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Micro-scaffolded peer consultation in hybrid literature classes: Enhancing analytical skills through the Seed–Pollinate–Synthesize (SPS) cycle

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Abstract

This explanatory sequential mixed-methods action research investigated student disengagement in literary analysis within a hybrid Grade 12 Humanities and Social Sciences classroom in the Philippines. A total of 28 students from two Grade 12 HUMSS sections at Xavier University Senior High School participated, selected through convenience sampling from enrolled students who provided informed consent. A 20-minute micro-scaffolded intervention—the Seed–Pollinate–Synthesize (SPS) cycle—was implemented asynchronously through Microsoft Teams. Students collaborated in fixed groups: first annotating a figurative device individually, then cross-questioning peers in a shared document, and finally co-authoring one justified textual insight. Pre-intervention diagnostics revealed an advanced baseline with limited evaluative depth. Post-intervention results, collected via identical pre- and post-tests and analyzed using the Wilcoxon Signed-Rank test, showed significant improvement with a large effect size (r = .68). Thematic coding of chat transcripts and teacher reflection logs through the Cognitive–Social–Metacognitive (CSM) framework identified cognitive discourse as the driver of evidence use, social exchanges as the anchor of inclusion, and metacognitive prompts as the regulator of synthesis. The SPS cycle introduces a replicable, low-resource protocol that transforms passive hybrid reading into active peer consultation. Digital traces provide transparent evidence of scaffolding within the Zone of Proximal Development, while teacher reflections confirm feasibility amid real-world connectivity constraints. Limitations include its single-module scope, absence of a control group, and strand-specific sampling. Future research will extend implementation across modules, strands, and time frames to test durability and transferability. Overall, the SPS cycle supports scalable critical literacy aligned with global quality education goals, offering teachers a practical framework to elevate analytical discourse in resource-constrained hybrid environments.

Keywords: *action research; collaborative learning; hybrid education; literary analysis; Philippines*

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INTRODUCTION

The COVID-19 pandemic profoundly disrupted education systems across the world, compelling schools to shift abruptly from traditional classrooms to virtual platforms. In the Philippines, the Department of Education (DepEd) issued Memorandum No. 073, series of 2020, which directed all public and private institutions to adopt flexible learning modalities. This approach combined online, modular, and blended strategies to ensure instructional continuity despite lockdowns.

Xavier University Senior High School immediately aligned with this policy and selected Microsoft Teams as its primary learning platform. Teachers uploaded pre-recorded lectures, digital reading packets, quizzes, and discussion prompts. Students accessed these materials asynchronously and joined live classes during synchronous sessions. While this model preserved access to instruction, it revealed unique challenges in literature classrooms. Teachers observed that students could read assigned poems and stories but often failed to engage in deeper analysis. Engagement dropped sharply once discussions shifted from comprehension to interpretation. In recorded sessions of 21st Century Literature from the Philippines and the World conducted in March 2022, the cooperating teacher noted limited participation. Despite being given the text in advance, only three of twenty-eight students were able to identify and explain examples of figurative language correctly. Others remained silent or offered incomplete responses through the chat. The teacher frequently had to supply the full explanation herself—a pattern that repeated across multiple sessions.

These classroom observations mirror broader patterns noted in related studies. Rapanta et al. (2021) emphasize that online and hybrid teaching require purposeful learning design rather than simple content transfer, while Allo (2020) shows that online learning during the pandemic was shaped by access, implementation, and learner participation issues. In literature classes, these conditions matter because analysis requires dialogic engagement—spaces where peers question, challenge, and refine each other's ideas. Time constraints further limit such opportunities. In typical one-hour synchronous classes, much of the time is consumed by administrative and review tasks, leaving little room for student-centered dialogue. Consequently, confident learners dominate while more reserved students remain quiet. Coman et al. (2020) similarly observed that emergency online teaching created difficulties for sustaining interaction, engagement, and perceived learning quality. For Grade 12 Humanities and Social Sciences (HUMSS) students, this gap is particularly consequential. Their strand prepares them for disciplines that demand interpretive and analytical literacy, such as communication, psychology, and law. In their literature modules—especially those focused on figurative and connotative meaning, students are expected not only to identify devices such as irony or paradox but also to explain their thematic and emotional impact. Diagnostic assessments, however, showed that many students remained at a surface level of understanding. They could recognize figures of speech but struggled to evaluate authorial intent or the broader significance of literary techniques.

Dhawan (2020) cautions that online instruction, when primarily lecture-based, risks becoming "emergency remote teaching," which prioritizes content transmission over conceptual development. For literature classes, where meaning emerges through layered interpretation and collaborative discussion, this risk is particularly acute. Addressing it requires intentional strategies that integrate active, peer-supported analysis within limited online time.

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Despite these observations, researchers identify a clear gap in the literature on hybrid literature instruction in Philippine senior high school contexts. Studies demonstrate that collaborative learning enhances critical thinking and analytical skills in Asian classrooms (Warsah et al., 2021; Mustakim et al., 2020) and that structured peer strategies, such as literature circles or small group discussions, improve text analysis and engagement (Karatay, 2017; Lestari, 2019). However, challenges persist in hybrid and online settings, including reduced student engagement (Chiu, 2021), difficulties with platform effectiveness (Almodaires et al., 2021), and implementation barriers in resource-constrained environments (Abou-Khalil et al., 2021; Retnawati et al., 2016). Local studies also reveal that peer pressure and passive approaches hinder analytical performance among Philippine students (Moldes et al., 2019). Few interventions address the unique constraints of Grade 12 HUMSS literature classes—limited synchronous time, variable connectivity, and the need for rapid asynchronous interaction—through a brief, micro-scaffolded peer consultation cycle. This study fills that gap by examining the Seed–Pollinate–Synthesize (SPS) cycle, a 20-minute asynchronous protocol designed to elevate figurative language analysis in hybrid Philippine senior high school settings.

Theoretical and conceptual framework

This study is anchored on sociocultural and constructivist learning theories. Vygotsky (1978) proposed that cognitive development occurs within the Zone of Proximal Development (ZPD), where learners can accomplish more complex tasks with appropriate guidance or collaboration than they could independently. In the context of literature analysis, peers can serve as scaffolds—offering interpretations, posing questions, and co-constructing meaning.

Building on this, Palincsar (1998) introduced the concept of reciprocal teaching, wherein students assume rotating roles such as questioning, summarizing, clarifying, and predicting. This model transforms learners into active participants who jointly build understanding. Johnson and Johnson (1999) further refined collaborative learning through five essential elements: positive interdependence, individual accountability, promotive interaction, social skills, and group reflection. Together, these principles underscore that meaningful learning arises through dialogue and shared cognitive effort. Engeström's (2015) activity theory provides an additional lens, emphasizing that learning activities are mediated by tools. In this study, Microsoft Teams served as the mediating tool that shaped interactions through shared channels, collaborative documents, and time-stamped exchanges. The platform thus became both the environment and instrument of learning.

These theoretical foundations converge in the Seed–Pollinate–Synthesize (SPS) cycle, a structured 20-minute peer consultation strategy. The "Seed" phase allows students to share individual insights by identifying one literary device and supporting it with textual evidence. During "Pollinate," peers exchange interpretations, ask clarifying questions, and build upon one another's ideas. In "Synthesize," groups consolidate their discussion into a collective interpretation supported by a short-written justification.

The SPS cycle operationalizes Vygotsky's scaffolding, Palincsar's reciprocal roles, and Johnson and Johnson's cooperative principles within a digital environment, making higher-order analysis achievable even under time and connectivity constraints.

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Figure 1

The Seed-Pollinate-Synthesize (SPS) Cycle

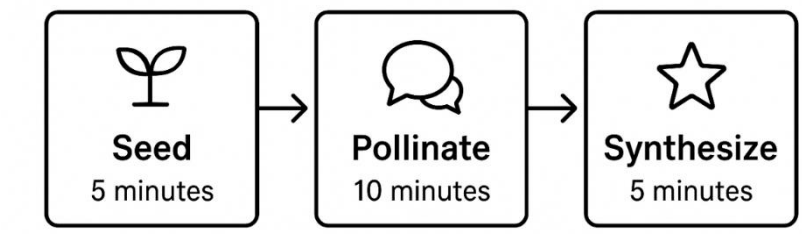

Figure 1 illustrates how individual idea generation (Seed), peer exchange (Pollinate), and group integration (Synthesize) correspond to progressive movement through Vygotsky's Zone of Proximal Development (ZPD). Each phase promotes increasing levels of social mediation and cognitive autonomy.

Statement of the problem

The core problem examined in this study lies at the intersection of platform limitations and analytical skill gaps. Grade 12 HUMSS students often demonstrate adequate recall and identification skills but struggle with interpretation and thematic connection. They tend to wait for teacher cues, replicate model answers, or avoid risk when analysis begins. These tendencies are reinforced in hybrid learning settings where asynchronous work can feel isolating and synchronous sessions often feel rushed.

Three consistent weaknesses have been identified: (1) students can recognize figurative devices but often fail to explain their function; (2) they overlook connotative nuances, interpreting terms like "bittersweet" literally rather than emotionally; and (3) they seldom connect literary devices to broader themes, resulting in fragmented interpretations. These difficulties are evident in both written and oral assessments, particularly in open-ended tasks that require justification and textual evidence. To respond to these issues, the study sought to explore whether a structured, time-bound peer collaboration protocol could enhance analytical engagement and performance in literature analysis.

Research questions

This study addressed the following research questions:

1. Does the implementation of the Seed–Pollinate–Synthesize cycle within the Collaborative Peer-Consulted Approach result in a statistically significant improvement in post-test scores, as determined by the Wilcoxon Signed-Rank test with effect size *r*?
2. How do patterns of peer discourse during the Pollinate phase contribute to individual and group analytical development, as reflected in coded chat transcripts?

METHOD

Research design

This study employed an explanatory sequential mixed-methods action research design (Creswell & Plano Clark, 2018). Researchers collected and analyzed quantitative data first (pre- and post-test scores), followed by qualitative data (chat transcripts and teacher reflections) to explain the quantitative results—a sequence characteristic of explanatory sequential mixed-methods (McLeod, 2019).

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As action research conducted within a single instructional module under real-world hybrid constraints, the intervention consisted of one targeted cycle. This focused approach aligns with practical action research in classroom settings, where teachers identify a specific problem, implement a concise intervention, and evaluate immediate outcomes (Ahmet, 2021). Validity is supported through triangulation of multiple data sources (pre-post test scores, chat transcripts, and teacher reflection logs), a large effect size in quantitative gains, and strong interrater reliability in qualitative coding. The brevity of the intervention enhances ecological validity, reflecting authentic hybrid teaching conditions with limited time and connectivity.

Settings and participants

The research took place at Xavier University Senior High School in Cagayan de Oro City, Philippines. The school serves Grades 11 and 12 under the national K–12 curriculum. Participants were enrolled in the Humanities and Social Sciences (HUMSS) strand, which prepares students for college majors in communication, law, and education. The intervention was integrated into the subject *21st Century Literature from the Philippines and the World*, specifically within Module 3, which focused on figurative language in modern texts.

Two Grade 12 HUMSS sections participated, each initially consisting of 15 students. Two participants withdrew due to scheduling conflicts, resulting in a final sample of 28. This sampling approach was appropriate for classroom-based action research because participants were drawn from accessible intact classes (Etikan et al., 2016). Classes operated in hybrid mode—one synchronous session via Microsoft Teams each week and several asynchronous days for independent work and online discussions.

Table 1

Participant Demographics (N = 28)

Demographic	Category	Frequency	Percentage
Gender	Female	14	50%
	Male	14	50%
Age	17 years	12	43%
	18 years	16	57%
Section	HUMSS A	14	50%
	HUMSS B	14	50%

Inclusion criteria required students to be officially enrolled in the course and to provide signed assent forms; parents of minors provided written consent. Forms were written in both Tagalog and English, assuring participants that involvement had no impact on grades and that withdrawal was permitted at any time. Exclusion criteria applied to those with incomplete consent or extended absences. The study environment reflected typical hybrid learning conditions. Some students participated from home with reliable internet connections, while others used school facilities. Microsoft Teams channels remained active 24 hours a day, allowing asynchronous collaboration and capturing the authentic dynamics of hybrid learning.

Intervention: The SPS cycle

The intervention, called the Seed–Pollinate–Synthesize (SPS) cycle, was designed as a 20-minute asynchronous collaborative protocol situated within the broader *Collaborative Peer-*

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Consulted Approach. Students worked in fixed groups of four to five, each assigned a private Microsoft Teams channel and a shared Google Document.

The Seed phase began with individual work. The teacher posted the literary text and the prompt: *"Highlight one figurative device and one quote that shows it."* Students identified their examples independently, typing responses onto digital sticky notes with two lines: the device and the supporting quote. This phase built individual accountability and evidence-based ownership. The Pollinate phase followed. The teacher signaled the start with a bell emoji. Students pasted their notes into the shared Google Document, organized into three columns: Device, Quote, and Why. After explaining their choice in one sentence, they tagged a peer (e.g., *"@Ana, your hyperbole fits the theme of loss?"*). This tagging created structured turn-taking and encouraged dialogue. Teachers observed silently, providing minimal feedback through emojis—thumbs-up for strong evidence or a question mark for clarification. This phase fostered exchange, challenge, and cross-fertilization of ideas. The Synthesize phase concluded the cycle. Groups had five minutes to reach consensus and respond to the final prompt: *"Agree on one group highlight. Justify it in two sentences."* They discussed, voted with emojis, and selected the best example. The output—a short claim explaining the chosen device's effect—was posted on a single slide in the main channel. Teachers acknowledged completion with a star emoji. This phase emphasized consensus-building, concision, and interpretive clarity.

Each SPS cycle required minimal teacher preparation—approximately ten minutes to set up documents, adjust permissions, and test timers. Groups remained stable throughout the module unless attrition required reshuffling. The protocol's brevity, clarity, and peer-driven rhythm kept energy high, minimized cognitive overload, and ensured that every student contributed evidence-based reasoning.

Data collection instruments

Three instruments were used for data collection: the pre-post-test, chat transcripts, and teacher reflection logs. The pre-post test comprised 20 identical items derived from the Module 3 learning packet: ten for device identification and ten for analytical explanation. Sample items included "Name the device in 'thunderous silence'" and "Explain how the paradox builds tension." Administered via Google Forms, the test was untimed and open for 24 hours. A pilot run in September 2022 involving 30 students from other sections yielded a KR-20 reliability coefficient of 0.70, indicating acceptable internal consistency. Two experts in literature education reviewed content validity in July 2022, confirming alignment with module objectives after minor revisions.

The chat transcripts provided qualitative process data. Three groups consented to full transcript sharing. Each session lasted 20 minutes, yielding approximately 1,200 utterances. Microsoft Teams logs were exported with timestamps, and all participant identifiers were anonymized (e.g., Student A1). The teacher reflection logs supplemented test and chat data. Partner teachers wrote one-page reflections after each session, responding to three prompts: (1) What went smoothly? (2) What stalled? (3) What should be adjusted next? Logs were concise and candid, later compiled for triangulation.

Data analysis

Data analysis followed both quantitative and qualitative pathways. For the quantitative component, pre- and post-test scores were tabulated, and descriptive statistics—mean, median, and standard deviation—were computed. Proficiency levels were categorized based on adapted Oregon descriptors: 0–5 (Novice), 6–11 (Intermediate), 12–17 (Advanced), and 18–20 (Superior). Normality testing via the Shapiro–Wilk test yielded a *p*-

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value of 0.018, indicating non-normal distribution. Consequently, the Wilcoxon Signed-Rank Test was used to compare paired medians, reporting both *p*-values and V statistics. Effect size (*r*) was calculated as $|Z|/\sqrt{N}$, with 95% confidence intervals derived through 1,000 bootstrap resamples for robustness.

For the qualitative component, thematic analysis followed Braun and Clarke's (2006) six-step procedure. Researchers first conducted line-by-line reading of all chat transcripts, applying the Cognitive–Social–Metacognitive (CSM) framework as an analytical lens. Cognitive codes captured evidence-based reasoning, social codes captured interactional moves, and metacognitive codes captured time and process management. Two independent coders achieved a Cohen's κ of 0.78, reflecting strong interrater reliability. Discrepancies were resolved through discussion. Frequency counts per phase were compiled and summarized in the codebook excerpt below. Teacher reflections were coded deductively to corroborate chat patterns. For example, one teacher noted, *"Group B rushed synthesis but nailed evidence,"* which reinforced observed high cognitive but low metacognitive coding frequencies.

Mixed-method integration occurred at the final stage, merging quantitative gains with qualitative insights. Higher test improvements corresponded to groups exhibiting dense cognitive interactions, while lower gains aligned with weaker metacognitive control. The unified analysis demonstrated that the SPS cycle enhances literary analysis by structuring peer discourse around evidence, reflection, and synthesis within a concise, replicable 20-minute format.

RESULTS AND DISCUSSION

Results

Pre-intervention literary analysis skills of Grade 12 HUMSS students

The pre-test established baseline performance prior to the implementation of the SPS cycle. Students completed the 20-item instrument on October 27, 2022. Scores ranged from 7 to 19 (M = 12.96, SD = 3.60, Md = 13.0), positioning the group at an overall *advanced* level. Learners demonstrated adequate ability to identify figurative devices and provide basic interpretations but rarely connected these to overarching themes or authorial intent.

Following the Oregon descriptors, no participant scored within the novice range (0–5). Seven students (25%) performed at the intermediate level, eighteen (64%) at advanced, and three (11%) at superior. This distribution indicates strong foundational competence with observable potential for higher-order growth. Teacher logs supported this interpretation, noting that "students know the names but stop short of impact," confirming the need for a peer-driven analytical scaffold.

Table 2

Pre-Intervention Capacity Level Distribution (N = 28)

Capacity Level	Score Range	Frequency (n)	Percentage (%)	Median Score in Level
Novice	0–5	0	0%	—
Intermediate	6–11	7	25%	10.0
Advanced	12–17	18	64%	14.0
Superior	18–20	3	11%	19.0
Total	—	28	100%	13.0 (overall)

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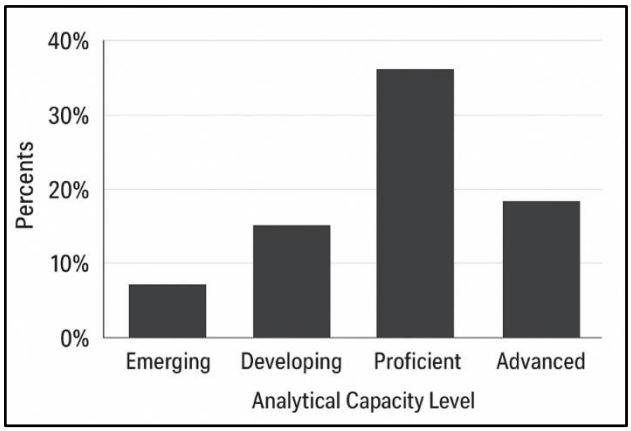
Figure 2

Distribution of Pre-Intervention Analytical Capacity Levels



Effect of the Seed–Pollinate–Synthesize cycle on students' post-test scores

The post-test, administered 24 hours after the intervention on October 28, 2022, used the same 20 items randomized in sequence. Scores ranged from 9 to 20 (M = 15.89, SD = 3.18, Md = 16.0). All students either improved or maintained their previous scores; 26 out of 28 registered measurable gains. Improvement was particularly strong in open-ended analysis items, where students more frequently supported interpretations with textual evidence.

The Shapiro–Wilk test for difference scores indicated non-normality (W = 0.91, p = .018). Consequently, the Wilcoxon Signed-Rank test was used to assess changes in median performance. Results showed a significant increase (V = 312.5, p < .001), with a median difference of 3.0 points. The computed effect size, r = .68, represents a large practical effect. Bootstrap resampling (1,000 iterations) yielded a 95% confidence interval for median difference from 2.0 to 5.0, confirming that improvement was both statistically and practically meaningful.

Table 3

Wilcoxon Signed-Rank Test Results for Pre- and Post-Intervention Scores (N = 28)

Measure	Pre-Test	Post-Test	Median Difference	V	p (exact)	r (Effect Size)	95% CI (Median Diff)
Mean (SD)	12.96 (3.60)	15.89 (3.18)	—	—	—	—	—
Median	13.0	16.0	3.0	312.5	< .001	.68 (large)	[2.0, 5.0]

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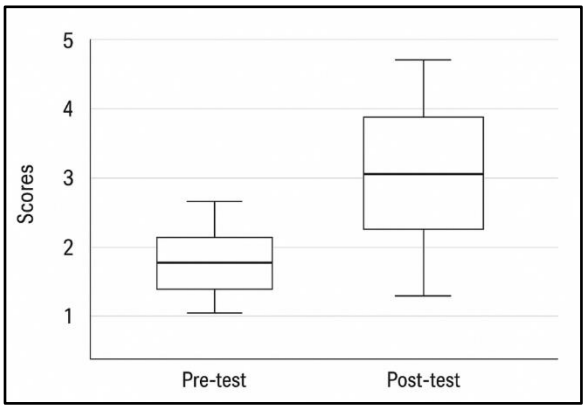
Figure 3

Boxplot Comparison of Pre- and Post-Test Scores



Peer discourse contributions during the Pollinate phase

Analysis of chat transcripts from three groups yielded 1,203 coded utterances. The Pollinate phase accounted for 68% of total interaction time, with the remainder divided between Seed and Synthesize. Following Braun and Clarke's (2006) thematic analysis procedure and the Cognitive–Social–Metacognitive (CSM) framework, utterances were classified into three discourse functions. Inter-rater reliability reached Cohen's κ = .78, reflecting strong agreement between coders.

Cognitive utterances comprised 48% of all messages. Students identified literary devices, quoted textual evidence, and explained interpretive effects. For example: "Line 5 uses personification—the wind 'whispers secrets' to show loneliness." High frequencies of such cognitive moves correlated with top score gains. Social utterances represented 32% of discourse. These lines included tagging peers, affirming ideas, and negotiating meaning, as in: "@Maria, your oxymoron is perfect—can we use it for synthesis?" The use of @tags maintained active participation and equitable turn-taking. Metacognitive utterances made up 20%. Students monitored time, prioritized choices, or managed workflow, e.g., "We have 3 min left—irony has the most quotes, vote now." Groups with higher metacognitive density completed synthesis efficiently and avoided last-minute rushes.

Table 4

CSM Theme Frequency in Pollinate Phase (N = 1,203 utterances)

Theme	Definition	Frequency (n)	Percentage (%)	Example Utterance
Cognitive	Names, quotes, or explains a literary device	578	48%	"Hyperbole in line 3 exaggerates pain to show grief."
Social	Tags peer, agrees, disagrees, or builds rapport	384	32%	"@Jon, agree? Your quote fits the theme of loss."
Metacognitive	Monitors time, plans next step, or reflects	241	20%	"2 min left—pick irony; it has 3 quotes."
Total	—	1,203	100%	—

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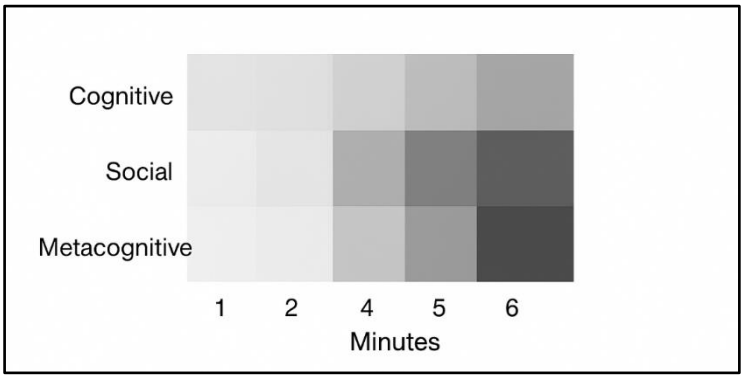
Figure 4

Heatmap of Temporal Distribution of Discourse Themes during Pollinate Phase



Integration across data strands revealed that groups with at least 50% cognitive utterances achieved post-test gains of four or more points. Groups below 40% cognitive density improved only marginally. Teams exceeding 25% metacognitive utterances consistently completed outputs on time. Teacher reflections supported this pattern: "Group C stalled at minute 12—no one said, 'time check.'" Consequently, the next cycle introduced an automated minute-10 reminder to scaffold time regulation.

Discussion

The Seed–Pollinate–Synthesize (SPS) cycle delivered a clear and measurable improvement within a compact twenty-minute window. Students advanced from basic identification toward higher-order evaluation of literary devices. They began quoting textual evidence to support their claims and linking stylistic choices to broader themes. This transformation occurred within a single asynchronous session—without additional lectures or extended homework. The outcome reflects the core promise of classroom-based action research: teachers identify a gap, apply a targeted intervention, and observe tangible change within authentic conditions.

The magnitude of improvement is noteworthy. The large effect size (r = .68) indicates substantial practical significance, especially given the brevity of the intervention. Comparable studies on collaborative learning have reported smaller gains across longer timeframes. Warsah et al. (2021), for example, synthesized data from thirty-one Asian classrooms and found that one-hour collaborative tasks improved higher-order thinking skills by an average of 0.61 standard deviations. The SPS cycle achieved a comparable or higher impact in one-third of the time. The difference lies in structure. Its timed phases prevented task drift, and the column-based template compelled students to ground analysis in textual evidence. Minimal teacher intervention—limited to emoji-based cues—maintained autonomy while sustaining motivation. This design is consistent with Bond et al. (2021), who showed that emergency remote teaching depends not only on the availability of digital tools but also on how those tools are organized to support interaction and learning activity. The SPS cycle confirms this principle in the real-world setting of Philippine senior high school classrooms.

The qualitative data illuminate how this improvement occurred. Cognitive utterances dominated the Pollinate phase, driven by the structure of the shared document. Each "Why" column required textual evidence, prompting students to search for quotations before

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explanation. This design echoes Karatay's (2017) literature circles, where assigned roles such as "luminary" encouraged participants to locate key symbols. In the SPS cycle, the task prompt itself replaced role assignment—ensuring that every student actively contributed to textual analysis. Social utterances, characterized by tagging peers and offering affirmations, sustained participation and psychological safety. Statements such as "@Ana, your irony fits loss" fostered inclusion and immediacy, echoing Lestari's (2019) finding that visible peer edits in Google Docs reduce hesitation and enhance collaborative flow.

Metacognitive utterances proved equally crucial. Time-check reminders and prioritization talk increased toward the final minutes of the cycle, demonstrating students' ability to self-regulate and manage collaborative deadlines. Examples such as "Two minutes left—pick irony, it has three quotes" illustrate this emergent autonomy. Law et al. (2017) reported similar patterns in scripted problem-solving tasks, where temporal prompts elevated both output quality and completion rates. Within the SPS framework, the timer itself functioned as an embedded metacognitive scaffold. Groups that demonstrated strong temporal regulation consistently produced more coherent synthesis slides. As one teacher log observed, "They owned the clock." Conversely, groups that neglected time monitoring produced shorter, less substantiated analyses—confirming the importance of explicit metacognitive cues.

The initially high pre-test scores among HUMSS students added further nuance. Most participants already performed within the "advanced" range before the intervention, suggesting a ceiling effect that typically limits observable gains. Nevertheless, improvement occurred across the full range of performance, with three students reaching the "superior" level and the majority advancing by two to four points. This pattern aligns with Vygotsky's concept of the Zone of Proximal Development (ZPD), wherein collaborative interaction enables peers to extend their capabilities through social mediation. Microsoft Teams functioned as an ideal tool for this purpose: timestamped edits and visible contributions made cognitive processes transparent, creating what Engeström (2015) terms an expansive learning environment. Future iterations may further enhance engagement by rewarding "sparkers"—students who initiate productive turns of analysis.

Despite the promising results, limitations remain. The current study focused on a single module of literary analysis. The next cycles will explore whether the SPS structure generalizes to other genres such as drama and essay writing. Cross-strand applications are also planned: STEM students could use the same phases to analyze data graphs, while ABM students might examine advertisement copy. Almodaires et al. (2021) caution that excessive teacher direction can suppress peer initiative; in this study, minimal teacher input proved effective. Silence—mediated only by emoji cues—created space for students to take ownership of discourse.

Digital trace analysis provides additional insight. The temporal heatmap revealed a clear rhythm: cognitive talk peaked during the mid-phase, social interaction remained steady, and metacognitive regulation surged near the end. This sequence exemplifies Mercer's (2008) "exploratory talk," in which structured ground rules enable joint reasoning. The SPS template effectively operationalized these ground rules, ensuring that collaboration remained purposeful. Cultural context also played a role. The cooperative orientation common in Filipino classrooms promoted affirmative rather than adversarial exchanges. Students preferred "yes, and…" formulations over "no, but…" rebuttals, maintaining harmony without diluting rigor. Altinay (2016) observed a similar balance in Cypriot peer discussions, where constructive disagreement enhanced analytical precision. An example from this study— "Your paradox is good, but hyperbole hits harder—quote?"—

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demonstrates gentle challenge paired with evidence-seeking, a hallmark of productive dialogue.

Teacher reflections underscored the adaptability of the model. One noted, "Internet lag froze Group A at minute eight," yet the group still completed its synthesis using mobile phones. This resilience indicates that the SPS cycle is viable even in low-bandwidth settings common in Philippine schools. Because it requires only basic collaborative tools, it holds potential for widespread implementation in public institutions.

Finally, the findings contest pessimistic narratives surrounding emergency remote teaching. Hodges et al. (2020) warned that abrupt transitions to online learning might erode student engagement and skill development when courses are moved online without careful design. In contrast, the SPS cycle leveraged online constraints as pedagogical strengths. A focused twenty-minute collaborative window proved more generative than extended lecture-based instruction. Similarly, Rapanta et al. (2021) emphasize the need to balance technology with pedagogy and purposeful learning activity in post-pandemic education. In this study, peer tagging and shared editing increased questioning frequency. Every tag represented a micro-dialogue that sustained inquiry.

In summary, the SPS cycle transforms the limitations of hybrid instruction into opportunities for cognitive, social, and metacognitive growth. Asynchronous collaboration allowed for reflection; peer tagging fostered confidence; and timed synthesis produced disciplined articulation. The substantial effect size confirms its impact, while discourse patterns explain its mechanism. The model is replicable, low-cost, and context-sensitive. It demonstrates that even brief, well-structured peer interaction can elevate literary analysis, foster ownership, and sustain engagement—turning a classroom challenge into a scalable instructional solution.

CONCLUSION

The Seed–Pollinate–Synthesize (SPS) cycle transforms a common challenge of hybrid learning into a classroom strength. Within twenty structured minutes, students shift from passive readers to active literary critics: they gather textual evidence individually, challenge interpretations collaboratively, and refine a unified insight as a team. This micro-protocol requires only free digital tools and clear prompts. Teachers can adopt it without extensive training, while students gain analytical confidence that extends beyond a single module.

The study offers three key contributions. First, the SPS cycle serves as a plug-and-play framework adaptable to any literature unit. Its time-bound phases align with compressed hybrid schedules, its shared-document template compels textual citation, and its emoji-based feedback system maintains light but effective teacher presence. Second, the mixed-methods evidence is grounded in the authentic context of Philippine senior high school classrooms. The integration of digital trace data demonstrates how specific discourse moves foster deeper analysis: cognitive utterances build textual proof, social utterances sustain inclusion and rapport, and metacognitive utterances ensure focus and closure. Third, the SPS cycle supports the UN Sustainable Development Goal 4.7, promoting equitable and participatory learning environments. Through structured peer consultation, every learner—regardless of bandwidth or device—joins the critical conversation.

The study's limitations remain transparent. It examined only one module and one academic strand, which narrows the scope of generalization. The absence of a control group limits causal inference, and the natural self-selection of HUMSS students may reflect

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stronger baseline reading ability. Technical constraints also surfaced, as intermittent internet connectivity disrupted two groups, although mobile devices allowed continuity of participation.

Future directions extend the inquiry. The next research cycle will implement the SPS model across Modules 4 to 6 with video exemplars to enhance transferability. Cross-strand applications will test the framework with STEM students analyzing data graphs and ABM students evaluating advertisements. Longitudinal tracking will determine whether the observed analytical gains persist through the end of Grade 12. The integration of AI-assisted nudges—such as automated time alerts or tone-sensitive feedback—may further refine the synthesis phase. Larger randomized controlled trials (RCTs) and public-school pilots will assess scalability across contexts with limited resources. In essence, the SPS cycle demonstrates that small structures can yield substantial skill growth. It enables teachers to reclaim hybrid instructional time and empowers students to reclaim their analytical voice. By reimagining asynchronous collaboration as a site of authentic literary engagement, the model ensures that literature continues to "live louder" within digital classrooms. One cycle, however brief, can start a lasting ripple of reflective and dialogic learning.

AUTHOR CONTRIBUTION

Ronald Quileste: Supervision, Validation, Project Administration, Writing—Reviewing and Editing; **Norman Calib-og**: Conceptualization, Methodology, Data Curation, Formal Analysis, Writing—Original Draft Preparation, Visualization; **Judha Mae Abalde**: Data Curation, Investigation, Writing—Reviewing and Editing; **Irish Vine Caayupan**: Data Curation, Investigation, Visualization, Writing—Reviewing and Editing; **Marvic Niña Kiseo**: Data Curation, Software, Investigation, Writing—Original Draft Preparation; **Melce Mae Salarda**: Conceptualization, Methodology, Supervision, Validation; **Jessa Joyce Tamiok**: Conceptualization, Methodology, Investigation, Validation.

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