
Comparative Analysis of Grade 4 Learners’ Performances in Mathematics on The Utilization of Interactive Strategic Intervention Materials: Basis for Instructional Supervisory Plan

FERNANDO C. PULGO

Teacher II

Western Leyte College

Master of Arts in Education

Major in School Administration and Supervision

fernando.pulgo@deped.gov.ph

ABSTRACT

This study was conducted and evaluated the comparative analysis of Grade 4 learners’ test performances in Mathematics on the Utilization of Interactive Strategic Intervention Materials (I-SIM) in Ipil Central School, Ormoc City District 2, Ormoc City Division, Ormoc City. The findings of the study were the bases for a proposed Instructional Supervision Plan. This research is a quasi-experimental study that used the pre-test - post- test experimental designs to evaluate the comparative analysis of Grade 4 learners’ test performances in Mathematics on the Utilization of Interactive Strategic Intervention Materials (I-SIM) in Ipil Central School, Ormoc City District 2, Ormoc City Division, Ormoc City. In the Quasi- experimental research design, the researcher prepared different Interactive strategic intervention Materials that were focused on the learning competencies in Mathematics as well as facilitating in the giving of pretest and posttest to the identified respondents in order to gather necessary data that will be significant in the study. The researcher utilized universal Sampling in selecting the respondents of the study. The test of the difference between pre- and post-test scores provides a quantitative way to assess how well ISIM integration has improved Grade 4 students' mathematical proficiency. When making decisions about the significance of the observed differences, the computed t-values are compared to the critical t-values. This analytical procedure encompasses a comprehensive investigation of the ways in which ISIM impacts Grade 4 students' academic development, providing insight into the efficacy of the intervention in bridging the knowledge gap between initial comprehension and improved competency. When we dig deeper into the test results, we find that there is a significant difference as indicated by the computed t-values for the pre-test and post-test scores, respectively. The calculated values are benchmarked against the critical t-values. Based on this comparison, it is decided to reject the null hypothesis (Ho), which denotes a statistically significant difference between the pre- and post-test scores of Grade 4 Math students. The null hypothesis's rejection has important ramifications for comprehending how ISIM affects academic achievement.

In the context of educational research, a significant difference suggests that the integration of ISIM has brought about measurable and meaningful changes in the mathematical competencies of Grade 4 students. This rejection has important implications for how the results are interpreted as "significant." This result isn't just a coincidence; it can also be linked to the intentional integration of Interactive Strategic Intervention Materials into the learning process. The choice to reject the null hypothesis supports the theory that ISIM plays a role in the observed increase in post-test scores.

Based on the Test of Difference Between the Scores in the Pre-test and Post-test of Grade 4 Pupils in Math, the data that is being presented shows a significant improvement in academic performance after the use of Interactive

Strategic Intervention Materials (ISIM). The present study centers on the calculated t-values, critical t-values, decision criteria, and the ensuing interpretation in order to offer a thorough comprehension of the influence of ISIM on the mathematical competencies of Grade 4 students. The results' statistical significance suggests that the use of Interactive Strategic Intervention Materials has significantly improved Grade 4 students' mathematical proficiency. The calculated t-values, which significantly exceed the critical thresholds, highlight how strong the observed improvement is. The choice to reject the null hypothesis is a crucial admission that the addition of ISIM has greatly improved the mathematical proficiency of Grade 4 students.

Keywords — Comparative Analysis Performance Grade 4 Learners Mathematic ISIM

I. INTRODUCTION

Interactive Strategic Intervention Material (I-SIM) is an instructional material meant to re-teach the concept/s and skills. This material is given to learners to help them master a competency-based skill which they were not able to develop during the regular classroom teaching. Science teaches concepts and knowledge that students may use in their day to day life experience.

In the study of Paula Varaidzai Makondo and Davison Makondo (2020), amongst the causes of poor academic performance in Mathematics are attitudes of the learners towards the subject, lack of teaching experiences, economic conditions, lack of appropriate teaching methods and low motivation of teachers and attitudes. Hence, strategic intervention must be implemented to develop pupils' interest and progress their level of achievement.

One solution that the Department of Education suggested to improve the skills of the learners is to make Strategic Intervention Material (SIM). Strategic Intervention Materials which are conceptualized and designed to aid the teacher provide the pupils the needed support to make progress in studies. These will increase and deepen the skills, knowledge and understanding of the child in various subject areas not only in Science and Math but also including various learning areas in the curriculum. This is the tool initiated by Department of Education to improve the academic performance and achievements of the low performing students. DepEd Memo No. 117, series of 2005 entitled "Training Workshop on Strategic Intervention Materials (SIMs) for Successful Learning" provided secondary teachers the training to have an idea and knowledge in the preparation of SIM.

The low performance of pupils poses a significant challenge to the field of education. Based on observation, Grade 4 pupils of Ipil Central School (ICS) can read mathematical concepts but they can hardly comprehend which resulted the learners gained in the fair and even below 75 percent level of performances which also resulted to have least mastered competencies.

As a Mathematics teacher, the researcher noticed that at the end of the grading period there were skills that were not fully attained by the Learners based on the result of their first quarter examination. With this result, additional contact time is needed and innovative teaching techniques should be done specially during the pandemic where there were limited physical teaching happens between the teachers and learners for the past 2 years.

The researcher is primarily interested in identifying the least learned competencies in Mathematics 4 of ICS and find a way to address this problem. The goal of the study is to evaluate the development of interactive SIM as an instructional tool so as to enhance their skill in adding and subtracting simple fractions and mixed numbers without or with regrouping as one of the least mastered competencies in Grade 4 Mathematics.

The researcher believes that this study will help improve the academic performance of the Grade 4 pupils especially in Mathematics subject that was rated very low and almost rank at the bottom among all the other subjects results based on the School Monitoring Evaluation and Adjustment. This study will also be an avenue to the researcher in order to improve his competence in teaching considering to the type of learners he is currently teaching after 2 years in the implementation of the different learning modalities due to pandemic. This study will also boost his confidence in teaching and develop opportunities and performance to the pupils to attain their potentials.

This study evaluated the comparative analysis of Grade 4 learners' test performances in Mathematics on the Utilization of Interactive Strategic Intervention Materials (I-SIM) in Ipil Central School, Ormoc City District 2, Ormoc City Division, Ormoc City. The findings of the study were the bases for a Instructional Supervision Plan.

Specifically the study sought to answer the following questions:

1. What is the performance of the Grade 4 pupils in Mathematics before the intervention using I-SIM?
2. What is the performance of the Grade 4 pupils in Mathematics after the intervention using I-SIM?
3. Is there a significant difference between the scores of the Grade 4 learners before and after the integration of the interactive strategic intervention materials (I-SIM)?
4. What instructional supervision plan can be proposed based on the findings of the study?

Null hypothesis:

There is no significant difference between the pretest and posttest scores of the Grade 4 learners before and after the integration of the interactive strategic intervention materials.

II. METHODOLOGY

Design. This research is a quasi-experimental study that used the pre-test - post- test experimental designs. The experimental part of the study were the learners' performance (Scores) of the Grade 4 pupils in Mathematics. Quantitative analysis was used to determine the significant difference between the pre-test and post-test mean scores. In this study, the researcher was used the Summative Test Questionnaires in Mathematics to determine the least mastered competencies. Based from the identified least mastered competencies, an Interactive Strategic Intervention Material will be constructed. The study was conducted for one month period or depending on the number of least learned competencies in mathematics which will be divided per week. The participants for this study will be the grade 4 pupils handled by the researcher it has the lowest Mean Percentage Score. The assessment card of the interactive Strategic Intervention Materials were given to the participants without the other parts of the SIM, the result was the pre-test. In this study, the selected participants were exposed to the entire content of interactive Strategic Intervention Material during remedial or vacant time of the learners. The remediation tool awaken their innate interest, opened their imaginations, brought them to the world of mathematics and gave them opportunity to explore, manipulate and perform thus, they experienced once more the competency that they were not fully understood during the regular class discussion. They performed it through the assistance of their parents or guardian. The result of the assessment card was the post-test. The main local of the study is Ipil Central School in Ormoc City District 2 in the Schools Division of Ormoc City. The assessment given to

the respondents was carefully validated by the teacher-researcher himself which are the pretest and posttest test performances of the Grade 4 learners, the different steps in conducting the identified approach were undertaken in order to validate their performances before and after the implementation of interactive media learning materials to the respondents. This study is mainly focus on the results of the different test validation to gather data: The pretest scores performance of the Grade 4 learners before the implementation of the Interactive Strategic intervention Materials in identifying the performance of the respondents, The Posttest scores performance of the Grade 4 learners after the implementation of the Interactive Strategic intervention Materials as well as the significant difference of the pretest and posttest performances before and after the implementation of the interactive media learning materials in the delivery of the most essential learning competencies in teaching Mathematics for the first grading Period. In the Quasi- experimental research design, the researcher prepared the different materials which integrating Interactive Strategic intervention Materials. The focus of this study was the Grade 4 learners and those readers who are in the fair and good level of performance in order to improve their performance those on the average level of performance as well as those learners who were independent learners as well as facilitating in the giving of pretest and posttest to the identified respondents in order to gather necessary data that will be significant in the study; The proposed instructional supervisory Plan was taken based on the findings of the study.

Sampling. There are 40 total number respondents who are included in the study. There are 23 Male and 17 Females with a 40 total number of respondents. The respondents or the grade 4 learners were being identified based on the performance of learners, and the primary means of reach is during the actual conduct of the study as well as during the gathering of data in the school where the study was conducted.. Another way of contacting them are through cell phones of their respective parents.

Research Procedure. The researcher prepared the research design which is the quasi-experimental research design and tools which are the different materials embedding the Interactive Strategic intervention Materials based from the test given to the Grade 4 learners being the respondents . The researcher formulated the following steps or procedures to be guided during the gathering of data. The steps are the following:

The researcher sent a letter to the Schools Division Superintendent of Leyte Division for approval in conducting the study to the said school, After which, the approved letter coming from the Schools Division Office was given to the Public School District Supervisor (PSDS) in Ormoc City District 2 in the Division of Ormoc City for his awareness.

The researcher conducted the pretest before the integration of Interactive Strategic intervention Materials in teaching mathematic. After conducting the pretest, the researcher now integrating the Interactive Strategic intervention Materials to the different most essential learning competencies (MELCs) in mathematics for 4 weeks. After 4 weeks of integrating the Interactive Strategic intervention Materials to the lesson, the posttest was conducted to validate the learning of the Grade 4 learners.

The results were analyzed and interpreted in order to find out if there were increased on the performance level from the pretest to the posttest. Then after the posttest and pretest were analyzed, the posttest result was treated statistically using the test for mean difference. The Approval and recommendation from the Office of the Schools Division Superintendent, as well as to the Assistant Schools Division Superintendent in Ormoc City Division being the Chairman of the Schools Division Research Committee through the Senior Education Program Specialist in Planning and Research. After the Approval of the Schools Division Research Committee, the Approved or endorsement letter from the body together with the approved letter of intent were forwarded to the Office of the Public School District Supervisor as well as to the office of the School principal in order to get full support on the conduct of the study as well as to get also approval from their end. The proposed title and design

was submitted to the School Division Office for approval. Upon approval, the Division released endorsement to the District Office where the school is located. When the research was approved by the Schools Division Office and District Office, the researcher began the process of data gathering. Validation of the instruments through Experts such as the Master Teacher in Mathematics and in coordination with the school head and lastly to the Education Program Supervisor in Learning Resource was sought. Orientation of the participants was done. Answering and retrieval of the research tool followed. Tallying of results and treatment of data. Analysis and Interpretation of Data. Making of Proposed Enhancement Plan.

Ethical Issues. The right to conduct the study was strictly adhere through the approval of the Schools Division Superintendent, Public School District Supervisor as well as the approval of the School Principal where the study were conducted. Orientation of the respondents both the learners and the teachers including the School Principal was also done. In the orientation, specially to the parents and or guardian, the process of the study was discussed in order for them to know how and why the study will be done and to reiterate that this study is purely focus on the improvement of the performance of the learners. The need for other data that was needed in the study such as the performance of the school in general based on the different performance indicators, a written permission was sought to the principal confidentiality and anonymity and will be discussed requiring them not to write names on the tools and have to writer pseudonym instead.

Treatment of Data. The following statistical formulas were used in this study:

The quantitative responses were tallied and tabulated. The data was treated statistically using the following statistical tool.

Weighted Mean. This was utilized to assess the numeracy performance of the Grade 4 pupils.

T-Test For Mean Difference- This tool was used to calculate the significant difference of the literacy skills performance of the Grade 4 pupils in reading.

III. RESULTS AND DISCUSSION

TABLE 1

PRE-TEST PERFORMANCE OF GRADE 4 PUPILS IN MATHEMATICS

Score Range	Description	PRETEST	
		Frequency	%
33-40	Excellent	0	0
25-32	Very Good	0	0
17-24	Good	28	76
9-16	Fair	9	24
1-8	Poor	0	0
Total		37	100
Weighted Mean		17.62	Good

Table 1 shows the pre-test performance of the Grade 4 learners in the different skills given by the teacher in Mathematics before the learners will be experiencing the interactive strategic intervention materials (E-SIM) in the delivery of the most essential learning competencies. This study will focus on the 2nd grading learning competencies in Mathematics.

The transformative potential of interactive strategic intervention materials in education has gained increasing recognition in recent years, especially with regard to the numeracy performance of Grade 4 students in mathematics. As a result of technological developments and a move toward more participatory and interesting teaching strategies, using strategic intervention materials becomes a viable strategy for improving math competency in elementary school. The purpose of this introduction is to discuss the reasoning behind the use of interactive strategic intervention materials in the mathematics teaching and learning processes for fourth grade. The incorporation of interactive materials seeks to create a dynamic and immersive learning environment as educators and stakeholders work to address the particular challenges that learners encounter in mastering numerical concepts. This intervention uses technology to its advantage to target support in areas that traditionally present challenges for young learners while also grabbing their interest and attention.

These strategic intervention materials' interactive design guarantees that Grade 4 students actively engage in their mathematical journey, promoting a deeper comprehension of concepts and a more lively and collaborative learning environment. By using this method, teachers hope to customize interventions to meet the unique needs of each student and foster individualized learning opportunities that complement the variety of learning styles found in the classroom.

It lays the groundwork for a thorough investigation of the advantages, difficulties, and overall effects of using interactive strategic intervention materials to enhance students' math proficiency in grade 4. It emphasizes how crucial it is to adopt cutting-edge teaching strategies that keep up with the changing needs of education, guaranteeing that students acquire the critical thinking and problem-solving abilities necessary for both their success in the classroom and in the future.

Table 1 shows the pre-test performance data for Grade 4 Math students, which breaks down each student's proficiency levels into five score ranges. No student received a score in the "Excellent" or "Very Good" categories, suggesting that there aren't any students who are particularly skilled in math. That being said, 76% of students demonstrated a satisfactory understanding of the subject during the pre-test assessment, placing them in the "Good"

category. A quarter of the students (24%) fell into the "Fair" category, where some students showed a rudimentary grasp of mathematical concepts, indicating a need for focused assistance and development. Interestingly, there were no Grade 4 students in the "Poor" category, indicating that there were not any exceptionally low proficiency levels overall.

A concentration of learners in the middle proficiency levels may be indicated by the lack of students in the extreme proficiency categories. The high percentage of students in the "Good" category, which indicates a generally good performance level among Grade 4 students in Mathematics during the pre-test, highlights this concentration even more. Differentiated instructional approaches are necessary, as the pre-test data analysis as a whole highlights the wide range of proficiency levels among Grade 4 students. The existence of the "Fair" category indicates how crucial it is to carry out focused interventions in order to give students who have a more fundamental understanding of mathematics more support and comprehension.

The weighted mean of 17.62, which falls into the "Good" category, confirms the pre-test results for Grade 4 math students' overall proficiency level. This quantitative measure provides educators and stakeholders with valuable insights to customize interventions that address the unique needs of students across a range of proficiency levels. It is combined with a detailed breakdown of scores. The mathematics pre-test performance data for Grade 4 students, presented in Table 1, provides a thorough understanding of their proficiency levels across various score ranges. Remarkably, neither the "Excellent" nor the "Poor" proficiency categories have any students in them; instead, both categories have a frequency of 0. Based on this preliminary observation, it appears that most students are in the mid-range proficiency range. The most common classification, "Good," includes 76% of the Grade 4 students. This suggests that during the pre-test, the majority of students showed a sufficient grasp of mathematical concepts. But the lack of students in the "Excellent" and "Very Good" categories calls for more research into the causes of the dearth of exceptionally high performance.

On the other hand, a subgroup of students with a rudimentary grasp of the subject is indicated by the "Fair" category, which comprises 24% of the student body. This group, though not the majority, shows that they require focused interventions to improve their mathematical abilities. Creating instructional strategies that are effective will require a thorough understanding of the unique challenges that this cohort faces. One encouraging finding is that there were no students in the "Poor" category, indicating that, generally speaking, Grade 4 students did not demonstrate notably low proficiency levels during the pre-test. However, a deeper look at the "Fair" category can provide light on possible areas for development that could keep students from dropping into the "Poor" category in the future. The weighted mean of 17.62, corresponding to the "Good" category, reiterates the overall proficiency level of Grade 4 pupils in Mathematics. This quantitative measure, coupled with the detailed breakdown of scores, offers valuable insights for educators and administrators to tailor interventions, address specific learning needs, and ensure a balanced approach to teaching mathematical concepts.

The pre-test performance data for Grade 4 Mathematics students, giving a detailed picture of the students' proficiency levels and score distribution. It is noteworthy that there aren't many students in the "Excellent" or "Poor" categories, suggesting that most students are in the mid-range competency range. This may indicate that the Grade 4 group performed fairly well overall, with no significant differences in their mathematical ability from the first evaluation. The most common category, "Good," includes 76% of the students in Grade 4. The most common category, "Good," includes 76% of the students in Grade 4. This majority implies that a sizable percentage of students showed during the pre-test a satisfactory grasp of mathematical concepts. But the lack of students in the higher proficiency levels, like "Excellent" and "Very Good," begs the question of what factors are preventing exceptionally high performance. It is necessary to conduct more research into the particular difficulties students encounter in achieving the highest levels of proficiency.

A subset of students with a rudimentary understanding of the subject is represented by the "Fair" category, which

comprises 24% of the student body. This group, though not the majority, points to a possible area for focused interventions. It will be essential to comprehend the unique difficulties this group of students faces in order to develop instructional strategies that will improve their mathematical abilities. Early detection and resolution of these issues can keep these students out of the lower proficiency groups on subsequent tests. One encouraging finding is that there were no students in the "Poor" category, indicating that, generally speaking, Grade 4 students did not demonstrate notably low proficiency levels during the pre-test. This may indicate a baseline level of understanding among the students or effective teaching strategies.

The weighted mean of 17.62, which falls into the "Good" category, offers a numerical indicator that confirms the general level of mathematical proficiency of Grade 4 students. Teachers and administrators should focus on the unique needs of students in the "Fair" category even though the majority of them fall into the "Good" category. This will help them to implement targeted interventions and promote continuous improvement. The thorough analysis of this data provides the basis for well-informed decision-making, which enables the creation of specialized tactics to improve Grade 4 students' mathematical competency.

The results in Table 1 implied that the math pre-test results of Grade 4 students has important ramifications for teachers and School Heads. With a weighted mean of 17.62, the majority of students fall into the "Good" category, indicating an overall proficiency level within this range. Although the average performance appears to be commendable, special attention needs to be paid to the 24 percent of students who fall into the "Fair" category. To improve their proficiency and address specific needs, this subgroup needs targeted interventions. When there are no pupils in the "Excellent" or "Poor" categories, the performance is focused in the middle range. Teachers ought to use this data to create focused lesson plans that support each student's ongoing development. This data-driven methodology guarantees a sophisticated comprehension of the various levels of proficiency, enabling informed decision-making to enhance the overall mathematical competency of Grade 4 pupils.

TABLE 2

POST TEST PERFORMANCE OF GRADE 4 PUPILS IN MATHEMATICS

Score Range	Description	POST TEST	
		Frequency	%
33-40	Excellent	24	65
25-32	Very Good	13	35
18-24	Good	0	0
9-16	Fair	0	0
1-8	Poor	0	0
Total		37	100
Weighted Mean		32.86	Excellent

Table 2 shows the posttest performance of the Grade 4 learners about the level of learnings that they have gained from the different skills given by the teacher in Mathematics after they have experience the integration of Interactive Strategic Intervention Materials in the delivery of the most essential learning competencies on the 2nd grading learning competencies.

The use of Interactive Strategic Intervention Materials (ISIM) has become a key tactic in the field of educational

innovation with the goal of transforming the way that fundamental learning competencies are delivered, especially in the area of mathematics. The field of education is always changing, and the use of strategic and interactive materials is changing the way that students in Grade 4 learn. This introduction lays the groundwork for a detailed examination of how ISIM affects these students' post-test performance, as shown in Table 2. The thorough information in the table offers a thorough analysis of the students' accomplishments, grouping them according to percentages and score ranges. This information provides an essential basis for a detailed examination of how the integration of Interactive Strategic Intervention Materials has influenced the overall learning outcomes for Grade 4 pupils in Mathematics.

The pursuit of improving the delivery of fundamental mathematical learning competencies in the constantly changing field of education has prompted educators to investigate novel approaches. The use of Interactive Strategic Intervention Materials (ISIM), a pedagogical technique intended to transform the educational experience for Grade 4 students, is a noteworthy paradigm in this endeavor. This introduction establishes the framework for a thorough investigation of the ways in which the use of interactive and strategic materials is transforming the educational environment and impacting these students' overall mathematical proficiency. With the integration of ISIM, traditional teaching approaches are abandoned in favor of dynamic and captivating learning resources that are specifically designed to satisfy the varied needs of Grade 4 students. This change demonstrates a dedication to promoting a deeper comprehension and application of fundamental mathematical ideas, establishing a learning environment that fosters critical thinking and problem-solving abilities in addition to rote memorization.

Table 2 will be the main focus. It shows the mathematics post-test results for Grade 4 students. The table gives a thorough analysis of the students' performance by outlining their accomplishments according to various score ranges. Notably, the grouping of scores into score bands like "Excellent," "Very Good," "Good," "Fair," and "Poor" enables a more in-depth analysis of how ISIM affects the cohort's diverse skill levels. Essentially, this investigation will traverse the incorporation of ISIM into the teaching of fundamental mathematical skills with the goal of elucidating the complex ways in which it affects students in Grade 4. By carefully examining Table 2, we hope to reveal not only the quantitative results but also the qualitative changes in these students' learning paths. This will give us important information about how well Interactive Strategic Intervention Materials work to influence Grade 4 students' futures in mathematics education.

Table 2 provides a thorough understanding of the mathematics post-test results of Grade 4 students after the use of Interactive Strategic Intervention Materials (ISIM). Students are grouped into various score ranges in the table, each of which has a description and a percentage frequency attached. This in-depth dissection makes it possible to analyze and interpret the effects of ISIM on the learning competencies of students in Grade 4. Sixty-five percent of Grade 4 students performed exceptionally well, with scores ranging from 33 to 40. This represents an admirable mastery of fundamental learning competencies made possible by ISIM integration. The high percentage in this category indicates that a considerable number of students have a high level of understanding and application of mathematical concepts due to the interactive and strategic nature of the intervention materials. Notably, 35% of the pupils scored in the 25–32 range, indicating a very good performance. This suggests that ISIM has a beneficial effect on a wide range of students who have strengthened their grasp of fundamental mathematical ideas, not just high achievers. The Grade 4 student cohort's diverse learning styles and abilities are well-represented in this category, demonstrating ISIM's flexibility and efficacy in meeting their needs.

Remarkably, not a single student fits into the Good, Fair, or Poor performance categories. The lack of students in these lower categories indicates that the intervention materials met the cohort's learning needs in an effective manner, guaranteeing that each student met the minimum competency standards classified as "Good." This result demonstrates ISIM's overall success in keeping all students' comprehension levels above a satisfactory level.

The distribution of percentages as a whole equals 100%, indicating that all Grade 4 students are fully covered. This illustrates how inclusive ISIM is in meeting the various learning preferences and skill levels of the students. The intervention materials have been effective in engaging all students and having an impact on their development of mathematical competencies as a whole. The weighted mean of 32.86, which is classified as "Excellent," provides a quantitative indicator of the performance of the Grade 4 students. This mean highlights the cohort's collective excellence by combining the individual scores. The high weighted mean highlights how well ISIM works to improve Grade 4 students' overall mathematical competency, indicating not only individual achievement but also a strong group performance as a whole.

The results in table 2 implies that most Grade 4 students have performed above grade level expectations, demonstrating a sophisticated grasp of fundamental mathematical concepts. The weighted mean provides a numerical depiction of the qualitative enhancements noted in the pupils' comprehension and utilization of mathematical ideas. The lack of students in the Fair and Poor categories indicates that the adoption of ISIM has promoted a comprehensive educational experience, guaranteeing that each student reaches a foundational level of proficiency in fundamental mathematical concepts. This result shows that the Grade 4 students' varied learning needs have been successfully met by the interactive and strategic intervention materials, fostering a comprehensive grasp of mathematical concepts.

The evidence of success in the Excellent and Very Good categories suggests that the intervention materials' interactive element has enhanced students' engagement and interaction with one another. Students' degree of engagement in the learning process seems to have been positively impacted by ISIM's experiential and interactive learning methodology, which has led to a greater comprehension of mathematical ideas and enhanced performance. Teachers may look into areas for additional development even though the current results are encouraging. Future intervention improvements may result from examining particular interactive elements or content that attracted higher success rates. Continuous improvement in the delivery of fundamental mathematical learning competencies can be achieved by identifying and improving upon the most effective ISIM components.

The favorable results of this post-test performance highlight the possibility of incorporating ISIM into mathematics education going forward. Future ramifications might include extending the application of interactive resources to a wider range of subjects, encouraging a more lively and captivating learning environment. The Grade 4 students' achievements attest to the effectiveness of ISIM in improving learning outcomes, indicating its suitability and potential for wider adoption in educational environments. In summary, the examination of Table 2 confirms that the use of Interactive Strategic Intervention Materials has significantly improved Grade 4 students' post-test performance in mathematics. The data illustrates a cohort that has performed exceptionally well together, highlighting the efficacy of ISIM in promoting a deeper understanding and the information shows a cohort that has performed exceptionally well overall, highlighting how successful ISIM is at promoting a deeper comprehension and application of critical learning competencies. The results of this study indicate that ISIM has the potential to be a game-changing approach in the field of educational strategies. It can offer insightful information to educators and policymakers who are looking for new and creative ways to improve students' learning experiences.

TABLE 3
TEST OF DIFFERENCE BETWEEN THE SCORES IN THE PRE-TEST AND POST-TEST OF GRADE 4 PUPILS IN MATHEMATICS

Aspects	Test Scores		Computed T	Critical T	Decision	Interpretation
GRADE 4 Pupils in Math	Pre	17.62	1.864	0.741	Reject H_0	Significant
	Post	32.86				

Table 3 shows the test of difference between the pretest and posttest scores performances of the grade 4 learners in before and after the integration of interactive strategic intervention materials to the Performance of The Grade 4 Learners In mathematics.

In the dynamic field of education, there is a constant pursuit to maximize learning opportunities and improve critical skills. In the field of mathematics in particular, the use of Interactive Strategic Intervention Materials (ISIM) is a critical strategy for teaching core learning competencies. With an emphasis on the test of difference between the pre-test and post-test scores of Grade 4 students in Mathematics, this introduction lays the groundwork for an extensive investigation of the effects of ISIM. This analysis's data examines the calculated t-values, critical t-values, decision criteria, and the interpretation that follows in order to determine how well ISIM assists Grade 4 students with their academic development and proficiency.

The test of the difference between pre- and post-test scores provides a quantitative way to assess how well ISIM integration has improved Grade 4 students' mathematical proficiency. When making decisions about the significance of the observed differences, the computed t-values are compared to the critical t-values. This analytical procedure encompasses a comprehensive investigation of the ways in which ISIM impacts Grade 4 students' academic development, providing insight into the efficacy of the intervention in bridging the knowledge gap between initial comprehension and improved competency. When we dig deeper into the test results, we find that there is a significant difference as indicated by the computed t-values of 17.62 and 32.86 for the pre-test and post-test scores, respectively. The calculated values are benchmarked against the critical t-values of 1.864 and 0.741. Based on this comparison, it is decided to reject the null hypothesis (H_0), which denotes a statistically significant difference between the pre- and post-test scores of Grade 4 Math students. The null hypothesis's rejection has important ramifications for comprehending how ISIM affects academic achievement.

In the context of educational research, a significant difference suggests that the integration of ISIM has brought about measurable and meaningful changes in the mathematical competencies of Grade 4 students. This rejection has important implications for how the results are interpreted as "significant." This result isn't just a coincidence; it can also be linked to the intentional integration of Interactive Strategic Intervention Materials into the learning process. The choice to reject the null hypothesis supports the theory that ISIM plays a role in the observed increase in post-test scores.

Based on the Test of Difference Between the Scores in the Pre-test and Post-test of Grade 4 Pupils in Math, the data that is being presented shows a significant improvement in academic performance after the use of Interactive Strategic Intervention Materials (ISIM). The present study centers on the calculated t-values, critical t-values, decision criteria, and the ensuing interpretation in order to offer a thorough comprehension of the influence of ISIM on the mathematical competencies of Grade 4 students. The results' statistical significance suggests that the use of Interactive Strategic Intervention Materials has significantly improved Grade 4 students' mathematical proficiency. The calculated t-values, which significantly exceed the critical thresholds, highlight how strong the observed improvement is. The choice

to reject the null hypothesis is a crucial admission that the addition of ISIM has greatly improved the mathematical proficiency of Grade 4 students.

The practical significance of the findings must be taken into consideration in addition to the statistical significance. Not only does the significant difference between pre- and post-test scores satisfy the requirements for statistical significance, but it also suggests that students' mathematical skills have improved in a noticeable and significant way. The results have practical implications that are relevant to the real world and highlight how well ISIM supports academic development.

The present study's data-driven analysis offers a strong basis for comprehending the beneficial impact of interactive and strategic intervention materials on academic outcomes. This, in turn, facilitates well-informed decision-making and additional investigation of efficacious educational tactics.

IV. CONCLUSIONS

Based from the findings of the study, it can be gleaned that the integration of the interactive strategic intervention materials To the Performance of The Grade 4 Learners In mathematics is significantly effective. Furthermore, this outcome is not only statistically significant but holds practical importance in the educational context, affirming that the strategic and interactive nature of the intervention has led to a substantial enhancement in students' understanding and application of essential learning competencies in Mathematics.

The findings from this analysis contribute not only to the understanding of the effectiveness of ISIM but also offer valuable insights for educational practitioners and policymakers. The decision to reject the null hypothesis propels educators to consider the integration of interactive and strategic intervention materials as a viable and impactful approach to enhance teaching and learning practices. It underscores the importance of adopting evidence-based strategies that can bring about meaningful and statistically significant improvements in student outcomes.

V. RECOMMENDATIONS

1. The proposed Enhancement plan should be used specially in teaching English subject because it will help the teachers improve their teaching process as well as improved learners performances.
2. Administrators or school head should include in their respective work and financial plan regarding the inclusion of the different materials or equipment to be used in crafting or making different learning materials to be used during the teaching and learning process using the aforementioned intervention which is found out to be effective in improving the performance of the learners.
3. School Heads should encourage teachers in all subject areas to apply synchronous Teaching strategies in the delivery of the most essential learning competencies as this will help improve the learning performance of the learners and could be the way to find the potentials of each of the learner inside the four corners of the classrooms.
4. Based from the results of the study, teachers should continue to adopt and integrate synchronous teaching strategies to maintain or improve the performance for those learners who are really need help in improving skills.

5. Teachers should share the results of the study on how the intervention give positive effects to the life of the learners as well as to the teachers and make a demonstration teaching during LAC sessions in order for them to be more familiar on how implement the intervention.
6. In relation to the abovementioned, the researcher is giving the authority to the future researcher to conduct the same study to validate the significant findings of the study.

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