

Language Functions in Literary Language Class Interactions Towards the Structure of Observed Learning Outcomes (SOLO Framework)

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Abstract

This study explored the relationship between teachers' use of language functions and students' cognitive responses according to the SOLO framework in literature classrooms at Bernardo Lirio Memorial National High School. The research utilized a qualitative approach involving semi-structured interviews with six English teachers, classroom observations, and analysis of lesson plans, assessments, and student outputs. The analysis revealed that heuristic, personal, interactional, informative, divertive, instrumental, imaginative, and regulatory language functions were predominant and systematically guided students from surface-level understanding to higher-order, relational, and extended abstract cognitive responses. The study identified patterns showing that scaffolded questioning, dialogic pedagogy, text-to-self connections, creative reconstructions, playful engagement, differentiated instruction, and metacognitive reflection enhanced analytical, evaluative, and creative thinking. The findings highlighted challenges in aligning instructional strategies with students' varying cognitive levels and emphasized the importance of intentional use of language functions to promote deeper learning. The study recommends that teachers align classroom discourse with students' cognitive levels to optimize engagement and learning outcomes. The research supports SDG 4 – Quality Education by promoting inclusive and effective teaching practices, and SDG 10 – Reduced Inequalities by addressing diverse learner needs. Its sustainability impact lies in improving institutional practices, fostering metacognitive development, and enhancing long-term teaching effectiveness.

Keywords: Classroom Interaction, Critical Thinking, Heuristic Function, Literature Instruction, Language Functions, Metacognition, SOLO Levels, Student Engagement, Thematic Analysis

1. Introduction

Language is the primary medium of teaching and learning, especially in literature classes where it functions both as a means of communication and as a tool for interpretation, meaning-making, and critical engagement with texts (Grøver et al., 2023). In literature learning, language functions such as description, explanation, evaluation, hypothesis formation, and discussion help students articulate responses, construct interpretations, participate in collaborative dialogue, and develop critical thinking (Kumar, 2023). These functions allow learners to move beyond literal comprehension toward deeper understanding, creativity, and analysis. However, many literature classrooms remain dominated by teacher talk and limited student participation. Studies show that language classes are often teacher-centered, with teachers using 70-80% of class time for teacher talk and relying heavily on closed questions, resulting in surface-level responses and limited opportunities for deeper engagement with literature (Arcena & Omblerio, 2024; Thompson et al., 2024; Riordan, 2025). This situation contributes to fragmented learner responses focused on recalling facts rather than synthesizing ideas or producing abstract interpretations.

In the Philippine context, the Revised K–12 Curriculum expects Junior High School English instruction to be strategic, scientific, and pedagogical, with emphasis on multiliteracies and the use of oral, written, visual, audio, gestural, and tactile modes of communication (Department of Education, 2024). This curricular direction responds to the need for learners to apply basic, critical, and applied literacy skills in evaluating, creating, and publishing spoken, written, and multimodal texts. The urgency of this goal is reinforced by the country's performance in international assessments, where the Philippines ranked among the bottom 10 out of 81 countries in the PISA 2022 cycle, including reading comprehension. Magno (2025) emphasized that PISA competencies must be intentionally integrated into curriculum and assessment practices, while the SOLO framework offers a systematic way to design tasks that move learners from surface to deeper levels of understanding (Magno, 2024, 2025). Balagtas et al. (2021) likewise warned that the systemic gap in Higher-order Thinking Skills (HOTS) development is reflected in the country's low PISA performance.

Related literature consistently emphasizes that language functions shape classroom interaction, student participation, and the quality of learning. Binalet and Wilang (2023) found that language functions support sharing, learning, participation, and critical thinking in classroom discourse, particularly when instructors create supportive environments for meaningful and equitable discussion aligned with the SOLO framework. Similarly, Khusniyah and Indah (2019) showed that elicitation, explanation, and feedback help transform passive EFL learners into active participants in classroom interaction. In this regard, language functions are not merely tools for delivering content but mechanisms for involving students in meaning-making and learning. Classroom interaction also affects learners' motivation, confidence, and language performance. Lockett (2022) found that interactive classrooms using oral activities, open questioning, and peer discussions positively influenced Grade 9 students' language performance and motivation. Balagao Patunob and Ibojo (2023) further noted that students demonstrated deeper understanding when they connected literary themes to personal experiences through language functions. Ding (2021) found that students became more motivated and confident when teachers and learners listened to one another and provided constructive feedback, while Badie (2020) argued that poor classroom interaction leads to rote memorization, limited communicative competence, frustration, and weak cognitive development.

The literature also shows the value of the SOLO taxonomy in assessing the depth of student responses across disciplines. Chubko et al. (2019) demonstrated that the SOLO taxonomy helps distinguish learners who merely memorize from those who demonstrate genuine understanding, while Biggs and Collis (1982) emphasized its usefulness in describing levels of learning complexity. Luo et al. (2020) showed that reasoning scaffolds can improve students' argument construction when assessed through SOLO taxonomy, and Damopolii et al. (2020) confirmed that scaffolding improves higher-order argumentation as learners move from unistructural to multistructural and relational levels. Damopolii et al. (2020) also highlighted the contribution of such scaffolds to scientific literacy and conceptual understanding. Other studies confirm the broader application of SOLO-based assessment. Claudia et al. (2020) used the SOLO taxonomy to classify mathematical reasoning in linear programming, while Lestary et al. (2019) showed that higher SOLO levels indicate stronger reasoning and conceptual understanding in statistics. Kaharuddin and Hajeniati (2020) found that students at relational and extended abstract levels were more engaged and academically successful than those at pre-structural and uni-structural levels. Suryani and Syahbani (2023) linked gamification with the SOLO framework and found that interactive strategies improved student participation and cognitive outcomes. Abdullah and Masran (2021) also showed that SOLO-based self-assessment and peer assessment encouraged reflective and higher-order thinking in writing instruction, while Huilan et al. (2020) supported the use of Bloom's Taxonomy and SOLO taxonomy for developing critical thinking.

Several studies further connect language, cognition, and classroom discourse. Afriadi (2021) argued that multilingual repertoires can support EFL classroom interaction by facilitating comprehension, communication, and cognitive processing, while Baxter and Durrant (2017) supported the view that flexible language use can help learners achieve deeper levels of understanding. Katili et al. (2021) examined directive speech acts, elicitation, and informative speech acts as classroom language functions that support instructional goals. Katili et al. (2021) also showed that re-elicitation strategies help learners move from unistructural to multistructural understanding by encouraging idea expression and conceptual connection. Digruber (2019) emphasized that clarification and confrontation support co-construction of knowledge, while Hastari et al. (2021) showed that emotional factors such as anxiety affect learners' cognitive levels. Cao et al. (2023) further demonstrated that deep learning models can classify short-answer responses according to SOLO Cognitive Levels, suggesting the possible role of technology in supporting SOLO-based assessment. Dent (2020) likewise emphasized that SOLO classification can guide educators in designing interventions aligned with students' cognitive understanding. Qahmash et al. (2017) added that different learning tasks require different cognitive performances, which can be identified through students' responses and language use.

Nationally, the study responds to the continuing concern over Filipino learners' performance in reading comprehension and higher-order thinking. After the 2018 PISA results, where the Philippines ranked 89th out of 89 countries in Reading and Literacy, DepEd, through the NEAP, introduced the HOTS-PLPs program to strengthen teachers' capacity to promote higher-order thinking (Department of Education – National Educators Academy of the Philippines, 2023). In Tanauan City, this program was rolled out to help English teachers improve pedagogy and assessment practices that promote HOTS. Locally, the need for the study is supported by school-based performance and reading data from Bernardo Lirio National High School. The 2024-2025 PPST results showed that only 4 out of 11, or 36%, of English teachers obtained an Outstanding Performance rating in classroom observations, while 7, or 64%, struggled to engage learners in genuine discussions (Department of Education – Teacher Education Council (2017). These findings suggest that many teachers still rely on simple, factual, and rote-type classroom interaction. Şahin and Doğantay (2018) and Thankachan (2024) emphasized that critical thinking differs from rote learning because current curricular demands require analysis, questioning, and application. The researcher's experience as a Master Teacher in English also revealed that many teachers experience difficulty formulating questions that stimulate critical thinking and processing students' responses for feedback. Pagano (2025) emphasized that feedback is central to critical thinking because specific and actionable feedback encourages learners to justify, evaluate, and synthesize ideas. The Philippine Informal Reading Inventory school report for the

beginning of school year 2025-2026 further showed that many learners remained below grade level in reading, reinforcing the need to strengthen classroom discourse, comprehension, and HOTS integration. These local and national conditions align with global educational concerns on multiliteracies, critical thinking, and learner readiness for complex literacy demands.

The study is anchored on language functions and the SOLO taxonomy. Halliday (1978) identified seven language functions: instrumental, regulatory, informative, interactional, personal, heuristic, and imaginative. Halliday (1978, 1993) viewed language as a social semiotic system used to create meaning in social contexts rather than merely follow grammatical rules. Zhang (2018) explained that Halliday's theory views language development as learning how to mean, with children gradually mastering communicative functions before grammar develops to support these purposes. Jakobson (1960) proposed another model of language functions based on sender, receiver, message, context, code, and contact. His model explains communication as an interaction among these elements, where a message is transmitted by an addresser to an addressee through shared code, context, and contact. While Jakobson's model focuses on the mechanics of communication, Halliday's framework emphasizes language as a social tool for meaning-making, making it especially relevant to language education. The SOLO taxonomy, developed by Biggs and Collis (1982), provides a hierarchical framework for assessing the quality of learning outcomes. It classifies student understanding into pre-structural, uni-structural, multi-structural, relational, and extended abstract levels. Unlike Bloom's taxonomy, which emphasizes cognitive processes, SOLO focuses on how concepts are organized and connected. Biggs and Collis (1982) viewed learning as a movement from surface understanding to deep understanding, with constructive alignment among outcomes, teaching activities, and assessment. Chan et al. (2002) found that SOLO is effective in evaluating learning quality because it focuses on the complexity of student responses, while Velasco (2025) supported its wider application beyond STEM subjects.

The reviewed literature shows that language functions and SOLO taxonomy have been studied in classroom discourse, EFL interaction, writing, mathematics, science, social studies, and technology-assisted assessment. However, there remains a gap in examining how teachers' language functions in literature classroom interaction guide students' responses across SOLO levels. Existing classroom practices often emphasize elicitation, explanation, and evaluation, but these are not always intentionally designed to lead learners toward relational and extended abstract reasoning. This gap is evident in classrooms where students produce single-word, fragmented, or factual responses, while teachers rely on what, who, and where questions to trigger interaction. Without deliberate cognitive challenge, learners may remain passive and limited to low-order thinking skills. This concern is supported by Tajeddin et al. (2020); Zou et al. (2024), who noted that questioning patterns rarely demand higher-order thinking when classroom discourse is not intentionally structured. Thus, this study is justified by the need to analyze the predominant language functions used by English teachers, identify the SOLO levels reflected in students' responses, examine the patterns between teacher language and learner cognition, and develop strategies that enhance students' use of language functions through the SOLO approach. Exposure to real-world problems and collaborative tasks enhances learners' ability to analyze, evaluate, and synthesize information (Taguchi, 2016), while needs-based evaluation using SOLO can help teachers strengthen questioning strategies and provide support suited to learners' cognitive abilities (Martin, 2014).

The study is most directly aligned with SDG 4 – Quality Education because it focuses on improving literature instruction, classroom interaction, reading comprehension, critical thinking, and higher-order learning among Junior High School students. By examining how teachers use language functions and how students respond according to SOLO levels, the study contributes to more inclusive, effective, and cognitively responsive English language teaching. The study also supports SDG 10 – Reduced Inequalities insofar as it addresses learners who struggle with reading comprehension and classroom participation. The use of scaffolded questioning, differentiated support, multilingual awareness, and discourse-based strategies can help learners with varying ability levels participate more meaningfully in literature classes. In addition, the study contributes to SDG 17 – Partnerships for the Goals because its findings may support professional development initiatives such as LACs, FGDs, and Collaborative Expertise sessions among teachers and school leaders. These collaborative mechanisms can strengthen institutional capacity to improve instruction, assessment, and learner engagement.

This study contributes to educational sustainability by promoting teaching strategies that develop long-term literacy, critical thinking, and metacognitive skills. Since language functions influence how learners interpret, explain, evaluate, and create meaning, improving classroom discourse can help sustain deeper learning across grade levels and subject areas. The study also supports institutional sustainability by providing school leaders with evidence for designing HRTD plans, teacher coaching, and professional learning activities that address teachers' challenges in creating HOTS questions and engaging students in meaningful discussion. Through SOLO-based analysis, teachers can better align learning outcomes, classroom activities, assessment, and feedback. Furthermore, the study contributes to socio-economic and innovation-oriented sustainability by strengthening learners' 21st-century skills, including reasoning, communication, collaboration, creativity, and problem-solving. These competencies are necessary for academic success, workforce readiness, and participation in a knowledge-based society. Although the study is situated in literature instruction, its focus on language, cognition,

assessment, and teacher development makes it relevant to multidisciplinary sustainability in education, communication, curriculum design, psychology, and school leadership.

2. Material and methods

2.1 Research Design

A qualitative design was utilized to capture rich, descriptive data regarding the language functions of teachers and the associated SOLO levels of student responses. This approach allowed the researcher to examine naturally occurring classroom discourse, understand teachers' instructional strategies, and interpret students' cognitive engagement within literature lessons (Polit & Beck, 2016; Putri, Mardiyana, & Saputro, 2017).

2.2 Locale of the Study

The study was conducted at Bernardo Lirio Memorial National High School, where English literature classes provided the context for observing the interplay between teacher language functions and student learning. The site was chosen for its representative classroom environment and accessibility for in-depth qualitative data collection.

2.3 Respondents of the Study

The participants consisted of English teachers who regularly instructed literature classes. These teachers were selected based on their experience, involvement in teaching literature, and willingness to participate in semi-structured interviews (Palys, 2008). The participants' insights offered direct perspectives on instructional strategies and classroom interactions that shaped students' cognitive responses.

2.4 Sample and Sampling Procedure

Purposive sampling was employed to select participants who could provide relevant and detailed information regarding language use in literature instruction. Teachers were identified based on their experience in delivering literature lessons and their openness to discussing pedagogical practices (Palys, 2008; Polit & Beck, 2016).

2.5 Research Instrument

The primary instrument was a semi-structured interview guide, which included questions aligned with the study's objectives to identify teachers' predominant language functions and instructional strategies. This instrument allowed flexibility for participants to elaborate on their methods, providing rich qualitative data for thematic analysis (Putri, Mardiyana, & Saputro, 2017; Qahmash, Joy, & Boddison, 2017).

2.6 Data Gathering Procedure

Data collection involved conducting interviews with the selected teachers in a setting conducive to reflection and discussion. Interviews were recorded and transcribed to ensure accurate capture of participants' responses. The researcher adhered to ethical standards, including securing informed consent, ensuring confidentiality, and obtaining voluntary participation (Republic Act No. 10173, 2012).

2.7 Data Analysis Techniques

The collected data were analyzed using thematic analysis to identify recurring patterns, codes, and themes related to teacher language functions and student cognitive engagement. This process involved coding transcripts, categorizing responses according to the SOLO Taxonomy levels, and synthesizing findings to interpret the relationships between instructional strategies and student thinking (Polit & Beck, 2016; Putri, Mardiyana, & Saputro, 2017; Rehman & Baig, 2024). This methodology ensured a systematic exploration of classroom language functions, their alignment with SOLO levels, and the development of instructional strategies that foster higher-order thinking and meaningful student engagement.

3. Results and Discussion

3.1 Predominant Language Functions in Literature Classes

3.1.1 Heuristic Function

Teachers primarily employed heuristic language functions through questioning that stimulated inquiry, analysis, and evaluation. Examples included prompts like "What is their takeaway... insight from the literary piece?" (LT4) and guiding questions such as "How do you understand what happened first... then next..." (LT6). These interactions encouraged students to analyze and evaluate literary concepts beyond simple recall. The discussion highlights that heuristic questioning promotes higher-order thinking, aligning students' responses from multi-structural to relational and extended abstract SOLO levels. Such cognitive scaffolding reflects the literature emphasizing the role of analytical questioning in fostering critical thinking (Chikiwa & Schäfer, 2018; Binalet & Wilang, 2023). Heuristic interactions enable students to construct meaning actively, integrating real-life examples and problem-solving tasks to enhance conceptual understanding.

3.1.2 Personal Function

Teachers connected literature to students' experiences, eliciting personal reflections and promoting affective engagement. For instance, prompts such as "Literature is a reflection of your life... this mirrors life" (LT1) and "I ask them their realizations... how they are going to apply it in their lives" (LT5) encouraged learners to relate texts to personal contexts. This function supports emotional engagement and deepens cognitive investment, consistent with studies showing that linking content to learners lived experiences enhances understanding and retention (Balagao Patunob & Ibojo, 2023; Ding, 2021). Personal function facilitates movement toward relational and extended abstract levels in SOLO taxonomy as students synthesize literary content with individual insights.

3.1.3 Interactional Function

Teachers activated prior experiences, sustained participation through dialogue, and encouraged collaborative engagement. Questions like "Na experience nyo na? Anong feeling... during the earthquake?" (LT2) prompted shared discussion, and group activities supported collaborative meaning-making. Interactional discourse fosters peer-to-peer and teacher-student engagement, promoting co-construction of knowledge (Digruher, 2019). Sustained interaction enables learners to develop reasoning and argumentation skills, moving their responses toward higher SOLO levels, consistent with Afriadi (2021) and Baxter and Durrant (2017) on the cognitive benefits of structured social discourse.

3.1.4 Informative Function

Teachers conveyed facts, explained literary elements, and provided examples, such as "There is storytelling... unlocking vocabulary... relationship with the character..." (LT2) and "Before giving the text, I also give them words which are unfamiliar... ask them to look for it in the dictionary..." (LT6). Informative language supports schema building and comprehension, allowing students to engage with content meaningfully. By providing context and examples, teachers scaffold cognitive processing, facilitating transitions from uni-structural and multi-structural to relational levels within the SOLO framework (Chubko et al., 2019; Luo et al., 2020).

3.1.5 Divertive Function

Playful strategies, including games and rhymes, were used to engage students. Examples included classroom competitions, chants, and interactive activities such as "Cabbage relay... dance... answer questions..." (LT4) and singing nursery rhymes (LT3). Divertive strategies increase participation, motivation, and cognitive engagement, supporting literature indicating that gamified and playful methods enhance learning outcomes (Suryani & Syahbani, 2023; Khusniyah & Indah, 2019). This approach encourages students to respond more elaborately, facilitating progress toward multi-structural and relational SOLO levels.

3.1.6 Instrumental Function

Teachers clarified and simplified language, scaffolded comprehension, and supported vocabulary development. Statements like "I really have to level down... easy for them to understand... I chop it into parts... ano yung setting... significant nitong characters" (LT5, LT6) illustrate these strategies. Instrumental language functions serve as cognitive scaffolds, supporting students' understanding of complex content. Chunking and simplification enable learners to construct meaning progressively, fostering movement from uni-structural to multi-structural SOLO levels (Damopolii et al., 2020).

3.1.7 Imaginative Function

Teachers encouraged creative outputs through role-play, dramatization, and literary production, e.g., "I asked them to make their own ending... sariling ending..." (LT5). Imaginative function promotes creativity, critical thinking, and extended abstract reasoning. Creative tasks allow students to synthesize knowledge and transfer understanding to novel contexts, supporting the literature on imagination as a mechanism for deeper cognitive engagement (Abdullah & Masran, 2021; Huilan et al., 2020).

3.1.8 Regulatory Function

Teachers structured differentiated instruction, assigned roles, and managed tasks, exemplified by "Sa groupings... yung low-performing... then sa mataas na level... beyond..." (LT2). Regulatory language functions provide organizational support, guiding learner participation and cognitive focus. Effective task management supports students' engagement in higher-order thinking and allows progression to relational and extended abstract SOLO levels (Katili et al., 2021).

3.2 Prevalent SOLO Levels in Student Responses

Student responses predominantly reflected multi-structural and relational levels. Multi-structural responses included listing multiple relevant ideas without integration, while relational responses demonstrated coherent connections among literary elements and personal experiences. Extended abstract responses were less frequent but evident when students generalized insights beyond texts or applied concepts to new contexts. The discussion indicates that teacher discourse directly influences the depth of student responses. Heuristic, personal, and interactional functions were particularly associated with relational and extended abstract levels, whereas instrumental and informative functions supported foundational multi-

structural understanding. These findings align with Biggs and Collis (1982) and Chubko et al. (2019) emphasizing the role of instructional scaffolding in facilitating progression through SOLO levels.

3.3 Patterns in Language Functions and SOLO Interplay

Analysis revealed systematic patterns in how teachers' language functions guided cognitive engagement. Heuristic questioning consistently elicited higher-order responses, personal and interactional functions facilitated emotional and collaborative integration of ideas, and imaginative and divertive strategies encouraged creative and extended abstract thinking. These patterns support the conceptual alignment of language functions with SOLO progression. The findings corroborate Afriadi (2021) and Katili et al. (2021), highlighting that intentional language use and strategic scaffolding in classroom discourse enable learners to advance from basic comprehension toward analytical, evaluative, and creative responses.

3.4 Strategies Developed by Teachers

Teachers employed strategies such as scaffolded questioning, dialogic pedagogy, text-to-self connections, creative reconstructions, playful engagement, differentiated instruction, and metacognitive reflection to enhance students' cognitive engagement. These strategies were consciously aligned with SOLO levels to support gradual development from surface-level responses to relational and extended abstract reasoning. The discussion underscores that these strategies provide structured opportunities for learners to apply higher-order thinking skills and metacognitive reflection. The systematic alignment of language functions, instructional methods, and SOLO levels reflects literature advocating for constructive alignment in teaching and assessment (Biggs & Collis, 1982; Velasco, 2025; Dent, 2020).

3.5 Summary of Results and Interpretations

Overall, the study demonstrates that the predominant language functions—heuristic, personal, interactional, informative, divertive, instrumental, imaginative, and regulatory—collectively shape the depth and quality of students' responses within the SOLO framework. The intentional design of classroom discourse, supported by appropriate pedagogical strategies, promotes students' progression from surface understanding to higher-order, abstract, and transferable learning outcomes. These results highlight the essential role of teacher language functions in fostering critical thinking, metacognition, and creativity in literature classrooms. They also provide empirical support for using the SOLO taxonomy as a tool to guide instructional design, assessment, and cognitive development in diverse learning contexts.

4. Conclusion & Recommendations

The study concludes that teachers' use of language functions in literature classes significantly influences students' cognitive engagement and progression through the SOLO levels. Predominant heuristic, personal, interactional, informative, divertive, instrumental, imaginative, and regulatory functions systematically scaffold students from surface-level understanding to relational and extended abstract reasoning. The data reveal that intentional alignment of language functions with pedagogical strategies, such as scaffolded questioning, dialogic teaching, text-to-self connections, creative reconstructions, playful engagement, differentiated instruction, and metacognitive reflection, enhances higher-order thinking, critical analysis, and reflective learning in literature classrooms (Biggs & Collis, 1982; Halliday, 1978; Magno, 2025; Chubko et al., 2019).

It is recommended that English teachers consciously apply and integrate the identified language functions within their classroom discourse to support students' development across SOLO levels. Teachers should employ scaffolded questioning, interactive and dialogic approaches, creative and imaginative tasks, and differentiated strategies aligned with students' cognitive abilities to foster critical thinking and higher-order learning. Additionally, school leaders and professional development programs should use these findings to guide teacher training, mentoring, and collaborative planning, ensuring consistent, effective application of language functions to enhance students' comprehension, analytical skills, and meaningful engagement in literature classes (Pagano, 2025; Taguchi, 2016; Velasco, 2025).

Compliance with ethical standards

The authors declare no conflict of interest. This study complied with recognized ethical standards for human-participant research by ensuring voluntary participation with informed consent, the right to withdraw without penalty, and strict confidentiality through anonymous, secure, and aggregated data handling. Given the focus on psychological well-being, procedures were non-invasive, and safeguards were observed to minimize discomfort, with guidance to appropriate support services when needed, and required institutional permissions were secured for instrument use and access to academic records.

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