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"Cowrite me if I'm wrong:" Effectiveness of proofreading activity + written corrective feedback in improving the writing mechanics proficiency of grade 5 learners

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Developing strong writing proficiency empowers young minds to engage with the world around them in meaningful ways. The main goal of this study was to determine the effectiveness of ProAct Feedback (Proofreading Activity + Written Corrective Feedback) on grade 5 learners' writing mechanics proficiency in Filipino. The study employed the one-group-pretest-posttest experimental research design. The researcher also utilized four-day proofreading progress scores, which were used to assess the writing mechanics proficiency of grade 5 pupils per day in the treatment phase. The participants in this study were the 20 purposively sampled grade 5 pupils in one section at the University of Saint Louis. Results show that the ProAct Feedback intervention substantially improves the pupils' writing mechanics proficiency. The progression from "moderate" to "excellent" progress over the four-day treatment phase indicates that the ProAct Feedback is effective in enhancing writing mechanics proficiency levels, helping the participants reach and maintain high levels of competency from the third to the fourth day. Additionally, the analysis of the proofreading activity progress scores indicates that the intervention had a larger significant effect at the beginning of the intervention phase, with smaller effects over time. From the study's findings, it can be inferred that learners instantly improve their writing proficiency through the use of innovative, engaging, self-corrective, and informative techniques such as ProAct Feedback. Hence, this research provides guidance for new policies intended to improve elementary learners' writing proficiency.

Introduction

One of the most important language skills for children to acquire in order to communicate effectively is writing. The Sustainable Development Goal 4 (SDG 4) of guaranteeing accessible and equitable quality education and encouraging opportunities for lifelong learning for everyone is directly linked to writing skills. Writing abilities are essential to literacy, which is one of SDG 4's main goals. "Ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy" is the precise goal of SDG 4.6, which is to be accomplished by 2030 (UNESCO, 2018). To fully engage in educational, economic, and social possibilities, people must be proficient in reading, writing, and basic arithmetic.

People with reading, writing, and numeracy abilities are empowered and able to "understand,

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comprehend, and make informed decisions in various aspects of their lives." For this, having strong writing skills is essential since they enable people to communicate, obtain information, and pursue lifelong learning (Bruneforth, 2018). Moreover, there is a threat to not only SDG 4, but all other development objectives, posed by the global learning crisis, in which a large number of children and teenagers lack basic literacy skills. Thus, enhancing writing abilities as part of an all-encompassing literacy program is essential to achieving the SDGs' more expansive objectives (UNESCO, 2018).

In conclusion, SDG 4 and writing competence are closely related as writing is a crucial part of the literacy and numeracy abilities that the objective seeks to guarantee for every person, enabling their full involvement in society, work, and education (Spink, Cheng & Schwantner, 2021).

Lack of proficiency in writing mechanics

Out of the four language skills, writing is the most challenging to master since it involves intricate language systems such as writing mechanics which include sentence structure, punctuation, spelling, and vocabulary (Garduce & Baluyos, 2023). The difficulties encountered by language learners in developing their writing skills, specifically in their proficiency in writing mechanics have been thoroughly examined all over the world (Abbas & Asy'ari, 2019; Sandrawati & Jurianto, 2021; Toba & Noor, 2019; Yuliawati, 2021). According to Akhtar, Hassan, and Saidalvi (2019), there are a number of significant issues that need to be addressed, such as tenses, mechanics, conditionals, subject-verb agreements, motivation, clarity, and coherence. It is essential to comprehend these difficulties because they obstruct clear communication and comprehension. According to Patwary, Alam, and Reza (2023), using the right punctuation, capitalization, and spelling helps improve sentence structure and guarantee that writing is meaningful. Proper use of these components highlights their critical role in successful communication by assisting readers in understanding concepts (Sandrawati & Jurianto, 2021).

Writing mechanics proficiency in the Philippines

Lack of proficiency in writing mechanics has been also an emerging issue in the Philippines and it attracted studies to assess the current skill level of Filipino students. In the study of Hikmah et al. (2019), which was conducted at a University in Iriga City, Philippines, students' proficiency in writing content, organization, and style was evident; nevertheless, their proficiency in mechanics is lacking. The students make more mistakes in mechanics, including punctuation, capitalization of proper nouns, proper paragraph indentation, and sentence breaks. Also, when students' writing abilities were assessed at a university in the Northern Philippines, it was shown that mechanics was the most challenging (Batalla & Vera, 2019).

Problem diagnosis and context of the study

The study identified a practical gap in the context of the University of Saint Louis Tuguegarao, a private Catholic institution run by the Congregation of the Immaculate Heart of Mary in Tuguegarao City, Philippines, where Grade 5 learners were observed to have difficulty in mastering the mechanics in writing which is a fundamental skill for their academic progress. In an assessment conducted before the study, it was confirmed that the use of punctuation, capitalization, spelling, and fundamental conventions in paragraphing were among the least mastered competencies of Grade 5 learners. These competencies were based

on the DepEd's Curriculum Guide which are expected to be already mastered by Grade 5 pupils. The gap analysis conducted by the researcher, who is also their current adviser in consultation with his fellow language teachers as part of the problem diagnosis is presented in Table 1. The gap analysis reveals several areas where grade 5 pupils in USL are struggling in writing. Therefore, writing needs to be improved in order to enhance writing mechanics including capitalization, punctuation, sentence breaks, and proper indentation.

Table 1. Initial diagnosis of the practical gap (N=44)

What should be?	What is actual?	What is the gap?
Fifth graders can use capital and small letters properly.	Only 25 fifth graders knew when to use capital and small letters.	There are still 19 pupils who cannot use capital and small letters correctly.
Fifth graders know how to use punctuation marks (period, comma, spacing, etc.).	Thirty (30) fifth graders demonstrate mastery with the use of punctuation marks.	There are still 14 pupils who cannot demonstrate mastery in using punctuation marks.
Fifth graders demonstrate correct spelling of words appropriate to their grade level.	Only 28 fifth graders demonstrate mastery with the correct spelling of words appropriate to their age.	There are still 16 pupils who cannot demonstrate the correct spelling of words appropriate to their age.
Fifth graders can write paragraphs clearly and correctly (e.g., indentation, margin, legibility)	Only 11 fifth graders can write paragraphs correctly.	The majority of the pupils (33) cannot write paragraphs correctly.
Fifth graders demonstrate mastery and consistency with the mechanics of writing including the use of punctuation, capitalization, basic spelling, spacing, and fundamental conventions in paragraphing.	Only three (3) fifth graders demonstrate mastery and consistency with the mechanics of writing.	Almost all of the pupils (41) do not demonstrate mastery and consistency with the mechanics of writing.

The analysis implies that pupils must learn how to properly capitalize proper names, punctuate sentences, indent paragraphs, master basic spellings, and break sentences. It shows the need for intervention to address these challenges and enhance the proficiency in the mechanics required for successful writing. Students' writing mechanics proficiency must be enhanced since with continuous practice, they will become more specialized writers.

Use of written corrective feedback as an intervention

Written corrective feedback (WCF) is the term for comments that teachers give on their student's work with the intention of enhancing later work. According to Mao and Crosthwaite (2019), feedback is the knowledge that teachers impart to their students in order to improve their performance and comprehension as well as to assist them in identifying and fixing their own mistakes.

Many people continue to hold the view that WCF is a precise, focused, and selected method of assisting pupils in mastering and fixing their errors (Lee, 2019). Giving students comments on their writing is seen by educators as a crucial teaching activity, with the goal of assisting students in developing their writing abilities and linguistic correctness (Shinta, Astuti & Ariani, 2023). Language learners continue to firmly want WCF from their instructors in order to enhance their writing and teachers continue to supply WCF since they frequently feel that they are not using it to its full potential (Mao & Crosthwaite, 2019). Furthermore, it has been demonstrated that instructors' WCF helps students' updated drafts of their writings become more accurate and that students can acquire more lexical and syntactic information when WCF is provided in an efficient manner (Syting, Malisobo, Salce & Roasol, 2023).

Research gap

Studies about the effectiveness of written corrective feedback on the writing skill of students have shown positive results all over the world (Brown, Liu & Norouzian, 2023; Esmaeeli & Sadeghi, 2020; Kim & Emeliyanova, 2019; Wirantaka, 2022). These studies emphasized the importance of the utilization of written corrective feedback to improve writing skills in English. However, there is limited research regarding its use in the Filipino language, especially the ones that focus on mechanics. As a result, this study focused on the development of a technique for correcting the mechanics of writing in Filipino which is commonly overlooked (Garduce & Baluyos, 2023; Yuliah, Widiastuti & Meida, 2020). The mechanics of writing are important to be mastered by elementary learners because they are in an important stage in building a foundation of skills (Lee & Yoo, 2023) and interest in writing (Yuantini & Suryani, 2022). Additionally, what is new in this study is that the commonly used written corrective feedback is combined with a proofreading activity which enriched the learning experience of the learners.

Objectives

The main goal of this study was to determine the effectiveness of ProAct Feedback in improving Grade 5 learners' writing mechanics proficiency in Filipino. Specifically, this study sought to: (1) determine the pupils' pre and post-writing mechanics proficiency levels; (2) determine the significant difference in the pre and post-writing mechanics proficiency of the pupils before and after implementation of the ProAct Feedback; (3) determine the four-day proofreading activity progress scores of Grade 5 pupils with the implementation of the ProAct Feedback; and (4) ascertain the significant differences in the four-day progress scores. Based on the given objectives, the researcher sought to answer the following research questions:

- What are the pupils' pre and post-writing mechanics proficiency levels?
- Is there a significant difference in the pre and post-writing mechanics proficiency of the pupils before and after implementation of the ProAct Feedback?
- What are the four-day proofreading activity progress scores of Grade 5 pupils with the implementation of the ProAct Feedback?
- Are there significant differences in the four-day progress scores?

Methods

Research design

This study made use of the one-group-pretest-posttest research design. This kind of study design, according to Privado and Hermosa (2023), establishes if there are any noteworthy variations between the pretest and posttest. Determining the degree of change or growth between the pretest and the posttest is another advantage of this study approach. In education, this kind of design is highly desired since researchers often want to know how much change or growth occurred between the pretest and the posttest.

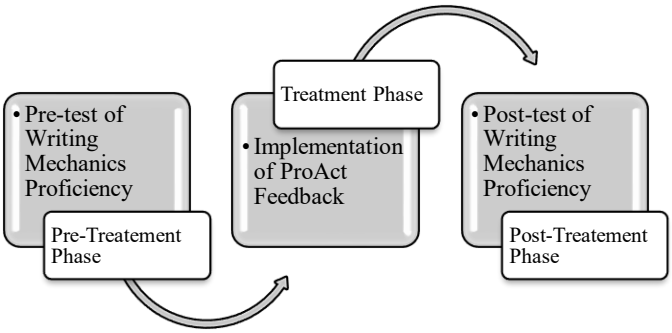

Figure 1. Research framework of the mixed-methods design

In this study, the group of participants consisted of 20 grade 5 pupils who received the intervention over a one-week period within Filipino class hours inside their classroom. Before the experimental intervention, a pre-test was conducted to determine the writing mechanics proficiency of the participants. Following the intervention, a post-test was administered to evaluate any progress or enhancement in their writing abilities.

To support the findings regarding the progress of the pupils in writing, the researcher used four-day proofreading progress scores which were used to assess the writing mechanics proficiency of grade 5 pupils per day while implementing the ProAct Feedback. The data here was generated based on their scores in their proofreading activity to assess and monitor the learners' progress during the implementation of ProAct Feedback. The proofreading activity consisted of five basic and common mechanical errors that are expected to be corrected by fifth-grade learners. In analyzing the results, the variation in the progress scores across the four days was tested. The interpretation of the progress scores provided insights into the students' overall development in writing mechanics proficiency and their response to the intervention.

Respondents of the study

The participants in this study were the 20 Grade 5 pupils in one section at the University of Saint Louis, which included 11 males and 9 females. Purposive sampling was the sampling technique used. In this study, purposive sampling is crucial because it facilitates the integration of various data kinds while taking quality factors into account and aids in the evaluation of data quality (Münnich, 2023) while considering ethical considerations. As a result, the study determined 20 participants who met the following criteria:

a) Inclusion Criteria: pupils who were present in the administration of pre-test, intervention, and post-test; completed all the tests within the allotted time; willing to participate and have parental consent to participate in the study.
b) Exclusion Criteria: pupils who missed at least one test during the study due to absence; did not complete a test during the allotted time; do not have parental consent to participate.

Instruments and validation

This study employed two sets of research instruments to measure the writing mechanics proficiency of the participants namely the pre-test-post-test writing composition rubrics and the proofreading activity.

A. Pre-test-post-test writing composition rubrics (25 points)

Since this research sought to determine the effectiveness of ProAct Feedback in improving the writing mechanics proficiency of Grade 5 learners, pre-tests and post-tests in the form of writing composition were utilized. The raters utilized a written rubric adapted from the study of Yuliawati (2021) that was modified by the researcher in order to objectively determine the students' writing scores. Content validity was used to determine the instruments' validity. As a result, the researcher sought an expert opinion to confirm the instruments' validity. Two raters were selected to evaluate the writing scores of the students on both the pretest and the posttest in order to have inter-rater reliability. The raters' scores on the tests of the pupils were almost the same since the rubrics used were very specific, indicating the percentage of correct uses of the mechanics.

Table 2. Inter-rater Reliability Test Using Correlational Analysis

Spearman's rho	Interpretation	P-value
0.96	Very High Positive Correlation	0.0004*

**= significant at 0.05 level; ns= not significant at 0.05 level Note: all other variables are not significant*
±.90-1.0 = Very high positive/negative correlation
±.70-±.90 = High positive/negative correlation
±.50-±.70 = Moderate positive/negative correlation
±.30-±.50 = Low positive/negative correlation
±.00-±.30 =Negligible correlation

In order to assess the inter-rater reliability of the rubric, Spearman Rho, a non-parametric test, was used to determine if there is a relationship between the scores of two raters. Hence, it was found out that there is a strong interrater reliability in scoring using the adapted and modified writing mechanics rubrics.

B. Proofreading activity progress scores in writing mechanics (5 items)

The study utilized a Proofreading Activity Progress Score in Writing Mechanics to assess and monitor the learners' progress during the implementation of the ProAct Feedback. The activity consists of five basic and common mechanical errors that are expected to be corrected by fifth-grade learners. After they spot the errors, they will then rewrite the paragraph presented by the teacher, incorporating their own corrections. The progress scores employed a rating system with marks such as "not participative," "coping," "emerging," "growing," and "meets expectation" to evaluate the learners' level of attainment in each competency. The indicators were based on the writing competencies in the currently used Curriculum Guide by the DepEd. Before administration, the activities underwent careful review and revision based on suggestions from an expert to ensure their effectiveness to establish their content validity.

Ethical considerations

This study was guided by the following research ethics considerations. First, a research capsule proposal was submitted to the University Research and Development Center. Second, after it was approved, letters of approval were given to the University Vice President for Academics and to the Basic Education Principal. Third, parental consent was given to the parents or guardians of the Grade 5 pupils. And lastly, to abide by the data privacy act, the privacy of the respondents was observed by not mentioning names.

Data gathering procedure

The data collection procedure in this study on ProAct Feedback aimed at improving the writing mechanics of Grade 5 learners was done within a period of three months, starting in March 2024 and concluding in May 2024. Prior to the conduct of the study, a baseline assessment was conducted to determine the participants' initial writing mechanics proficiency. Baseline data was collected for the Grade 5 pupils, noting their individual strengths and areas for improvement. After collecting the baseline data, the pre-test questionnaires were administered, assessing the participants' writing mechanics proficiency, specifically on capitalization, punctuation, spelling, and paragraphing. Following the pre-test, the intervention, which is the ProAct Feedback was used by the teacher and students within a period of one week. Subsequently, they answered the post-test questionnaires. Finally, statistical analyses and interpretation were done after completing the post-tests and interviews. The timeline of the data-gathering process is shown in Table 2.

Table 3. Stages of data gathering process

Stages of Data Gathering	Timeframe	Procedures
Pre-Intervention Stage	March - April 2024	➢ Problem Diagnosis ➢ Administration of the Pre-test Questionnaires
Intervention Stage	April 2024	➢ Implementation of the ProAct Feedback to Grade 5 Pupils ➢ Monitoring of the progress and performance throughout the intervention period
Post-Intervention Stage	April 2024	➢ Administration of the Post-Test Questionnaires
Post-Assessment Stage	May 2024	➢ Analysis of the pre-test and post-test assessment data ➢ Statistical analyses to evaluate the effectiveness of the ProAct Feedback

Development and implementation of the proact feedback as a researcher-innovated version of written corrective feedback

To address the concern of teaching writing using ProAct Feedback, the researcher followed the ADDIE Model (Analysis, Design, Development, Implementation, and Evaluation) of instructional design as a generic process of developing instructional learning material or course designs. There are five phases of development, in the Analysis phase, the designer analyzes the present knowledge, and proficiency of the pupils in writing mechanics with the difficulties and challenges brought by several factors such as the post-COVID-19 effect on pupils, lack of awareness of the conventions, and lack of resources and techniques in teaching writing. These prompted the researcher to venture into the design of the ProAct Feedback. Figure 2 shows the sequence and design of the ProAct Feedback.

During the design phase, the researcher considered innovative, engaging, self-corrective, and informative designed techniques. In this part, the researcher designed the ProAct Feedback as a learning resource to be accessible and interactive for learners. Considering that COVID-19 caused significant isolation among the learners, the need for them to be exposed to effective strategies will allow them to be aware of the conventions of writing. The content of the slides was based on credible sources and was validated by a group of language experts.

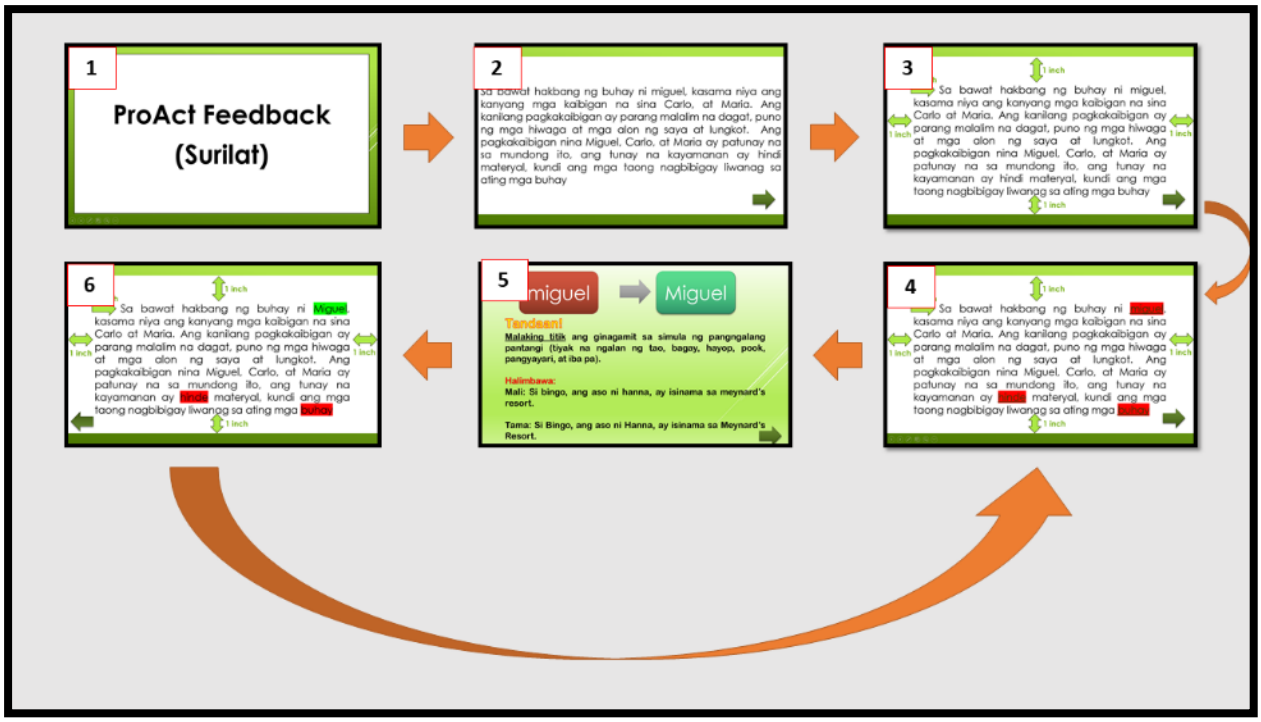

Figure 2. The content and sequence of the proact feedback

Consequently, the development phase allowed the researcher to develop the ProAct Feedback following the learning objectives and content in the Learning Competencies set by the DepEd for writing mechanics. The ProAct Feedback is composed of "Proofreading Activity" combined with "Written Corrective Feedback." In the part of proofreading Activity, the learners spot the errors in a given paragraph and then rewrite it integrating their corrections. In the part of the Written Corrective Feedback, the slides will show the errors in margins, indent, punctuation, capitalization, and spelling supplemented by explanations of rules and right and wrong examples of its use. The Written Corrective Feedback contains a package of learning regarding writing mechanics as it covers rules, examples, and usage in an engaging manner. As to the implementation phase, the researcher scheduled one week of utilization of the intervention resulting in a four-day usage of the material since the school has only four days of face-to-face classes per week. The intervention's mechanics of utilization are as follows:

Mechanics of Utilization of the ProAct Feedback

(1) The user (who can be the learner or teacher) opens the ProAct Feedback file. Slide 1 presents the name of the technique.
(2) Slide 2 presents the Proofreading Activity, in which the learners will spot the errors in the paragraph. After that, they rewrite the paragraph on an activity sheet, integrating their own corrections.
(3) By clicking the next button, the third slide presents the first phase of the written corrective feedback, in which the correct paragraphing, including margins and indent, will be shown to the learners.
(4) The user again clicks the "next" button for the slide to show the second phase of the feedback, presenting the errors in punctuation, capitalization, and spelling. When the user wants an explanation about the error, he or she can click on one of the errors to proceed to the next slide.
(5) After clicking the chosen error, a slide will appear. Slide 5 shows the text error and the corrected version of it. Below it, the learners can read the rule regarding the correction of the error. In the bottom part, an example of its misuse and another example of the correct usage of the rule are shown.
(6) By clicking the "next" button, the correct use of the rule will be integrated into the original paragraph. If the user wants to go back to choose and study the other errors, he/she can click the "back" button on the slide to go back to slide 4. By going back to slide 4, the user can click on other errors and learn their correct usage, similar to the content presented in slides 5 and 6.

Finally, the evaluation phase of the intervention involves diagnostic, formative, and summative evaluation, specifically the proofreading activities and pre-test-post-test assessments of the proficiency of the pupils. Evaluation studies of instructional materials and strategies to improve instruction in writing at the basic education level are few, particularly in the mechanics of writing as it is commonly overlooked. In an attempt by the researcher to provide an insightful and engaging experience for the pupils, the development of ProAct Feedback as a learning technique can supplement their learning process. Hence, this study becomes necessary in the provision of effective techniques for grade 5 pupils to improve their level of proficiency, particularly in the conventions of writing.

Data analysis

The descriptive statistics was utilized to summarize the collected data. Measures such as means, medians, and standard deviations were calculated to provide an overview of the central tendency and variability of the data. These descriptive statistics helped to summarize and describe the learners' writing mechanics proficiency and progress throughout the intervention period.

Shapiro-Wilk test was used to assess the normality of quantitative data. One of the most effective statistical tests for determining normality is the Shapiro-Wilk test. Finding the normal distribution of numerical data requires the use of normality tests, with the Shapiro-Wilk test being advised for data with up to 50 individuals (Avram & Mărușteri, 2022).

To assess the effectiveness of the intervention, inferential statistics were employed such as the

Wilcoxon Signed Ranks Test, ANOVA Friedman's, and Post Hoc-Nemenyi. The chosen significance level ($p < .05$) indicated the threshold for determining whether the intervention had a significant impact on the learners' writing mechanics. The study employed Statistical Package for the Social Sciences (SPSS) version 26.0 which provided a range of tools and functions for data analysis, enabling the researcher, guided by a statistician, to perform the necessary statistical tests and obtain meaningful results regarding the effectiveness of the ProAct Feedback.

Test of normality on the proficiency of the respondents

The table (4) given below depicts the results of the Shapiro-Wilk test which is utilized to determine the normality of the distribution of data. This test was administered on Proficiency pre-test and post-test results. The following table (4) presents the sample size (N), the test statistic (W), and the corresponding p-value for each of the conducted tests.

Table 4. Test of normality for the pre-test and post-test proficiency scores

	Shapiro-Wilk Test		
	N	W	p-value
Pre-test Proficiency	20	.9063	0.054
Post-test Proficiency	20	.8174	0.001

In terms of Proficiency, the scores of the pre-test were different from the scores of the post-test. The pre-test Proficiency scores had a test statistic of 0.9063, with a p-value of 0. 054, which is very close to the 0.05 threshold. This implies that the data could be slightly non-normal but not strictly non-normal since the p-value is slightly greater than 0. However, the post-test Proficiency scores revealed a test statistic of 0.8174 with a p-value of 0. 001, which means that the results are significantly different from the normal distribution since the p-value is less than.

Since the distribution of proficiency scores was not normal, the Wilcoxon Signed Rank Test was used to compare the two tests. When the data do not meet the assumptions required for the use of the parametric test, there is the non-parametric Wilcoxon Signed Rank Test used to compare two related or matched samples. Rather than focusing on the mean difference, it focuses on the median differences between the matched samples (Garren & Davenport, 2022).

In general, there is an indication that the proficiency scores, especially the post-test, are skewed away from the normal. Several factors of students and environmental factors could be responsible for non-normality in writing score data. Student variables include differences in writing ability, interest, prior writing experience, and learning style. Such differences may lead to a range of writing scores among students, which may contribute to the non-normal distribution of the data (Ginting, Ginting, Hasibuan & Perangin-angin, 2022; Puengpipattrakul, 2021).

Test of normality on the proofreading activity progress scores of the respondents

The data presented in the table (5) below shows the Shapiro-Wilk test for normality applied to the progress scores of the respondents for four consecutive days of a proofreading activity. Shapiro-Wilk test is used to check the normality of a dataset where the test statistic represents the closeness of the data to a normal distribution, while the p-value is used to check the results of the test and their significance.

Table 5. Test of normality on the proofreading activity progress scores

	Shapiro-Wilk Test		
	N	W	p-value
Day 1	20	0.8501	0.005
Day 2	20	0.8448	0.004
Day 3	20	0.6233	0.000
Day 4	20	0.6322	0.000

Using the Shapiro-Wilk test on Day 1 with 20 observations resulted in a statistic of 0. 8501 and a p-value of 0.005. Using the value obtained, the test indicates a reasonable fit to the normal distribution; however, the calculated p-value is less than the usual alpha level of 0. 05 which means that the null hypothesis of normality should be rejected. Hence, the progress scores on Day 1 are not normally distributed. Likewise, on the second day, the test was comprised of 20 observations, and the statistic obtained was 0.8448 with a p-value of 0.004. This also suggests a moderate fit of the normal distribution but with sufficient evidence to reject the null hypothesis of normality therefore indicating that the scores on Day 2 are not normally distributed. The values obtained for Day 3 and Day 4 are more likely to shift from the normal distribution. In both cases, the values are considerably smaller (0. 6233 and 0. 6322), while the p-values are extremely small (0. 000), indicating that the null hypothesis of normal distribution should be rejected. These results indicate that the scores on these days are significantly different from the normal distribution.

However, when examining the progress scores from the proofreading activity for all four days, it is evident that the scores do not have a normal distribution. The skewness increases as the days progress, meaning that the distribution of scores might have been impacted by activity-related aspects or the respondents' adjustment to the task. This non-normality could be important for thinking about how to process these data further, especially if initially one toyed with the idea of using parametric methods.

To examine the differences between the scores, the Friedman ANOVA was utilized because the progress score data distribution is non-normal. A non-parametric statistical test called the Friedman ANOVA, or Friedman test, is used to identify treatment differences between test runs. Though it is particularly made for non-normally distributed data or situations in which the assumptions of parametric tests are not satisfied, it is comparable to the parametric repeated measures ANOVA (Bülbül, 2020). After a significant result has been established in the Friedman test—a non-parametric alternative to the repeated measures ANOVA—the Nemenyi test is used as a post-hoc test to ascertain precisely which groups have different means. When the Friedman test demonstrates a significant difference across numerous groups, the Nemenyi test aids in the identification of particular pairwise differences between groups (Ben Mahria, Chaker & Zahi, 2021; Li, Jiang & Xu, 2019).

There are several factors that may cause the progress scores data on some days to be non-normal. Writing development is a complex process; it is influenced by motivation, classroom environment, use of applications, and feedback system (Vacalares, Clarin, Lapid, Malaki, Plaza & Barcena, 2023). In addition, those who receive the exercises and feedback used during the intervention may undergo various changes in their progress score due to individual differences (Kaweera, Yawiloeng & Tachom, 2019). These aspects must be taken into consideration when examining the non-normality observed in the progress scores data.

Results and discussion

Pre and post proficiency levels in writing mechanics

Table 6 reflects the pupils' pre and post-writing mechanics proficiency levels of Grade 5 pupils before and after the implementation of ProAct Feedback. Table 6 presents frequency and percentage in every score range. It also includes the overall mean, standard deviation, and interpretation of their proficiency levels.

Table 6. Pupils' proficiency levels in writing mechanics

	Pre-test			Post-test		
Proficiency Level	Score Range	f	%	Score Range	f	%
Advanced	23-25	0	0	23-25	12	60
Proficient	20-22	7	35	20-22	8	40
Developing	17-19	10	50	17-19	0	0
Beginning	≤ 16	3	15	≤ 16	0	0
	Total	20	100	Total	20	100
Mean	18.8			23.45		
SD	2.42			1.5		
Interpretation	Developing			Advanced		

It can be seen that there is an increase in proficiency levels from the pre-test to the post-test. Of the participants in the pre-test, the majority fell under the Developing level while in the post-test, the majority moved up to the Advanced level. This shift is also supported by the rise of the mean score from 18.8 to 23.45 and a decrease in standard deviation from 2.42 to 1.5, which does not only show improvement but also greater uniformity among the students in taking the tests. The interpretation shifts from "Developing" in the pre-test to "Advanced" in the post-test, demonstrating the efficacy of the ProAct Feedback applied in between the tests.

The effect of written corrective feedback on learners' writing proficiency has been investigated in a great number of studies, which aligns to this study's findings. For example, Mohsen (2022) established that as a significant input of writing, WCF enhances writing ability and accuracy among learners. Furthermore, Rahimi (2019) stated that written corrective feedback is effective in addressing word and sentence mistakes as well as the general written quality. Moreover, direct feedback like the Proact Feedback is always preferred over indirect feedback at any level of proficiency. Thus, practicing using written corrective feedback helps to develop writing accuracy and fluency step by step (Cheng & Zhang, 2021).

Test of difference on the pre-test and post-test proficiency scores of the respondents

The data presented below shows the pre and post-test scores of the respondents after they have undergone the intervention phase. The findings are presented using the mean, median scores (Mdn), Z values, P-values, and the effect size (R).

Table 7. Wilcoxon signed rank test of difference between the pre-test and post-test proficiency of the respondents

Proficiency	Mean	Mdn	Z Value	P-Value	Effect Size (R)	Interpretation
Pre-test	18.8	18.5	3.8188	0.0001*	0.8761	Large
Post-test	23.45	24				

**= significant at 0.05 level; ns= not significant at 0.05 level*
0.1= small effect; 0.3 = moderate effect; 0.5 and above = large effect

The median score of the pre-test is 18. 5. The Z value is 3. 8188 which is the measure of the standard deviation from the anticipated mean difference in light of the null hypothesis. The P-value is 0. 0001, this means that the scores obtained before the intervention and those after the intervention are significantly different at the 0. 05 level. The effect size (R) is 0. 8761. This makes the effect size to be large, hence showing that the intervention significantly impacted the proficiency scores. The median achieved in the post-test is 24, which is higher compared to the pre-test. Since the median score has increased, this indicates that the participants' ability was enhanced due to the intervention.

The analysis of the results also shows improved performance in their proficiency from the pre-test to the post-test. Thus, the large value of effect size reflects the substantial significant influence of the intervention. The rise in median scores from 18.5 in the pre-test to 24 in the post-test also indicates that the intervention was successful in improving the participants' performance. These outcomes are also statistically significant, making the observed enhancements even more credible. This implies that the ProAct Feedback was effective in supporting the intended objectives of enhancing the participants' proficiency levels.

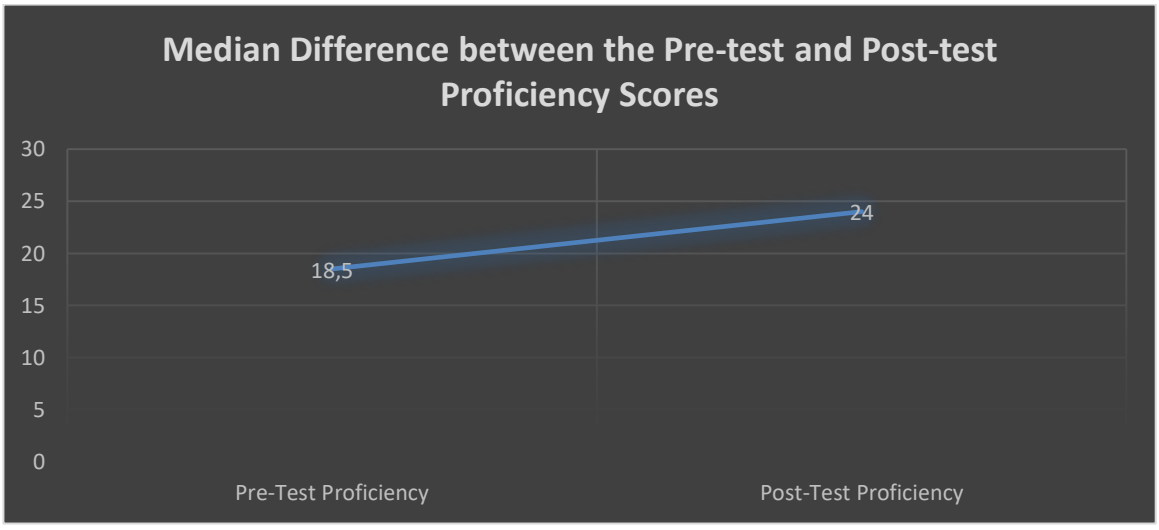

Figure 3. Line graph of difference between the pre-test and post-test proficiency scores

Looking at figure 3, it can be seen that there is a noticeable increase in the pupils' overall median before and after the intervention. The increase is represented by the blue line in the figure, which goes up from the pre-test to the post test proficiency. Their median scores are also presented. The pre-test proficiency median score is 18.5, on the other hand, the post-test proficiency median score is 24. It further supports that the pupils significantly improved their writing mechanics proficiency levels after the intervention.

The findings support the indication that the use of written corrective feedback in enhancing the students' writing skills is effective, which has been well-researched in numerous studies. For instance, Pamungkas and Amroni (2021) discovered that the mechanics of the students' writing are highly benefited from written corrective feedback. This is also consistent with the findings of Zhang and Cheng (2021) who revealed that well-structured written corrective feedback promotes the improvement of writing accuracy and fluency. Furthermore, written corrective feedback promotes language accuracy both when used directly and indirectly (Jafary, Amani & Benoit, 2023). Prior research has indicated that written corrective feedback has a positive effect on the development of writing skills.

Proofreading activity progress scores during the implementation of the proact feedback

The data below shows the increase in scores made by those who undertook the proofreading activities as part of the ProAct Feedback intervention for four days. The scores are measured by mean values, standard deviations (SD), and interpretation of progress.

Table 8. Proofreading activity progress scores of the grade 5 pupils with the implementation of the proact feedback

Phases of the Intervention	Mean	SD	Interpretation
First Day	2.65	1.23	Moderate Progress
Second Day	3.35	1.35	Moderate Progress
Third-Day	4.55	0.76	Excellent Progress
Fourth Day	4.65	0.59	Excellent Progress

4.20-5.00 (Excellent Progress/ Meets Competency Expectations)
3.40-4.19 (Significant Progress/ Growing)
2.60-3.39 (Moderate Progress/ Emerging)
1.80-2.59 (Limited Progress/ Coping)
1.00-1.79 (No Progress/ Not Participating)

The intervention begins with a mean score of 2.65 and a standard deviation of 1.23, described as "Moderate Progress." This means that the participants are starting to interact with the intervention and improving in the skill of proofreading but with variations. The mean on the second day improves slightly and is at 3.35 and the SD rises slightly to 1.35. It retains the "Moderate Progress" classification suggesting the consolidation of the learning progress concerning the improvement of the given skills, while the rising SD reflects the general tendency towards the diversification of participants' abilities. The third day produces the most improvement with an overall mean score of 4.55 and the SD decreasing to 0.76. The interpretation rises to "Excellent Progress," proving a dramatic improvement in the ability to proofread and write accurately. The decrease in SD indicates that participants are becoming more consistent in their performances. The trend persists with a marginal rise in the mean to 4. 65 and a further reduction in SD to 0. 59 on the fourth day. This day also falls under the 'Excellent Progress' since the participants are most competent and their performances are consistently very high.

The change in status from "Moderate" to "Excellent" status over the four days shows that the ProAct Feedback intervention improves writing mechanics proficiency levels. A greater variability in scores is observed in the first two days, evidenced by the higher SDs, but it decreases by the third and fourth days, implying that participants are not only getting better

but also becoming alike. This is in line with the set competency levels, where any score higher than 4.20 is considered excellent. The data indicate that this intervention was effective since participants were able to achieve and sustain high levels of competency by the fourth day.

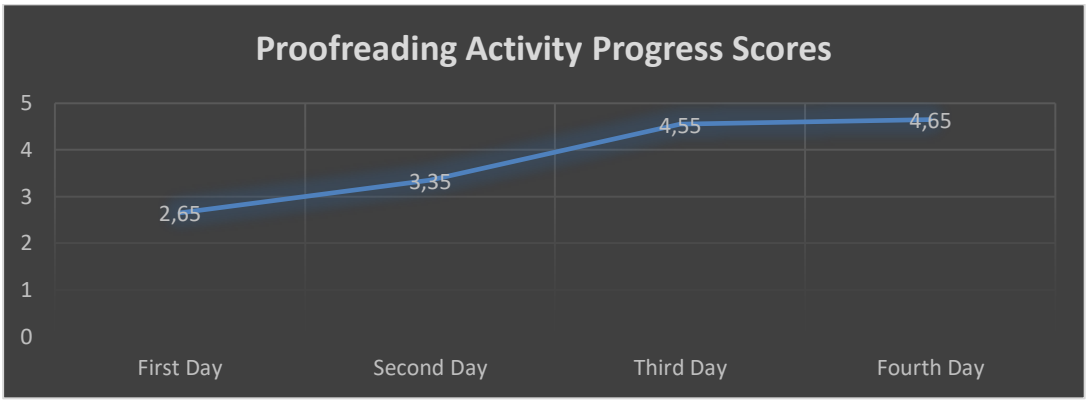

Figure 4. Line graph of the progress scores of the respondents

Figure 4 presents the changes in the pupils' proofreading activity progress scores every day during the intervention phase. Based on it, the pupils' overall scores vary each day. The change is represented by the blue line, revealing that there is a continuous increase during the phase. Their median scores ranged from 2.65 (first day) to 4.65 (fourth day). Thus, it can be implied that they improved their writing mechanics proficiency levels each day during the intervention phase of this study.

The literature on writing proficiency shows that proofreading or revising has a great effect on the quality and accuracy of written content. Ekanayaka and Ellis (2020) reported that students who revised after feedback were more improved in writing accuracy as compared to those who did not revise. Similarly, studies indicate that students who undergo proofreading and revision have enhanced writing achievement and a positive attitude toward writing (Sachar, 2020). Proofreading and revision as well as editing enable students to enhance content, organization, vocabulary, language use, and mechanics as for Kadar et al. (2023). Moreover, self-generated writing skills are developed with the help of writing assessment feedback, such as Proact Feedback, where students show gains in writing ability through knowledge-based feedback and self-guided practice (Lee, 2020). The discussion of the results of the conducted research highlights that effective writing cannot be achieved without proofreading or revising. Not only does it improve writing accuracy but also it enhances a more comprehensive view of writing as a process. Revising whether based on feedback, instructors' comments, or feedback from computer tools is beneficial for the writer to increase his/her efficiency and the exercise is suitable for both intermediate and advanced students.

Differences in the proofreading activity progress scores during the implementation of the proact feedback

The data provided presents the differences between proofreading activity progress mean scores over four days of ProAct Feedback implementation. The outcomes had the average ranks per day and the general test statistics from the Friedman ANOVA test using chi-square distribution, which corresponds with this.

Table 9. Friedman's test of difference in the four-day progress scores during the integration of proact feedback

Phases of the Intervention	Average Rank	df	ChiSquare	*Asymp. Sig.*
First Day	1.4			
Second Day	2.125	3	*36.2407*	*0.000**
Third-Day	3.175			
Fourth Day	3.3			

**= significant at 0.05 level; ns= not significant at 0.05 level*

An average rank of 1.4 on the first day indicates that on this first day, the participants' scores in proofreading were quite lower than the following days. The second day's mean rank increases to an average of 2.125 which shows an improvement in proofreading scores as the intervention progresses. On day three, also, the average rank is 3.175 indicating progress made by the participants towards becoming better writers. A slightly higher mean rank of 3.3 is observed during the fourth day and this implies that it had the highest marks although there was only a small change from last time. The statistic in the Friedman test is 36.2407 which measures how different the proofreading scores are across various days with no changes between them expected to occur. The test has three degrees of freedom because there are four days (4-1=3). The p-value was recorded as .000 with * indicating significance at 0.05 level or less. This very small P-value suggests that these differences in means for all four days are significant.

From the statistical analysis, it is evident that there are significant differences in the scores for the progress of proofreading activity over the four intervention days. The fact that average ranks continue to rise from the first day to the fourth indicates that ProAct Feedback intervention is effective in enhancing the proofreading skills of students as time progresses. The significant Friedman value also shows that these differences are statistically meaningful and unlikely to be due to a chance occurrence. This means therefore that intervention had a measurable and positive effect on participants' ability to do proper editing with maximum improvement observed by the fourth day.

Nemenyi post hoc test in the differences in the proofreading activity progress scores during the implementation of the proact feedback

The Nemenyi Post Hoc test results have analyzed the pairwise differences in proofreading activity progress scores across different days as the ProAct Feedback intervention is being implemented. Comparing multiple groups without making an assumption of normal distribution, this test has a particular advantage. These results consist of the Rsum difference, Q statistic, and P values.

Table 10. Nemenyi post hoc test in the differences in the proofreading activity progress scores

ir	**Rsum Difference**	**Q**	**p-value**
Day 1- Day 2	-14.5	2.512	0.285ns
Day 1 -Day 3	-35.5	6.149	0.000*
Day 1 - Day 4	-38	6.582	0.000*
Day 2 - Day 3	-21	3.637	0.0496*
Day 2 - Day 4	-23.5	4.07	0.02*
Day 3- Day 4	-2.5	0.433	0.99ns

**= significant at 0.05 level; ns= not significant at 0.05 level*

The difference in rank sums between Day 1 and Day 2 is -14.5, Q = 2.512. The P-value is 0.285 signifying that the scores variation between these two days does not have a statistically

significant meaning. There is a substantial difference of -35.5 in rank sums below Day 1 to Day 3 with Q=6.149. P-value (0.000) is very low, indicating that there was a great improvement from Day 1 to Day 3 in terms of scores. The difference in rank sums further increases slightly to -38 between Day 1 and Day 4, with a Q value of 6.582. The P-value is also low (0.000), suggesting that there was a significant improvement from day one up to day four. The rank sum difference is -21, with a Q value of 3.637. The P-value is also at the margin (0.0496), implying that scores are significantly different on day two compared with day three. A rank sum difference of -23.5 has been used together with a Q value of 4.07 whereas the P-value equals 0.02 showing improvements in performance from day two to four as seen below. No meaningful difference in scores between Day 3 and Day 4 is indicated by a P-value of 0.99.

The Nemenyi Post Hoc test results indicate that proofreading activity scores improved significantly as the intervention phase progressed, which was particularly evident from Day 1 to Day 3 and Day 1 to Day 4. There was also a statistically significant change between Day 2 to Day 3 and Day 2 to Day 4, while this change is not as pronounced as it was on other days. Nonetheless, there is no significant difference between Day 3 and Day 4 suggesting that the highest level of improvement in proofreading ability occurred on Day 3 with no further substantial improvements made on Day 4. This trend indicates that at the beginning of the intervention program, it had its most powerful effect but it became less effective over time.

The outcomes are consistent with the most recent research that has highlighted the role of proofreading or revising and providing feedback in improving writing skills. Teacher feedback is vital in making good corrections to students' texts when dealing with errors (Charalampous & Darra, 2023). In addition, this study also provided direct written corrective feedback which according to Endley and Karim (2022), allows for revision that has been shown to enhance accuracy. Writing revision strategies are what lead to writing success and a positive writing attitude as Sachar (2020) states aligned with this study's results. On the whole, students view written corrective feedback as being helpful with them preferring strategies that engage both metalinguistics explanations and direct feedback (Rasool, Mahmood, Aslam, Barzani & Qian, 2023). The synthesis of the study indicates that taking feedback is an integral part of writing skill enhancement. Feedback and revision in general are integral parts to ensure one's development in writing.

Conclusion

The main goal of this study was to determine the effectiveness of ProAct Feedback in improving Grade 5 learners' writing mechanics proficiency in Filipino. The ProAct Feedback intervention was effective in achieving its goals of improving writing mechanics proficiency among the participants, having a large effect size. Hence, the use of ProAct Feedback in Filipino class substantially improves the pupils' writing mechanics proficiency, helping them to spot and avoid their usual mechanical errors in writing. The progression from "moderate" to "excellent" progress over the four-day treatment phase indicates that the ProAct Feedback is effective in enhancing writing mechanics proficiency levels, helping the participants reach and maintain high levels of proficiency from the third to the fourth day. From the study's findings, it can be inferred that learners improve their writing proficiency through the use of innovative, engaging, self-corrective, and informative technique such as ProAct Feedback.

Implications and future directions

The following are some recommendations based on the conclusion of this study. First, with regard to the practical recommendations, schools should implement ProAct Feedback in order to further students' writing skills. This combination of proofreading activities with written corrective feedback has proved to be effective and can be applied to different learning environments. In addition, teachers need to be trained and educated about the proper usage of ProAct Feedback through workshops or training sessions. This will guarantee that the approach is applied properly and uniformly throughout various lessons. It is also crucial to create and disseminate tools and materials like recommendations and models, which teachers can utilize to adopt ProAct Feedback. These resources should include feedback as well as tips on how to conduct proofreading sessions successfully.

Second, for the managerial recommendation, educational administrators should consider introducing policies that promote the use of feedback tools such as ProAct Feedback in writing instruction. This could involve reopening the assessment policies to include feedback as part of the writing process. In addition, they should have a mechanism for assessing the level of compliance with the general plan of ProAct Feedback and the outcomes of the students. This could entail formative checks and appraisals to evaluate the performance of the program and to modify it as needed. It is equally important to involve parents and members of the community in order to make them understand why they should support the implementation of ProAct Feedback. This may include the sharing of information or even a demonstration of the feedback process.

Finally, the theoretical recommendations are to continue research investigating the effects of ProAct Feedback on other components of writing, including grammar, creativity, and organization. This can assist in broadening the theoretical framework of feedback in education. It is also suggested to explore how effective ProAct Feedback is compared to other feedback methods, as well as students' perceptions of it. This could help to understand how various feedback systems can be most effective in the context of education. This intervention should also be tried in other grades in Basic Education besides Junior and Senior High Schools. This would bring out more areas of application of the technique thus improving on it.

Declarations

Funding: This is no funding.
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Conflict of Interest: The authors declare no conflicts of interest regarding the publication of this article.
Data availability: The data supporting this study's findings are available from the corresponding author upon reasonable request. Due to confidentiality agreements with participants, certain restrictions may apply.

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