Evaluating Teacher-Made Mathematics Test and Teachers' Competency in Assessment

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ABSTRACT

Assessment has always been considered a vital component of the teaching-learning process. This study aimed to evaluate the teacher-made mathematics assessment tools and assessed the teaching competency of educators in the Schools Division of Cotabato City and sought to provide a comprehensive exploration of the existing issues and challenges in the assessment that affect the way teachers evaluate students. Using a mixed-method research design, specifically the convergent parallel research model, the study was conducted among mega and large schools in the SDO Cotabato City. The participants included thirty-one (31) junior high school mathematics teachers from these schools, selected through purposive sampling. The findings indicated that teachers generally made minimal errors in test construction; however, there is a need for improvement in preparing the Table of Specifications, with particular attention to grammar, punctuation, and spelling. While the test items largely align with curriculum standards, improvements are necessary regarding vocabulary appropriateness, item independence, and the avoidance of directly using examples or phrasing from textbooks. Teachers demonstrated competency in curriculum, pedagogy, professional development, and valuation, exhibiting a strong understanding of curriculum objectives and assessment strategies. However, common errors in assessment are not associated with a teacher's curriculum competence. Mathematics assessments face several challenges, including diverse student skill levels, language barriers, time constraints, and concerns about validity and fairness. These factors highlight the complexities involved in creating effective and equitable assessments.

Keywords: Assessment, Mathematics test, Competency, Common errors, Assessment challenges

INTRODUCTION

Assessment has always been considered a vital component of the teaching-learning process. In fields such as Mathematics, it plays an essential role on how educators evaluate the learning outcomes achieved by the students. The primary goals of assessment in mathematics education are to produce evidence that may be used to make decisions about enhancing mathematics learning. In relation, some mishaps maybe present in conducting assessment which can greatly affect the quality of educational outcomes.

Because assessment instrument construction is a complex system with many interconnected components, a comprehensive approach to system improvement is necessary. Assessment instrument mistakes arise primarily from human failure, and it is not good enough to claim that "to err is simply human." (Sutto & Ireland, 2021). As such, errors in test papers come from the misalignment of required and observable human capacity, and one clear way to solve this mismatch is that of 'adapting' people to the demands of the item's making procedure (Constantinou, 2024).

Common issues include easy test items, route learning, implausible distractors, negative questions, concealed clues, illogical order of alternatives, long sentences for right responses, disrupted sequence of items, single-mode (text-based) questions, and subjective items (Simsek, 2016) and also including testing and test items (Lasaten, 2016). Despite using varied assessment strategies, they struggle with students' participation, (Agtarap et. al, 2024). Equity orientation, assessment preparation, and professional development are some factors that can influence assessment, (Varier et. al, 2024).

In relation, teachers' competence is critical for successfully executing educational policies and meeting

assessment goals because it allows them to gather and analyze evidence of student learning (Zamri & Hmazah, 2019). As such, competency of teachers in educational assessment should be given focus and be analyzed seriously (Rural, 2021). As such, teachers should comprehend the fundamental concepts of assessment as they try to enhance their skills in applying the concepts to their practice more successfully (Musikin et. al, 2020).

Studies in the Philippines reveal that application of reliable and established assessment enhances tools and techniques for various assessment purposes (Sarmiento et. al, 2020). In Northern region, public school teachers lack assessment literacy and methods of assessment for temporal and logistical aspects (Napanoy and Peckley, 2020) and cultural contexts (Cahapay, 2020). Meanwhile, the Philippine education system strives to address complicated challenges of social justice through equitable and high-quality education (Miranda et. al, 2022).

The existing literature highlights significant gaps in teachers' assessment literacy and competency in mathematics education, particularly in the Philippine context, where issues such as misalignment between assessment practices and educational policies, the prevalence of flawed assessment instruments, and the lack of effective professional development contribute to suboptimal student learning outcomes; therefore, further research is needed to explore how enhancing teachers' competencies in constructing and implementing assessments can mitigate the problem encountered and enhance the standard of mathematics teaching.

Unsatisfactory performance on international tests such as the Programme for International Student Assessment (PISA) and the standardized national achievement test (NAT) have a major concern in our country. PISA assessed 15-year-old pupils' reading, math, and science proficiency in relation to real-world problems. The Philippines placed lowest in reading and second to last in science and math in the 2018 PISA.

In the context of Cotabato City Division, the result of National Achievement Test (NAT), showed that Mathematics scored the lowest Mean Percentage Score (MPS) of 36.91 among other subjects. The Philippine Development Plan Target (PDP) is 65%. Hence, further reforms involving assessment are needed in order to achieve higher achievement results of students in the NAT (Rural, 2021).

Thus, this study aimed to evaluate the teacher-made mathematics assessment tools and assessed the teaching competency of educators in the Schools Division of Cotabato City. Moreover, it sought to provide a comprehensive exploration of the existing issues and challenges in assessment that affect the way teachers evaluate students.

Also, insights gained from this study will be beneficial to administrators, educators, policymakers, students of the Ministry of Basic, Higher and Technical Education (MBHTE) and to all future researchers in understanding different aspects of assessment.

METHODOLOGY

Research Design

This research incorporated a mixed method research design, specifically, convergent parallel research design. According to Creswell and Pablo-Clark (2011), a convergent parallel design comprises the researcher conducting both quantitative and qualitative elements simultaneously in the same phase of the research process, weighing the methods equally, analyzing the two components independently, and interpreting the results jointly.

Research Locale

This research was conducted in several mega and large schools within the SDO Cotabato City. These schools were the Notre Dame Village National High School CCNHS-Rojas Site, Pilot Provincial Science High School and technology, CCNHS-LR Sebastian Site, Datu Siang National High School and Canizares National High School.

Research Participants

The respondents in this study consisted of thirty-one (31) junior high school Mathematics teachers from large

and mega schools in SDO Cotabato City. These teachers were itemized or detailed and are teaching Mathematics in the mentioned schools. The following table showed the distribution of respondents in each school:

School	Number of Respondents
Canizares National High School – SAT	5
CCNHS-Rojas	7
Notre Dame Village NHS	7
Pilot Provincial Science High School and Technology	5
Datu Siang NHS	5
CCNHS-LR Sebastian Site	2
Total	31

Research Instrument

To gather relevant data for this study, the research made use of an adapted instrument composed of two parts: common errors in assessment and level of teacher's competence in making assessment. The first part was an adapted checklist for the guidelines on the test construction from the *Enclosure 5 of Division Memorandum 564 of DepEd SDO Pampanga.* It was composed of a total of 39 items organized into six subheadings: General Item Writing (Procedural), General Item Writing (Content Concerns), Stem Construction, General Option Development, Correct Option Development and Distractor Development. Moreover, the second part was an adapted and modified survey questionnaire from the study of Hamzah and Zamri (2019) that will describe the teacher's competence in making assessment. It was composed five (5) statements pertaining to their competence in terms of curriculum competency, pedagogical competency, professional development and valuation competency. The questionnaire was validated by five (5) experts to ensure face and content validity. Experts were Masters or Doctorate graduate in Mathematics Education or allied field. Afterwards, the reliability of the survey questionnaire was tested using Cronbach alpha at .05 level of significance and obtained a value of .942 and considered highly reliable.

Data Gathering Procedure

Once the research proposal received approval from the research panel, the researcher began the data collection process. A permission letter was sent to the Schools Division Superintendent of SDO Cotabato City, as well as to the school heads of both the mega and large schools, to authorize the conduct of the study. A consent form was secured for each respondent. After gaining approval, the researcher distributed the survey questionnaires to each school, allowing respondents ample time to read and understand the statements included. Concurrently, interviews were conducted with the respondents. After this phase, the researcher collected the completed survey questionnaires and entered the data into MS Excel. The quantitative and qualitative data were analyzed separately, with the results interpreted together.

Ethical Considerations

Several ethical considerations were made when carrying out this study in order to ensure the integrity and respect for all the participants. First and foremost, the respondents were given informed consent, notably the junior high school Mathematics teachers of the mega and large schools of SDO Cotabato City. Participants was given thorough explanation on the aim of the study, procedures, potential disadvantages and advantages, ensuring that they understand their right to participate willingly. They were also be notified of their right not to participate from the study at any time, with no consequences. Additionally, respondents' confidentiality and anonymity were carefully maintained during the research procedure. Personal identifiers were deleted from all obtained

data, and findings were reported in aggregate form to ensure that specific participants could not be identified. The researcher made certain that the information was safely stored and that only the researcher was allowed to see it. Furthermore, ethical considerations included using established data gathering methods and reporting findings in an honest and transparent manner.

RESULTS AND DISCUSSION

Table 2. Extent of Common Error in Terms of Procedural

Indicator	Mean	SD	Verbal Interpretation
1. The teacher prepared the Table of Specifications TOS before writing the test items.	3.16	.77	Slightly Erroneous
2. The TOS was a two-way grid and followed the prescribed format shared by the division.	3.61	.79	Not Erroneous
3. The test items adhered to the 30-60-10 rule 30% easy, 60% average, and 10% difficult.	3.35	.74	Not Erroneous
4. The teacher used either the "best answer" or "correct answer" format.	3.81	.40	Not Erroneous
5. The teacher avoided complex multiple-choice formats (Type K) such as "A and D," "A and C," "All of the above," "None of the above," and "A, B, and C.	3.68	.47	Not Erroneous
6. The items were formatted vertically, not horizontally.	4.00	.00	Not Erroneous
7. The items were constructed with consistent attention to good grammar, punctuation, and spelling	3.26	.57	Slightly Erroneous
8. The teacher minimized examinee reading time by carefully phrasing each item.	3.06	.76	Slightly Erroneous
9. The teacher avoided tricky items that might mislead or deceive examinees into answering incorrect.	2.68	.74	Slightly Erroneous
OVERALL	3.40	.25	Not Erroneous

Table 2 presents the overall mean of 3.40 (SD = 0.25), interpreted as "Not Erroneous," which shows that teachers exhibited minimal error in the procedural aspects of test item construction. However, the intricate details among the specific indicators indicate room for development, particularly in TOS preparation, grammar/punctuation/spelling, reducing reading time, and avoiding difficult subjects. Addressing these issues through focused professional development may result in more reliable and valid evaluations, thereby benefiting student learning outcomes. Similarly, the study of Kissi et al. (2023) revealed that teachers perceived higher levels of competence in guaranteeing content validity, followed by test item assembly and management of test item "options" (alternatives). In relation, Cristobal (2022) mentioned that majority of vocabulary items violated the concept of using the same word class for all options. On the other hand, most grammar exam items had multiple options, and many reading comprehension questions can be solved using general knowledge. Moreso, teachers have grammatical problems in omission for 42%, addition 22%, misformation 30%, and misordering 6% (Fadhilah & Sharif, 2020). Munduro (2017) added that test construction is critical in teaching and learning and teachers are aware of Bloom's taxonomy's importance in test building but lack knowledge on how to apply it. Challenges include inadequate materials, terminology, and bad test planning. Moreso, a key theory-laden technique for creating valid and reliable written tests that can be used at the primary, secondary, or tertiary levels of educational assessment is the Table of Specifications (TOS), sometimes known contextually as the Test Blueprint. Additionally, TOS gives a general idea of how well the written exams balance the knowledge evaluations between low-order and higher-order information accumulation and correspond to the cognitive stages proposed in Bloom's taxonomy (Danushka & Gamage, 2024).

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Table 3. Extent of Common Error in Terms of Content Concerns

Indicator	Mean	SD	Verbal Interpretation
1. Based on the Most Essential Learning Competencies of the K to 12 Curriculum.	4.00	.00	Not Erroneous
2. Focused on a single problem.	3.81	.40	Not Erroneous
3. Kept the vocabulary consistent with the examinees' level of understanding	2.74	.72	Slightly Erroneous
4. Avoided cuing one item with another and ensured that items were independent of each other.	2.77	.71	Slightly Erroneous
5. Used the author's examples as a basis for developing items.	3.39	.70	Slightly Erroneous
6. Avoided textbook and verbatim phrasing when developing items.	3.06	.84	Slightly Erroneous
7. Avoided items based on opinions.	3.58	.61	Slightly Erroneous
8. Used multiple-choice questions to measure higher-level thinking.	3.58	.49	Slightly Erroneous
9. Tested for significant material and avoided trivial material.	3.71	.45	Slightly Erroneous
OVERALL	3.41	.22	Not Erroneous

As shown in Table 3, the overall mean of 3.41 (SD = 0.22), interpreted as "Not Erroneous," suggests that, in general, teachers minimally errored in addressing content concerns in test item construction. However, the individual indicators highlight areas where improvements can be made, particularly in ensuring vocabulary appropriateness, item independence, avoiding textbook phrasing, avoiding items based on opinions, used the author's examples as a basis for developing items, and using multiple-choice questions to measure higher-level thinking. Rudolph et al. (2019) cited that teachers should choose item types that correspond to the intended learning objectives to be assessed on the examination. Ideally, an examination must include a variety of item kinds to capitalize on the benefits while mitigating the effects of any negatives connected with a particular item format. Score modifications should be made with caution and after examining all relevant item information. In addition, the findings of this study of Rivai et al. (2019) suggested that test construction knowledge has a beneficial impact on the quality of objective tests created by teachers. Findings indicate that focusing on relevant information can help with understanding and managing item reliance in passage-based reading comprehension examinations (Baldonado et al., 2019).

Table 4. Extent of Common Error in Terms of Stem Construction

Indicator	Mean	SD	Verbal Interpretation
1. Stated the stem in either question or completion form.	4.00	.00	Not Erroneous
2. When using the completion format, did not leave a blank at the beginning or middle of the stem.	3.19	.78	Slightly Erroneous
3. Ensured that the directions in the stem are clear and that the wording lets the examinee know exactly what is being asked.	3.45	.61	Not Erroneous
4. Worded the stem positively and avoided negative phrasing.	3.03	.78	Slightly Erroneous

5. Included the central idea and most of the phrasing in the stem.	3.06	.84	Slightly Erroneous
OVERALL	3.35	.35	Not Erroneous

Table 4 revealed the overall mean of 3.35 (SD = 0.35), which means "Not Erroneous," points out that, in general, teachers errored less in stem construction. Individual indicators, on the other hand, identify places for improvement, including eliminating blanks at the start or middle of the stem, wording the stem favorably, and including the idea. Accordingly, Kizer (2024) reiterated that the stem is the first component of a multiple-choice question that explains the circumstance or inquiry. An effective stem is clear, simple, and clearly related to your training objectives. It is critical to verify that your stems accurately assess the needed knowledge or abilities. Good stems are concise and positive, avoiding negative terms like "not" or "except" (Poorvu, 2021). The results of the study by Menold & Raykov (2021) indicate that validity of an instrument can be influenced by the specific way item stem is formulated.

Table 5. Extent of Common Error in Terms of General Option Development

Indicator	Mean	SD	Verbal Interpretation
1. Used as many options as feasible; more options are desirable.	2.94	.80	Slightly Erroneous
2. Placed options in logical or numerical order.	2.74	.72	Slightly Erroneous
3. Kept options independent; they should not overlap.	3.48	.71	Not Erroneous
4. Ensured all options in an item are homogeneous in content.	3.61	.61	Not Erroneous
5. Maintained a fairly consistent length for all options.	3.52	.62	Not Erroneous
6. Phrased options positively, not negatively.	3.19	.86	Slightly Erroneous
7. Avoided distractors that could give clues to test-wise examinees, such as clang associations, absurd options, formal prompts, or semantic clues (overly specific or overly general).	3.58	.55	Not Erroneous
8. Avoided giving clues through faulty grammatical construction.	3.45	.66	Not Erroneous
9. Avoided using specific determiners such as "never" and "always."	3.35	.70	Not Erroneous
OVERALL	3.32	.24	Not Erroneous

Based on table 5, on the extent of common errors in general option development, the overall mean of 3.32 (SD = 0.24), interpreted as "Not Erroneous," suggests that, in general, teachers showed minimal error in general option development of test items. On the other hand, indicators on the use of logical and numerical order should be enhanced. According to Zimmaro (2016), when creating multiple-choice questions, ensure that the options are clear, independent, and homogeneous, using letters for identification and keeping the length consistent while avoiding "all of the above," "none of the above," or "I don't know." To prevent test-wise examinees from guessing, options should be phrased positively, without grammatical clues or specific determinates, and the correct answer should appear randomly in each position.In relation, the study of Karanfil & Neufeld (2020) highlighted order dominance and sequence priming as two factors that influence multiple choice outcomes, both of which can amplify or lessen the attractiveness of the correct and erroneous answers. These variables should be carefully examined when developing multiple choice outcomes in high-stakes language proficiency tests and shuffle alternatives in either paper-based or computer-based testing.

Table 6. Extent of Common Error in Terms of Correct Option Development

Indicator	Mean	SD	Verbal Interpretation
1. Positioned the correct option so that it appears around the same number of times for each possible position for a set of items.	3.52	.50	Not Erroneous

2. Ensured that there is only one correct option.	4.00	.00	Not Erroneous
OVERALL	3.76	.25	Not Erroneous

As presented in Table 6, the extent of common errors in correct option development, the overall mean of 3.76 (SD = 0.25), interpreted as "Not Erroneous," indicates that teachers demonstrate no error in correct option development which reflects a solid understanding and implementation of best practices in the developing right options in multiple choice tests. As such, an article found a considerable bias toward middle positions in both test creation and test administration, with accurate responses and guesses preferentially favoring central options. While test balancing attempts diminish this bias in answer keys, it remains in examinee replies and influences item difficulty and discrimination, exhibiting significant psychometric effects (Attali & Bar-Hillel, 2023).

Table 7. Extent of Common Error in Terms of Distractor Development

Indicator	Mean	SD	Verbal Interpretation
1. Used plausible distractors; avoided illogical distractors.	3.35	.74	Not Erroneous
2. Incorporated common errors made by students into distractors.	3.39	.70	Not Erroneous
3. Avoided technically phrased distractors.	2.84	.77	Slightly Erroneous
4. Used familiar yet incorrect phrases as distractors.	3.39	.66	Not Erroneous
5. Used true statements that do not correctly answer the item.	3.35	.70	Not Erroneous
OVERALL	3.26	.39	Not Erroneous

Table 7 indicates that, the overall mean of 3.26 (SD = 0.39), interpreted as “Not Erroneous,” suggests that, mainly, teachers showed less error in distractor development. However, the avoidance of technically phrased distractors must be improved. Shin et al. (2019) emphasized that to improve the quality of multiple-choice questions, a “systematic generation with rationales method” is proposed, in which distractors are generated based on empirically supported student misconceptions or errors, with rationales offered by content specialists. This methodology attempts to develop more believable and relevant distractors than random assignment approaches, and future research should consider combining topic modeling with advances in Artificial Intelligence to generate these distractors other than students’ misconceptions, alternative forms of distractions include: supplied to aid with the creation of convincing distractors for mathematics multiple choice questions. As such, practical guidelines for judging distractors fit for mathematics questions are provided to help teachers improve their item writing skills based on literature and experience as a mathematics teacher, and the common pitfalls in distractor development were identified to allow mathematics teachers to have a clear path for their work (Arhin, 2024).

Table 8. Summary on the Extent of Common Errors in Mathematics Assessment

Indicator	Mean	SD	Verbal Interpretation
General Item Writing (Procedural)	3.40	.25	Not Erroneous
General Item Writing (Content Concerns)	3.41	.22	Not Erroneous
Stem Construction	3.35	.35	Not Erroneous
General Option Development	3.32	.24	Not Erroneous
Correct Option Development	3.76	.25	Not Erroneous
Distractor Development	3.26	.39	Not Erroneous
OVERALL	3.42	.28	Not Erroneous

Table 8 presents the summary of the extent of common errors in mathematics assessment and showed that, the overall mean of 3.42 (SD = 0.28), interpreted as "Not Erroneous," indicates that mathematics teachers errored

minimally in various aspects of assessment construction and all components were competently done by the teachers. As such, the study of Kinyua & Odiemo (2018) demonstrated that teacher experience, training in test building and analysis, level of education, usage of Bloom's taxonomy, test moderation, and test length all influence test validity and reliability. These characteristics have varying effects on the validity and reliability of teacher-created exams as shown by experienced teachers who had prior training in testing and so utilized a number of these criteria in their test development tended to produce tests with higher validity and reliability than their counterparts without such training.

Table 9. Level of Teachers' Competence in Making Assessment in Terms of Curriculum Competency

Indicator	Mean	SD	Verbal Interpretation
1. I have a thorough understanding of the most essential learning relevant to my subject area.	4.87	.34	Very Competent
2. I effectively align my assessments with the learning objectives outlined in the curriculum.	4.35	.54	Very Competent
3. I regularly update my knowledge of curriculum changes to enhance my teaching practices.	4.58	.61	Very Competent
4. I am confident in my ability to prepare assessments that accurately measure student mastery of the curriculum.	4.58	.49	Very Competent
5. I utilize a variety of assessment methods based on the target competencies outlined in the curriculum.	4.74	.44	Very Competent
OVERALL	4.63	.18	Very Competent

According to Table 9, the overall mean of 4.63 (SD = 0.18) which was categorized as "Very Competent," provided compelling evidence that teachers feel well-equipped to develop assessments that are closely aligned with curriculum competencies. Given these uniformly positive results, it can be inferred that teachers possess a high degree of self-efficacy and expertise in assessment design and implementation. According to Marion et al. (2020), competency-based education can promote equity, but only if it is actively integrated into the educational environment, structures, curriculum, assessments, and instruction. District and school administrators should utilize this framing to encourage equality goals by creating balanced assessment systems that are aligned with competency-based learning systems. In relation, findings of Hageninama et al. (2023) found that teachers mostly use clarifying questioning strategies during Competence-Based assessment, and it was also shown that the majority of assessments are limited to lower levels of thinking, with only a few questions selected to examine higher levels of thinking. As such, an investigation of selected teachers from the Department of Education-National Capital Region (DepEd) discovered that they had intermediate competency in the first, third, and fourth strands of Domain Number 5, Assessment and Reporting of the Philippine Professional Standard for Teachers (PPST). The study recommends that these results might be used by DepEd to build professional development programs to assist instructors comply with the PPST criteria and become more successful (Rural, 2021).

Table 10. Level of Teachers' Competence in Making Assessment in Terms of Pedagogical Competency

Indicator	Mean	SD	Verbal Interpretation
1. I employ a range of assessment strategies to cater students' diverse learning style.	4.42	.55	Very Competent
2. I systematically plan assessments that are integrated into my teaching activities.	4.90	.30	Very Competent
3. I actively analyze student performance data to identify learning challenges and adjust my teaching accordingly.	4.65	.48	Very Competent
4. I ensure that assessment practices measure student learning and	4.55	.50	Very Competent

achievement.			
5. I regularly reflect on my pedagogical approaches to improve classroom assessment outcomes.	4.26	.44	Competent
OVERALL	4.63	.18	Very Competent

As depicted in Table 10, on the pedagogical practices related to assessment, the overall mean of 4.63 (SD = 0.18), interpreted as "Very Competent," shows that teachers generally perceive themselves as competent in employing sound pedagogical practices in assessment. While strengths are evident across most areas, promoting more consistent and focused reflection on assessment strategies could further refine teachers' competence in this critical domain. As mentioned by Masuku et. al (2021), assessment in higher education is a pedagogical and measuring technique that encourages deep learning by improving critical thinking and analytical abilities. Deep learning requires specific evaluation that relates to learning outcomes (knowledge, understanding, application, analysis, and synthesis) and engages students in developing future skills. In addition, assessment competence in pedagogy is defined as an individual's comprehension of the basic assessment concepts and procedures, which are typically derived from standards for educational assessment. It has given teachers valuable insights into areas of their knowledge that are pertinent to evaluating students (Herppich et. al, 2018).

Table 11. Level of Teachers' Competence in Making Assessment in Terms of Professional Development

Indicator	Mean	SD	Verbal Interpretation
1. I participate in ongoing professional development activities related to assessment practices.	4.26	.51	Competent
2. I actively share knowledge and skills with colleagues to improve our collective assessment competencies.	4.74	.44	Very Competent
3. I seek feedback from peers and mentors to enhance my assessment strategies.	4.68	.53	Very Competent
4. I adhere to the notion that continuous professional development is essential for improving my assessment skills.	4.71	.45	Very Competent
5. I am open to adopting new assessment methods and technologies based on professional development experiences.	4.71	.45	Very Competent
OVERALL	4.62	.26	Very Competent

Table 11 showed that engagement in ongoing professional development activities concerning assessment practices garnered a mean of 4.26 (SD = 0.51), noted as "Competent." This suggests a general commitment to improving assessment knowledge, although it may indicate room for increased participation or targeted training opportunities. In relation, Yigletu et al. (2023) emphasized that professional development in assessment for learning significantly improves pre-service primary mathematics teachers' self-regulated learning skills, though no significant difference was found across achiever levels post-intervention. While influenced by beliefs and values, pre-service teachers with a solid understanding of assessment for learning principles and greater autonomy during practicum are better equipped to apply assessment results to improve teaching and student learning. More so, the Dynamic Approach (DA) to Teacher Professional Development (TPD) can assist teachers improve their assessment abilities, hence improving student learning results (Christoforidou & Kyriakides, 2021).

Table 12. Level of Teachers' Competence in Making Assessment in Terms of Valuation Competency

Indicator	Mean	SD	Verbal Interpretation
1. I am skilled at using various assessment methods to evaluate student work effectively.	4.45	.61	Competent

2. I analyze assessment data systematically to inform my teaching practices.	4.71	.52	Very Competent
3. I provide timely and constructive feedback to students based on their assessment performance.	4.35	.60	Very Competent
4. I ensure that my assessments are aligned with the lesson objectives and standards for learning.	4.87	.34	Very Competent
5. I regularly reflect on my assessment practices to improve their effectiveness in supporting student learning.	4.29	.52	Competent
OVERALL	4.54	.35	Very Competent

Table 12 indicates the, the overall mean of 4.54 (SD = 0.35), classified as "Very Competent," conveys that teachers are generally well-equipped in valuation competency, particularly in analyzing assessment data and ensuring alignment with learning goals. Umar et al. (2018) noted that any educators have long considered assessment to be a way to gauge learning outcomes, which is primarily accomplished through summative evaluation. However, in recent years, educators have started to expand the scope of assessment to include not only students' learning outcomes at the conclusion of a given time period to determine who passes or fails, but also to improve learning by altering classroom instruction. As an instrument for both formative improvement of teaching and learning and summative accountability evaluation of teachers, schools, and administration, educational assessment is essential to the quality of student learning experiences, teacher instructional activities, curriculum evaluation, school quality, and system performance (Brown, 2022).

Table 13. Summary on the Level of Teachers' Competence in Assessment

Indicator	Mean	SD	Verbal Interpretation
Curriculum Competency	4.63	.18	Very Competent
Pedagogical Competency	4.55	.27	Very Competent
Professional Development	4.62	.26	Very Competent
Valuation Competency	4.54	.35	Very Competent
OVERALL	4.59	.27	Very Competent

Evident in Table 13, the overall mean of 4.59 (SD = 0.27), which means "Very Competent", provides a strong indication that teachers generally feel well-prepared and highly capable in all core areas of assessment. These findings suggest that teachers are equipped to effectively design, implement, and utilize assessments to support student learning.According to Hull & Vigh (2024), mediating elements, such as assessment efficacy and conceptions, have an impact on teachers' assessment competency. Training workshops, assessment courses, and teachers' self-reflection on assessment procedures are all good ways to develop it. Thus, training had the biggest impact on assessment competence and practices, according to the findings, and teachers thought they were assessment literate but less so in digital assessment (Al-Bahlani & Ecke, 2023).

Table 14. Pearson's Results on the Significant Relationship Between Extent of Common Error and Teachers' Competence in Making Assessment

Variables	M	r	p	Decision	Interpretation
Common Errors	3.42	-.148	.427	Accept Ho	*Very Low Correlation, Not Significant*
Teachers' Competence	4.59				

According to table 14, Pearson product-moment correlation was computed to assess the relationship between the extent of common errors in assessment and teachers' competence in making assessments. The results

indicated a nonsignificant, very weak negative correlation, r = -.148, p = .427. Therefore, the null hypothesis was accepted. This suggests that there is no statistically meaningful linear association between the two variables, suggesting that other factors beyond overall competence are likely at play. This implies that reducing assessment errors requires targeted interventions addressing specific error types, resources, workload, and assessment complexity, rather than solely relying on enhancing general teacher competence. Shank (2025) noted that unfortunately, many trainers, instructors, instructional designers, and multimedia producers are unaware of the importance of designing sufficient learning evaluations to complement classroom, online, or blended education, and many are unsure of how to do so. Inadequate assessments fall short of assessing what is required and can generate substantial issues for designers, learners, instructors, and organizations. A note regarding assessment error may be appropriate here and, in this situation, error does not imply a mistake on the part of the assessor or a defect in the test. Rather, it refers to the impact of external influences on the score (Singh, 2024). Fields (2018) mentioned that teaching and exam writing demand distinct skill sets. While teachers are frequently expected to prepare language examinations, they frequently receive insufficient training, which can result in tests that lack validity and reliability, rendering them unfair to test-takers. Additionally, both workload and fatigue affect performance, and a heavy workload can exacerbate exhaustion (Fan & Smith, 2017). As such, Kissit et al. (2023) explained that it was discovered that there were major issues with copies of multiple-choice items that teachers had created for their students, as well as unique and convincing evidence regarding teachers' assessed test construction skill and interpretation of their multiple-choice exams.

Table 15. Thematic Analysis on the Issues and Concerns in the Conduct of Mathematics Assessment

Formulated Meaning	**Theme**	**Code**
Challenges in creating fair assessments due to diverse skill levels; language barriers in word problems; math anxiety; limited time for instruction and assessment; difficulty in measuring true understanding; unequal access to resources.	Student-Related Challenges, Time Constraints and Curriculum Overload, Assessment Validity and Reliability, Access and Equity	1, 2, 3, 4
Students' poor reading comprehension leads to a lack of understanding and, consequently, a reluctance to read.	Student-Related Challenges	1
Students' reading comprehension difficulties extend to the point where they don't understand or even read test instructions and test questions.	Student-Related Challenges	1
There is insufficient time, and there are too many learning targets to cover.	Time Constraints and Curriculum Overload	2
Students often do not read questions carefully (especially those not on the honor roll), relying on guessing; too many competencies lead to incomplete instruction and exclusion from assessments; test results are unreliable due to cheating and lenient proctoring.	Student-Related Challenges, Time Constraints and Curriculum Overload, Assessment Validity and Reliability	1, 2, 3, 4

Table 15 revealed four primary theme on the issues and challenges in the conduct of assessment: Student-Related Challenges emerged, encompassing issues of diverse student skill levels, language barriers, reading comprehension difficulties, and math anxiety. Reading comprehension also arose, with some of the response stating, "Sa reading comprehension pa rin maam kahit sa test instructions pa lang di na nila maintindihan" (Still in reading comprehension Maam, even in test instructions they do not understand). Time Constraints and Curriculum Overload were also evident, with respond noting, "Lack of time or no luxurious time - Numerous learning targets to be accomplished," highlighting the struggle to cover all material adequately. Assessment Validity and Reliability concerns included student guessing and the unreliability of test results due to cheating, as voiced by one of the respondents, "Marami sa mga students...ay hindi nagbabasa ng mga test questions...hindi ganoon ka-reliable ang results ng exam kasi may mga nakakalusot pa rin mangopya" (Many of the students...do not read test questions...the results of the exam are not so reliable because there are still those who are copying). Finally, Access and Equity was also revealed, stating that "hindi lahat ng mga bata ay maka-access sa mga resources" (not all of the children can access resources). These themes reveal a multifaceted set of challenges

impacting the effectiveness and fairness of mathematics assessment.

CONCLUSION

The study on mathematics test items and teacher competency in Cotabato City revealed that teachers demonstrated minimal errors in procedural aspects, content concerns, stem construction, and general option development, but areas for improvement include refining details in TOS preparation, vocabulary appropriateness, and avoiding difficult subjects. Teachers showed no errors in correct option development, indicating a strong grasp of best practices. Mathematics teachers performed well across various assessment components. Teachers generally feel competent in aligning assessments with curriculum competencies and employing sound pedagogical practices, though more reflection could enhance their skills. They are committed to continuous professional development and are well-equipped in valuation competency. However, challenges in mathematics assessments include diverse student skill levels, language barriers, and resource availability issues. Overall, teachers are well-prepared to design and implement assessments, but addressing these challenges is crucial for improving student learning outcomes.

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Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

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