom Say to choose the time And the place the appropriate For education Without Restriction In a long time or place, as in education The presence (Rakibi, 2022).

And by extrapolation results Many from Studies And research that I had education mathematics on after I confirmed all of them on Importance Distance Learning in education mathematics Of which study Elgath (2021) Reality practice Parameters mathematics For the stage Medium For methods Calendar alternative e in Teaching them on after in Shade pandemic corona, And I ate study Al-Shanqeeti And Elbalawy (2022) range Use Calendar Al-Qaim on the performance in Distance Learning I have my teacher mathematics in stage high school, study Al-Zahrani (2021) about effectiveness Distance Learning For courses mathematics University during Spread pandemic virus corona from Side consideration Members body Teaching With an oath mathematics at Umm Al-Qura University, and I ate study Elbadawy (2021) effectiveness Training on design Tutorials Distance Learning in material mathematics, as She pointed out study Almudkhaly, Abdulkarim (2022) to Role Distance Learning in development Skills The soft one I have Educated women specialty mathematics At the university Imam Abdulrahman son Faisal from Destination Their gaze , And I ate study Al-Saai (2021) degree difficulty application Distance Learning For a substance mathematics And the stage the basic Supreme in Shade pandemic corona from Destination consideration Parameters mathematics in education The Jordan Valley North , And I ate study Hassan (2020) Education mathematics on after in Shade pandemic corona, as And I ate study Atif And Kariri And Tohay (2022) opinions my teacher mathematics In an area Jazan in Distance Learning during Hungry corona.

It turns out Than Previously that all Studies Previous that I had education mathematics on after, that it I had it in Stages Educational different, But With a picture Rare in stage Medium, and this is what Seeking for him Studies current in Identify on Challenges in education mathematics on after for the stage Medium from Destination consideration Teachers And parameters, proposals to develop it.

Problem the study:

Prepare The kingdom Arabic Saudi Arabia from Countries that used Distance Learning In a way Complete, in all Stages Educational Such as stage Medium, whether in Crises like pandemic Corona or in times comment the study in attendance, and that from during activation education Email With systems administration education different As a guarantee To continue the operation Educational.

And from during an experience researcher And his observation To my teachers education mathematics For the stage Medium In person And about after Notice some Challenges in Try it To teach mathematics on after For the stage medium, Which a job on Its effect study exploratory, via Interviews a personality codified, on a sample from my teacher mathematics For the stage medium, And the adult Their number (60) A teacher And a teacher, Show from During it that 100% of them They faced A number from Challenges in Their experience To teach mathematics on after For the stage medium, and that 92% of them They have Proposals For development.

And in view for importance an experience stage Medium in Use Distance Learning By being phase a task and basic in Phase education general, came search the next to get to know on Challenges in education mathematics on after For the stage medium, And suggestions To develop education mathematics on after from Destination consideration Teachers And parameters.

Questions the study:

1. What are the challenges in distance teaching mathematics for the Middle stage from the point of view of mathematics teachers?
2. What are the necessary proposals for the development of distance teaching mathematics for the Middle stage from the point of view of mathematics teachers?

Goals the study:

I aimed the study to reveal on:

Challenges in education mathematics on after for the stage Middle from Destination consideration Teachers and parameters.

Proposals necessary to develop education mathematics on after for the stage Medium from Destination consideration Teachers and parameters.

Importance the study:

Lie Importance the study While follows:

Presentation reality Actual For challenges that Facing education mathematics on after for the stage medium, Which It will benefit Teachers and parameters and specialists in education from the focus on her and avoid it with attempt to find Solution Futurism she has.

Presentation Proposals To develop education mathematics on after for the stage medium, Which It will benefit Teachers And parameters and officials and friends the decision in Planning And development education.

Throw the light on education mathematics on after for the Middle stage and that for scarcity Studies in this the field Say border science researcher Than may be Opens the field for more from Studies And it works on Enrichment the library Arabic.

Limits of the study:

It was limited the study on the border Utensils:

Objective Limits: Challenges education mathematics on after for the stage Medium And suggestions Development.

Human Limits: a sample random from my teacher and parameters mathematics for the stage Medium in Schools Governmental for Males and Females.

Spatial Limits: schools Governmental for boys and girls in office education managed by education Mecca in the Kingdom Arabic Saudi Arabia.

Time Limits: applied the study during the chapter Academic the first from General 1445/1446 AH.

Terms the study:

education on after:

Known that he is "System educational get up on receipt Subject Educational to learner Without Commitment With time and a place specific using Technique the information and communication" (Al-Ubaid, Alshaya, 2018) .

and he knows him researcher Procedurally That he is style education Official He learns in it Educated people in stage Medium material mathematics in any time and yes place using Technology Modern.

The Frame Theoretical and studies Previous

First: Distance Learning:

that education right project for all Individuals the society on difference their circumstances, and education the presence won't Manage from presentation Services Educational unless for class Limited who are they from here Back Concept education on after, Which Prepare candy suitable to provide Opportunities Learning and development Professional for whom did not allow for them Their circumstances Completely Teaching them or development Their selves (Jawaida & et al, 2019) .

Starting Distance Learning in Century Ninth ten While He knew By education By correspondence, so get up Institutions Educational With determination Contents education necessary, To meet Desires in Learning I have Categories Wide from the society in order to You can from regularity in seasons Scholarship that It requires it Urban Education, In that the time He was Content educational Sends on road Mail It is composed from Materials Printed Generally, And evidence the study (Shato, 2018) .

And with beginning the seventies in Century Twenty appeared an idea Use Television And the radio and tapes the video in His structure Learning on after, so She was Universities send via Her mail Materials Necessary To learn from books and tapes video and others, and it was A condition necessary to attend all Educated people to perform the test Final (Al-Rakibi, 2022) .

As well as About what Previously The with progress Technology in Century Present, Transformation Distance Learning to education using Technology With all Its types cell phone and devices tablet and the computer Automated, can learner Access Destiny big from sources Learning Miscellaneous written and vocal and visual, and communication with the teacher in any time and yes place, and interaction with His peers as Gets in education presence, and send, and receive Duties and activities.

Distance learning of Concept:

Known Nashwan and Abdel Moneim (2011) Distance Learning That he is: Style To learn Self And continuous He is in it learner Away on female teacher where He endures responsible Learn it using Material Educational from during means Educational e, It includes in that

Internet in which suits nature Learning Self And capabilities Inequality For learners And their speed The different one in Learning. And you know Al-Hanawi (2012) Distance Learning It is: a phrase on Availability Opportunities Educational Continuous All along life for individuals with intention development all Individuals the society and develop them, so that they can from Adaptation with Requirements Civilized And even He is as much as they can Interaction with Programs Development.

as Known Jawaida & et al (2019) Distance Learning That he is: to provide education for any an individual from Individuals the society he has the desire in education and ability Finance on that, it is done that on road communication from during Media Multiple And means Connection Miscellaneous under Censorship Administrative and organizational It ends by getting on certificate Recognized With it.

know (Berg & Simonson, 2023) Distance Learning It is: a system Official For education And learning It was completed Prepare it In a way private on road means Connection e, And it is distinguished With his ability on Create Opportunities For education in Cases that It is difficult With it to implement education traditional, And that Because he less Cost no maybe Restrict him In an area geography specific, as that it Easy practical Learning For learners And employees Whose They face Problems Distances And the turmoil in in Schedule Appointments Because he more flexibility from Hand the time And it can Get on him in any place.

Justifications Distance learning:

that Tracker For situations Systems Educational via Ages different, find that it did not Be away on Circumstances Community surrounding, she is You get trapped with all what Spins in the society from events and changes Social, Economic, political and others, The Command that stands out Types different from Methods And ways education and learning (Jawaida & et al,2019) .

appeared the need the diamond For Distance Learning As a response necessary for many from needs, and processing Face it Palaces in Systems Educational traditional, because of Justifications The following: saving Opportunities education For individuals in Regions remote, to provide education during crises, scale down Costs

education, to lift the level Scientific And cultural For all Individuals the society on difference Their circumstances (Gabriel, 2009) .

Sees researcher that from Justifications Use education on after, to support education Continuous For all Individuals the society, because education not Confined in education school, And the plural between education and work with a purpose development Individuals The worker in all sectors, and keep up Developments And the changes the happening in the world All together.

Goals Distance Learning:

Mentioned (Elbadawy, 2021, Al-Zahrani, 2021, Atif & et al, 2022) that Distance Learning aim to me:

Availability Opportunities education for every from He desires in to lift His level Scientific and the professional.

Mitigation the pressure on Institutions Educational.

Facilitation on Educated people and their desire in more Their Acquaintances.

Investigation Goals the society cultural and developmental.

Dam Gap between Technology and the curricula Scholarship and invest it in shape optimum in presentation Knowledge and its evaluation.

Supply Individuals the society with acquaintances that meet their needs.

To provide education for any an individual in any time and a place.

To provide means Multiple To deliver Knowledge for learners and design Curricula Scholarship with What Considerate Differences Individuality between them.

to provide Opportunities more to interact and communication between the teacher and the learner.

Availability Opportunities miscellaneous to interact with Teachers And the sources educational, And employment strategies Educational miscellaneous.

presentation the support for students Low the level the collection Outside time Period scholastic, and contribute in Care the students gifted, And the limit from Lost Educational.

Contribute in retention by learning and access by learning to phase Mastery from during Availability Materials Educational.

Sees researcher that from benefits Distance Learning he Individualization education with what Proportional to with nature, level learner, with His circumstances Temporality, spatial, method and pattern Learn it.

and from what Confirms This is amazing Importance Many from Studies Of which study Hassan (2020) and I finished the study to suggestion some Tools Materialism And software e And interactive To develop education And learn mathematics on after, as I confirmed on necessity training The leaders on teaching mathematics With techniques Technological: to ensure Dealing with her With a picture Professionalism, study Elgath (2021) To get to know on reality practice Parameters mathematics For the stage Medium in city Riyadh In the Kingdom Arabic Saudi Arabia For methods Calendar alternative e in Teaching them on after in Shade pandemic corona, And study Al-Zahrani (2021) I aimed Identify on effectiveness Distance Learning For decisions mathematics University during Spread pandemic "virus corona from Destination consideration Members body Teaching With an oath mathematics in university Mother Villages And I arrived results the study to that practical interaction Members body Teaching with Their students during the crisis She was To a degree Medium Due To move Sudden from education The presence to education on after, In addition to some Difficulties Related With specialization Courses mathematics, study Elbadawy (2021) I searched effectiveness Training on design Tutorials Distance Learning in material mathematics, And it was results the study that degree to have Teachers skills design lessons on after in material mathematics Medium.

Aimed study Al-Saai (2021) recommended Its results to necessity Preparation a team specialized to redo look in road an offer material mathematics from during System Distance Learning and make it more Interactive And training and qualification my teacher mathematics to possess Competencies Technological To apply System Learning on after And it is able on Create environment Electronic Interactive Rich With attitudes, and activities, And the means Educational.

And he has I agreed study all from Atif & et al (2022), Al-Shanqeeti & Elbalawy (2022), Elmoudkhali, Abdulkarim (2022) on necessity to

publish Awareness With importance education mathematics, learn it on after I have Teachers, the educated And their families, clarify mission, responsibilities assigned With them.

Handicaps Distance Learning:

To remember Al-Saai (2021) that there Many from Obstacles that Transformation Without application Distance Learning on the face optimum Such as:

Weakness Structure Infrastructure.

To rise Cost Development.

Limited Content Email the appropriate.

Absence Interaction Humanitarian.

Loss Of experience Technology I have Participants in the operation Educational.

None Accept some Parties the operation Educational For this Type from education and learning.

And he sees researcher that Most Obstacles in education on after, may be Faded because of what I made it pandemic corona from Move it Quality in to merge Technology in education , education on after, he has I dealt Countries with all Obstacles , the difficulties Continuously education Especially in The kingdom Arabic Saudi Arabia , But no He removes Distance Learning Need To develop more With what It goes along with Stages education different, Especially stage Medium Being phase Transitional And important And basic from Phase education.

And he has I confirmed results studies Atif et al (2022), Al-Shanqeeti & Elbalawy (2022) to absence Interaction humanitarian, And a shortage Of experience Technology I have Participants in the operation educational, And weakness Structure Infrastructure Due for high costs Materialism.

Proposals to succeed Distance Learning:

He agrees all from (Jawaida & et al, 2019, Al-Zahrani, 2021 , Atif & et al, 2022) on that from Proposals necessary to succeed Distance Learning its:

to equip Structure Infrastructure For networks Internet in all the cities and the villages.

a contract Courses Training for Teachers And the educated How to Dealing with tools education Email on after in a way general.

The performance with a process Confinement comprehensive for learners Whose no they have Equipment Necessary For process Distance Learning and provide it for them.

Benefit from Competencies Educational existing in education General or University in Enrichment banks (questions, the exams And explanations Acoustic and visual, Software educational, the games educational, enrichments Educational) including He achieves the quality, considerate Differences Individuality.

Investment means media And means communication Social in to publish Awareness With goals education And learning on after And its importance I have Teachers And the educated And their families And clarify mission And responsibilities assigned them.

To provide Mechanisms To motivate Teachers And the educated-on education And learning on after.

Inclusion Standards to choose Teachers The new ones To own fate Enough from Skills Technology.

Inclusion Standards the performance Career For teachers, parameters, enhance Capacity Technology They have to deal with Software And tools and platforms Educational on after and activate it.

Strengthen Curricula Scholarship that from Like her development Skills Technology.

Construction units Specialized in area the design educational means Prepared Content electronic for materials Scholarship.

He sees researcher that practical Success education on after, need for process research and development ongoing, And that To keep up Variables in area Technology and education, And create units And centers Certain in Distance Learning in Ministry education Her goal search the permanent And development with what He begs from variables in the field Technical and educational.

Methodology the Study

Curriculum the study:

I depend on Curriculum Descriptive to achieve Goals the study and the answer on Her questions, Description variables the study and analyze it.

Community the study:

Be Community the study from all my teacher and parameters mathematics in stage Medium in all Schools Governmental For boys And girls in office education administration Mecca Al Mukarramah For separation Academic the first from General 1445 AH/1446 AH, The adult Their number (129) Males and Females, According to Statistic Ministry education.

Table No. (1) the study population.

Number of middle school mathematics teachers in the Makkah Education Office				
Males	percentage	Females	percentage	Total
45	% 34.9	84	% 65.1	129

Sample the study:

To determine size a sample the study It was completed following equation Richard Geiger, And that using level trust 99% and percentage mistake 1%, accordingly He is size a sample the study (129) Teacher And a teacher specialty mathematics in stage Medium in all Schools Governmental For boys And girls in office education administration Mecca Al Mukarramah, who It was completed Their choice In the way Random Simple.

Tool the study:

To answer on Questions the study and to achieve its objectives used the study the questionnaire As a tool President To collect data, Which It was formed from Two axes Essential:

- 1.**First:** challenges in distance learning of teaching mathematics for the Middle stage from Destination consideration Teachers and parameters. Where include the Axis First on (23) Paragraph.
- 2.**Second:** Proposals to develop distance Learning of teaching mathematics for the Middle stage from Destination consideration Teachers And parameters. Where include the Axis second on (15) Paragraph.

Validity of the tool:

Honesty Virtual (The Validity Arbitrators: Done that from during an offer a tool the study on group from Arbitrators from Experts technology education and mathematics to express the opinion, suggestion what They see him suitable from adjustment, he has It was

completed Procedure Modifications that I agree on her Arbitrators and so verification validity the questionnaire.

Stability of the Tool:

To measure stability a tool the study It was completed Use Factor alpha Cronbach's, I have reached rate constancy (0.89) and it is rate High and acceptable Statistically.

Table No. (2) The Reliability coefficient for the axes of the study tool.

Questionnaire axes and phrases	Number of Paragraphs	Reliability
Challenges in teaching mathematics remotely for the middle Stage	23	0.85
Proposals for developing distance learning mathematics for middle school and female teachers	15	0.87
Total stability	38	0.89

The previous table (2) shows that the study tool has statistically acceptable values, as the overall reliability of the study was (0.89), which is high, while the reliability coefficients of the study tool items ranged between (0.85-0.87), which is high reliability coefficients that can be trusted in applying the study tool.

Resolution correction:

A five-point Likert scale was used to obtain the responses of the study sample members, according to the following degrees of agreement: (strongly agree - agree - neutral - disagree - strongly disagree) after which they were expressed quantitatively by giving each of the items a score as follows: Agree Strongly (5 degrees), agree (4 degrees), neutral (3 degrees), disagree (2 degrees), strongly disagree (1 degree), as for the distribution of the range of means for each of the categories according to a five-point Likert scale, as shown in the table (3).

Table No. (3) Distribution of the range of means according to a five-point Likert scale.

importance	Degree of approval	Range of averages	Five-point Likert scale
Very limited	Strongly Disagree	1.00 - 1.80	1
Limited	Not agree	1.81 - 2.60	2
middle	Neutral	2.61 - 3.40	3
big	OK	3.41 - 4.20	4
very big	Strongly Agree	4.21 - 5.00	5

Results the study and discuss it

First: to answer on the question the first: "What Challenges Say distance learning of teaching mathematics for the Middle stage from Destination consideration my teacher And parameters mathematics?"

To answer on the question the first it was completed account Mean, standard deviation, account Mean general, Standard deviation general, Responses a sample the study, as Explained in the Table No. (4).

Table No. (4) Mean, Standard deviation for responses a sample the study on expressions Challenges in Distance Learning of Teaching mathematics.

NO	Phrase	Mean	Standard deviation	Rank	Importance
22	Some students rely on others to access and complete tasks in distance learning mathematics.	4.60	0.56	1	very big
7	The frequent absence and delay of students from mathematics classes in distance Learning, which affects their academic level.	4.47	0.78	2	very big
21	Weak families' follow-up of their children in distance learning mathematics.	4.47	0.78	3	very big

NO	Phrase	Mean	Standard deviation	Rank	Importance
20	Poor awareness of the importance of distance learning mathematics among some students and their families.	4.37	0.76	4	very big
5	Some students do not have technical devices and an Internet connection, which leads to their inability to teach and learn mathematics.	4.30	0.750	5	very big
4	The large professional burden on the teacher in electronic preparation, recording attendance, absence, tardiness, etc.	4.27	1.05	6	very big
10	Many distractions when using technology, which may cause the learner to lose focus Distance mathematics education.	4.27	0.94	7	very big
1	The teacher's lack of familiarity with technical competencies, which affects his use of technology techniques in teaching mathematics remotely.	4.23	0.89	8	very big
11	Many technical problems when using technology in teaching mathematics remotely.	4.17	0.87	9	big
3	The teacher does not prepare educational content that suits the individual differences	4.17	0.87	10	big

NO	Phrase	Mean	Standard deviation	Rank	Importance
	among learners in distance learning mathematics.				
15	Weak credibility of assessing learners in mathematics remotely, as a result of increased cases of cheating.	4.17	0.95	11	big
6	Learners' lack of familiarity with using technology, which constitutes an obstacle to their use Distance learning systems.	4.10	1.03	12	big
23	Some teachers, male and female, principals and supervisors focus on achieving high entry rates for learners, without regard to learning outcomes.	4.10	0.96	13	big
14	The abundance of educational content in the learning systems used to teach mathematics remotely, including assignments, activities, etc., which constitutes a cognitive burden on learners.	4.07	1.14	14	big
2	The teacher's lack of familiarity with distance learning strategies and ways to employ them in teaching mathematics.	3.93	0.91	15	big
16	The density of the number of learners in distance mathematics classes limits	3.87	1.22	16	big

NO	Phrase	Mean	Standard deviation	Rank	Importance
	the interaction between the teacher and the learner.				
19	The lack of virtual mathematics laboratories in learning management systems in Distance Learning.	3.87	1.14	17	big
13	The difficulty of taking into account individual differences in distance learning mathematics.	3.77	1.22	18	big
12	Relying on objective assessment tools in distance education, which do not serve the solution of mathematical problems.	3.73	1.14	19	big
8	Poor effective participation of learners in mathematics classes in distance Learning.	3.67	0.99	20	big
17	Difficulty writing and dealing with mathematical symbols on distance Learning systems.	3.63	1.19	21	big
9	Difficulty in assessing learners in mathematics in distance Learning.	3.47	1.17	22	big
18	Difficulty communicating mathematical concepts and theories during distance education compared to in-person education.	3.37	1.33	23	middle
The overall average of the axis		4.04	0.47	big	

It is clear from the previous table (4) that one of the most agreeable expressions among the study sample is the phrase (some students rely on others in entry processes and completing tasks in distance teaching mathematics), as it obtained an arithmetic mean (4.60) and a standard

deviation (0.56), as The most challenges in distance teaching mathematics from the point of view of mathematics teachers, and the least agreeable expressions among the study sample is the phrase (difficulty communicating mathematical concepts and theories during distance education compared to in-person education), as it got an average of (3.37), a standard deviation of (1.33), as it constitutes the least of the challenges in distance teaching mathematics from the point of view of mathematics teachers.

Second: to answer on the question the second: what Proposals necessary to develop distance learning of teaching mathematics for the Middle stage from Destination consideration my teacher And parameters mathematics?

To answer on the question the second it was completed account Mean, standard deviation, from then account Mean general, Standard deviation general, I have my teacher mathematics For the Middle stage in office education administration Mecca Al Mukarramah, as Explained in the Table No. (5).

Table No. (5) Mean and standard deviation of the sample's responses to statements of proposals for developing distance learning of teaching mathematics.

NO	Phrase	Mean	Standard deviation	Rank	Importance
4	Providing technical devices and an Internet connection for those learners who do not have them.	4.53	0.73	1	Very large
14	Reducing the educational content in terms of focusing on quality rather than quantity in the learning systems used to teach mathematics remotely, including assignments, activities, and others.	4.53	0.86	2	Very large
13	Mathematics teachers, principals, and supervisors focus on learning outcomes in	4.53	0.63	3	Very large

NO	Phrase	Mean	Standard deviation	Rank	Importance
	distance Learning.				
15	Using adaptive electronic learning management systems in distance education, to take into account individual differences between learners and their learning styles.	4.53	0.68	4	Very large
10	Using more interactive learning methods in distance education, such as activities Interactive electronic and interactive educational video.	4.50	0.63	5	Very large
5	Educating learners and their families about the importance of distance learning mathematics.	4.47	0.63	6	Very large
12	Adding virtual sports laboratories to learning management systems in distance Learning	4.47	0.63	7	Very large
2	Educating middle school mathematics teachers about distance learning strategies and ways to employ them.	4.43	0.82	8	Very large
3	Reducing administrative burdens on middle school mathematics teachers during distance Learning	4.43	0.77	9	Very large
1	Providing continuous qualitative training for learners and middle school mathematics teachers in using technology in distance Learning	4.40	0.81	10	Very large
11	Adopting in-person tests only to measure distance learning mathematics.	4.33	0.92	11	Very large

NO	Phrase	Mean	Standard deviation	Rank	Importance
8	Changing evaluation mechanisms in distance education, so that they focus on learners' attendance, interaction, and participation in mathematics classes.	4.33	0.88	12	Very large
6	Reducing the number of learners in one virtual class during remote mathematics classes.	4.17	0.91	13	big
9	Applying the electronic discount when learners are late or absent from classes Mathematics in distance Learning.	4.13	1.07	14	big
7	Requiring learners to open the camera in distance learning mathematics, to achieve communication Between teacher and learner.	3.43	1.31	15	big
The overall average of the axis		4.35	0.44	Very large	

It is clear from the previous table (5) that one of the most agreeable phrases among the study sample is the phrase (providing technical equipment and an Internet connection for those who do not have one of the learners), as it got an arithmetic mean (4.53) and a standard deviation (0.73), as it constitutes most of the proposals For the development of distance mathematics education for the intermediate stage, there is support from the point of view of mathematics teachers, and that one of the least agreeable statements among the study sample is the phrase (obliging students to open the camera in distance Learning of teaching mathematics, to achieve communication between the teacher and the learner), as it got an average of (3.43). A standard deviation (1.31), as it constitutes the most supportive proposal for the development of distance mathematics education for the intermediate stage from the point of view of mathematics teachers.

Explanation results the study and discuss it

First: discussion results the question the First:

She pointed out results the question the first to Approval Hardly on (8) Paragraphs from between (23) Paragraph college, Than indicates on Existence Challenges big in distance Learning of teaching mathematics For the Middle stage, and that from Most important Challenges she " Approval some Educated people on Change them in Operations Access And achievement mission in education mathematics on after, And a lot Absence, he was late Educated people on Shares mathematics in education on after, Which impact in Their level Academic and weakness tracking Captivity For their children in education mathematics on after, And he attributes researcher that For methods Calendar Approved in stage Medium By being no Proportionate with Distance Learning, And accordingly no Bad from Replace it With tools calendar Depends on Discussion , share Effectiveness for the learner. He has I agreed results the study current with results Studies Previous, like study Hassan (2020) , study Al-Saai (2021) , study Atif et al (2022) , as I disagreed results the study current with results Studies Previous, like study Hassan (2020) , study Bedouins (2021), study rain (2021), study Al-Shanqeeti, Elbalawy (2022) , study Elmoudkhali, Abdulkarim (2022) .

Second: Discussion results the question the Second:

She pointed out results the question the second to Agree Very much on (11) Paragraph from between (15) Paragraph college, Than indicates on Existence need big To develop education mathematics on after For the stage medium, And from more Proposals In support she to provide Devices Technique And network communication On the Internet for whom no Available he have from educated people, reduction Content educational from where the focus on How And not Quantity in Organize it Learning used With education mathematics on after from Duties And activities and others, And focus my teacher And parameters mathematics And supervisors on Outputs Learning By education on after, And he attributes researcher that For importance Availability Materials Necessary used in Distance Learning from Devices And communication With a network Internet

And organize it Learning, and also Mechanisms her job, supervision on her from before Specialists in area technology education.

and he has I agreed results the study current with results Studies Previous Inclined study Hassan (2020) , study Al-Zahrani (2021) , study Atif et al (2022) , as I disagree results the study current with results Studies Previous like study rain (2021), study Bedouins (2021), study Al-Saai (2021) , study Al-Shanqeeti, Elbalawy (2022) , study Elmoudkhali, Abdulkarim (2022) .

Recommendations the study and its proposals.

In a light results Study: recommended researcher He suggests what follows:

1. Development Systems administration Learning used in education mathematics on after, in which Be Systems to learn Adaptive and more Interactive.
2. Reduction Burdens Administrative on my teacher mathematics for the Middle stage, reduce Shares predicate on them.
3. Construction centers Distance Learning in Departments education Concerned Follow up situation educated people, Saving Tools Necessary from Devices Technique and communication with a network Internet for whom no Available he have who are they, saving training continuous for them, support Technical.
4. The job on addition Lab mathematics hypothetical in language Arabic Proportional to with Educated people in stage medium, their characteristics Age.
5. To provide training qualitative continuous to my teachers and parameters mathematics in stage Medium in area education on after.
6. Activation Role Communities Learning Professional between my teacher mathematics For the stage medium, To benefit in Enrichment Bank Activities, questions in Systems administration Learning used in distance Learning of teaching mathematics.
7. Attribution Operations Supervision, management on Distance Learning to Specialists in area technology education, for their experiences in this the field.

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