

SIMS as Intervention in Enriching the Teaching of Fundamental Operations in Mathematics: An Action Research

Glen Mary A. Segarino*, Jane C. Labisig,
Lovella S. Calmerin, Cyril A. Cabello

For affiliations and correspondence, see the last page.

Abstract

Quasi-experimental research with pretest and posttest design was conducted to investigate the effectiveness of the Strategic Instructional Material (SIM)-based teaching in ameliorating the mastery level of fourth grade learners of Camanjac Elementary School. Two groups were created, namely: a) control group and b) the experimental group. There were 12 learners in each group and the second group were exposed to SIM-based teaching and the other won't. Study findings disclosed that majority of both groups had very low scores in the pretest, and the latter group had great increase in their scores while the former group had a very slight change in the scores of their posttest. Additionally, both groups showed a considerable mean improvement from the pretest to the posttest, demonstrating the critical role that SIM play in the teaching-learning process. The experimental group acquired higher mean gain than the controlled group and had a Very High perception towards the use of SIM in the teaching of Fundamental Operations in Mathematics. The study concluded that SIM-based teaching is an effective intervention in improving the mastery level of students in the concepts of Fundamental Operations in Math. Furthermore, the researchers recommend the use of SIM for remediation where all teachers put more of an emphasis on the teaching and learning process and by incorporating interventions that the students enjoy. School administrators should concentrate on remediation programs and instructional intervention plans to avoid problems with fundamental mathematical abilities in children and constructing SIMs not only on least mastered skills but also on all skills covered by the lesson.

Keywords: Strategic Intervention, Material, Remediation, Intervention, Improvement Of Mastery Level, Mathematical Operations

Introduction

Given that mathematics is considered as a significant and challenging subject, this characteristic needs to be emphasized in one of the integrated math's instruction systems. According to Cargnelutti (2017), it was usual for students to view mathematics as a difficult topic and for many of them to exhibit arithmetic anxiety in their daily lives outside of the classroom. Every learner must master all the basic knowledge like learning the four fundamental operations with the aid of various instructional materials such as Strategic Intervention Materials (SIM) which is a huge help for students to gain a better understanding of their lessons (Diaz & Dio, 2017). Strategic Intervention Materials (SIM), a type of 21st-century teaching and learning tool, can help a student who is struggling to comprehend mathematical concepts (Abuda et al. 2019).

This is a learning material that may help the learners in grasping important information and develop competency-based abilities that could not be developed in a traditional classroom, thus, improving their knowledge and skills on the said subject matter (Lazo & De Guzman, 2021). With the known effectiveness of the usage of SIMs as enhancement

material in improving the cognitive skills of the different types of learners, more seminars, and workshops on the principles of SIM construction must be done (Arpilleda, 2021). This study was conducted to demonstrate the efficacy of Strategic Intervention Material (SIM), an intervention that supports Grade 4 students at Camanjac Elementary School in mastering the four fundamental operations for the purpose of knowledge enrichment.

Due to the Corona Virus Disease Pandemic, which is a worldwide phenomenon, students worldwide are challenged in their academic performance (Aliyyah, 2020). As a result, teachers are forced to improvise to modify their lessons and teach students who are transitioning from a school setting to a home environment (Cabello, 2022). Teachers came to the idea to use an online platform, and some used the distance learning modality or the printed modules including the Strategic Intervention Methods (SIM) in delivering their lessons (Sinco, 2018). In the Philippines, one of the pandemic's affected countries, educational institutions such as the Department of Education (DepEd) have offered various types of distance learning modalities to ensure learners' learning continuity. The employment of SIM is an effective teaching method and means of raising student

achievement (Suarez & Casinillo, 2020).

Despite numerous objections to the start of classes this allows learning to continue for instruction across all disciplines with the assistance of the parents, community, and other stakeholders (Tus, 2021). Even with the problems encountered, teachers become creative in delivering lessons like printed modules, online classes, and such to deliver synchronous instructions where learning still takes place even not in a traditional setup (Contreras, 2018). Teachers in Negros Oriental, make sure to use different kinds of assessment strategies to modify the content and delivery based on the needs of the children including the learners with disabilities (Verano & Comighud, 2020).

Every educator wants their students to understand, apply, and master the material they have learned in class, but this is impossible if the students themselves have trouble understanding the math lessons. Because of this, educators must create their own unique inventions. One such innovation is the use of Strategic Intervention Materials as a remediation tool (Cerujano, 2019). Learning with the aid of strategic intervention materials can assist students in becoming successful learners (Cacay, 2021). According to Romero (2021), learners exhibited enthusiasm and were enjoying while learning as they go along with the SIM. This could mean that learners can achieve excellent performances (Cordova et al., 2019). The students can benefit from a variety of key learning opportunities, such as themes that are simple to understand, increased enthusiasm in learning math concepts, and eventual independence as learners (Adonis, 2020). The use of the SIMs intervention by the students had a considerable impact, and it was shown to be an excellent tool for helping students who were having trouble understanding what was being taught in class (Bonitez, 2021).

Most students perceive mathematics to be uninteresting, which causes them to be uninterested in the topic being discussed. Especially in the elementary and secondary levels, where it's critical to develop a positive study habit and a firm grasp of the key ideas. In today's educational climate, where the majority chooses the modular learning approach, teachers must be creative and patient enough to discover answers to the issues that students confront, wherein using Strategic Intervention Material (SIM) is useful in enhancing students' academic performance. (Acera, 2022). Given the issues we are currently facing because of the pandemic's aftereffects (Ando et al., 2022), schools must implement workshops, pieces of training, programs, and other initiatives to enhance the knowledge and abilities of all teachers in making Strategic Intervention Material (SIM) (Arpilleda, 2021). Additionally, it is advised that educators

implement effective interventions and programs in the classroom (Abucejo et al., 2022) and encourage students to use Strategic Intervention Materials (SIM) to improve their learning and memory (Diaz et al., 2020). Teaching mathematics content as a requirement initially and developing modules collectively are the methods that most teachers have used individually (Retnawati et al. 2018). Funds must be set aside by school officials for the creation and replication of SIMs for usage by their students (Alboruto, 2017).

To ascertain if the Grade 4 pupils at Camanjac Elementary School have improved in their grasp of the four fundamental operations, pre-test and post-test evaluations were completed as part of the quasi-experimental research design. The students will be divided into two groups: a) the experimental group (students that will be using the SIM) and b) the control group (non-SIM students). They will be chosen using purposive sampling. The data collected will be then interpreted and analyzed to know the effectiveness of the said intervention. The research's findings served as the foundation for advice on how to create teaching and learning methods that will improve students' learning outcomes and ultimately result in strong academic achievement (Limbago-Bastida & Bastida, 2022).

According to the DepEd Memorandum 117, Series of 2005, one of the materials designated by the Department of Education is Strategic Intervention Materials (SIM) to help students perform better across all disciplines. The strategic intervention materials aid students in acquiring skills they were unable to acquire in conventional classes. Given that learners learn differently, using Strategic Intervention (SIM) is a great help in giving a positive impact on the mastery of the least-learned competency of the learners.

Theoretical Underpinning

Mathematics is known to be a tough subject but with the mastery of basic knowledge could make it easier to deal with. That's why finding ways on how to strengthen the mastery of the learners is a huge challenge for educators especially today that the learners have been on limited face to face classes and need the assistance of the teachers.

However, this study introduces an intervention which is Strategic Intervention Material that may improve the existing issue and to clearly discuss the collaboration of this strategy to the phenomenon, a theory must be anchored. The study is bounded on Vygotsky's Scaffolding which stated that students are especially

reliant on assistance from teachers and peers. The phrase "scaffolding" refers to giving students the proper support they need to accomplish tasks that would have been too challenging for them to complete on their own. Scaffolding is a form of support that consists of both visible and audible words and pictures. It is a great technique to give students easily understandable material so that they can advance in learning but also, they will make improvement in their possession of understanding of the Math basics. To make the input much more understandable, students should be able to see an image of what the teacher is describing or the key words that the teacher is explaining when learning materials are being developed. This will also help to remove the affective filter that develops when students are afraid of or get bored when they understand very little in class.

Similar to this, Keller's Personalized System of Instruction (PSI) said that a learner needs adequate time and quality teaching resources to keep up with other students (Motamedi & Sumrall, 2000). PSI was initially developed as a classroom-based method of instruction with the goal of raising student accomplishment and displacing the long-standing practice in education of using positive consequences for learning.

Moreover, Curriculum Development Theory (CDT) of John Dewey about the use of support materials in which "students must be exposed to meaningful and relevant tasks that will allow them to apply the concept they are trying to understand" which is similar to Keller's PSI.

Therefore, instructional materials must work as a roadmap for learning, be individualized, self-paced, have meaningful and pertinent exercises, and offer something that motivates students to use their past knowledge or schema. The many stances or concepts of the aforementioned theories on learning and material development served as the foundation for the development of self-learning materials in all academic areas. Basically, listening, reading, speaking, and writing were the least-learned macro skills in primary school, which were the emphasis of the Strategic Intervention Materials.

Research Questions

This study determined the effectiveness of SIM in raising the degree of mastery of the four fundamental operations in the chosen group of Grade 4 public school pupils at Camanjac Elementary School. Further, this study elicited on relevant information to answer

the following questions

1. What are the pre-test results for the two groups of respondents?
 - 1.1. Controlled Group
 - 1.2. Experimental Group
2. What are the post-test results for the two groups of respondents?
 - 2.1. Controlled Group
 - 2.2. Experimental Group
3. Is there a significant difference between the pre-test and post-test scores of the controlled and experimental groups?

Literature Review

Our daily lives involve mathematics in some way or another. As an educator, one of the toughest subjects to teach in school is mathematics. When teaching these fundamental mathematical operations to fourth graders who have trouble grasping the topic, some teachers use Strategic Intervention Material (SIM). The four fundamental mathematical operations are multiplication, division, subtraction, and addition. The procedure was taught to the student at a lower grade level, but it wasn't fully ingrained in their minds, thus they had difficulty when they reached a higher grade. However, to target the student's ability to comprehend and apply the basic mathematical processes, teachers have taken the initiative to develop Strategic Intervention Materials (SIM).

According to Toquero (2020), Strategic Intervention Material becomes the teacher support materials to help students master their least-learned competencies. Students who struggled to comprehend the topic's premise are given it. It can help students with their responses and improves teachers' abilities to instruct their charges (Castalone, 2019). SIM remediates the student who has difficulty understanding the lesson and help them master the competency (Aranda et al. 2019). Compared to those who got education utilizing the traditional manner, students who used Strategic Intervention Materials (SIM) did better. (Balazo, 2021). It may be said that one thing that helps pupils do better in mathematics is the usage of strategic intervention materials (Ramos, 2019).

Students can master competency-based skills they couldn't learn in a regular classroom setting thanks to a tool called the Strategic Intervention Material (SIM) (Acuña et al. 2015). It is one strategy the Department of Education uses to raise student achievement (De Jesus 2019). Additionally, the department publishes

several memos for instructors receiving training in the creation of Strategic Intervention Materials (SIM). Strategic Intervention Materials is a project designed for the current blended learning system of education (Dimou, 2021). The project will serve as learning assistance for the student to get an active class discussion (De Roxas, 2019). The teacher will use an interactive whiteboard and a printer to give concrete activity sheets for students' output (Riconalla et al., 2022). This helps students study and enjoy their studies by providing them with appealing and useful printed materials (Cabello et al., 2022).

The strategic intervention materials concentrated on the least-mastered abilities and were plain, easy to grasp, and reproducible. Additionally, they ensured that the activities matched the tasks or objectives, kept them brief and to the point, and provided several activities so that the student would have plenty of chances to practice mastering the skill (Bahinting et al., 2022), a diversity of activities to accommodate to the different learning styles, and finally they made sure that the activities fit the tasks or objectives (Apiong, 2021).

According to Dumigsi and Cabrella (2019), developing SIMs can provide content that is extremely accurate in terms of appropriateness, lucidity, and mathematical concepts. The SIM may also be quite appropriate, beneficial, and ideal for potential consumers. The proficiency level of the students who were remediated using the SIM was “satisfactory”; while the students who didn’t give SIM as an intervention were described as “did not meet expectations.”

In the current health situation that we are facing today, there is a good chance that the COVID-19 pandemic has impacted pupils' mental health and well-being (Olleras et al., 2022). During this pandemic and even after the health crisis, interventions should be started to address the student's mental health needs (Egcas et al., 2021). According to Romero (2021), students showed passion and enjoyment while learning as they go along with the SIM. This may imply that students are capable of achieving exceptional results

Methodology

Research Design

This study used a mixed-method research design specifically an explanatory research design wherein the utilization of the SIM as strategy was assessed and

the data gathered was triangulated. This design is sequential wherein the gathering of the numerical data was first elicited then the qualitative analysis commenced.

Sampling Design

Population

There are 30 Grade Four pupils currently enrolled at Camanjac Elementary School selected as target population of the study as they are the one who is enrolled in Mathematics 4.

Setting

This study was conducted in Camanjac Elementary School, Camanjac Dumaguete City, Negros Oriental, Philippines. This school is chosen as it offers Mathematics subject to its clientele which is the focus of the study.

Choosing of Sampling Technique

This study employed the explanatory research design to assess the effectivity of Teacher-Made SIMs as an intervention in teaching fundamental operations in Mathematics among the respondents that will qualify. The researchers selected the pupils using a purposive sampling technique based on their academic achievement. Across the board, students' accuracy, and fluency in the four foundational operations were lacking. In this way, uncertainty of the study will be reduced as the target respondents that best suit to the inquiry is effectively settled. Further, this sampling technique keeps the data saturated. Utilizing the purposive sampling creates a systematic way of identifying different respondents within a sample size.

Determining of Sample Size

The indicated sample size of this study was 30 respondents in which they were fairly designated into two groups – 15 respondents for both control and experimental group.

Research Instruments

The researchers created a teacher-made Strategic Intervention Materials (SIM) that cover the four foundational mathematical operations to test the respondents' mastery level. This instrument was validated by the experts through content validation by Colton & Covert (2007) as cited by Cabello & Bonotan (2020). The instrument will evaluate what it is meant to be evaluated by doing this.

Respondents

There are 30 respondents in this study. These are all Grade 4 learners of Camanjac Elementary School, Camanjac Dumaguete City, Negros Oriental, Philippines. The study's respondents were rated among a group of 30 pupils. The first 30 were grouped into two for a) control and b) experimental group. After and in-between of the pretest and posttest, the respondents who were (1) enrolled in the academic year of 2022-2023, (2) attending the Grade 4 MATHEMATICS Class, and (3) willingly agreed to participate in the study.

Instruments

In the quantitative data, a pretest and posttest questionnaire created and produced by the researchers served as the instrument. According to Cabello & Bonotan (2021), this instrument underwent Colton & Covert's (2007) validation procedure. There were 20 items in both pretest and posttest, 5 items on every fundamental operation.

Data Collection

A letter was written and approved to obtain permission from the appropriate authority to collect data. For the data gathering, the researchers created a letter to obtain permission. After getting the approval from the School Head, the researcher-teacher began its observation in five days. Then a teacher-made Strategic Intervention Material will be presented to the respondents. After the learners get an intervention, a post-test will be performed to assess the difference in scores. The researcher will compile the data at the end of the week. Because the ratings from the pre- and post-tests were considered, the mean, standard deviation, and t-test for significant difference were used to precisely code, compute, and evaluate these data.

Data Analysis

In the Quantitative data analysis, the mean and standard deviation were utilized in the quantitative data analysis to classify the respondents and gauge how well the experimental and control groups performed. The T-test was used to determine whether there was a significant difference between the means of the pre-test and post-test for each group. In the Qualitative data analysis, the Colaizzi's descriptive phenomenological analysis was utilized.

Ethical Consideration

The Ten Principles on Ethical Considerations by Bryman and Bell (2007) were used in this

investigation; (1) it was clear that the research subjects had not been compromised and injured in any way; (2) demonstrating the importance of participants' respect for human dignity; (3) the participants' consent was won without the use of threats or coercion; (4) between the participants, there was no invasion of privacy; (5) the information collected from the participants was respected and handled with the utmost secrecy; (6) anonymity was observed among the participants and the organizations involved in the research investigation; (7) it was clear that the goals and objectives of the current investigation were achieved without deception or exaggeration of any kind; (8) if applicable, the document strongly stipulated the declaration of any supporter from different funding and financial engagement; (9) uprightness, morals, and lucidity were values applied in this research project in order to connect with, communicate with, and reach out to the participants in order to collect relevant data, (10) in providing the specifics of this investigation, there was neither bias nor objectivity.

Results and Discussion

The tables below provide a thorough explanation of the discussion and interpretations that follow the analysis and provide the answers to the research questions.

Table 1. *The Results of the Two Groups in Pretest*

Name	Pretest scores (Control Group)	Name	Pretest scores (Experimental Group)
Student 1	8	Student 16	8
Student 2	8	Student 17	7
Student 3	15	Student 18	8
Student 4	18	Student 19	6
Student 5	9	Student 20	12
Student 6	10	Student 21	7
Student 7	8	Student 22	6
Student 8	11	Student 23	15
Student 9	9	Student 24	10
Student 10	9	Student 25	12
Student 11	13	Student 26	6
Student 12	10	Student 27	9
Student 13	12	Student 28	4
Student 14	6	Student 29	13
Student 15	10	Student 30	8
Mean	10.4		8.73
SD	3.07		3.08

Table 1 contains scores of both control and experimental groups. The result shows that the highest score accumulated in the control group was 18 and the lowest score is 9 with an overall average of 10.67 and

a standard deviation of 3.14. On the other hand, experimental group got 15 as the highest and 6 as the lowest with a mean of 8.83 and a standard deviation of 2.89. This indicates that the students lack mastery of the four fundamental operations of mathematics based on the outcomes of the two groups' results. It is revealed that the academic performance of the students is greatly affected during the pandemic.

According to Maruyama and Igei (2022), more than 80% of elementary school students are not proficient in math fundamentals. This necessitates immediate action on the part of educators. Educators must be experts in both material and pedagogy, as well as be able to adapt to the demands of a technologically advanced society (Posamentier & Smith, 2020). The study of Kozuka (2018) suggest that students may learn mathematics more effectively in remedial activities after they have improved their basic computing skills. The outcomes for the two groups showed that these students only had a basic understanding of the four fundamental operations.

Table 2. *The Results of the Two Groups in Posttest*

Name	Posttest scores (Control Group)	Name	Posttest scores (Experimental Group)
Student 1	9	Student 16	14
Student 2	10	Student 17	14
Student 3	18	Student 18	14
Student 4	20	Student 19	12
Student 5	13	Student 20	18
Student 6	14	Student 21	13
Student 7	12	Student 22	12
Student 8	14	Student 23	20
Student 9	12	Student 24	15
Student 10	13	Student 25	17
Student 11	17	Student 26	11
Student 12	13	Student 27	13
Student 13	13	Student 28	10
Student 14	8	Student 29	18
Student 15	10	Student 30	16
Mean	13.07		14.47
Sd	3.31		2.85

It can be gleaned from Table 2 that both control and experimental groups has significant increase between the results of the pre-test and post-test in the experimental and control group. The result indicates that the highest score accumulated in the control group was 20 and the lowest score is 9 with an overall average of 13.75 and a standard deviation of 3.19. On the other hand, experimental group got 20 as the highest and 12 as the lowest with a mean of 14.7 and a standard deviation of 2.68. This demonstrates that by using SIM as an intervention during the discussion, the experimental group improved their academic

achievement.

The results showed that the pupils' performance improved from very low to high after being exposed to the intervention material. This also implies that the exercises offered in the course material aided in their comprehension and mastery of the four fundamental operations in mathematics. The claim that a learner can achieve a high level of understanding is supported by this. The new strategy being used, particularly using the Strategic Intervention Material, has the potential to improve students' academic achievement and attitude toward learning. Effective interventions are organized properly and are high intensity adapted to the students' achievement level (Schnepel & Aunio, 2022). It can be extrapolated that applying the new strategy was a little different from applying the traditional approach to instruction. The use of strategic intervention material, an educational tool for remediation, is one technique employed by the Department of Education to enhance academic performance of students performing badly in the subject of science, technology, and mathematics (Sison, 2021).

Table 3. *Pretest and Posttest Difference between Controlled Group and Experimental Group*

Group	n	df	t-value	p-value	Alpha	Interpretation	Remarks
Controlled Group	12	11	-2.38	0.01	0.05	Significant	Reject the Null Hypothesis
Experimental Group	12	11	-4.91	0.00	0.05	Significant	Reject the Null Hypothesis

Table 3 displays the major distinction between control and experimental groups' pretest and posttest scores. The table highlights the considerable differences between the two groups' test results, which is why both respondents' evaluations from the two groups show the importance of the findings from the grade 4 classes' pretest and posttest tests after using SIM.

Statistical findings revealed that there is a significant difference between the performance of the control and the experimental group. For the controlled group, the t-value is -2.38 and the p-value is 0.01. On the other hand, the t-value and p-value is -4.91 and 0.00 respectively for the experimental group. This entails that in the controlled and experimental group poses a big difference. This finding further suggests that strategic intervention materials had a positive impact on student learning, leading to higher grades.

The researchers credited the use of SIM in teaching math for the pupils' increased test scores. Subsequently, the null hypothesis is rejected. This means that there is a significant difference in the post-test performance of the control and experimental group. Additionally, because of this outcome, the strategic intervention material can now be regarded as a successful remedial approach for teaching mathematics classes at the primary level.

The researcher's conclusions corroborated those of the study of Sadsad (2022) where it supports that Strategic Intervention Materials, also known as SIM in the Philippine educational system, is one of the teaching resources that aids teachers in providing high-quality instruction by enabling them to address students' subpar academic performance. The goal of SIM is to support students' lifelong learning and comprehension of personalized learning experiences, not just their immediate need for the subject (Kitto, et al.,2020).

Qualitative Analysis

As shown in table 4 (*see appendix*), a lot of students considered SIM to be an effective tool for mastering the least-learned mathematical competencies. It has been discovered that SIM help students in understanding the process of solving using the fundamental operations since it enables them to review the lesson if they are unsure. To summarize, student's sentiments as reflected in Table 4 students have good and positive response towards the SIM as an intervention in teaching the fundamental operations in Math in Grade 4.

Perceived Usability

Strategic Intervention Material can be produced on a hard and soft copy making it easier to access by both teachers and learners. The purpose of SIM is to inspire students, to learn and pertain concepts and skills into real life situations. This suggests that SIM can be used as a teaching tool and instructional resource during the learning process (Suarez & Casinillo, 2020).

Student 5 cited that,

"Para nako, ganahan ko sa SIM kay maka usab pakog lantaw sa akong nalimtan nga maoy rason sa akong mga pagduha-duha. Akong balikan og lantaw kung giunsa namo to pag answer, labi na ang mga examples nga gihatag, mao na ang usa sa mga nindot kayo nga bahin sa paggamit aning SIM. Kinahanglan nakong lantawon usab ang SIM para makasiguro ko nga sakto ang akong mga tubag"

(For me, I like the SIM because I can also see what I have forgotten which is the cause of my doubts. I will look back at how we answered it, especially the examples given, that is one of the best parts of using this SIM. I need to look at the SIM as well so I can be sure that my answers are correct)

The ability to view again the lesson and to check their answers is supported by SIM as instructional support as mentioned by the Student 5 is considered effective tool for learning and enhances retention. This theme, perceived usability, permits learners to have an access on the lesson whenever they think they need to especially when they forgot the process or wants to look at the examples again and to check whether their answers are correct. With these, learners can enhance their academic performance because they can review the lesson at the same time being able to be relaxed that whenever they solve a particular item, they can easily check their answers at the back or at the end part of the SIM. The ideal educational environment today is one where students learn when they feel most comfortable while enjoying supplementing their individual needs.

Usefulness

Interventions can be extraordinarily advantageous aspect of school life. Using a structured intervention, teachers can quickly close development or achievement gaps in a key area. They can also see the obvious impact of their practice and share it with the child and their parents. SIM-based instruction is a more effective scaffold in enhancing students' performance (Gabucan & Sanchez2021).

Student 10 cited that,

"Nindot kaayo ang akong experience, labi na inig sulti na sa instructions. Muhunong ko kadyot para paglantaw usab kung unsa pasabot sa instructions. Ang SIM gamit kayo nako kay ang mga instructions gihaom nga pang Grade 4 gyud. Ang examples nga gihatag kay lain-lain og makalingaw. Ang guided activity kay sayon kayo humanon. Ang nakanindot sa SIM kay ma check nimo sa likod kung sakto ba akong answer or dili."

(My experience was very good, especially when it comes to the instructions. I will stop for a moment to look again at what the instructions mean. I will use the SIM because the instructions are suitable for Grade 4. The examples given are varied and entertaining. The guided activity is easy to finish. The nice thing about SIM is that you can check on the back if my answer is correct or not.)

This statement from the respondents demonstrated that SIM is very convenient to use with because of its nature that it can be produced through hard and soft copy for the students to have variance or choice of usage. Thus, this intervention can be of great help in making the lives of the learners conquer academic challenges. Strategic Intervention Material is a tool that gives assistance and support to students and teachers for an easy and accessible use and effective learning strategy.

Enjoyment

Students learned best when they are doing at the same time, they are enjoying what they are learning. When students enjoyed the activities and discussion, they tend to understand more of the lesson and have longer retention. When the learners engage through fascinating activities, it captures their curiosity by making the material pleasing to the eyes and can be encouraged to think more, do more, and learn more (Impas, 2021). SIM is a module that can be printed and be viewed on gadgets that contains puzzles, games, vivid illustrations, and concept map that is used to stimulate and stir up the interest and curiosity of the learners (Ondo, 2019). Through this process, the learners will enhance their performance in school.

Student 8 said that,

“Nalingaw ko ug answer sa SIM ky ang mga hulagway na gigamit daghan mang color. Duna pod mga drawing na prutas lami kaayo kan on. Naay cherries nga among kuhaan ug 3 pila man ang nabilin. Nya naa pod ice cream among gibahin ug 3 ang 12. Dali ra ko nakakuha dayon sa insakto nga answer.”

(I enjoyed answering SIM because the pictures used have many colors. There are also drawings of fruits that are very tasty. There are cherries that we will take 3 tell how many are left. We also had ice cream and we divided 12 by 3. I quickly got the correct answer.)

Student 8 has a satisfactory attitude towards the intervention given since it enables them to learn successfully and at the same time, they enjoyed doing it. Through the colors and art, the intervention was able to get the student's interest. Additionally, the respondent makes it very evident how having colorful and realistic images stimulates their interest and promotes flexible thinking.

The respondents' experiences learning the Fundamental Operations in Math using SIM as instructional support and how the tool drive them to achieve were best demonstrated by this theme. Thus, the theme of enjoyment is appropriate for usefulness

and efficacy in advancing the academic performance of learners especially in Math.

Conclusion

Based on the result of the study, the students' performance has significant increase upon the utilization of teacher-made Strategic Intervention Material. The null hypothesis has been rejected thus it has been proven that there is a significant difference between student performances in the pretest and post test results showing the effectiveness of the intervention used in Grade 4 students.

The study's findings led to the following recommendations: It is possible to improve the learners' mastery level by making all teachers put more of an emphasis on the teaching and learning process and by incorporating interventions that the students enjoy. School administrators should concentrate on remediation programs and instructional intervention plans to avoid problems with fundamental mathematical abilities in children. Based on previous research, future researchers may conduct comparable studies with new topics or respondents who have distinct characteristics.

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Affiliations and Corresponding Information

Glen Mary A. Segarino

Cebu Technological University
Moalboal Campus, Philippines

Jane C. Labisig

Cebu Technological University
Moalboal Campus, Philippines

Lovella S. Calmerin

Cebu Technological University
Moalboal Campus, Philippines

Cyril A. Cabello, PhD

Cebu Technological University
Moalboal Campus, Philippines

Table 4. Summary of Comments Collected from the Experimental Groups' Discussion

Theme	Authentic Experiences
Perceived Usability	<p>Student 5: <i>"Para nako, ganahan ko sa SIM kay maka usab pakog lantaw sa akong nalimtan nga maoy rason sa akong mga pagduha-duha. Akong balikan og lantaw kung giunsa namo to pag answer, labi na ang mga examples nga gihatag, mao na ang usa sa mga nindot kayo nga bahin sa paggamit aning SIM. Kinahanglan nakong lantawon usab ang SIM para makasiguro ko nga sakto ang akong mga tubag"</i></p> <p>(For me, I like the SIM because I can also see what I have forgotten which is the cause of my doubts. I will look back at how we answered it, especially the examples given, that is one of the best parts of using this SIM. I need to look at the SIM as well so I can be sure that my answers are correct)</p>
Usefulness	<p>Student 10: <i>"Nindot kaayo ang akong experience, labi na inig sulti na sa instructions. Muhunong ko kadyot para paglantaw usab kung unsa pasabot sa instructions. Ang SIM gamit kayo nako kay ang mga instructions gihaom nga pang Grade 4 gyud. Ang examples nga gihatag kay lain-lain og makalingaw. Ang guided activity kay sayon kayo humanon. Ang nakanindot sa SIM kay ma check nimo sa likod kung sakto ba akong answer or dili."</i></p> <p>(My experience was very good, especially when it comes to the instructions. I will stop for a moment to look again at what the instructions mean. I will use the SIM because the instructions are suitable for Grade 4. The examples given are varied and entertaining. The guided activity is easy to finish. The nice thing about SIM is that you can check on the back if my answer is correct or not.)</p>
Enjoyment	<p>Student 8: <i>"Nalingaw ko ug answer sa SIM ky ang mga hulagway na gigamit daghan mang color. Duna pod mga drawing na prutas lami kaayo kan on. Naay cherries nga among kuhaan ug 3 pila man ang nabilin. Nya naa pod ice cream among gibahin ug 3 ang 12. Dali ra ko nakakuha dayon sa insakto nga answer."</i></p> <p>(I enjoyed answering SIM because the pictures used have many colors. There are also drawings of fruits that are very tasty. There are cherries that we will take 3 tell how many are left. We also had ice cream and we divided 12 by 3. I quickly got the correct answer.)</p>