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Explore The Jordanians Mathematic Teachers' Assessment Considerations Focused on (Students, Methods, Mathematics) in Evaluation of School Students' Achievements

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Abstract

The aim of this study explore the Jordanians mathematic teachers' assessment considerations focused on (students, methods, mathematics) in Evaluation of School Students', Based on the categorization of troubles that subject math teachers while assessing their students, we were used a self-report quantitative questionnaire to use it by (100) the Jordanians mathematic teachers' in the second semester of study year 2021/2022, a self-report quantitative questionnaire for teachers included three foci of consideration for math evaluation: considerations regarding evaluating students, considerations involving the of teaching methods, and assessment considerations mathematics. The important conclusion is that math teachers aspire to evaluate their students as a full picture, that considers the needs of student's study mathematics, and look to the reachable assessment methods and their doable to adapt them to a valid and dependable assessment in mathematics, and center of interest on the challenges and difficulties in assessing the mathematics, and we want to center of interest on the challenges and difficulties in assessing the mathematics. The results the show that the Jordanians mathematic teachers' have special worries of math evaluation and they need to acquaint them with a range of math evaluation methods, appreciation the issues that need to be exercised in order to select special ways, and mix them.

Keywords: Mathematic Teachers, Academic Achievements, Assessment Considerations Focused on (Students, Methods, Mathematics).

Introduction

The foci of math teachers on evaluating their students' achievements, appreciation and evaluating talents acquired in learning. Therefore, the purpose of the current study about used to be to look at the relationships between students and choose out method and math describe the foci of math teachers' worries in evaluating their students' achievements, on other hand strive to answer questions about validity of techniques of evaluating math and their ability to reflect the mathematical knowledge and mathematical competencies received by means of the usage of their students. The grasp gained from the literature is that that a combination of quantitative evaluation strategies and a qualitative evaluation technique could permit math teachers accumulate a increased comprehensive, in-depth and right photo of their students achievements (Veldhuis & van den Heuvel-Panhuizen, 2020).

Evaluating achievements is a critical phase of educating and grasp evaluation issues may contribute to enhancing the teaching, and consequently, to enhancing student's achievements. many math teachers go towards the negative aspects of qualitative and quantitative evaluation techniques in the realm of educating math (Silver & Mills, 2018). Most of problem to math teachers relate usually to questions such as sample size, the questioning degrees, and validity of math evaluation. Studies have additionally revealed that many teachers' senses that they lack the know-how of practice options to the quantitative-traditional

assessment (Chiang, 2015; Darmody et al., 2020).

Two ordinary techniques are time-honored in math evaluation: well-known evaluation techniques and desire assessment methods. Traditional evaluation techniques are normally primarily based absolutely on quantitative assessments aimed at diagnosing the facts and competencies acquired by way of way of the students on the math studied and quantifying their achievements in relation to the required level, this method is normally used as examination of an ultimate product (Pellegrino, 2003).

Evaluation evaluation strategies are based totally absolutely on the constructivist approach, as a result enabling the teachers to seem to be at the students' getting to comprehend and search for techniques. (Ültanir, 2012).

Evaluation evaluation in math is a wonderful pedagogical machine in which gaining understanding of is observed for the length of its course. so preference assessment if mainly based totally on active participation in the assessment processes, alongside the student's gaining know-how of processes and adapting the content to their abilities and desires (Silver & Mills, 2018).

evaluation assessment techniques in math are diverse: descriptive assessment, which consists the problem-solving process, so that teachers can analyze the way students resolved, and for aid them understand in math. (National Council of Teachers of Mathematics, 2000).

Other evaluation evaluation techniques in math are oral exams and interviews (Watt, 2005).

Another evaluation method is the introduction of a "concept map," through which students come to be conscious of the contexts and interactions between the mathematical things they had learned, and a representational understanding of the idea studied. Another method is peer assessment, which helps increase meta-cognitive questioning and will amplify student's self-awareness of their strengths and weaknesses in gaining expertise of mathematics.

The portfolio consists of works and archives testifying to search for and learning, and which enhance reflective and revolutionary thinking. Evaluation evaluation by using commentary permits teachers to look at about the sorts of interactions and strategies and follow their students' getting to recognize processes. (Shahbari et al., 2018).

In the latest decades, it is agreed that planning teaching must be primarily based on look at scores, performing exercises, in-class assignments and tasks, the correctness of methods to which students use techniques whilst performing tasks, and students' responses.

Such statistics that useful in allowing teachers to count on students' responses to academic tasks. Thus, assist teachers make higher decisions in planning teaching and enforcing, and enhancing it. (Cai et al., 2020).

Data-based teaching possibilities are primarily based on interactions between three elements: math tasks, teaching methods, and students. The nature of the interactions between the three factors to be a gaining knowledge for the students (Cai et al.,2020).

The facts that emerge from a evaluation can serve as a foundation for describing the thinking approaches of students at some point of the experiences and for enhancing educating techniques and educating practices. These records are included information of the way students to reply to sure components of educating tasks, in addition to information about patterns determined in all training (Cai et al., 2020). Additionally, the statistics can be beneficial to the fact the strategy that students used for uncovered their idea tactics to attain to solution.

Documenting the techniques that the students used can assist teachers predict how students can apprehend new problems brought. Such facts additionally serve as a groundwork for pedagogical expert knowledge, as a section of enhancing the long-term educating of math. (Cai et al.,2020), assisting to promote teachers' lookup on methods to enhance teaching and promote pupil gaining knowledge of and achievements (National Council of Teachers of Mathematics, 2013).

Although the evaluation assessment duties are complicated and require a remarkable funding and tons time, there is a whole lot of significance in defining the content material area that is being assessed.

To attain the aim of assessment, one need to demand proof that carrying out the assignments is no longer a count number of studying through rote, however one that represents the whole getting to know system that the students underwent to fulfill the project (Schiefer etal., 2019).

Evaluation's evaluation strategies are correlated with greater fulfillment levels, getting to know motivation and diligence, and students' grasp of teaching efficacy (Sahin & Abali Ozturk, 2014). Hence, common evaluation techniques ought to be used with test ones (Veldhuis & van den Heuvel-Panhuizen,2020).

The benefits and strengths of the math evaluation method, alongside the difficulties and challenges that signify it, have led many researchers to inspect the concern (Zhao et al., 2018). On the one hand, the research points out that evaluation techniques assist improves the assimilation of students gaining knowledge of processes, enhance their educational achievement, boost private learning potential, and enhance their fine mindset towards math (Galustyan, 2017).

On the different hand, regardless of the growing focus of assessment strategies as contributing to the nice of studying ofstudents and merchandising their achievements, there are difficulties in their application (Kingston & Nash, 2012), and in teaching teachers to use evaluation methods. Perusing the lookup literature published that math teachers have difficulties with the project planning and transmitting stages.

Furthermore, they are involved about the degree of validity and reliability of evaluation methods, and additionally modern evaluation application need greater financial funding than a quantitative examination. (Veldhuis & van den Heuvel-Panhuizen, 2020).

Teachers have unique techniques toward assessment; some are acquainted with a range of evaluation techniques and use them equally, being conscious of their contribution to guidance and learning. Others use them much less than common or very little (Zhao et al., 2018). The restrained use of evaluation affected with the aid of its bad perception, and lack of expertise on the issue of evaluation (Levy-Vered & Nasser-Abu Alhija, 2015).

Providing assist to teachers who increase and use evaluation in mathematics, that give the contribute to enhancing students' fulfillment in math (Veldhuis & van den Heuvel-Panhuizen, 2020). In preceding qualitative research, Biton and Halfon (2021) recognized three key areas (foci) of math evaluation that situation math teachers and scholar teachers: the validity and reliability of math tests, the heterogeneity of the evaluated students, and the students' level of understanding and achievements as indicated through their assessment. Following, this quantitative find out about examined whether, and to whathigh degreeare math teachers worried with these concerns in every of the identified foci? To what do these issues contribute to ensuring that their assessments are reliable, valid, and mirror the understanding and capabilities obtained by way of their student.

Methodology

Aim

The aim of this study explore the Jordanians mathematic teachers' assessment considerations focused on (students, methods, mathematics) in Evaluation of School Students'. These ambitions have excessive significance as section of the effort to enhance educating and assessment in general, and in math particularly.

Research Questions

What are the correlations between the three foci of issues of Mathematics teachers' assessment of their students' achievements?

It is hypothesized that there are high-quality and robust relationships between the three foci of math teachers' concerns in evaluating their students' achievements

Research Design

We used of a quantitative approach. instrument used to be a self-report questionnaire that was once developed and validated on the groundwork of the findings of a preceding qualitative lookup (Biton & Halfon, 2022).

Procedure

a questionnaire was once dispensed to (100) math teachers in jordan. Based on the issues of math teachers that have been discovered in a preceding find out about (Biton & Halfon,

2021), issues had been chosen in accordance with the following criteria: relevance to assessment in math and pleasant and readability of the phrasing. After the questionnaire used to be constructed, it used to be transferred for validation to professional teachers who evaluated – one by one

The questionnaire was once dispatched to a variety of teachers (a whole of 140 teachers), who had been requested to reply to it anonymously. A whole of (100) responses to the questionnaire have been received.

Population and Sample

Background facts of the math teachers who spoke back to the questionnaire is introduced in Table 1. About half of the teachers had over ten years of seniority in educating typically and math specifically, a 0.33 had between 4 and 9 years of seniority (10.7%) three years or less. Most of them (79.8%) have specialized in Mathematics, and 78.6% have some heritage in pupil achievements' Evaluation and assessment.

Table 1. Mathematic Teachers' Background

		NUMBER	%
Years of seniority teaching	1-3	9	10
	4-7	29	34.3
	+10	46	55
Years of seniority teaching mathematic	1-3	12	14.3
	4-7	32	38.1
	+10	40	47.6
Specialization in teaching mathematic	yes	67	80
	no	17	20
Background in student achievements' Evaluation and assessment	Academic/advance course	44	78.7
	None	18	22
N=84			

The professional background characteristics of the math teachers are presented in Table 2.

Number of students the teacher teaches < 20 students 11 13.1 20-30 students 36 42.9 30 students or more 35 41.7 (no response) 2 2.4 N = 84

Table 2. Mathematic Teachers' Work Characteristics

		NUMBER	%
School level	Elementary school	74	90
	Middle school	10	9
Number of classes the teacher teaches	one classes	12	14.3
	2-4 classes	32	38.1
	+5 classes	40	47.6

	(No response)	2	2.5
Number of students the teacher teaches	< 20	11	13.1
	20-30	36	42.9
	30 students or more	35	41.7
	(No response)	2	2.4
	None	18	22
N=84			

Most of the teachers work in an Elementary school (91.7%) and the relaxation in center school. Most of them teach two classes or greater (76.2%) or one category (21.4%). Most of them educate 20 students or greater (82.6%); 13.1% reported that they classes much less than 20 students.

Tool

Based on the first qualitative stage of the lookup (Biton & Halfon,2021), statements have been produced from mathematic teachers' consideration related to evaluating their students' information and competencies. These teachers participated in three in-service publications for math teachers and two educational publications for student-teachers on evaluating fulfillment in mathematics. Following a systematic content material evaluation of their answers, a 25- statement questionnaire used to be constructed.

The statements describing concerns had been classified into three foci: Ten concerns centered on assessment of students, based totally on their abilities, difficulties, and variance (α = .80), six concerns targeted on methods of evaluation of mastering math which are handy to the classes (α = .78), 9 issues focused on evaluation strategies in math as a self-discipline sui generis (α = .73).

The training given the teachers was: "Following are introduced 25 concerns. Please rank the extent to which every consideration concerns you while evaluating your students' information and achievements in gaining knowledge of mathematics." The respondents had been requested to rank every declaration on a 5-point Likert scale (from 1 = no longer at all, to 5 = very much).

The three foci of the statements and their distribution in the questionnaire are presented in Figure 1.

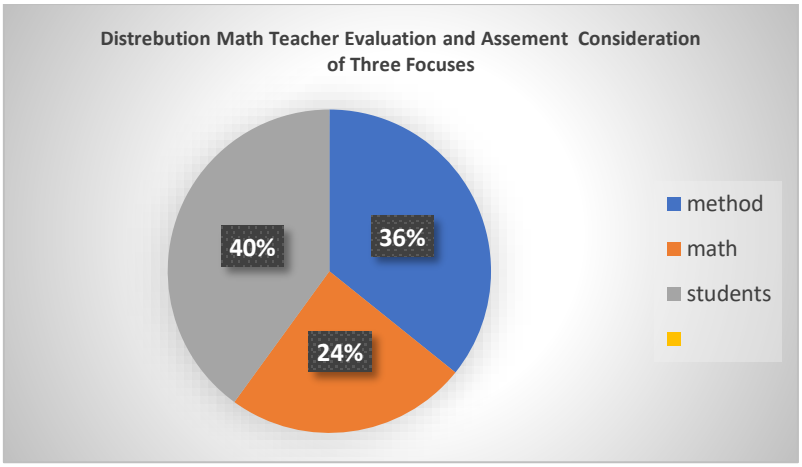

Figure 1. Three Foci of Math Teachers' Evaluation Considerations

Data Analysis

Descriptive data protected frequencies and percentages, averages, and popular deviations. The correlations between the three foci of consideration have been calculated the usage of Pearson r correlation coefficients. To examine math teachers by using exclusive characteristics, t test had been calculated between two impartial groups, and a one-way evaluation of variance used to be carried out between three groups.

Findings

Correlations between the Three Foci of Math Teachers Evaluating Consideration

In response to first lookup question, positive, high, and huge correlations had been discovered amongst the three foci of consideration. For instance, teachers tend to center of attention concurrently on all three foci together: the extra they focal point on adapting the evaluation to the learners, their abilities, and difficulties, the greater they focal point on considerations in deciding on approaches of evaluation ($r = .78$, $p < .000$) in frequent and math in unique ($r = 0.71$, $p < .000$). In different words, the percentage of defined variance of each these foci of consideration (focusing on learners and focusing on evaluation methods) is 50.4% (the variance defined by way of a rectangular of the correlation); the last variance (49.6%) is defined by way of different factors.

The correlation between the use of concerns targeted on evaluation techniques in general, and in math is positive, highly excessive, and huge ($r = .64$, $p < .000$). In different words, the percentage of defined variance of each these foci of consideration are 41% (the variance defined by means of a rectangular of the correlation); the remaining variance (59%) is defined by means of different factors. In summary, positive, strong, and vast hyperlinks have been found between the high degree to which math teachers exercising concerns in the three foci when evaluating their students.

Math Teachers' Considerations in the Three Foci

the following tables of the three considerations focused on (Students, Methods, Mathematics) in evaluation of school students' achievements, Additionally, the averages and deviations of the statements are introduced in the tables, as they had been included in every of the three foci of consideration, and for every of the statements the frequency and percentage of respondents who rated it as a consideration which is considered to a notable /very much, somewhat, or very little/not at all.

Considerations Focused on Students

The Jordanians mathematic teachers' assessment considerations focused on students in evaluation of school students are introduced in Table3 and Figure 2.

Table 3 Considerations Focused on Students Assessment

Number The statement of assessment of students(Q)	The statement of assessment of students	Considered		Somewhat considered		Not considered			
		f	%	f	%	f	%	M	SD
	Average - Considerations in evaluating learners							3.5	0.68
19	No breakdown of the way of thinking – only a final answer. Students struggle to explain how they reached the result.	59	71	20	21.4	6	6	3.9	0.9
21	Difficulty of the examinee in understanding the	59	66.7	21	24	8	9.5	3.9	1.05

	formulation of a test question (reading comprehension)								
3	The student understands the material in the classroom fails the test or receives a low grade that is at a relative gap to the knowledge	57	65.5	18	20.2	13	14.3	3.8	1.10
1	Children who become anxious and during the knowledge is not truly expressed	50	58.3	26	30	10	11.9	3.8	1.02
18	A teacher's difficulty to evaluate achievements against desire, effort, and ability: if the child tries hard and makes an effort but does not necessarily manage to reach score of 100. If he gets 70, he'll see it as a failure	53	59.5	22	26.2	14	14.3	3.6	1.04
5	How do you know that the student worked alone and wasn't helped by anyone else?	37	42.9	21	23.8	29	33.3	3.2	1.13
12	Each student is different in terms of knowledge, level, strengths, background, and therefore assessing achievement is not something that is certain and generalizable for the entire class	34	41.7	24	28.6	25	29.8	3.2	1.25

20	Subjective assessment of the teacher (influenced by previous acquaintance with the student)	37	42.9	19	22.6	29	34.5	3.1	1.3
10	Assessment does not check student's personal progress	31	35.7	27	32.1	27	32.1	3.1	1.17
14	It's hard to evaluate a student with unclear handwriting	33	38	22	26.2	30	35.7	3.0	1.25

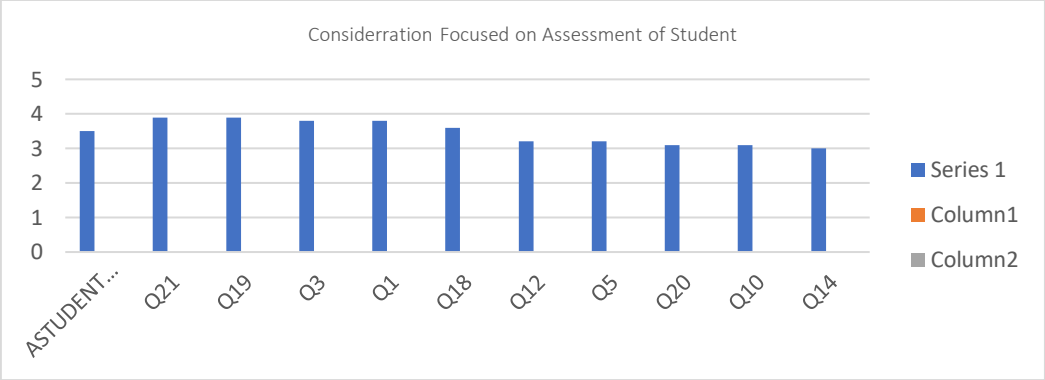

Figure 2: Considerations focus on Assessment of students

On average, teachers are targeted on concerns associated to evaluating rookies to an average or a massive high degree (M = 3.5, SD = 0.68). The two concerns associated to evaluating freshmen in which math teachers are most focused whilst evaluating their students are: (21) The examinee's problem in perception the components of a test query (reading comprehension) (M = 3.9, SD = 1.05) and (19) No breakdown of the way of questioning – only a last answer. Students battle to provide an explanation for how they reached the result. (M = 3.9, SD = 0.90). To the least degree (somewhat), amongst the concerns associated to evaluating learners, math teachers focal point on three considerations: (14) It's difficult to consider a pupil with doubtful handwriting (M = 3.0, SD = 1.25), (10) Assessment does now not test student's private growth (M = 3.1, SD = 1.17), and (20) Subjective evaluation of the class or (influenced by means of preceding acquaintance with the student) (mean= 3.1, SD = 1.30). Significant differences have been discovered in assertion (12) related to the declare that every scholar is extraordinary related to knowledge, level, strengths, and heritage evaluation and thus, evaluation of the complete type is unsure and now not generalizable. Teachers who do now not specialized in educating mathematic agreed (M = 3.09, SD = 1.23) that every student is one-of-a-kind related to knowledge, level, strengths, and history evaluation and thus, evaluation of the entire classification is unsure and no longer generalizable, extensively much less (t = 2.02, p = .047) than teachers who specialized in teaching mathematic (M = 3.76, SD = 1.25). Additionally, trainer who educate much less than 20 students (M = 3.36, SD = 1.63) or 30 students or extra (M = 3.54, SD = 1.25) agreed to a positive extent with this statement, however appreciably extra (F (2,79) = 3.83, p = .039) than teachers who classes medium lessons (20-30 students) (M = 2.81, SD = 1.04). However,

involving the differences between math teachers in accordance to a variety of history characteristics, on common no widespread variations have been discovered in these issues (M = and every of the statements) in accordance to mathematic teachers' history (years of seniority in teaching, years of seniority educating mathematic, specialization in teaching mathematic, heritage in scholar achievements' assessment and assessment) and mathematic teachers' work traits (school level, variety of lessons the class for teaches).

Considerations Focused on Methods

The Jordanians mathematic teachers' assessment considerations focused on methods in evaluation of school students are introduced in Table4 and Figure 3.

Table 4 Considerations Focused on methods Assessment

Number The statement of assessment of methods(Q)	The statement of assessment of methods	Considered		Somewhat considered		Not considered			
		f	%	f	%	f	%	M	SD
	Average - Considerations in evaluating learners							3.4	0.63
25	Do theexams (school efficiency and growth indices), which the students are intentionally prepared to, really provide a reliable picture? Do the "Meitzav" exams (school efficiency and growth indices), which the students are intentionally prepared to, really provide a reliable picture?	66	78.6	12	14.3	6	7.1	4.2	1.08
22	Difficult to pay personal attention in a large group of students (also medium group)	64	76.2	17	20.2	3	3.6	4.2	0.87

24	Mastery varies – while studying – the students know it, but when the content is not used – they forget it	57	67.9	20	23.8	7	8.3	3.9	0.95
23	Difficulty in checking homework	46	54.8	23	27.4	15	17.9	3.6	1.18
4	The gap between the report card which is based on a quantitative score and an assessment that is not necessarily based on a quantitative score (including an evaluation assessment)	46	54.8	21	25	17	202	3.5	1.1
2	How to evaluate a student if not on an exam? How can you evaluate when you give a thinking task in pairs or a group?	40	47.6	25	29.8	19	22.6	3.4	1.2
16	n the test: equal scoring for each question despite differences in the level of difficulty (the expectation: a more difficult question will	40	47.6	22	26.2	22	26.2	3.3	1.16

	receive a high score)								
13	The questions are not in accordance with what was learned in class	36	42.9	21	25.0	27	32.1	3.1	1.3
8	How much do you take off for a recurring error	28	33.3	25	29.8	31	36.9	2.9	1.24

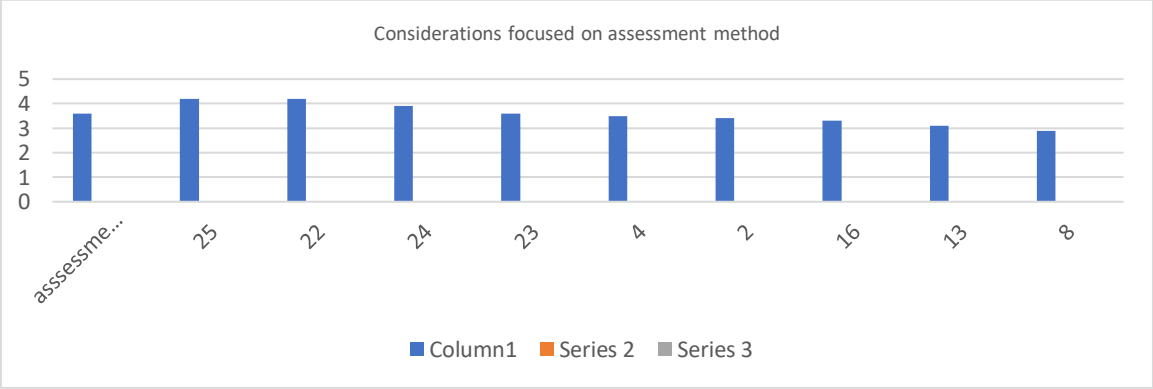

Figure 3: Considerations focus on Assessment of method

On average, teachers are targeted on issues associated evaluation techniques to a reasonable to high degree (M= 3.6, SD = 0.63). The three concerns associated to evaluation techniques on which math teachers are most focused whilst evaluating their students are: (25) Do the assessments (school effectivity and increase indices), which the students are deliberately organized to, furnish a dependable picture? (M = 4.2, SD = 1.08), (22) Difficult to pay non-public interest in a giant crew of students (also medium group) (mean= 4.2, SD= 0.87), and (24) Mastery varies – whilst analyzing – the students be aware of it, however when the content material is no longer used – they forget it (M = 3.9, SD = 0.95). The consideration (8) How a good deal does you take off for a habitual error is solely moderately at the center of attention of consideration (M = 2.9, SD = 1.24).

In phrases of the variations between teachers and math in accordance to special characteristics, on common no giant variations had been determined in these concerns (M = and every of the statements) in accordance to mathematic teachers' historical past (years of seniority in teaching, years of seniority educating mathematic, specialization in teaching mathematic, heritage in scholar achievements' evaluation and assessment) and mathematic teachers' work traits (school level, quantity of lessons the trainer teaches). However, Significant variations had been determined in announcement (12) involving the declare that every scholar is distinctive involving knowledge, level, strengths, and historical past evaluation and thus, evaluation of the complete type is indefinite nor generalizable.

Teachers who specialized in teaching mathematic agreed that every scholar is one of a kind involving knowledge, level, strengths, and history evaluation and thus, evaluation of the complete category is indefinite nor generalizable, extensively extra (t = 2.02, p = .047) than teachers who did no longer specialized in educating mathematic, who agreed with this announcement solely to a positive degree. Additionally, trainer who classes much less than 20 students (M = 3.36,

SD = 1.63) or 30 students or greater (M = 3.54, SD = 1.25) agreed to a positive high degree with this statement, however drastically greater (F(2,79) = 3.83, p = .039) than teachers who train medium training (20- 30 students) (M = 2.81 , SD = 1.04) who have a tendency no longer much less agree with this statement. No great variations have been determined in these concerns (M = and every of the statements) in accordance with mathematic teachers' historical past (years of seniority in teaching, years of seniority teaching mathematic, specialization in teaching mathematic) and mathematic teachers' work traits (school level, quantity of classes the trainer teaches, range of students the class for teaches). Additionally, teachers who have a background in scholar achievements' evaluation and evaluation agreed that (22) it is tough to pay private attention in a massive or medium team of students (M = 4.06, SD = .88), and to a positive extent that they focal point on (23) the subject in checking homework (M = 3.42, SD = 1.20) - drastically (t = -2.05, p = .049, t = -2.06, p = .043 respectively) much less than teachers with no preceding history in scholar achievements' evaluation and evaluation (M = 4.50, SD = .79, imply 4.06, SD = 0.94 respectively). Regarding concerns targeted on evaluation and evaluation methods, teachers who educate 5 lessons or extra (M = 4.20, SD = .84) take underneath consideration to an excessive extent that (24) Mastery varies – whilst reading – the students be aware of it, however when the content is no longer used – they have a tendency to neglect it, extra than class or who educate extensively much less (F(2,79) = 3.77, p =0.027) than 4 classes or less. It was once additionally determined that teachers who educate 30 students or extra center of attention their issues to a certain-high degree(M = 3.51, SD = 1.22) on (13) The questions are now not in accordance with what was once discovered in the class, significantly greater (F(2,79) = 4.57, p = .013) that teachers who educate 20-30 students (M = 2.64, SD = 1.20) or much less than 20 students (M = 3.18, SD = 1.33). Teachers who educate 30 students or greater center of attention their concerns additionally focus their issues to a very high degree (M = 4.60, SD = .60) in (25) The reliability and validity of the of the tests – notably extra (F(2,79) = 4.32, p = .017) than trainer who classes 20-30 students (M =3.92, SD = 1.18) or much less than 20 students (M = 4.09, SD = 1.30).

Considerations Focused on Mathematics

The Jordanians mathematic teachers' assessment considerations focused on math evaluation of school students are introduced in Table5 and Figure 4

Table 5Considerations Focused on Mathematics Assessment

Number The statement of assessment of Mathematic (Q)	The statement of assessment of methods	Considered		Somewhat considered		Not considered			
		f	%	f	%	f	%	M	SD
	Average - Considerations in evaluating learners							3.4	0.78
6	Difficulty in seeing the thought process that led to a solution (Whether a mistake or a correct answer), hence the problem of how	48	57.1	27	32.1	9	10.7	3.7	0.99

	to handle difficulty / error								
15	Evaluation of partial / full work with a mistake	6428	33.3	29	34.5	27	32.1	3.6	1.13
9	Evaluation on way versus evaluation one result	5740	47.6	28	33.3	16	19.1	3.4	1.18
7	Numerical grade does not allow the student to correct and improve himself, as s/he does not know or does not understand his/her errors	37	44.1	27	32.1	20	23.8	3.3	1.24
17	Usually, exams check the result and not the process. Sometimes a incorrect answer is rejected although the line of though was correct	48	57.1	22	26.2	14	16.7	3.2	1.09
11	Deliberation in scoring a solution that is not fully written, yet it is clear that the student understands and knows the solution	37	44.1	26	31.0	21	25	3	1.1

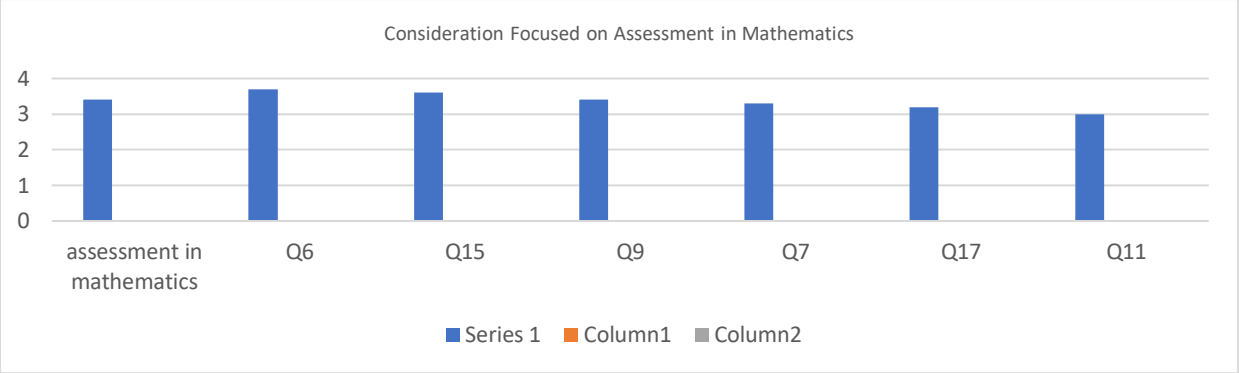

Figure 4: Considerations focus on Assessment of math

On average, teachers are centered on concerns associated to the evaluation strategies in math to a moderate high degree (M = 3.4, SD = 0.78). The concerns related with the evaluation techniques in mathematics in the best possible way – average to very high, center of attention on (6) Difficulty in seeing the thinking manner that led to an answer (whether a mistake or a right answer), consequently the hassle of how to cope with problem / error (mean= 3.7, SD = 0.99). A reasonable high degree (the lowest in this class of considerations) is the consideration targeted (15) on evaluation of partial / full work however with an average mistake (M = 3.0, SD =1.10).

As for the variations between math teachers in accordance to extraordinary characteristics, on average, no substantial differences had been discovered in these issues (M = and every of the statements) in accordance to mathematic teachers' historical past (years of seniority in teaching, years of seniority educating mathematic, specialization in teaching mathematic, history in scholar achievements' evaluation and assessment) and mathematic teachers' work traits (school level, quantity of training the class for teaches).However, teachers who teach much less than 20 students center of attention to an excessive extent (M = 4.09, SD = 1.14) on (17) that consideration that usually, exams take a look at effects and now not system (sometimes an flawed reply is rejected even though the line of even though used to be correct) – extensively (F(2,79) = 4.89, p = .010) greater than teachers who educate 20-30 students (M = 3.14, SD = 1.15) or 30 students or greater (M = 3.80, SD = .99).

Discussion

About examined the focal point of the concerns of math teachers in assessing the achievements of their students' efforts to enhance teaching in math. Three foci of issues of assessing math students had been introduced to teachers in a questionnaire: assessing students based on their abilities, difficulties, and variance; and the assessment strategies that are special to method of teaching mathematics; and the assessment strategies that are special to mathematics. The discovering that the correlations between the three foci of consideration are positive, high, and significant; the greater math teachers' focal point on students they teach, the greater they consider their skills and difficulties in math the more they additionally focal point on issues associated to their preference of evaluation method in mathematics. (Biton & Halfon, 2021). Thus, teachers who use modern method in evaluating students, concurrently practice concerns concerning to appropriate approaches of evaluation in frequent and in math in specific – and vice versa. Therefore, as a means of enhancing the cycle of teaching, learning, and evaluation (Birnbaum et al., 2006) it is necessary to encourage teachers to enlarge their know-how and competencies in methods of evaluation that are appropriate for math as a wonderful self-discipline on the one hand, and to direct them towards cognizance of the capabilities and difficulties of students in evaluation conditions that might also influence the reliability of the evaluation and its results.

Although the correlations that had been determined are particularly high, together, they provide an explanation for solely about 1/2 of their frequent variance in the foci of their assessment in math considerations. The final variance is defined by using elements no longer

examined in the current find out about and ought to deepen the grasp related to different consideration that teachers.

teachers use when they verify their students. elements associated to the environmental physical prerequisites where the educating takes location (number of students in class, noisy or quiet environment, lighting, check hours, etc.), the sources accessible to teachers (smart boards, computer systems and peripherals, and specialized software program for teaching and getting to know mathematics), expert degree in mathematics, etc. (Veldhuis & vanden Heuvel-Panhuizen, 2020).

In follow-up studies, it is proposed to locate out what these extra elements are as nicely as different elements that ought to influence the relationship between concerns centered evaluation methods in typical, and how they can be elevated to expand the reliability of assessment in math and its contribution to the teaching/learning cycle

Among the concerns associated to evaluating on which math teachers are targeted whilst evaluating their students, the teachers center of attention frequently on the viable situation of the examinees in grasp the formulation of the questions introduced to them in the exam (reading comprehension: familiarity with the formal language of mathematics, the that means of mathematical expressions, and the details and accuracy), and the want to grade an reply in which the way of questioning and explain how the students reached the result. These two foci of consideration characterize, to an awesome degree, the self-discipline of mathematics and ought to be considered when planning and conducting the evaluation. It is viable to respond to this range of difficulties via assessing the students the usage of a mixture of evaluation alongside the quantitative checks (Silver & Mills, 2018),

as the benefit of qualitative evaluation is the possibility it offers teachers to confirm by way of supplying remarks even in the gaining knowledge of ranges (and no longer simply remarks on the last product) that the students understood the questions and assignments, due to the fact they comprehend and have mastered the formal language of math and its special expressions, they have formulated their work with the appropriate meticulousness and precision, and that the methods to resolve the issues introduced to them and completing the assignments are clear and appropriate, namely, to acquire a comprehensive, in-depth, and accurate image (Cai et al., 2020)

However, as has additionally emerged in the literature, teachers do now not have sufficient know-how of planning executing selections that will complement the dangers of quantitative evaluation (Zhao et al., 2018).

Therefore, it is appropriate that teachers' in-service studying will integrate, aspect through side, approaches of evaluation in each method, so that teachers will be clear about how every approach enhances the dangers of the other. In this context, the problem of data-based evaluation arises, each quantitative and qualitative data, their students' exam consequently enhancing their very own of teaching. (Cai et al.,2017).

Thus, amongst the issues associated to way of evaluation, the teachers center of attention first t on the reliability of exterior exams in which a gorgeous deal of work is invested a lot of work in preparing for them, every so often – at the price of deepening the appreciation and teaching of tactics for solving issues of quite a number types,

there is many The concerns of traditional evaluation. are getting to know the students in a giant and medium-size groups, may students' change of dealing with every subject. These concerns mirror diverse components of math evaluation: exterior evaluation , students person, and the element of mastering and retention. The reciprocal family members between these three factors should. (Cai et al., 2017; Cai et al., 2020a).

It can be concluded from this, overall, that the use of exams and quantitative exams does now not represent adequate methods of evaluation in mathematics, due to the fact the achievements they measure are now not tailor-made to the specialty of the students (regardless of the wide variety of students in the classroom), do now not consider the context of the time and location in which teaching/learning takes place, nor the time of the textual content (relative to the time of teaching/learning).

Evaluation ought to supply an appropriate response to these considerations, as it can be

tailored to the student's uniqueness, to the time and area the place the teaching/learning takes place, and the context of the teaching/learning continuum (for example, with evaluation one can provide a bendy schedule, allow correcting and enhancing the

work till attaining mastery of the studied), due to the fact and evaluation lets in energetic participation in the evaluation alongside the gaining knowledge of and adaptation of the find out about special skills (Silver & Mills, 2018).

At the equal time, as evaluation improves and with it coping with the difficulties worried in its implementation, the fantastic of educating and the quintessential evaluation abilities for enhancing students' gaining knowledge of and success may additionally enhance (Kingston & Nash, 2011, 2012).

Among the concerns associated to the approaches of assessment in mathematics, teachers' focal point by and large on the difficulty in revealing students' thinking procedure and method that led them to the solution, as this situation makes it challenging for them to decide how to consider and grade errors or a partial method of a solution, or a task carried out in full however with an error. These difficulties are certainly especially normal of the self-discipline of mathematics, and factor to its complexity (Cai et al., 2020). It is fascinating to be aware that in considerations targeted on the methods of assessment themselves (not always an evaluation in mathematics), grading a routine error is the consideration that is ranked lowest in evaluation to the different considerations, as this issue is an inherent phase of the assessment in math and is self-evident and it normally characterizes quantitative tests.

A assessment, which consists of the opportunity of interplay between the classeor and the scholar or all students – permits the scholar to current and provide an explanation for the way of answer and as a result overcome errors (Choosing the way that is flawed whilst is a right answer that may additionally be clarified in retrospect) and habitual errors (incorrect writing due to negligence or a mastering incapacity that impacts the examinee's reading/writing ability) that may also impair the evaluation he receives. The issue in dependable evaluation in mathematics, which stems from the complexity of this discipline, which consists of now not solely special language, procedures, and capabilities for fixing issues fixing and exercises, however additionally requires a deep grasp beyond the activities duties (which can be discovered via rote only) reinforces the want to teach teachers and acquaint them with a range of math evaluation methods, appreciation the issues that need to be exercised in order to select special ways, and mix them (Schiefer et al., 2019).

It is necessary to reiterate that evaluation the usage of evaluation strategies should make contributions to greater achievements, elevated motivation, perseverance for learning, and even to the students' appreciation of efficacy (Sahin & Abali Ozturk,2014), as properly as promote the find out about of math and its improvement (Veldhuis & van den Heuvel-Panhuizen, 2020).

Conclusions

The most important conclusion that emerges from the modern-day learn about is that math teachers center of attention concurrently on all three foci of evaluation: issues in evaluating the students, the approaches of evaluation that to the teachers and accessible to them, and issues that are special to evaluation in mathematics.

This conclusion is vital in that, when teachers' strategy evaluating the math students' knowledge, skills, and achievements, they mix in their concerns the strong point of math evaluation (such as scoring considerations) of a right reply written with errors in wording or in the formal way of formulating the solution). In different words, math teachers aspire to consider their students efficiently primarily based on a broad image of the students' needs, the evaluation techniques accessible to them, and the want to focal point on theevaluation difficulties that are special to the challenge of mathematics. This conclusion helps the method that characterizes a reliable, dependable, and legitimate evaluation primarily based on statistics that displays the whole studying technique (Schiefer et al., 2019)

mixed with an evaluation that is vital qualitative (Silver & Mills, 2018). Also, the lookup findings strengthen the argument that math evaluation has special considerations that are wonderful and special from evaluation concerns in different disciplines, and consequently

mathematics teachers have a range of evaluation issues special to their subject. On the one hand, there is a want for specialized education for math teachers to professionalize in the forte of evaluation in this complex challenge whilst they are nevertheless students of education. On the different hand, there is a want to layout and implement specialized in-service publications in evaluation in mathematics as awesome self-discipline for in-service.

teachers and create a putting for mutual collaboration with new equipment for evaluation in mathematics. Learning and experiencing evaluation in math ought to be systematically built-in into the realistic and theoretical schooling of math pupil teachers, collectively with the didactic classeions that focal point on teaching and learning (the teaching-learning-assessment cycle). This evaluation needs to consist of each quantitative and qualitative strategies (Pellegrino, 2003; Veldhuis & van den Heuvel-Panhuizen, 2020), due to the fact complementary data that can be derived from an evaluation may additionally shed mild on the techniques and techniques of the students' questioning and enlarge the teachers' perception of the students' mathematical getting to know experiences, by offering the teachers with equipment to formulate for themselves the issues they need to work out to overcome their difficulties in planning and enforcing a evaluation (Cai etal. 2020) and their expert training in creating gorgeous and reliable symptoms for evaluation (Schiefer et al., 2019). The contribution of this learn about is expressed in the reality that the area of expertise of math evaluation is emphasized as a foundation for teachers' concerns to mix different evaluation strategies that will grant records that will spotlight the complex elements of mastering mathematics.

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