

Addressing College Students' Writing Difficulties through Cooperative Learning and Inquiry-Based Learning Approaches

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Abstract

High proficiency in college students' writing is beneficial for their academic success. The dynamic nature of higher education demands effective communication through writing, making it imperative to understand the prevalent issues hindering students' success in this area. This study assessed the effectiveness of Cooperative Learning and Inquiry-based Learning in improving writing difficulties among college students. Conducted over eight weeks at a private university in Cagayan de Oro City, Philippines, this quasi-experimental research involved 64 participants. The study utilized a comprehensive rubric assessing content, organization, grammar, vocabulary, and mechanics to evaluate the students' essays. Results demonstrated notable improvements in both Cooperative Learning and Inquiry-based Learning, with students progressing from 'Emerging' to 'Proficient' levels in writing. These enhancements were significant in all assessed areas, highlighting the effectiveness of the interventions. While both methods were found effective in improving writing proficiency, the Inquiry-based Learning approach stood out as more effective, particularly in improving grammar. This finding emphasizes its role in elevating the overall writing quality of college students. The study's outcomes not only affirm the effectiveness of their pedagogical strategies in enhancing writing abilities. Future research is recommended to further investigate the nuances of these learning approaches, as identified in this study.

Keywords: writing quality, cooperative learning, inquiry-based learning

Introduction

In today's globally interconnected environment, effective writing skills are considered a vital asset within the Philippine education system. Far from being just a basic communication tool, writing proficiency has emerged as a critical determinant for success across various domains. Scholars like Moses and Mohammad (2019) affirm that a student's future employability hinges significantly on their writing expertise, underscoring the necessity of mastering this competency in this modern world.

Several studies within the Philippine context have shed light on the challenges college students face in their writing proficiency. As Bautista and Gonzalez (2013) illustrate, Filipino students often struggle with various elements of writing, including content, structure, grammar, and usage. Such difficulties typically emerge

due to inadequate preparation at the secondary level, thereby becoming starkly noticeable when they transition to the university level, which demands more discipline-specific and analytical writing skills. Bernardo (2007) adds that these struggles frequently result from students' limited vocabulary and habitual direct translation from Filipino, leading to poorly structured essays and weak arguments.

Considering these concerns, this study aims to enhance the writing quality of college students through two pedagogical approaches: cooperative learning and inquiry-based learning.

Cooperative learning is an instructional strategy that promotes collaboration, active participation, and mutual support among students. It involves structured activities where students work together in small groups to achieve a common goal. Cooperative learning fosters positive interdependence, individual accountability, and social skills development. The cooperative learning strategy developed by David W. Johnson and Roger Johnson (2009) emphasizes the positive effects of cooperative learning on academic performance, social skills, and positive relationships among students. On the other hand, inquiry-based learning, rooted in constructivist theory, encourages students to explore and investigate real-world issues, promoting critical thinking and effective communication skills essential for writing proficiency (Pedaste et al., 2015). Utilized in tandem, these pedagogical approaches may improve college students' writing abilities by fostering collaborative learning, in-depth understanding, and critical analysis.

In this era of globalization, Filipino students must not be only equipped with strong academic writing skills but also capable of leveraging these skills for their professional and academic progression. By addressing these research gaps, teachers can ensure Filipino college students are adequately prepared to compete and excel in the global arena, thus underscoring the importance of conducting this study.

Framework

This study hypothesizes that cooperative learning and inquiry learning approaches can enhance the writing quality of college freshmen learners. This investigation draws support from John Dewey's (1933) Constructivist learning theory, Cooperative Learning by Vygotsky (1978) and Independent Learning Theory by Wedemeyer (1977). Dewey believed that learning is not a passive reception of knowledge but an active process of constructing meaning through direct experience. In his seminal work "Experience and Education," he emphasized the value of hands-on learning and the role of experience in shaping understanding (Dewey, 1938). According to Dewey, students learn best when they are actively engaged in their learning environment, interacting with the world around them.

Cooperative Learning. Cooperative learning refers to an instructional approach that combines cooperative learning strategies. With the use of technology, cooperative learning enhances collaboration, engagement, and learning outcomes among students. It leverages various digital tools and platforms to facilitate communication, information sharing, and collaborative problem-solving. This structured approach promotes active engagement, interdependence, and shared responsibility among students, fostering a deeper understanding of the material and improving writing quality through collaborative knowledge construction.

When applied to writing instruction, cooperative learning provides a supportive environment where students engage in active dialogue, share ideas, and collectively construct knowledge (Gillies, 2007). Through collaborative writing activities, students have the opportunity to receive and provide feedback, fostering a deeper understanding of writing conventions, organization, and clarity (Keeley, 2014). In addition to the advantages of peer review and discussion, collaborative writing is thought to help improve confidence and make idea development and execution easier (Sitompul et al., 2022).

Numerous studies have consistently examined the effectiveness of the cooperative learning approach in enhancing the writing quality of learners. A study conducted by Zhou and Lewis (2021) unveiled that cooperative learning when used in a college classroom, students were able to learn and have high quality in their outputs. Thus, incorporating cutting-edge technologies in information technologies into effective teaching methods enhances profound learning experiences within higher education settings.

Furthermore, a study conducted by Adhami and Taghizadeh (2022) revealed that students using online platforms such as Edmodo and Google Docs showed significant improvement in their writing quality, particularly in the areas of grammar and fluency. Moreover, adopting this approach led to increased learner engagement, motivation, satisfaction, and reduced anxiety. The outcomes also indicated learners' favorable attitudes toward the educational benefits of using Edmodo and Google Docs.

Lin (2013) studied the impact of using cooperative learning or task-based learning on nursing students and found that it is an effective way to improve students' skills proficiency, and it can also lead to a more positive learning experience.

Research studies conducted in recent years have further highlighted the benefits of a cooperative approach in enhancing writing outcomes. Mendo-Lazaro et al, (2022), implied that cooperative learning encourages the development of interpersonal skills and motivates students to participate more actively in the teaching and learning process. For instance, a study by Kyei-Blankson et al., (2016) suggests that tools such as Google Docs, Microsoft Teams, or collaborative whiteboards enable students to work together in real-time, creating and editing documents or presentations simultaneously. These tools facilitate group projects, brainstorming sessions, and co-creation of content, promoting active engagement and fostering teamwork.

Inquiry-based Learning. Inquiry-based learning, when applied in conjunction with Wedemeyer's Independent Learning Theory (1977), offers a powerful approach to enhancing writing quality among learners. Independent Learning Theory emphasizes learners' active involvement in the learning process and their ability to self-direct their learning experiences. By combining this theory with inquiry-based learning, students are empowered to take ownership of their writing, engage in self-directed research, and improve their writing quality.

One of how inquiry-based learning aligns with Independent Learning Theory to enhance writing quality is by promoting students' autonomy and self-regulation. In an inquiry-based learning environment, students have the freedom to choose their topics of interest, conduct independent research, and explore their unique perspectives on the subject matter (Park, 2014). This autonomy fosters a sense of responsibility and ownership over their writing, leading to increased engagement and

motivation. As a result, students are more likely to invest time and effort into producing high-quality written work.

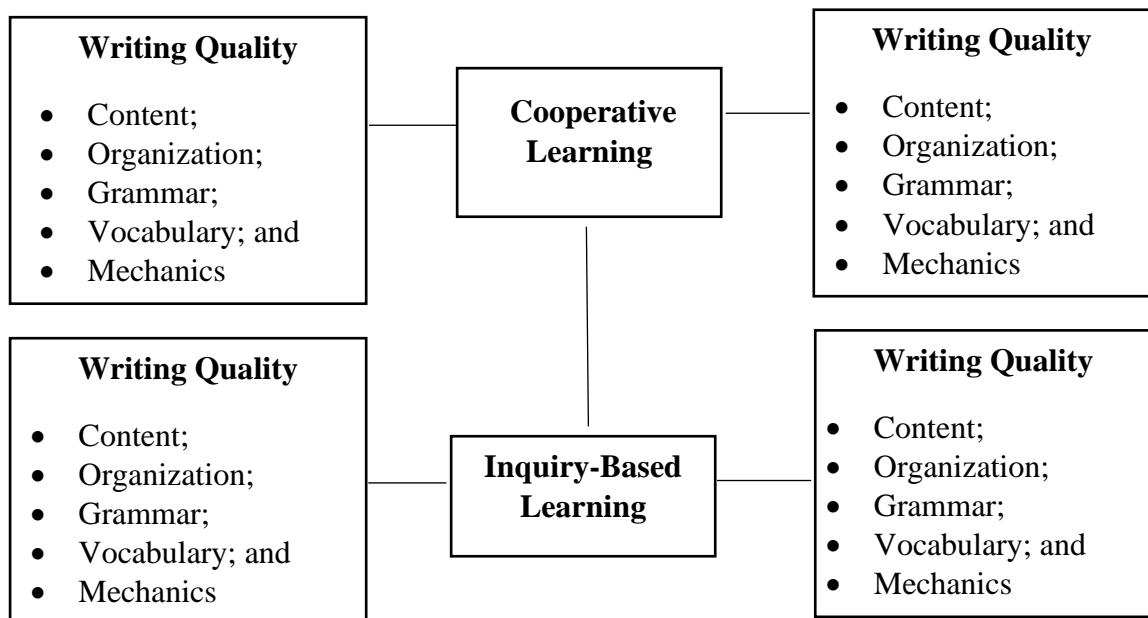
Furthermore, the integration of independent learning principles in inquiry-based learning enhances students' metacognitive awareness and self-reflection. Independent Learning Theory emphasizes the importance of self-assessment and self-monitoring in the learning process (Dembo & Eaton, 2000). In an inquiry-based learning setting, students are encouraged to reflect on their own writing process, identify areas for improvement, and set goals for enhancing their writing quality. This metacognitive awareness enables students to recognize their strengths and weaknesses, make targeted revisions, and take responsibility for their writing development.

Moreover, independent learning within the context of inquiry-based learning equips students with research skills that are crucial for improving writing quality. As students engage in independent research to explore their chosen topics, they learn how to locate, evaluate, and incorporate relevant and reliable sources into their writing (Kuhlthau, 2013). This research competency enables students to provide strong evidence, support their claims, and enhance the credibility and depth of their written work.

In a nutshell, through cooperative learning and inquiry-based learning approaches, educators can guide students toward producing quality written work. Developing proficiency in these areas equips students with essential skills for academic success and prepares them for professional endeavours.

Figure 1

Schema Showing the Interplay of Variables of the Study



The figure presented on the following page illustrates the intricate interplay among the variables discussed within the framework of the study. This visual representation offers a comprehensive overview of how these variables interact and influence one another. Al-Jaro et al, (2016) suggest that students require concepts to research and write about. Skilled writers can employ prewriting processes and invention techniques, while less proficient writers may require guidance. By visually depicting the relationships and connections, the figure enhances the understanding of the conceptual framework and provides a visual roadmap for the study's theoretical underpinnings.

Research Questions

This study sought to investigate the effectiveness of cooperative learning and inquiry-based learning approaches in improving students' written communication skills. The study seeks to address the following research questions:

1. Are there any statistically significant differences between the levels of the students' writing quality before and after interventions considering: 1) Content; 2) Organization; 3) Grammar; 4) Vocabulary; and 5) Mechanics?
2. Is there any statistically significant differences among students of the experimental and control groups with reference to their writing quality in the pre and post-test?
3. Do the two groups of participants' writing quality significantly differ?

Research Objectives

This study aims to evaluate the impact of cooperative learning and inquiry-based learning methods on enhancing the writing quality of college students enrolled in a private university in Cagayan de Oro City.

Methodology

The research employed a quasi-experimental approach, as described by Di Nardo (2008), to assess the causal impact of interventions on the writing skills of college freshmen students. The study involved a sample of college freshmen students from four different sections, who served as research participants. These sections were formed using a heterogeneous grouping approach, resulting in a total of 64 students. Specifically, two sections, each comprising 32 students, were assigned to the Inquiry-based learning strategy, while the other two sections, also consisting of 32 students, will be assigned to the Cooperative learning strategy. The statistical tools used in this study were descriptive, t-test and ANCOVA. Furthermore, it provided a comprehensive analysis of the data, enabling a deeper understanding of the influence of the interventions on the participants' writing quality.

Result and Discussion

Table 1 showcases the summary table of the participants writing quality highlighting substantial progress within both the Cooperative and Inquiry-based learning Groups. The Inquiry-based learning group exhibited a noteworthy result, advancing from '*Emerging*' to '*Proficient*' (mean score of 4.44), paralleled by the Cooperative Group's ascent into the '*Proficient*' category (mean score of 4.23). This indicates that different teaching approaches can yield substantial gains in writing skills.

This underscores the potential for diverse educational strategies to cater to varying learning styles and preferences, ultimately contributing to improved academic outcomes in writing. The results also highlight the importance of incorporating a variety of teaching methods to foster comprehensive skill development in educational settings

Table 1

Participants' Writing Quality

	COOPERATIVE GROUP						INQUIRY GROUP					
	Pretest			Post test			Pretest			Post test		
	M	Int	SD	M	Int	SD	M	Int	SD	M	Int	SD
Content	2.78	Dev	0.42	4.38	Prof	0.55	2.94	Dev	0.25	4.69	Ex	0.47
Organization	2.69	Dev	0.54	4.50	Prof	0.57	2.78	Dev	0.42	4.69	Ex	0.47
Grammar	2.41	Em	0.61	4.16	Prof	0.51	2.14	Em	0.61	4.38	Prof	0.49
Vocabulary	2.44	Em	0.50	4.09	Prof	0.39	2.59	Dev	0.56	4.31	Prof	0.59
Mechanics	2.16	Em	0.68	4.0	Prof	0.25	2.06	Em	0.39	4.13	Prof	0.42
OVERALL	2.49	Em	0.36	4.23	Prof	0.37	2.50	Em	0.39	4.44	Prof	0.34

Legend:

4.51-5.00 = Ex (Exemplary); 3.51-4.50 = Prof (Proficient); 2.51-3.50 = Dev (Developing);
1.51-2.50 = Em (Emerging); 1.00-1.50 = Beg (Beginning)

The gains in writing skills shown by the Cooperative and Inquiry-based Learning Groups, as indicated by their advancement to 'Proficient' levels, are well-supported by existing research. Studies on inquiry-based learning, like the one involving pharmacy students, demonstrate its effectiveness in enhancing various aspects of academic writing skills, aligning with the Inquiry Group's performance (Wale & Bogale, 2021). Similarly, research on cooperative learning highlights its role in developing key academic goals, interpersonal skills, and active participation, resonating with the Cooperative Learning group improvement (Mendo-Lázaro, et al., 2022). These findings emphasize the effectiveness of diverse educational strategies in catering to varying learning styles and preferences, thereby contributing to improved academic outcomes in writing and underscoring the value of integrating multiple teaching methods for comprehensive skill development.

Table 2 presents the findings in the participants' writing quality before and after the interventions. The data reveal a marked improvement in the writing skills for both groups, transitioning from the pretest to the posttest phase. This is shown in the statistically significant t-test results in the Cooperative group ($t=23.45$, $p=.000$) and in the Inquiry group ($t = -27.99$, $p=.000$). These findings indicate a noteworthy elevation in writing proficiency after the interventions. Thus, the null hypothesis is rejected. The findings effectively challenge the null hypothesis, which suggested no significant variation in writing quality as a result of the interventions. The results, therefore, underscore the effectiveness of the applied interventions in fostering improved writing abilities among the participants.

Table 2

Result of the Test of Difference in the Participants' Writing Quality Before and After the Interventions

	COOPERATIVE GROUP							INQUIRY GROUP						
	Pretest		Post test		t	P	Effect Size	Pretest		Post test		t	P	Effect size
	M	SD	M	SD				M	SD	M	SD			
Content	2.78	0.42	4.38	0.55	13.55**	.000	1.70	2.94	0.25	4.69	0.47	19.49**	.000	2.52
Organization	2.69	0.54	4.50	0.57	17.31**	.000	2.22	2.78	0.42	4.69	0.47	20.33**	.000	2.64
Grammar	2.41	0.61	4.16	0.51	12.33**	.000	1.53	2.14	0.61	4.38	0.49	17.72**	.000	2.28
Vocabulary	2.44	0.50	4.09	0.39	15.57**	.000	1.98	2.59	0.56	4.31	0.59	18.60**	.000	2.40
Mechanics	2.16	0.68	4.05	0.25	15.40**	.000	1.96	2.06	0.39	4.13	0.42	14.57**	.000	1.85
OVERALL	2.49	0.36	4.23	0.37	23.45**	.000	3.06	2.50	0.39	4.44	0.34	27.99**	.000	3.67

Additionally, the overall effect size of 3.67, is extraordinarily high in the context of Cohen's d metrics. This magnitude of effect size is suggesting that the interventions implemented had contributed on improving writing quality. Such a pronounced effect size implies not just statistical significance but also practical significance, indicating that the changes in writing quality are substantial and likely to have meaningful implications in real-world educational settings. This data strongly support the efficacy of the applied interventions, suggesting that they could be effective tools in educational practices aimed at enhancing writing skills.

The data also provide compelling evidence of the participants' improved writing abilities across various components. Notably, the Content component stands out with a remarkable t-value of 19.49, signifying a substantial enhancement in their capacity to generate relevant and insightful content. This suggests a deeper level of engagement with the topics they were writing about. Additionally, the Organization component, exemplified by a noteworthy t-value of 20.33, highlights a significant advancement in the coherence of the writing structure. This, in turn, implies that the participants' writing has likely benefited from increased clarity and persuasive effectiveness.

Table 3

Mann-Whitney (Z) Values Showing Significant Differences in the Two Groups of Participants' Writing Quality

Participants' Writing Quality	Intervention 1 COOPERATIVE GROUP (Mean Rank)	Intervention 2 INQUIRY GROUP (Mean Rank)	Mann-Whitney U	Z	p	Effect sizes
Content	29.83	35.17	426.5	1.30	.193	-0.16
Organization	31.14	33.86	468.5	.707	.480	-0.09
Grammar	27.20	37.80	342.5	2.45*	.014	-0.31
Vocabulary	31.39	33.61	476.5	.552	.581	-0.07
Mechanics	30.20	34.80	438.5	1.07	.283	-0.13
OVERALL	27.77	37.23	360.5	2.06*	.039	-0.26

* significant at 0.05 level

The observed difference in performance between the two groups could be attributed to the unique aspects of Inquiry-based Learning. This approach emphasizes student-centered, active learning where students explore questions, problems, and scenarios, leading to deeper understanding and retention of knowledge. It often involves critical thinking, problem-solving, and application of concepts in real-world contexts, which can enhance writing proficiency by fostering a more engaged and reflective learning process.

Furthermore, the effect size for overall writing quality is measured at -0.26 according to Cohen's d metrics. This denotes a small to medium effect, signifying that while the improvement in writing quality is statistically significant, its practical implication is moderate. Such an effect size suggests observable improvements in real-life educational settings, but not drastic or overpowering changes (Di Carlo, 2019).

Overall, the data illustrates the clear advantage of the inquiry-based intervention in improving overall writing quality, especially in grammar mastery. While the two methods showed comparable effectiveness in areas like organization, vocabulary, and mechanics, the inquiry-based approach emerged as a more effective tool for enhancing comprehensive writing skills. This coincides with Wale and Bogale (2021) that inquiry-based writing education helps students enhance their academic writing skills, such as task completion, coherence and cohesion, lexical resource, grammatical range, and accuracy. This analysis emphasizes the critical role of methodological choice in educational settings, particularly when aiming to improve specific aspects of writing proficiency.

Recommendations

English language educators are encouraged to enhance their teaching methods by leveraging Learning and Inquiry-based learning approaches to address learners' writing difficulties. Additionally, structured inquiry-based learning activities can guide students in asking questions, conducting research, and critically analysing sources, with necessary scaffolding and support. School administrators play a crucial role in maximizing effective learning strategies, providing ongoing professional development for teachers in technology and inquiry integration, and collaborating with teachers to ensure alignment with educational standards.

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Dr. Kriscentti Exzur P. Barcelona, Dean at the College of Teacher Education at Lourdes College Cagayan de Oro, Philippines, has demonstrated dynamic leadership in spearheading academic innovation and research in education. His work places a strong emphasis on fostering student engagement and collaboration, aimed at developing key competencies including socio-emotional skills, intercultural communication, leadership, and problem-solving abilities. Through his exploratory research on collaborative teaching methodologies and pedagogy, Dr. Barcelona probes into eliciting students' experiences and insights, underscoring the vital role of teamwork and participation in contemporary classrooms. He has made noteworthy contributions to the academic literature, authoring scholarly publications spanning a range of salient themes - from teaching and learning, curriculum design, professional development, and e-learning, to broader pedagogical strategies. His strong scholarship is a testament to his dedication to enhancing educational practices and furthering the understanding of the complex dynamics of teaching and learning within evolving contexts. Overall, Dr. Barcelona's work significantly mirrors his commitment to advancing pedagogical approaches and incorporating collaborative frameworks to enrich learning in the education sector. His contributions reflect the ongoing evolution and enrichment of educational methodologies in the field.