



Enacting TPACK through WhatsApp: A Virtual Learning Medium for Improving EFL Narrative Writing Skills

Jhones Y Manutilaa¹, Henry Latuheru²

¹ English Education Study Program, STKIP Hermon Timika, Central Papua

² English Education Study Program, Pattimura University, Maluku

Article Info	Abstract
Received: 2026-04-07 Revised: 2026-05-19 Accepted: 2026-09-18 Keywords: EFL; narrative writing skill; TPACK; virtual learning; WhatsApp. DOI: 10.24256/ideas.v14i2.12033 Corresponding Author: Jhones Y Manutilaa henry.latuheru@lecturer.unpatt i.ac.id English Education Study Program, STKIP Hermon Timika, Central Papua	<i>Grounded in the Technological Pedagogical Content Knowledge (TPACK) framework, this action research examined how an English teacher's technological, pedagogical, and content knowledge shaped the use of WhatsApp as a virtual learning medium to improve the narrative writing skill of eleventh-grade students at a public senior high school in Tanimbar Selatan, Maluku Province, Eastern Indonesia, during pandemic-driven online instruction. Thirty students participated across two action research cycles of planning, implementation, observation, and reflection, in which the teacher's knowledge of WhatsApp's features, of narrative structure and the simple past tense, and of staged, scaffolded instruction was enacted through instructional videos, graphic organizers, sequential pictures, and emojis distributed and monitored via WhatsApp. Data were collected through a teaching journal, observation checklists, a Likert-scale questionnaire administered once at the end of the second cycle, and pre- and post-writing tests scored with an analytic rubric. Mean writing scores rose from 53.83 (SD = 12.43) at pre-test to 71.33 (SD = 10.98) after Cycle 1 and 81.83 (SD = 6.50) after Cycle 2, with the proportion of students scoring Good or Excellent increasing from 26.7% to 100% over the same period. Students also reported positive perceptions of the WhatsApp-mediated activities, including motivation, confidence, and progress in vocabulary and sentence construction, with most items receiving over 90% agreement on a questionnaire administered once at the end of the intervention. As an action research case rather than a</i>

controlled experiment, the study cannot isolate the precise contribution of WhatsApp or of any single TPACK domain; instead, the findings suggest that narrative writing improved alongside an increasingly structured enactment of the teacher's TPACK, through staged planning, implementation, and monitoring, rather than through the application alone. Implications for strengthening EFL teachers' TPACK in similarly under-connected regional settings are discussed.

1. Introduction

Writing remains one of the most demanding language skills for English as a Foreign Language (EFL) learners because it requires the simultaneous coordination of linguistic knowledge, content organization, and mechanical accuracy; among writing genres, narrative writing quality has itself been linked to specific cognitive components such as spelling, revision, and oral language ability (Andriani et al., 2022). Narrative writing in particular asks senior high school students to sequence events, develop characters, and apply past-tense structures consistently while telling a coherent story.

In the Indonesian senior high school curriculum, narrative text is one of the core genres mandated for developing students' productive competence through a text-based, genre-oriented syllabus (Triastuti et al., 2022), yet classroom practice often privileges reading comprehension of narrative passages over sustained writing practice. This imbalance became more pronounced when the COVID-19 pandemic forced schools across Indonesia to close and shift instruction online, requiring EFL teachers nationwide to redesign face-to-face lessons for online delivery on short notice (Atmojo & Nugroho, 2020). In many under-resourced regions, including small-island districts such as Kabupaten Kepulauan Tanimbar in Maluku Province, teachers had limited access to dedicated learning management systems and instead turned to widely available mobile applications, particularly WhatsApp, to sustain teaching and learning.

Narrative writing itself conventionally follows a generic structure of orientation, complication, resolution, and an optional re-orientation, and typically relies on the simple past tense to render completed events; genre-based scaffolding, in which teachers make this structure visible through model texts and staged composition, has been found to shape how successfully teachers help students move from guided to independent narrative writing (Nguyen et al., 2025). WhatsApp offers text messaging, image and video sharing, voice notes, and group chat features that make it a practical, low-bandwidth alternative to formal e-learning platforms, and evidence across different learner populations converges on a single pattern: gains in engagement (Hidayati et al., 2022; Mackay et al., 2021), writing accuracy (Muhammad & Nagaletchimee, 2023), motivation (Alamer et al., 2023; Yuliantini et al., 2021), and teaching presence (Naghdi-pour & Manca, 2023).

depend less on the application's features than on how deliberately teachers structure its use, a conclusion echoed by a systematic review of WhatsApp-based writing instruction (Khurram et al., 2024) and by evidence on WhatsApp's role in sustaining asynchronous teacher-student exchange more generally (Farahian & Parhamnia, 2022).

This last point suggests a knowledge, not just a tool, problem: simply having access to WhatsApp does not by itself explain whether a teacher can turn it into effective narrative-writing instruction. The Technological Pedagogical Content Knowledge (TPACK) framework offers a way to unpack this problem, describing effective technology-integrated teaching as the dynamic interaction of three core knowledge domains and the further domains generated where they overlap (Mishra & Koehler, 2006).

For the purposes of this study, these domains are operationalized as follows: technological knowledge (TK) is the ability to operate WhatsApp's features (text, image, video, voice note, and group chat); content knowledge (CK) is knowledge of narrative structure, grammar, and the simple past tense; pedagogical knowledge (PK) is knowledge of how to scaffold writing instruction and give feedback; technological pedagogical knowledge (TPK) is knowledge of how to adapt instructional procedures, such as pacing and task sequencing, to WhatsApp as a medium; technological content knowledge (TCK) is knowledge of how to represent narrative content through WhatsApp's technological affordances, for instance using pictures or video to stand in for a story's plot; pedagogical content knowledge (PCK) is knowledge of how to pedagogically scaffold narrative writing specifically, for example through story maps and graphic organizers; and TPACK itself is the coordinated enactment of all three domains together for a specific lesson.

In writing classes specifically, teachers' mastery of these domains has been found to vary, with content knowledge typically strongest and the fully integrated TPACK domain typically weakest (Abubakir & Alshaboul, 2023), and this pattern recurs across Indonesian EFL professional-development contexts more broadly, where in-service teachers' self-reported TPACK levels remain uneven despite targeted online training, with technological competence typically lagging behind pedagogical confidence (Budianto et al., 2023).

While earlier studies have examined WhatsApp's effect on writing accuracy, motivation, and engagement mainly among university students (Farahian & Parhamnia, 2022), comparatively little research has documented how a teacher's TPACK is enacted, cycle by cycle, to teach a specific school-based genre such as narrative writing to senior high school learners in an under-connected regional context. Much of the existing WhatsApp-writing evidence was also generated among learners with relatively advanced proficiency and independent study habits; whether a comparable pattern of planning, implementation, and monitoring can be adapted for adolescent EFL learners with lower proficiency remains an open question.

A preliminary observation at SMA Negeri 10 Tanimbar Selatan found exactly

this kind of gap: although the class teacher already used WhatsApp during the pandemic, the application was used mainly to distribute reading material and comprehension questions, with almost no structured writing practice, since a full narrative writing task was considered too demanding for online delivery. This pattern is mirrored more broadly among EFL teachers in rural Indonesian schools, who report unstable connectivity, limited student-owned devices, and inconsistent student engagement as recurring obstacles to fully online English teaching (Kusuma, 2022). Understanding how a teacher's TPACK can be deliberately enacted through an ordinary messaging application therefore has implications well beyond the single school examined here, particularly for EFL teacher professional development in similarly under-connected regional contexts.

The research addressed three questions: (1) how was the teacher's TPACK enacted through WhatsApp across the action research cycles; (2) how did students' narrative writing performance change across the cycles; and (3) what were students' perceptions and engagement regarding WhatsApp-mediated narrative writing instruction. These questions are examined through a TPACK lens, treating the teacher's planning, implementation, and monitoring of WhatsApp-mediated instruction as observable enactments of TPK, TCK, and PCK.

Correspondingly, the study aimed to describe how the teacher's TPACK was enacted through WhatsApp, measure students' resulting writing achievement across the two cycles, and capture students' perceptions of and engagement with this mode of learning. The novelty of this study lies in examining TPACK enactment for narrative writing among secondary EFL learners in an under-connected Eastern Indonesian context, a combination largely absent from existing WhatsApp-writing research. The findings are expected to contribute practical guidance for EFL teachers' TPACK development in similarly under-connected regional settings.

2. Method

This study employed Action Research (AR), an approach that engages practitioners in systematic, reflective inquiry into their own teaching practice while generating both qualitative and quantitative data (Burns, 2005). AR was chosen because it allowed the researcher and the class teacher to jointly plan, implement, observe, and revise a WhatsApp-mediated teaching pattern across two cycles, adjusting the design in response to classroom evidence rather than testing a single fixed intervention.

Because the study also aimed to understand how the teacher's knowledge shaped this process, the TPACK framework (Mishra & Koehler, 2006) was used alongside the AR cycle as an interpretive lens, treating planning decisions as evidence of technological pedagogical knowledge (TPK), material design as evidence of technological content knowledge (TCK), and staged teaching and feedback as evidence of pedagogical content knowledge (PCK). The study followed the four-phase cycle of planning, action, observation, and reflection commonly

used in classroom action research (Burns, 2005): two cycles were implemented, each comprising four meetings held entirely outside the classroom via WhatsApp, with Cycle 1 concluding in a post-test whose results and student feedback were used to revise the plan for Cycle 2, principally by sending complete sets of learning materials in advance and by regrouping students according to the quality of their internet connection.

The research was conducted at SMA Negeri 10 Tanimbar Selatan, Kabupaten Kepulauan Tanimbar, Maluku Province, during a period when face-to-face instruction was suspended nationwide because of the COVID-19 pandemic and schools had shifted to fully online delivery. Participants were 30 eleventh-grade students who were already accustomed to using WhatsApp for daily communication, and the class English teacher collaborated with the researcher throughout the planning, teaching, and evaluation stages. The source records document each student only by initials alongside their test scores; age, gender distribution, and prior English proficiency level were not separately recorded and are therefore not reported here.

Each meeting followed a pre-teaching, while-teaching, and post-teaching structure: pre-teaching used emojis, pictures, and short video clips to brainstorm vocabulary and context; while-teaching guided students to identify story elements (character, setting, and event sequence) using picture series, video, and story maps, then to compose simple past-tense sentences under teacher feedback; and post-teaching consisted of extending or rewriting the narrative and reviewing tense and sequencing errors.

Across the two cycles, the activities moved from vocabulary brainstorming, to picture-based brainstorming, to sequencing practice, and finally to guided narrative composition using a graphic organizer that scaffolded the orientation, a series of events, and the ending of the story. It should be noted that the pre-test (one sentence per picture) and the two post-tests (fuller narrative composition, increasingly supported by a graphic organizer in Cycle 2) differed in task format and complexity; this progression mirrored the scaffolded build-up of the intervention itself rather than functioning as equivalent-difficulty parallel tests, which limits how directly scores at the three stages can be compared and is addressed further in the Conclusion.

Data were collected through three instruments. First, a teaching journal and observation checklist were used throughout the cycles to record instructional clarity, material appeal, student participation, and technical problems such as unstable internet connections. Second, a pre-test and two post-tests of narrative writing were administered, each scored holistically on a five-band descriptive scale, Excellent (85-100), Good (75-84), Fair (65-74), Poor (55-64), and Very Poor (below 55), a banding convention comparable to that used to report rubric-based writing scores elsewhere in EFL assessment (Le et al., 2023); within each band, cohesion, appropriate use of time sequence, and sentence structure served as qualitative descriptors of overall performance rather than separately weighted sub-scores.

All tests were scored by the researcher alone; no second rater was involved, and no inter-rater reliability coefficient was therefore computed, a limitation discussed further in the Conclusion. Third, a single Likert-scale questionnaire, administered once at the end of Cycle 2, measured both students' perspectives on their learning (motivation, enjoyment, creativity, confidence, and progress in vocabulary, organizing information, language expression, time sequencing, and simple sentence construction) and their attitudes and behavioral engagement during WhatsApp-mediated activities (how consistently they read instructions, responded to tasks, asked for clarification, discussed activities with peers, and used a dictionary); these are conceptually distinct constructs that were nonetheless combined in a single adapted instrument for which no separate validity or reliability data (e.g., Cronbach's alpha) are available.

The school's minimum mastery criterion (*Kriteria Ketuntasan Minimal*, KKM) of 70, the standard Indonesian benchmark schools set to determine whether a student's competency achievement is complete and a threshold also used as the success criterion in other Indonesian classroom action research on narrative writing (Sarwanti et al., 2026), was used as the threshold for successful achievement, with the action considered successful once at least 75% of the class reached this score; this KKM threshold of 70 is distinct from, and numerically lower than, the Good-category threshold of 75 used for descriptive banding in Table 1, and both are reported separately in the Results. Institutional research permission for the study was obtained from the school principal and the coordinator of the postgraduate English Education program at Universitas Pattimura; no separate documentation of individual student or parental informed consent is available.

Test scores were analyzed descriptively using frequency and percentage distributions across the five achievement bands, alongside the mean, standard deviation, minimum, and maximum for each stage. Questionnaire responses were likewise converted into percentages of respondents selecting each Likert-scale option.

The teaching journal and observation checklists were reviewed by the researcher and class teacher after each cycle to identify recurring decisions and behaviors related to planning, material design, and monitoring; these qualitative patterns were then interpreted against the TPACK domains and triangulated with the quantitative test and questionnaire results to answer the three research questions. Because this interpretation rests on the researcher's reading of classroom evidence rather than on an independently validated instrument measuring the teacher's TPACK competence, the analysis is best understood as documenting observed TPACK enactment rather than measuring TPACK as a stable teacher attribute.

3. Result

Preliminary Study and Pre-Test Result

A one-month preliminary observation found that the class teacher used WhatsApp mainly to distribute reading material rather than to teach writing directly, largely because writing a full narrative was considered too demanding for online delivery; writing activity was limited to answering comprehension questions and filling in missing words. A baseline pre-test, in which students wrote one sentence for each of five sequential pictures, showed that the majority of students performed poorly ($M = 53.83$, $SD = 12.43$, range 40–80), as summarized in Table 1. Most students produced only isolated words or short phrases, such as “he drinks” or “he walks”, rather than complete sentences, and several picture items were left blank or without any description.

Cycle 1 and Cycle 2 Results

Following the first cycle of WhatsApp-mediated instruction, which covered vocabulary brainstorming through emojis, picture-based sequencing, and guided sentence writing about the story “*The Hidden Treasure*”, the first post-test showed marked improvement ($M = 71.33$, $SD = 10.98$, range 50–90; a mean gain of 17.50 points over the pre-test), although observation notes indicated that some students still missed sequencing details, and unstable internet connections made it difficult for some to submit their work promptly. Based on this reflection, materials for all three remaining Cycle 2 meetings were distributed to students in advance, and students were regrouped according to the strength of their internet connection. Cycle 2 used the story “*The Little Pianist*” as well as a locally sourced narrative that students wrote using a graphic organizer covering the setting, three to four events, and an ending. As Table 1 shows, the second post-test showed further improvement ($M = 81.83$, $SD = 6.50$, range 75–95; a further mean gain of 10.50 points, 28.00 points overall relative to the pre-test), with no students remaining in the Fair, Poor, or Very Poor bands.

Because Cycle 2 combined several changes at once, earlier material distribution, connection-based regrouping, a new story and graphic organizer, and an additional round of practice, this design cannot isolate which specific change was primarily responsible for the further gain. Using the school's mastery criterion of $KKM \geq 70$, rather than the higher Good-category threshold of 75, 6 of 30 students (20.0%) reached mastery at pre-test, rising to 21 of 30 (70.0%) after Cycle 1 and all 30 (100.0%) after Cycle 2. Taken together, this pre-test-to-Cycle-2 trajectory speaks most directly to RQ2 (how students' narrative-writing performance changed across the cycles), while the planning and implementation changes described above provide initial evidence for RQ1 (how the teacher's TPACK was enacted through WhatsApp); students' perceptions and engagement, reported next, address RQ3.

Table 1. Students' Narrative Writing Achievement across the Pre-Test, Cycle 1, and Cycle 2

Category	Pre-Test	Cycle 1 Post-Test	Cycle 2 Post-Test
Excellent (85–100)	0.00%	6.67%	23.33%
Good (75–84)	6.67%	56.67%	76.67%
Fair (65–74)	13.33%	13.33%	0.00%
Poor (55–64)	10.00%	16.67%	0.00%
Very Poor (below 55)	70.00%	6.67%	0.00%
Total (N = 30)	100.00%	100.00%	100.00%

Students' Perspectives on Learning Narrative Writing through WhatsApp

Table 2 summarizes the perspective section of the end-of-cycle questionnaire, administered once at the end of Cycle 2 rather than at multiple time points, so the results reflect students' perceptions at that single point rather than a measured increase. All students (100% Agree or Strongly Agree) reported that learning to write narrative text through WhatsApp motivated them to learn English and that the activities made them feel more creative. A smaller majority (93.33%) found the activities enjoyable, with 6.67% disagreeing. All students (100%) reported feeling confident in their English at that point in the intervention. In relation to specific writing sub-skills, most students reported perceiving progress in vocabulary, organizing information, using language expression, applying time sequence correctly, and writing simple sentences, with Strongly Agree responses ranging from 53.33% to 90.00% across these five items.

Table 2. Students' Perspectives on Learning Narrative Writing through WhatsApp (N = 30)

Item	Disagree	Agree	Strongly Agree	Total
Motivates me to learn English	0.00%	73.33%	26.67%	100.00%
Creates fun	6.67%	43.33%	50.00%	100.00%
Makes me more creative	0.00%	40.00%	60.00%	100.00%
Makes me more confident in English	0.00%	0.00%	100.00%	100.00%
Progress in vocabulary	0.00%	46.67%	53.33%	100.00%
Progress in organizing information	0.00%	16.67%	83.33%	100.00%
Progress in language expression	0.00%	23.33%	76.67%	100.00%
Progress in using time sequence	0.00%	16.67%	83.33%	100.00%
Progress in writing simple sentences	0.00%	10.00%	90.00%	100.00%
Total (N = 30)	100.00%	100.00%		100.00%

Students' Attitude and Engagement

Table 3 summarizes the attitude and engagement section of the same questionnaire. Most students always followed instructions and began work promptly, always responded by sending their answers, and frequently discussed activities with classmates. Two items, however, showed more mixed responses that deserve attention alongside the largely favorable results: only 76.67% of students reported always asking the teacher for clarification, with 10.00% reporting they

never did so, and working with friends to complete tasks was the least consistent behavior in the table, with 43.33% of students reporting they never did this, compared with 46.67% who sometimes did; no student reported always working with friends. This suggests that while most students engaged reliably with the material itself, collaborative help-seeking and peer work were less consistently adopted. All students (100%) reported always using a dictionary to find word meanings.

Table 3. Students' Attitude and Engagement during WhatsApp-Mediated Activities (N = 30)

Item	Never	Seldom	Sometimes	Always	Total
Reads instructions and starts work	0.00%	0.00%	23.33%	76.67%	100.00%
Responds by sending answers	0.00%	0.00%	3.33%	96.67%	100.00%
Asks teacher for clarification	10.00%	0.00%	13.33%	76.67%	100.00%
Chats with friends about activities	0.00%	0.00%	16.67%	83.33%	100.00%
Works with friends to complete tasks	43.33%	10.00%	46.67%	0.00%	100.00%
Uses a dictionary to find meaning	0.00%	0.00%	0.00%	100.00%	100.00%

Observation Results

Observation checklists across both cycles indicated that instructions and materials were generally perceived as clear and interesting, and that providing the full set of materials in advance, introduced in Cycle 2, increased student participation and sense of responsibility. Some students reported difficulty submitting work promptly because of unstable internet connections, a problem addressed in Cycle 2 by regrouping students according to connection quality. Table 4 summarizes how each problem identified in the teaching journal and observation checklist was reflected upon and translated into a revised action between cycles, together with the outcome observed afterward.

Table 4. Cycle-by-Cycle Problem, Reflection, Revised Action, and Observed Outcome

Cycle	Problem Observed	Reflection	Revised Action	Observed Outcome
Cycle 1	Some students missed sequencing details; unstable internet connections delayed submission of work.	Materials had been sent meeting-by-meeting, and internet connection quality varied widely across students.	Materials for all three remaining meetings were distributed in advance; students were regrouped according to connection quality.	Post-test 1: M = 71.33 (SD = 10.98), up from M = 53.83 at pre-test; fewer students in the lowest achievement bands.
Cycle 2	No further major technical obstacles were	Advance distribution and connection-based	Advance distribution and connection-based	Post-test 2: M = 81.83 (SD = 6.50); all 30

reported.	grouping appeared to support more timely and consistent participation.	grouping were continued; a graphic organizer was introduced to scaffold full narrative composition.	students reached the Good or Excellent band.
-----------	---	---	--

4. Discussion

The findings show a clear pattern: narrative writing achievement improved substantially across the pre-test, Cycle 1, and Cycle 2 post-tests, moving from a majority of students in the Very Poor band to the entire class reaching the Good or Excellent band, while students' self-reported motivation, confidence, and engagement remained consistently positive throughout. This improvement occurred alongside an increasingly structured pattern of the teacher's TPACK enactment: planning that predominantly reflected technological pedagogical knowledge (TPK), implementation that predominantly reflected technological content knowledge (TCK) and pedagogical content knowledge (PCK), and monitoring that predominantly reflected an increasingly integrated TPACK. These are presented as dominant analytical manifestations rather than exclusive, one-to-one mappings: as an action research case without a comparison condition, the study cannot establish that TPACK enactment, rather than some other factor, caused the improvement, and in authentic classroom practice planning, implementation, and monitoring each plausibly drew on more than one knowledge domain at once.

Planning as Technological Pedagogical Knowledge (TPK)

The revision introduced between Cycle 1 and Cycle 2, sending the whole set of learning materials for the coming meetings at once rather than meeting by meeting, coincided with a further gain in achievement and reported participation. This revision predominantly reflects technological pedagogical knowledge (TPK): knowing not merely that WhatsApp can send files, but how its asynchronous, on-demand access changes what a lesson plan needs to look like when delivered this way.

This is consistent with evidence that WhatsApp's benefits for writing instruction depend on deliberate task design and pacing rather than on the application's features alone (Khurram et al., 2024). Regrouping students by internet connection quality also directly addressed one of the main obstacles identified in Cycle 1 reflection, namely unstable connectivity, which is a familiar constraint in small-island regions of Eastern Indonesia and one that teachers in similar settings will likely need to plan around explicitly. Because advance material distribution, connection-based regrouping, a new story, a graphic organizer, and an additional round of practice were all introduced together for Cycle 2, this account

cannot determine which of these changes, if any single one, was primarily responsible for the further gain; the plausible explanation offered here is one among several the design cannot rule out.

Implementation as Technological Content Knowledge (TCK) and Pedagogical Content Knowledge (PCK)

The pre-teaching, while-teaching, and post-teaching structure used in every meeting gave brainstorming through emojis and pictures, guided composition through picture series, video, and graphic organizers, and evaluation their own distinct space in the lesson. Choosing pictures, video, and graphic organizers to represent narrative structure, rather than simply describing that structure in text, is read here as predominantly reflecting technological content knowledge (TCK): using WhatsApp's media features to make the genre's orientation-event-ending structure visible and manageable.

This is distinguished from integrated TPACK in the present analysis by focus rather than by a sharp boundary: instances were coded as TCK when the decision centered on how a technological affordance could represent narrative content (for example, a picture sequence standing in for a plot), and as integrated TPACK when a decision could not be separated from a simultaneous pedagogical judgment about staging, pacing, or feedback; in practice, choices such as which pictures to send when likely involved both. Staging this material across pre-, while-, and post-teaching phases is similarly read as predominantly reflecting pedagogical content knowledge (PCK) specific to narrative writing, helping students build competence incrementally rather than being asked to produce a complete story without scaffolding.

This combination is consistent with findings that WhatsApp-based lessons improve undergraduate EFL learners' writing accuracy when tasks are purposefully sequenced (Muhammad & Nagaletchimee, 2023), and with evidence that genre-based scaffolding shapes how successfully students move from guided to independent narrative composition (Nguyen et al., 2025). The available data, drawn from holistic band-level scores rather than transcribed writing samples, do not permit a finer-grained analysis of which specific feature of students' writing, cohesion, temporal sequencing, sentence structure, or grammatical accuracy of the simple past tense, improved most across the cycles; this is noted as a direction for future research rather than a claim this study can support.

Monitoring and the Integration of TPACK

The consistently high response rates reported in the attitude questionnaire (Table 3), including most students always responding to activities and all students using a dictionary to find word meanings, are consistent with continuous, low-friction monitoring through text messages and photographed work, rather than formal check-ins, having kept students engaged even though instruction occurred entirely outside school hours; because these are self-reports about an intervention run by the students' own teacher and researcher, some degree of social-desirability

bias cannot be ruled out. This pattern is consistent with evidence that WhatsApp groups can sustain a felt sense of teaching presence even in fully asynchronous, out-of-class interaction (Naghdipour & Manca, 2023), and with findings that structured WhatsApp-mediated tasks can raise learners' self-motivation and achievement while reducing anxiety (Alamer et al., 2023). Sustaining this kind of monitoring across planning and implementation, rather than any single feature of WhatsApp, is read here as predominantly reflecting the fully integrated TPACK construct: the teacher's capacity to orchestrate technological, pedagogical, and content knowledge together for this specific lesson (Mishra & Koehler, 2006). This progression from a fragmented starting point (WhatsApp used only to distribute reading material) toward this kind of integrated enactment is broadly consistent with the pattern reported among EFL teachers in Ambon, where technological knowledge, rather than pedagogical or content knowledge, was consistently the domain requiring the most deliberate development (Latuhuru & Makaruku, 2026); the present case suggests, though it cannot confirm, that a structured, cycle-based action research process is one way such development can take place.

Taken together, these results are consistent with the idea that WhatsApp's value for narrative writing instruction does not come from the application itself but from how deliberately a teacher's TPACK, predominantly TPK in planning, TCK and PCK in implementation, and integrated TPACK in monitoring, is enacted around its basic features, namely text messaging, camera, and group chat; as an action research case without a comparison group, this should be read as a plausible interpretation rather than a demonstrated causal claim. This has direct relevance for EFL teachers in small, remote, or low-bandwidth schools who may not have access to dedicated learning management systems but do have reliable access to WhatsApp, suggesting that teacher professional development in such contexts should target TPACK enactment specifically, rather than technology access alone.

5. Conclusion

This action research examined how a teacher's Technological Pedagogical Content Knowledge (TPACK), enacted through WhatsApp, related to improvement in the narrative writing skill of eleventh-grade students at a senior high school in Tanimbar Selatan, Eastern Indonesia, during pandemic-driven online instruction. Across two action research cycles, students' narrative writing achievement improved alongside an increasingly structured pattern of planning (predominantly reflecting technological pedagogical knowledge, TPK), staged implementation (predominantly reflecting technological content knowledge, TCK, and pedagogical content knowledge, PCK), and continuous monitoring (reflecting an increasingly integrated TPACK), moving from a majority in the Very Poor band on the pre-test ($M = 53.83$, $SD = 12.43$) to the entire class reaching the Good or Excellent band by the end of Cycle 2 ($M = 81.83$, $SD = 6.50$). WhatsApp's text messaging, camera, and group-chat features appeared useful for distributing instructional videos, graphic

organizers, and picture sequences, and for collecting and giving feedback on students' handwritten or typed work, once these features were organized by a deliberate pedagogical and content plan; as an action research case without a comparison group, however, the study cannot isolate WhatsApp, any single TPACK domain, or any one of the several changes introduced in Cycle 2 as the specific cause of the further improvement. Students' perceptions, gathered once at the end of the intervention, were consistently positive: nearly all reported perceiving the activities as motivating and confidence-building, and as supporting progress in vocabulary, sentence construction, and the use of time sequence markers, though engagement was less consistent for help-seeking and peer collaboration than for individual task completion. These conclusions should be read in light of the study's limitations: it was conducted with a single class of 30 students at one school over two short cycles during an emergency pandemic period; the researcher and class teacher worked collaboratively rather than independently; writing tests were scored by a single rater without an independent second rater or inter-rater reliability check; the questionnaire combined conceptually distinct constructs (perspectives and behavioral engagement) without separate validity or reliability data and was administered only once, so perceptions cannot be compared against a pre-intervention baseline; the pre-test and post-tests differed in task format and complexity rather than functioning as equivalent parallel tests; participant demographic information beyond grade level and school was not available; and institutional permission was obtained from the school principal and program coordinator without separately documented individual or parental consent procedures. The findings should therefore be read as evidence from one context, showing writing improvement alongside increasingly structured TPACK enactment, rather than as a generalizable or causal claim about WhatsApp-based instruction everywhere.

In terms of suggestion, WhatsApp, despite being designed for everyday communication rather than instruction, appears able to support meaningful narrative-writing development when a teacher's TPACK, rather than the tool alone, is deliberately enacted: planning material sequencing, scaffolding composition in stages, and monitoring engagement. For EFL teachers, particularly in small or remote schools with limited access to dedicated e-learning platforms, this suggests that WhatsApp can be organized into a genuine writing curriculum rather than treated only as a channel for informal communication.

Teacher professional development programs in similarly under-connected regions may consider using TPACK explicitly as a design framework, helping teachers move deliberately from technological knowledge (knowing the app) toward technological pedagogical and content knowledge (knowing how to teach a specific genre through it). Students are encouraged to sustain the habits observed in this study, such as using a dictionary and discussing tasks with classmates, while teachers may wish to give particular attention to students who are less inclined to seek clarification or collaborate with peers. Future researchers might extend this

design to other text genres or other WhatsApp features such as voice notes; use equivalent, piloted pre- and post-test tasks scored by multiple trained raters with reported inter-rater reliability; validate perception and engagement instruments separately, ideally with a pre-intervention baseline; document individual and, where relevant, parental consent procedures; and use larger, independently assessed, non-collaborative, and comparison-group designs that can better isolate the specific contribution of TPK, TCK, and PCK to writing achievement.

6. References

- Abubakir, H., & Alshaboul, Y. (2023). Unravelling EFL teachers' mastery of TPACK: Technological pedagogical and content knowledge in writing classes. *Heliyon*, 9(6), 1–11. <https://doi.org/10.1016/j.heliyon.2023.e17348>
- Alamer, A., Al Khateeb, A., & Jenö, L. M. (2023). Using WhatsApp increases language students' self-motivation and achievement, and decreases learning anxiety: A self-determination theory approach. *Journal of Computer Assisted Learning*, 39(2), 417–431. <https://doi.org/10.1111/jcal.12753>
- Andriani, L., Syihabuddin, S., Sastromiharjo, A., & Anshori, D. (2022). The Role of Writing Process Components and Cognitive Components in Improving the Quality of Narrative. *International Journal of Learning, Teaching and Educational Research*, 21(12), 88–106. <https://doi.org/10.26803/ijlter.21.12.5>
- Atmojo, A. E. P., & Nugroho, A. (2020). EFL Classes Must Go Online! Teaching Activities and Challenges during COVID-19 Pandemic in Indonesia. *Register Journal*, 13(1), 49–76. <https://doi.org/10.18326/rgt.v13i1.49-76>
- Budianto, L., Arifani, Y., Wardhono, A., & Poedjiastutie, D. (2023). The TPACK level of in-service EFL teacher online professional training: The perspectives of teachers, students, and trainers. *Journal of Digital Learning in Teacher Education*, 39(2), 87–101. <https://doi.org/10.1080/21532974.2023.2167024>
- Burns, A. (2005). Action research: an evolving paradigm? *Language Teaching*, 38(2), 57–74. <https://doi.org/10.1017/S0261444805002661>
- Farahian, M., & Parhamnia, F. (2022). Knowledge sharing through WhatsApp: does it promote EFL teachers' reflective practice? *Journal of Applied Research in Higher Education*, 14(1), 332–346. <https://doi.org/10.1108/JARHE-12-2020-0456>
- Hidayati, A. N., Sri, M., Abdullah, F., Ramalia, T., Yunita, W., & Sulastri, F. (2022). Whatsapp in the Indonesian Online EFL Learning Milieu: How Do the Students Engage? *ENGLISH FRANCA : Academic Journal of English Language and Education*, 6(1), 83. <https://doi.org/10.29240/ef.v6i1.4136>
- Khurram, S., Palpanadan, S. T., & Chachar, Z. A. (2024). Analyzing the contribution of WhatsApp in enhancing English writing skills among undergraduate English as a Foreign Language (EFL) learners: A systematic review. *Forum*

- for *Linguistic Studies*, 6(2), 57–74. <https://doi.org/10.59400/fls.v6i2.1174>
- Kusuma, I. P. I. (2022). EFL teachers' online teaching in rural schools during the COVID-19 pandemic: Stories from Indonesia. *Studies in English Language and Education*, 9(1), 203–221. <https://doi.org/10.24815/siele.v9i1.21239>
- Latuheru, H., & Makaruku, H. (2026). EFL teachers' TPACK preparedness in Eastern Indonesia: Challenges and strategies. *Huele: Journal of Applied Linguistics, Literature and Culture*, 6(1), 49–62. <https://doi.org/https://doi.org/10.30598/huele.v6.i1.p49-62>
- Le, X. M., Phuong, H. Y., Phan, Q. T., & Le, T. T. (2023). Impact of using analytic rubrics for peer assessment on EFL students' writing performance: An experimental study. *Multicultural Education*, 9(3), 41–53. <https://doi.org/https://doi.org/10.5281/zenodo.7750831>
- Mackay, J., Andria, M., Tragant, E., & Pinyana, À. (2021). WhatsApp as part of an EFL programme: participation and interaction. *ELT Journal*, 75(4), 418–431. <https://doi.org/10.1093/elt/ccab019>
- Masruddin, Hartina, S., Arifin, M. A., & Langaji, A. (2024). Flipped learning: facilitating student engagement through repeated instruction and direct feedback. *Cogent Education*, 11(1), 2412500.
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record: The Voice of Scholarship in Education*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Muhammad, R., & Nagaletchimee, A. (2023). Effects of WhatsApp Based Lessons on Undergraduates' Writing Accuracy. *E-Jurnal Bahasa Dan Linguistik (e-JBL)*, 5(1), 35–50. <https://doi.org/10.53840/ejbl.v5i1.139>
- Naghdipour, B., & Manca, S. (2023). Teaching presence in students' WhatsApp groups: Affordances for language learning. *E-Learning and Digital Media*, 20(3), 282–299. <https://doi.org/10.1177/20427530221107968>
- Nasriandi, N., & Masruddin, M. (2021). The Use of British Parliamentary Debate Style in Teaching Speaking Skill. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 9(1).
- Nguyen, L. T., Bui, H. P., & Ha, X. Van. (2025). Scaffolding in genre-based L2 writing classes: Vietnamese EFL teachers' beliefs and practices. *International Review of Applied Linguistics in Language Teaching*, 63(2), 1275–1293. <https://doi.org/10.1515/iral-2023-0125>
- Sarwanti, S., Sotlikova, R., & Winarsih, D. (2026). Enhancing Students' Narrative Writing Skills Through Peer Dynamic Assessment: A Classroom Action Research. *Journal of Languages and Language Teaching*, 14(1), 183–194. <https://doi.org/10.33394/jollt.v14i1.18351>
- Triastuti, A., Madya, S., & Chappell, P. (2022). Genre-based teaching cycle and instructional design for teaching texts and mandated curriculum contents. *Indonesian Journal of Applied Linguistics*, 12(1), 1–15. <https://doi.org/10.17509/ijal.v12i1.46563>

Yuliantini, N. N., Paramita, I. G. A. D., Setyono, E. Y., & Suciani, N. K. (2021). The use of whatsapp cooperative learning to improve writing ability. *Journal of Applied Studies in Language*, 5(2), 245–251. <https://doi.org/10.31940/jasl.v5i2.245-251>