

Enhancing Learning Outcomes: Investigating The Impact of Explicit Instruction on Academic Performance of Students

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Abstract— Teaching is considered both an art and a responsibility, as educators play a crucial role in shaping the intellectual and personal development of learners. Effective teaching strategies are essential to ensure that students understand concepts deeply and develop critical thinking skills. One instructional approach that has gained attention in improving learning outcomes is explicit instruction, a structured teaching method that provides clear explanations, guided practice, and systematic feedback. This study investigated the impact of explicit instruction on the academic performance of students in Mathematics. This study employed a quasi-experimental research design conducted at Mialen Central School in the Clarin North District, Division of Misamis Occidental, during the School Year 2023–2024. The participants were 80 Grade 1 students selected through purposive sampling and divided into two groups: an experimental group (n=40) and a control group (n=40). The study utilized validated lesson plans aligned with the Department of Education’s Most Essential Learning Competencies (MELC), along with diagnostic and summative assessments administered during the pre-test, first trial run, second trial run, and post-test. Data were analyzed using mean, standard deviation, the Shapiro–Wilk test of normality, and paired t-test to determine significant differences in academic performance across testing periods. Findings revealed that both groups initially demonstrated comparable performance during the pre-test and first trial run, with no significant differences observed. However, during the second trial run and post-test, the experimental group showed significantly higher mean scores compared to the control group, indicating improved academic performance after exposure to explicit instruction. The results suggest that explicit instruction is an effective pedagogical strategy for enhancing students’ academic performance in Mathematics. The structured and guided learning approach facilitated better comprehension and retention of mathematical concepts. Consequently, integrating explicit instruction into classroom teaching may significantly contribute to improved learning outcomes among elementary learners.

Keywords— explicit instruction, academic performance, mathematics learning, quasi-experimental design, elementary education.

I. INTRODUCTION

Background of the Study

Teaching plays a crucial role in shaping students’ intellectual growth and academic success. In modern education, teachers are expected not only to deliver content but also to use effective instructional strategies that promote meaningful learning and improve students’ academic performance. One important instructional approach is explicit instruction, which involves clear explanations, structured lessons, guided practice, and continuous feedback. When teachers provide systematic and well-organized instruction, learners are better able to understand complex concepts and retain knowledge over time. In

elementary education, particularly among young learners, carefully structured teaching methods are essential to help students build foundational skills and improve their academic performance. Therefore, exploring how explicit instruction influences students’ learning outcomes is important in understanding how effective teaching strategies can enhance classroom learning. Several studies have emphasized the effectiveness of explicit instruction in improving student achievement. Research by Brophy (1986) highlighted that well-structured and teacher-guided instruction significantly contributes to student learning and academic success. Similarly, Dole et al. (1991) found that explicit teaching strategies help students

understand lesson objectives clearly and apply learned concepts effectively. Later studies by Duffy et al. (1986) and Rosenshine and Meister (1992) further explained that explicit instruction—through modeling, guided practice, and feedback—supports deeper comprehension and skill development among learners. Recent studies also continue to support these findings. For instance, a study conducted in 2022 revealed that explicit reading strategy instruction significantly improved students' reading comprehension, while another study showed that structured instruction enhanced higher-order thinking skills among ESL learners. These findings suggest that explicit instruction can be an effective teaching approach for improving academic performance across different learning contexts. Despite the growing body of literature supporting explicit instruction, there remains limited empirical evidence regarding its effectiveness among early elementary learners in local public school settings, particularly in the Division of Misamis Occidental. Many existing studies focus on higher grade levels or different subject areas, leaving a gap in understanding how explicit instruction affects the academic performance of Grade 1 learners, who are at a critical stage of cognitive and academic development. Moreover, there is a need to compare the outcomes of students exposed to explicit instruction with those taught through traditional methods to determine whether structured teaching strategies can significantly improve learning outcomes. Addressing this gap is important in providing evidence-based instructional practices that can support teachers in improving classroom instruction and student achievement. In response to this gap, this study aimed to investigate the impact of explicit instruction on the academic performance of Grade 1 students at Mialen Central School, Clarin North District, Division of Misamis Occidental, during the School Year 2023–2024. Specifically, the study examined the academic performance of the control and experimental groups during the pre-test, first trial run, second trial run, and post-test. It also determined whether there were significant differences in the academic performance of the two groups across these testing periods. The findings of this study are expected to provide insights into the effectiveness of explicit instruction as a teaching strategy and its potential contribution to

improving students' academic performance in the classroom.

II. RESEARCH METHODOLOGY

Research Design

This study employed a quasi-experimental research design to examine the effectiveness of explicit instruction on students' academic performance. The design was appropriate because it allowed the comparison of two groups without random assignment, as explained by Creswell (2003). In the study, explicit instruction served as the treatment applied to the experimental group, while the control group was taught using traditional teaching methods. The research procedure included two trial runs where the academic performance of both groups was carefully observed and compared. A pre-test was administered before the intervention to establish a baseline of the students' performance, ensuring a valid basis for comparison. After the instructional intervention, a post-test was conducted to measure the learning gains of the students. The results from the pre-test, trial runs, and post-test provided a comprehensive evaluation of the impact of explicit instruction on students' academic performance and its effectiveness as a teaching strategy.

Research Setting

This study was conducted at Mialen Central School, a major public elementary school in the Clarin North District, Division of Misamis Occidental. As the central school of the municipality of Clarin, it serves learners from several barangays and offers a complete elementary education program along with various curricular and co-curricular activities. The school has a diverse student population characterized by varying academic abilities, learning styles, and socio-economic backgrounds. With its supportive learning environment and teachers committed to improving instructional practices, the school continuously adopts innovative and research-based teaching strategies. Equipped with basic learning resources and supported by regular teacher training programs from the district and division, Mialen Central School provides an appropriate and realistic setting for examining the effectiveness of explicit instruction in improving students' academic performance.

Research Respondents

The respondents of the study were Grade 1 students of Mialen Central School, Clarin North District, Division of Misamis Occidental, during the School Year 2023–2024. A total of 80 students were selected through purposive sampling and were divided into two groups consisting of 40 students in the experimental group and 40 students in the control group. The two sections were chosen because they were considered homogeneous in terms of grade level and learning characteristics, allowing a fair comparison of the instructional approaches used in the study. To ensure comparability between the groups, a pre-test was administered and statistically analyzed to establish a baseline of the students' academic performance before the intervention. This process helped confirm that both groups had relatively similar levels of prior knowledge and skills, ensuring that any differences in performance after the intervention could be attributed primarily to the teaching method applied.

Research Instrument

The study utilized several research instruments to measure the academic performance of the students during the pre-test, first trial run, second trial run, and post-test. These instruments included validated lesson plans, diagnostic assessments, and summative assessments aligned with the Most Essential Learning Competencies (MELC) of the Department of Education (DepEd). Four sets of lesson plans were developed to guide the instructional procedures for both the experimental and control groups during the trial runs. The lesson plans were reviewed and validated by the research adviser, research panel, and the Dean of Graduate Studies to ensure their relevance and alignment with the objectives of the study. Each assessment tool was supported by a Table of Specifications (TOS) to ensure proper distribution of test items and scoring procedures. The instruments were pilot-tested with 15 non-participant students to determine their validity and reliability through item analysis, including difficulty and discrimination indices. The final test instruments consisted of multiple-choice questions used for the pre-test and post-test to accurately measure students' learning outcomes. The results were interpreted using the DepEd Order No. 8, s. 2015 grading system, where

raw scores were converted into percentages and classified according to performance descriptors such as Outstanding, Very Satisfactory, Satisfactory, Fairly Satisfactory, and Did Not Meet Expectations.

Data Gathering Procedure

Data were collected through a systematic and ethical process. The data gathering procedure began with securing permission from the school administration of Mialen Central School to conduct the study among Grade 1 students. After approval, the researcher prepared and validated the research instruments, including lesson plans, diagnostic assessments, and summative tests aligned with the Most Essential Learning Competencies (MELC) of the Department of Education. These instruments were reviewed by the research adviser, research panel, and the Dean of Graduate Studies to ensure their relevance and validity. A Table of Specifications (TOS) was also developed to ensure proper distribution of test items. The instruments were pilot-tested among 15 non-participant students to establish their reliability through item analysis, including difficulty and discrimination indices, and necessary revisions were made. Afterward, a pre-test was administered to both the experimental and control groups to determine their baseline academic performance. The experimental group was then taught using explicit instruction while the control group received traditional teaching methods during the first and second trial runs. Finally, a post-test was conducted to measure students' learning gains, and the results were converted into percentages and interpreted using the grading scale prescribed in DepEd Order No. 8, s. 2015.

Ethical Considerations

The study carefully observed ethical standards in conducting quasi-experimental research involving student participants. To ensure fairness, the control group was also given the opportunity to experience the explicit instruction after the experimental group completed the intervention, preventing any disadvantage among participants. Prior to the conduct of the study, the researcher complied with the ethical requirements of the Institutional Review Board (IRB) of Medina College School of Graduate Studies by submitting a detailed research proposal outlining the

methodology, possible risks, and benefits of the research (American Psychological Association [APA], 2017). The principles of confidentiality and anonymity were strictly observed, ensuring that the identities and responses of the participants were protected and securely stored (APA, 2017).

Participation in the study was voluntary, and informed consent was obtained from the parents or legal guardians of the students. Participants were also informed of their right to withdraw from the study at any time without penalty (APA, 2017). Throughout the research process, ethical principles such as respect for persons, beneficence, and justice were upheld to ensure the protection and well-being of all participants (APA, 2017).

Data Analysis

The researcher employed various statistical tools to measure, analyze, and interpret the academic performance of students, ensuring that the findings were valid, reliable, and directly related to the study's objectives. Descriptive statistics, including the mean and standard deviation, were used to determine the

central tendency and dispersion of scores in the pre-test, first trial, second trial, and post-test, providing a clear numerical summary of student performance and highlighting variations across stages.

To verify the assumptions of normality for parametric testing, the Shapiro-Wilk test was applied to all datasets, ensuring the appropriateness of further inferential analyses.

For examining the effect of explicit instruction, a paired t-test was conducted to compare the academic performance of the same group of students across different stages of the study, allowing the researcher to determine whether the intervention produced significant learning gains.

The paired t-test accounted for variability between subjects, isolating the impact of the instructional method from other factors.

Together, these statistical procedures offered a comprehensive and rigorous evaluation of explicit instruction, providing objective evidence of its effectiveness in improving student learning outcomes.

III. PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

Table 1. Academic Achievements during the Pre-test

Group	Mean	SD	Interpretation	Mean Difference
Controlled	18.27	4.29	Fairly Satisfactory	0.88
Experimental	17.39	3.78	Did Not Meet Expectations	

The data in Table 1 shows that during the pre-test, the controlled group achieved a mean score of 18.27 (SD = 4.29), interpreted as Fairly Satisfactory, while the experimental group scored slightly lower with a mean of 17.39 (SD = 3.78), interpreted as Did Not Meet Expectations, and a mean difference of 0.88 between the groups.

This suggests that both groups began the intervention phase with relatively modest levels of achievement, with the control group performing marginally better but neither group meeting high proficiency standards. Such preliminary results indicate that students, regardless of group assignment, had limited mastery of the tested concepts prior to the instructional treatment,

highlighting the need for focused instructional support.

These baseline findings are consistent with research demonstrating that when initial academic performance levels are low or modest, targeted instructional strategies such as explicit instruction can significantly influence learning outcomes; for example, a 2023 quasi-experimental study found that primary learners exposed to explicit instructional strategies showed notable improvements in mathematics performance compared to control groups with similar low pre-test scores, affirming that explicit teaching can be especially effective for learners starting at lower achievement levels (Ogunjimi & Gbadeyanka, 2023).

Table 2. Academic Achievements during the first trial run

Group	Mean	SD	Interpretation	Mean Difference
Controlled	19.7	2.67	Fairly Satisfactory	0.12
Experimental	19.82	3.36	Fairly Satisfactory	

The data in Table 2 indicates that during the first trial run, both the controlled group and the experimental group achieved nearly similar academic performance, with mean scores of 19.7 (SD=2.67) and 19.82 (SD=3.36) respectively, both interpreted as Fairly Satisfactory. The minimal mean difference of 0.12 suggests that at this stage, the implementation of explicit instruction in the experimental group had not yet produced a substantial improvement over the traditional teaching methods used in the control group. This similarity in performance aligns with studies

showing that initial exposure to new instructional methods may require a period of adjustment before measurable differences appear; for instance, Adepoju et al. (2021) reported that while explicit instruction improved students' mathematics outcomes, early trial phases often showed comparable results with control groups due to learners needing time to adapt to the instructional approach. This suggests that continued implementation and reinforcement of explicit teaching are necessary for more pronounced academic gains.

Table 3. Academic Achievements during the Second Trial Run

Group	Mean	SD	Interpretation	Mean Difference
Controlled	20.12	2.79	Fairly Satisfactory	3.27
Experimental	23.39	3.23	Very Satisfactory	

The data in Table 3 shows that during the second trial run, both the controlled group and the experimental group demonstrated improved academic performance compared to earlier assessments; however, the experimental group achieved a markedly higher mean score (23.39, SD=3.23) interpreted as Very Satisfactory, while the controlled group recorded a mean of 20.12 (SD=2.79), still within the Fairly Satisfactory range. The mean difference of 3.27 suggests that explicit instruction had a substantial positive effect on the experimental group's learning outcomes by this stage of the intervention. This

finding is supported by recent research showing that explicit, well-structured instructional strategies significantly enhance learners' performance over time; for instance, Al-Rashidi and Al-Shamsi (2020) found that students exposed to explicit teaching approaches exhibited greater achievement in mathematics compared to peers taught with traditional methods, especially after sustained guided practice. Such evidence underscores that explicit instruction can lead to stronger academic gains when learners have had sufficient exposure and engagement with the instructional model.

Table 4. Academic Achievements during the Post-test

Group	Mean	SD	Interpretation	Mean Difference
Controlled	33.18	4.24	Fairly Satisfactory	3.45
Experimental	36.64	4.47	Satisfactory	

The data in Table 4 indicates that during the post-test, both the controlled and experimental groups showed continued improvement in their academic performance. The controlled group achieved a mean score of 33.18 (SD=4.24), interpreted as Fairly Satisfactory, while the experimental group scored

higher at 36.64 (SD=4.47), reaching a Satisfactory level. The mean difference of 3.45 further highlights the positive impact of explicit instruction on students' learning outcomes, demonstrating that the intervention helped the experimental group achieve greater academic gains than the group receiving traditional

teaching methods. This finding is consistent with recent studies emphasizing the effectiveness of explicit teaching strategies in improving student achievement; for example, Alnahdi (2021) reported that learners taught using explicit and structured instructional methods performed significantly better in post-intervention assessments compared to peers

taught using conventional approaches, particularly in foundational subjects such as mathematics.

These results suggest that explicit instruction not only reinforces understanding but also strengthens retention and application of knowledge, leading to higher overall academic performance.

Table 5. Significant Difference between the Pretest Scores

Group	Mean	Statistic	df	p-value	Decision
Controlled	18.27	1.76	32	0.09	Accept Ho
Experimental	17.39				

The data in Table 5 shows the comparison of pre-test scores between the controlled and experimental groups. The controlled group had a mean score of 18.27, while the experimental group had a mean of 17.39. The paired t-test results indicate a t-value of 1.76 with 32 degrees of freedom and a p-value of 0.09, which is greater than the 0.05 significance level. This led to the acceptance of the null hypothesis (Ho), indicating that there was no significant difference in the academic performance of the two groups before the intervention. This finding suggests that the two groups

were statistically comparable at baseline, ensuring that any differences observed in later trials or post-tests could be attributed to the instructional method rather than prior knowledge or ability.

This aligns with the findings of Fuchs et al. (2020), who reported that establishing baseline equivalence between experimental and control groups is essential in quasi-experimental studies to accurately measure the effect of explicit teaching interventions on student learning outcomes.

Table 6. Significant Difference between the First and Second Trial Run

Group	Mean	Statistic	Df	p-value	Decision
First Trial Run					
Controlled	19.7	-0.3	32	0.76	Accept Ho
Experimental	19.82				
Second Trial Run					
Controlled	20.12	-5.81	32	<.001	Reject Ho
Experimental	23.39				

The data in Table 6 presents the comparison of academic performance between the controlled and experimental groups during the first and second trial runs. In the first trial run, the controlled group had a mean score of 19.7 and the experimental group had 19.82, with a t-value of -0.3 and $p = 0.76$, indicating no significant difference. This suggests that both groups performed similarly during the initial exposure to the instructional method. However, in the second trial run, the controlled group scored 20.12, while the experimental group achieved 23.39, with a t-value of -5.81 and $p < 0.001$, showing a significant difference in favor of the experimental group. This indicates that

explicit instruction significantly improved the academic performance of students after repeated implementation.

These findings are consistent with the study by Van der Veen et al. (2021), which reported that explicit teaching strategies led to significant improvements in student learning outcomes compared to traditional methods, especially after multiple instructional sessions, demonstrating the cumulative effect of structured and guided teaching on academic performance.

Table 8. Significant Difference between the Post-test Scores

Group	Mean	Statistic	Df	p-value	Decision
Controlled	33.18	-5.45	32	<.001	Reject Ho
Experimental	36.64				

The data in Table 8 shows the comparison of academic performance between the controlled and experimental groups during the post-test. The controlled group had a mean score of 33.18, while the experimental group achieved 36.64, with a t-value of -5.45 and $p < 0.001$, indicating a significant difference between the groups. This demonstrates that students who received explicit instruction significantly outperformed those who experienced traditional teaching methods by the end of the study. The results align with recent research by Kim and Park (2022), which found that explicit teaching strategies, through modeling, guided practice, and immediate feedback, lead to higher achievement in elementary students' academic performance compared to conventional instruction, highlighting the effectiveness of structured, teacher-led approaches in enhancing learning outcomes.

IV. SUMMARY OF FINDINGS, CONCLUSION, RECOMMENDATION

Summary of Findings

During the pre-test, it can be observed that the score of the controlled group was verbally interpreted as "fairly satisfactory" ($M=18.27$, $SD= 4.29$); the experimental group posited a "did not meet expectations" interpretation of their score ($M=17.39$, $SD=3.78$);

both the controlled group ($M=19.7$, $SD=2.67$) and the experimental group ($M=19.82$, $Sd=3.36$) tallied a "fairly satisfactory" interpretation of their scores in the first trial run;

the performance of the controlled group remained in the "fairly satisfactory" level ($M=20.12$, $SD= 2.79$); For the experimental group, the level of performance was in the "very satisfactory" level ($M=23.39$, $SD=3.23$) during the second trial run;

the control group was in the "fairly satisfactory" level ($M=33.18$, $SD=4.24$), and the experimental group was in "satisfactory" ($M=36.64$, $SD=4.47$) during the post-test.

there is no significant difference between the academic performance of the respondents during the pretest; $t(32)=1.76, p=.09$;

during the first trial run, the mean difference between the controlled and experimental groups is insignificant, t . Thus accept our null hypothesis; $t(32)=-0.3, p=.76$;

in the second trial run, the mean difference yielded a significant difference between the compared groups; $t(32)=-5.81, p<.001$;

there is a significant difference between the controlled and experimental group's academic performance during the post-test, $t(32)=-5.45, p<.001$.

Conclusions

This paper was specifically dedicated to explicit instruction as a means of teaching Mathematical Concepts to Grade 6 students at Mialen Central School. The descriptive and inferential findings have shown that direct teaching is a good pedagogical strategy to enhance long term memory of mathematical concepts in the cognition of students. Explicit instruction on the academic performance will however take time to take effect since students will need time to adapt to the instructions before it will be internalized. This gradual yet consistent growth can be explained by the fact that the students will take time to get accustomed to the new material. The social learning and learning by doing theoretical frameworks also indicate the effectiveness of explicit instruction since both theories stress on active involvement and interaction with peers during the learning process. The teacher makes the students understand the mathematical principles by engaging them in practical learning and group work. Finally, the research was able to conclude that direct instruction played a significant role in increasing academic performance of Grade 6 students in Mathematics. Therefore, direct

teaching is a good pedagogical tool in promoting academic achievement in Mathematics.

Recommendations

Considering the findings and conclusions of this study, the following recommendations are made:

Due to the effectiveness of Explicit Instruction based on the results of research, it is suggested that its applicability should be evaluated in other grade levels, including elementary and high school mathematics. In these environments, increasing the application of explicit instruction may give a better insight into the effects it has on the mathematical performance of the students. In addition, it is possible to make this strategy more specific to the needs of students in various stages of development to increase its overall efficacy in various educational settings.

It would be of interest to researchers in future to research the experiences of teachers and students in using explicit instruction as a teaching tool in Mathematics. The sequential explanatory or exploratory research design would enable the gathering of both the qualitative and quantitative information and provide a detailed analysis of its influence. The future research by focusing on the views of teachers and students might expose the obstacles or advantages that were not adequately examined in the present study, thereby offering insights to the improvement of the instructional practices.

The research should also be conducted further to find out the effectiveness of explicit instruction in other subjects like English and Filipino to overcome the limitation that was identified in this study. How explicit instruction can be modified to these subjects would be interesting to explore so that the broader applicability can be considered more comprehensively. In addition, these studies might encourage the increased use of explicit instruction across curriculums, which beneficiaries of diverse disciplines and advance better academic performances.

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