

A Mixed Method Analysis of the Cognitive Levels Manifested in English Quarterly Tests: Basis for Enhancing Teacher Assessment Practices in Asipulo District

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Abstract

This study examined the cognitive levels manifested in English summative tests administered in the Asipulo District and served as a basis for enhancing teachers' assessment practices. Using a mixed-method research design, the study combined quantitative content analysis of test items and qualitative data gathered from teacher interviews to provide a comprehensive understanding of current assessment practices. The quantitative phase involved analyzing English summative test items using Bloom's Taxonomy of cognitive domains to determine the distribution of lower-order and higher-order thinking skills. Results revealed that the overall cognitive level of the summative tests falls under lower-order thinking skills, indicating that most test items emphasize remembering, understanding, and basic comprehension rather than analysis, evaluation, and creation. The qualitative findings further revealed that while teachers recognize the importance of incorporating Higher-Order Thinking Skills (HOTS) in assessments, they encounter several challenges in crafting such test items. These challenges include limited time for test construction, difficulty in designing context-based and analytical questions, and the need for additional training and resources related to HOTS-based assessment. Based on these findings, the study highlights the need to strengthen teachers' assessment practices by promoting professional development programs focused on the development of HOTS-oriented test items. Enhancing teachers' competencies in assessment design can help ensure that English summative tests effectively measure deeper learning and critical thinking among students. The results of the study may serve as a basis for improving assessment strategies and supporting teachers in developing more cognitively demanding evaluation tools in the Asipulo District.

Keywords: Higher-order thinking skills, English summative tests, cognitive levels, HOTS, LOTS, assessment practices, teacher assessment literacy, Asipulo District

1. Introduction

1.1. Introduction

Yanti and Thohir (2024) explained that, from the idea of Bloom's Taxonomy, higher-order thinking skills (HOTS) aim to train learners' minds and skills so that they may be prepared to face real-world challenges and global demands. Aba-Oli and Husen (2024) likewise stated that, for learners to cope with the difficulties of the 21st century, they must go beyond memorization. The development of skills in problem-solving, creating, evaluating, and critical thinking enhances their readiness for the future because these skills require learners to process information, synthesize patterns, form judgments, and produce original work. In the context of 21st-century learning, education does not only help people acquire knowledge, but also assists learners in developing the ability to think critically, solve problems, and generate original ideas. These abilities are referred to as higher-order thinking skills, which were adapted from the higher levels of Bloom's Taxonomy, as explained by Mardiana (2023). Similarly, Sausan et al. (2023) argued that HOTS involve cognitive processes that go beyond rote learning or memorization and include skills such as analyzing, evaluating, and creating. These are associated with the upper levels of the Revised Bloom's Taxonomy of Anderson and Krathwohl (2001). Liu et al. (2021) further explained the importance of studying HOTS as a basis for quality education and lifelong learning, emphasizing that learners who possess advanced thinking skills are better able to critically assess information, make informed decisions, and create innovative solutions to complex problems.

1.2. Theoretical and Conceptual Foundation of the Study

The framework of the study was anchored on Bloom's Revised Taxonomy and Constructivist Learning Theory, both of which emphasize that learners build knowledge through higher-order cognitive processes such as analysis, evaluation, and creation (Anderson & Krathwohl, 2001). In the local context, the K to 12 Curriculum and the Philippine Professional Standards for Teachers (PPST) published by the Department of Education promote the use of HOTS as part of classroom

assessment. In particular, under Pillar II of the PPST, critical and creative thinking are considered indicators of an effective teacher. However, recent evidence suggests a continuing disconnect between curricular intentions and classroom realities. Balinas (2016) discovered that the assessment practices used by English teachers were still largely focused on recall and comprehension questions. In a similar manner, Adao (2025) and Orongan and Manual (2024) established that teacher-made summative tests at the high school level were dominated by lower-order thinking skills (LOTS), with only minimal inclusion of analytical or creative tasks. Studies conducted in Indonesia by Yuliasari and Sukyadi (2019) and Yulia and Aprianti (2023) also confirmed that HOTS items appeared only in very limited numbers because of inadequate teacher preparation and weak assessment literacy.

1.3. Research Gap and Rationale

A review of related literature revealed that only a few studies have examined the integration of higher-order thinking skills in actual English summative tests at the secondary level in the Philippines. Balinas (2016) found that the majority of classroom assessments made by English teachers were devoted to recall and comprehension-type questions. Likewise, Adao (2025) as well as Orongan and Manual (2024) reported that most teacher-made summative tests continued to focus on LOTS, with only a very limited number reflecting analytical, evaluative, or creative tasks. As a result, there remains inadequate evidence to support the improvement of assessment practices that are aligned with both national and global educational priorities, including those reflected in the Programme for International Student Assessment or PISA. In response to this gap, the present study aimed to determine the cognitive levels, particularly LOTS and HOTS, of English periodical tests in Asipulo District. In addition, the study sought to gain insights into teachers' understanding of HOTS through interviews.

1.4. Research Questions

The study aimed to identify the cognitive level of English periodical tests in Asipulo District. Specifically, it sought to determine the distribution of cognitive levels, whether LOTS or HOTS, in English summative assessments in the district. It also aimed to explore what HOTS meant in the context of teachers, how teachers ensured that their periodical test questions were aligned with HOTS, what challenges they encountered in crafting HOTS-based periodical items, and how they coped with those challenges in preparing HOTS-based periodical tests.

1.5. Literature Review

Higher-order thinking skills, as developed and recognized globally, are among the primary skills measured in PISA. The Programme for International Student Assessment is an international study conducted by the Organisation for Economic Co-operation and Development (OECD), and its test items are designed to measure how well students can think critically, solve complex problems, and apply knowledge in unfamiliar contexts. Sirén and Sulkunen (2025) observed that society is greatly influenced by digital content, which may sometimes lead to misinformation, and they explained that the ability to evaluate misleading information is one of the targets of PISA. Grey (2024) argued that the inclusion of HOTS in PISA demonstrates the integration of 21st-century skills, which are essential in helping learners adapt to rapid changes in the modern world. Meryansumayeka et al. (2020) further emphasized that when students answer PISA test items, they demonstrate HOTS because the assessment measures the critical abilities needed in the 21st century.

1.6. HOTS and PISA-Based Assessment

Rohmawati and Fathoni (2022) believed that the use of questions similar to those found in PISA showed that teaching and testing through higher-order thinking tasks could improve students' critical thinking abilities. This suggests that when classroom lessons and assessments focus on reasoning and problem-solving, students become more effective thinkers and learners. In the same way, Putri et al. (2024) explained that when students solve PISA-type mathematical problems, they develop more abilities that are essential for real-life learning. Gómez and Suárez (2020), using data from PISA 2015, supported the view that inquiry-based activities help shape learners' scientific abilities. Hernández-Ramos and Araya (2025) also affirmed that PISA requires much more than rote memory, since it includes tasks that demand creativity, inference, and deeper reasoning. Their view also highlights the important role of schools in cultivating these higher-level skills among learners.

2. Material and methods

2.1. Research Design

The study employed a convergent mixed-method research design. This design was considered appropriate because it enabled the researcher to collect and analyze both quantitative and qualitative data at the same time in order to gain a deeper understanding of how higher-order thinking skills (HOTS) were integrated into English summative tests. For the quantitative aspect of the study, content analysis was used. The researcher analyzed the teachers' test questions and categorized each item according to Bloom's Taxonomy as either higher-order or lower-order, which provided an overall classification of the level of HOTS integration. For the qualitative aspect, data on teachers' understanding of HOTS and the challenges they encountered were gathered through interviews, focus group discussions, or open-ended questionnaires.

After both forms of data were analyzed, the results were compared and validated to determine whether the teachers' understanding and the challenges they experienced were aligned with the actual content of their assessment tasks. This complementation provided strong evidence that may contribute to the improvement of teacher assessment practices in the Asipulo District.

2.2. Participants of the Study

The respondents of the study were English language teachers from five public high schools in the Asipulo District. They were selected because they were responsible for crafting or designing the quarterly summative tests in English during each school year. Purposive sampling was used because the study specifically focused only on English teachers in the district. A total of 15 teachers participated in the study. Of this number, 2 came from Natcak National High School, 2 from Camandag National High School, 2 from Nangkatengey National High School, 5 from Haliap National High School, and 4 from Asipulo National High School.

2.3. Instruments of the Study

The study used English periodical test papers as the main instrument for collecting quantitative data. These test papers served as the basis for examining the cognitive level of the assessment items included in the summative tests. A rubric on the level of HOTS and LOTS was also used as the basis for the assessment. In particular, Brookhart's HOTS Assessment Rubric was employed as a tool to help identify the level of the summative tests or activities given to the learners. This rubric focused on tasks involving the analysis of information, decision-making, application of knowledge to new situations, and the production of original work. Through this guide, the researcher was able to determine whether the test items went beyond simple memorization and supported meaningful and real-life learning. For the qualitative data, an interview protocol was utilized in order to gain deeper insights into English teachers' experiences and understanding in crafting HOTS-based test questions.

2.4. Procedure

The data-gathering procedure began with the collection of quarterly English test papers from secondary teachers in five public schools in the Asipulo District during the most recent quarterly examinations. This ensured that authentic and current assessment materials were obtained for analysis. To gain a deeper understanding of the teachers' practices and perspectives in creating higher-order thinking skills test items, the researcher conducted individual interviews with each respondent. These interviews provided detailed insights into their strategies, challenges, and rationale in test construction. After all the test papers had been collected, the researcher systematically reviewed and evaluated each item and categorized it as either lower-order thinking skills (LOTS) or higher-order thinking skills (HOTS) based on its cognitive demand. This combination of document analysis and qualitative interviews provided both quantitative data on the distribution of item types and qualitative data on teachers' experiences, thereby ensuring a comprehensive understanding of the construction of English periodical tests.

2.5. Data Analysis

The quantitative data were analyzed using descriptive statistics, particularly frequency and mean, to determine the cognitive level of English periodical tests in the Asipulo District. These statistical tools were considered appropriate because they measured the frequency and percentage of HOTS in the summative tests. In particular, frequency count was used to compute the level of HOTS present in the English summative tests. For the qualitative data, Braun and Clarke's (2021) Reflexive Thematic Analysis was used to analyze the insights gathered from the respondents. This type of analysis required the active role of the researcher throughout the process and did not rely on multiple coders or statistical tools, but rather on the researcher's careful interpretation and deep understanding of the data. The process followed six steps: familiarization with the data, generating initial codes, constructing themes, reviewing themes, defining themes, and writing up the results.

2.6. Ethical Considerations

The study observed ethical principles in the gathering and treatment of data. Confidentiality and privacy were given importance to ensure that the respondents' information was handled properly and kept private. Informed consent was secured not only from the respondents but also from authorized personnel such as school principals and administrators before the collection of data. The respondents were also given the freedom to withdraw their participation from the study at any point. In handling the collected data, honesty and integrity were strictly observed to ensure that the results of the study were presented truthfully and responsibly.

3. Results and Discussion

3.1. Distribution of Cognitive Level of English Periodical Tests

The analysis of the English periodical tests in Asipulo District showed that, out of 1,000 test items, 499 or 49.9% were classified under Basic Application of Skills, indicating that nearly half of the test items required learners to apply previously learned concepts in direct and straightforward ways. A total of 339 items or 33.9% were categorized under Strategic

Thinking, which showed that a considerable portion of the test already required higher-order thinking and problem-solving. Meanwhile, 148 items or 14.8% fell under Recall and Reproduction, reflecting a smaller concentration on memory-based questions. Only 14 items or 1.4% were classified under Extended Thinking, which means that very few questions required learners to engage in deep analysis, synthesis, or evaluation. Overall, the findings revealed that the English periodical tests were heavily concentrated on lower- to mid-level cognitive skills, with limited emphasis on the highest-order thinking tasks. This suggests the need to further increase the proportion of HOTS items in future assessments. These findings are supported by Heong et al. (2016), who stressed that despite the strong emphasis on HOTS in educational reforms, many classroom assessments still focus on remembering and understanding. Similarly, Ramos and Dolipas (2019) found in the Philippine context that teacher-made examinations in secondary schools mainly measured remembering and understanding, with fewer items targeting analysis and evaluation. Studies further showed that although teachers are aware of HOTS implementation, classroom assessments often remain at the lower-order thinking skills level because of inadequate training in assessment design.

3.2. HOTS in the Context of Teachers

In the context of teachers, higher-order thinking skills referred to the ability to facilitate, design, and implement learning activities that required students to engage in complex cognitive processes such as analysis, evaluation, and creation rather than mere memorization of facts. This view aligned with the educational definition of HOTS as cognitive processes that go beyond recall and comprehension toward critical thinking, problem-solving, decision-making, and creativity. Bloom's Taxonomy, as a foundational educational framework, positioned these processes at the top of the cognitive hierarchy, emphasizing that learners must engage in deeper mental work such as analysis, evaluation, and creation in order to demonstrate HOTS. Aziz and Rawian (2022) explained that HOTS involves critical thinking, problem-solving, creativity, and evaluative reasoning, all of which require students to make judgments, interpret data, solve complex problems, and generate original ideas. The findings suggested that HOTS was closely associated with communication and comprehension skills because it was not enough for students to simply arrive at the correct answer; they also needed to demonstrate understanding by articulating the steps of their reasoning and logically connecting ideas. This was reflected in teachers' responses, such as the statement that a student understands the topic when he or she can explain it in his or her own words and relate it to real-life situations, and another response which stated that HOTS becomes visible when students can reason out their answers and discuss their thought processes without hesitation. These responses showed that teachers associated HOTS with the ability to communicate understanding clearly, reinforcing the idea that articulation is an essential component of higher-order thinking. Recent studies supported this view. Gao et al. (2022) noted that student explanation strategies in mathematics and statistics education, such as self-explanation and peer explanation, significantly enhanced conceptual understanding and procedural knowledge, which suggests that articulation of reasoning is integral to deeper learning and generative thinking processes. The findings also revealed that teachers viewed HOTS as the application and demonstration of learning, wherein students were expected to use knowledge in real-life contexts, solve problems, and produce outputs that reflected understanding. Teachers explained that HOTS is demonstrated when learners analyze situations, make decisions, and create meaningful outputs. This finding was supported by teacher responses such as, "HOTS is when students can apply what they learned in real situations," and "It is when learners can demonstrate their understanding through outputs or performance tasks." Other teachers also emphasized that students should not merely answer questions but should explain and show how they arrived at their answers. These findings were further supported by Nguyen (2017), who stated that explicit HOTS instruction improves students' ability to apply knowledge and enhances academic performance. Mendeley (2025) likewise explained that when teachers highlight a HOTS learning environment, it promotes problem-solving and realistic knowledge transfer to students. In addition, Hamzah and Zulkifli (2022) emphasized that inquiry-based and metacognitive approaches encourage students to apply and demonstrate understanding at deeper levels.

3.3. Strategies Teachers Use to Ensure Alignment of Periodical Test Questions to HOTS

The findings revealed that English teachers consistently relied on established cognitive frameworks to align their periodical test questions with higher-order thinking skills. In particular, teachers referred to Bloom's Taxonomy to structure questions across cognitive levels ranging from comprehension and application to analysis, evaluation, and creation. They also used SOLO Taxonomy to assess the depth of students' understanding and to ensure that the test items promoted strategic and extended thinking rather than simple recall. One teacher stated that he or she always checked the questions against Bloom's levels and made sure that at least one question required students to analyze or create instead of simply recalling facts. Another teacher shared that SOLO Taxonomy was used to determine whether the questions truly challenged students to connect ideas rather than merely list answers. These responses showed that teachers intentionally designed their tests to foster cognitive growth and assess higher-level skills. Studies on assessment design emphasized the importance of cognitive frameworks in promoting HOTS. Anderson and Krathwohl (2001) explained that Bloom's revised taxonomy facilitates the creation of questions that measure higher-order cognitive processes, while Biggs and Collis (1982) highlighted that SOLO Taxonomy offers a systematic way to assess the quality of students' understanding and encourage assessments that go beyond surface learning. The findings also showed that teachers ensured alignment through peer or expert review. Through this process, teachers validated whether their test items genuinely challenged students' analytical, evaluative, and creative

abilities. One teacher remarked that before finalizing the test, fellow teachers were asked to review it and often pointed out questions that were too simple or unclear, which were then revised to better assess critical thinking. Another participant explained that feedback from supervisors ensured that the questions were not merely factual but truly challenged students to think and reason. These statements indicated that professional validation was a deliberate strategy for improving the quality of HOTS-aligned assessments. Supporting this, Romnick et al. (2025) revealed a strong positive relationship between principals' guidance and teachers' professional development, while Abazie (2024) found that high-quality feedback from school leaders improved working conditions and professional growth, which in turn influenced teacher competence and performance. The findings further revealed that some younger English teachers integrated technology and artificial intelligence tools to improve the quality of assessment items. Teachers used digital resources to refine their questions, enhance clarity, and ensure that the items effectively promoted higher-order thinking. One respondent emphasized the importance of designing questions that required students to analyze and interpret text rather than merely recall information. Another teacher said that Bloom's Taxonomy was commonly used as a guide in constructing test questions to ensure that they targeted higher-order thinking skills. Teachers also stressed the value of collaborative review, with one participant sharing that master teachers were asked to review test items to ensure alignment with HOTS. Research supported these practices by showing that teachers encounter difficulties in designing genuine HOTS questions and therefore need systematic review, collaboration with experienced teachers, and validation of items to improve the quality and cognitive accuracy of assessments (Ilmu Pendidikan et al., 2025). In general, the findings showed that teachers tried to ensure that their periodical tests were aligned with HOTS by designing questions that encouraged deeper thinking and by continuously reviewing their tests over time.

3.4. Struggles Encountered by Teachers in Formulating HOTS Periodical Tests

The findings showed that teachers consistently experienced difficulties in formulating HOTS-based periodical tests. One of the most frequently emphasized challenges was the time-consuming nature of designing higher-order thinking items. Teachers explained that creating HOTS questions required careful planning, alignment with competencies, and the development of meaningful reading selections. Because teachers also had to handle lesson preparation, meetings, checking of papers, and other administrative tasks, they found it difficult to dedicate enough time to constructing well-developed HOTS items. One teacher explained that there was often not enough time to craft questions that truly required analysis or evaluation, which caused a tendency to revert to simpler items because deadlines were tight. Another teacher noted that between teaching, meetings, and grading, there were only limited hours left to refine HOTS items, resulting in questions that were sometimes rushed or incomplete. These findings were supported by Wang (2022), who found that heavy workloads and fragmented schedules limited teachers' capacity to prioritize cognitively demanding tasks such as HOTS item construction. Another challenge highlighted in the findings was the difficulty of ensuring that all questions were properly aligned with HOTS and distributed across cognitive levels such as knowledge, comprehension, analysis, application, synthesis, and evaluation. Teachers struggled to make certain that the test items did not focus only on memory and comprehension but truly assessed higher-order thinking skills. Some participants admitted uncertainty as to whether their questions genuinely measured HOTS. One teacher explained that sometimes a question initially appeared to be HOTS, but upon review it was still only comprehension. Another teacher stated that it was difficult to distinguish whether a question truly belonged to analyzing or evaluating because the differences between levels were sometimes confusing. Another respondent also shared that even when they tried to include HOTS, most questions still ended up under understanding or application. This difficulty was supported by Apriana et al. (2022), who found that HOTS-based questions remained significantly fewer than LOTS items in teacher-constructed assessments. The findings also revealed that teachers struggled to find suitable reading texts or selections aligned with the required competencies. This was a major concern because periodical tests, especially those modeled on PISA or HOTS-based assessments, required passages that could stimulate critical thinking, analysis, and evaluation. Teachers explained that without appropriate reading materials, it became difficult to formulate questions that accurately measured HOTS. One teacher noted that it was difficult to find reading materials that were appropriate for students while still allowing the construction of higher-order thinking questions. Another participant explained that sometimes the text was either too easy or too difficult, making HOTS question construction problematic. Another teacher stated that much time was spent searching for passages that matched the competency and at the same time encouraged students to analyze and evaluate. These findings were supported by Afflerbach et al. (2017), who emphasized that appropriate text selection is crucial in promoting higher-order thinking, and by Rahman et al. (2020), who found that language teachers often struggle to identify reading materials that fit both curriculum standards and learners' reading levels. The findings likewise showed that students' readiness and comprehension levels posed another challenge in constructing HOTS questions. Teachers reported that some students found even simple interpretive or contextual tasks difficult, which made it more challenging to formulate higher-order questions that were both rigorous and understandable. One respondent stated that transforming questions into HOTS was difficult because some students could not comprehend higher-order questions. This meant that teachers had to balance rigor with accessibility by considering students' developmental levels and cognitive readiness. These challenges were supported by Ragab, Kaid, and Sayed (2024), who noted that designing HOTS assessments is both preparation-intensive and cognitively demanding, and by Coching (2025), who explained that teachers often struggle to transform conventional questions into HOTS items and construct plausible answer choices that require analysis or evaluation rather than guessing.

3.5. Coping Strategies in Mitigating the Challenges

The findings revealed that teachers coped with the challenges of formulating HOTS periodical tests through continuous professional learning. This included extensive reading, note-taking, and the use of technological tools such as artificial intelligence. These strategies enabled teachers to improve their understanding of higher-order cognitive processes and enhance their ability to design assessment items aligned with HOTS objectives. One participant shared that he or she coped by reading more references and taking notes in order to better understand how to construct HOTS questions. Another teacher emphasized the role of technology by saying that AI tools were sometimes used to generate ideas for HOTS questions and to check whether the questions were appropriate. A third participant added that reviewing different materials and examples helped improve the way higher-order thinking questions were formulated. These findings were supported by DeLuca et al. (2019), who found that continuous professional development and access to instructional resources improve teachers' assessment literacy and HOTS implementation, and by Rahman et al. (2020), who reported that teachers who engage in self-directed learning, professional reading, and digital resource use are better prepared to integrate HOTS into assessments. Zhai et al. (2023) further highlighted the growing role of AI and digital tools in supporting teachers' assessment design. The findings also showed that teachers coped through instructional adjustment and assessment refinement. These strategies included reteaching or reviewing lessons, revising test questions, and retesting items to ensure that the assessments were suitable for students' comprehension levels and could effectively measure higher-order thinking skills. One teacher explained that lessons were reteach or reviewed to make sure students were ready before attempting HOTS questions. Another teacher shared that test items were revised and sometimes retested to ensure that they were appropriate to students' level of understanding. A third participant added that questions were adjusted to match what students could handle so that they would not be overwhelmed by higher-order questions. These findings were supported by Brookhart (2018) and Zohar and Dori (2019), who emphasized that scaffolding instruction and providing opportunities for review and practice improve students' readiness for HOTS tasks. Rahman et al. (2020) also found that teachers who engage in iterative assessment design, including revising and validating items, are more effective in creating assessments that target higher-order cognitive skills, while Heong et al. (2021) stressed that aligning instructional practices with assessment demands is vital in the successful implementation of HOTS. Finally, the findings showed that teachers coped through collaboration and expert validation. This involved consulting master teachers, school principals, or other authorized personnel to review and provide feedback on test questions before they were administered. Such collaboration ensured that the items were accurate, cognitively appropriate, and aligned with learning competencies. One teacher stated that the master teacher or school principal was asked to review the test questions before they were given to students. Another participant explained that having an experienced teacher check the questions helped ensure that they were truly higher-order and appropriate for students. A third teacher said that collaboration with school authorities provided confidence that the questions were valid and well aligned with the competencies. These responses indicated that expert validation was a key strategy in maintaining the quality of HOTS-based assessments. Supporting this, DeLuca et al. (2019), Rahman et al. (2020), and Zhai et al. (2023) explained that collaboration, peer review, and expert validation improve assessment reliability, strengthen professional learning, and enhance alignment between curriculum standards and classroom assessments.

4. Conclusion & Recommendations

The study concluded that although English summative test items in the Asipulo District showed some inclusion of higher-order thinking skills, the assessments remained largely concentrated on lower- to mid-level cognitive processes. This indicated that learners were given only limited opportunities for deep cognitive engagement. The findings further showed that teachers had a clear understanding of higher-order thinking skills as involving analysis, evaluation, synthesis, articulation, and the application of knowledge. They also employed structured approaches, such as the use of established frameworks and validation processes, to align their assessments with these skills. However, the consistent integration of HOTS in assessments was hindered by several challenges, particularly time constraints, difficulty in designing and balancing cognitively demanding questions, and differences in student readiness. Despite these constraints, teachers demonstrated initiative in improving the quality of their test items through continuous learning, collaboration, the use of artificial intelligence tools, and expert feedback. Overall, the findings underscored the need for stronger support systems, targeted professional development, and improved assessment design practices in order to ensure that summative tests more effectively promote and measure higher-order thinking skills among learners.

Based on the findings and conclusion of the study, it was recommended that English teachers should be provided with continuous professional development activities focused on the construction of HOTS-based assessment items, particularly in designing questions that require analysis, evaluation, and creation. Schools and district leaders should strengthen technical assistance, mentoring, and item review processes so that teachers may be guided more effectively in aligning their summative tests with higher-order thinking skills. It was also recommended that collaborative planning and peer validation be institutionalized in schools to improve the quality, clarity, and cognitive level of teacher-made assessments. In addition, school administrators should provide teachers with enough time, resources, and access to appropriate reading

materials and assessment tools that support the development of HOTS-based periodical tests. Since student readiness was found to be a challenge, teachers should also continue using scaffolding strategies, review sessions, and differentiated instruction to help learners gradually develop the capacity to respond to higher-level tasks. Future researchers may conduct similar studies in other districts or regions and may also examine intervention programs that could further strengthen teachers' competence in developing HOTS-oriented assessments.

The study was limited to the analysis of English periodical tests and the perspectives of English teachers in the Asipulo District only. It focused primarily on identifying the cognitive levels of the test items and exploring teachers' understanding, strategies, struggles, and coping mechanisms in crafting HOTS-based assessments. Since the study involved only selected public high schools in one district, the findings may not be generalized to all schools in other divisions or regions. The study was also limited by the number of available test papers and respondents, as well as by the dependence on teacher responses during interviews, which may have reflected subjective experiences and perceptions. Moreover, the investigation centered only on English summative assessments and did not include other subject areas or actual classroom observation of assessment practices. These limitations suggest that the results should be interpreted within the specific context of the study.

Compliance with ethical standards

The study was conducted in accordance with established ethical standards in research. Participation was voluntary, informed consent was secured from the respondents, and confidentiality of all gathered information was maintained. All data were used solely for academic purposes.

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