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# Effectiveness of Printed Strategic Intervention Materials (SIM) as Tool for Distance learning To Improve the Performance of Grade 6 Pupils in Math

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*Abstract*—Teaching materials is a common term used to describe the teacher's resources to deliver instruction. This can support the students' learning and increase students' success. Ideally, the teaching materials were designed to the content in which such are to be used, in consonance with the students' level and needs. Teaching materials come in many shape and sizes, but they all have in common the ability to support student learning. Teaching or instructional material plays a very important role in the teaching- learning process. It enhances the students' memory level and makes the teaching – learning process interesting (4,6). Strategic Intervention Material, an instructional material for remediation purposes is one of the solutions employed by the Department of Education to enhance academic achievements of students performing low in the field of science and technology and mathematics (2). During this pandemic, where some of the pupils had a hard time understanding the lessons in the module, this material is very useful to help improve their performance while learning at home. Thus, this study was formulated to determine the effectiveness of Printed Strategic Intervention Materials (PSIM) to improve the performance of the Grade 6 pupils in Math. It was revealed in this study that there is a significant difference in the pre-test and post-test performances of the Grade 6 pupils in Math. Moreover, it was concluded that printed strategic intervention material is effective in improving the performance of the pupils in Math. The proposed improvement plan is recommended.

*Keywords* — *Printed Strategic Intervention Materials, Performance, Distance Learning*

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## I. Introduction

Quality teaching depends not only on the teacher's knowledge and skills but also on the teacher's innovations and creativity. Every teacher has to continually innovate an intervention material as well as strategies to keep abreast with the trend of the students' needs and eventually enhance the quality of the teaching-learning process. Understanding the essence of instructional materials in the learning of the students is tantamount to a lesson well-delivered to the majority of

the students. Innovative teachers expose their students to different ways of learning, thus facilitating the diverse and unique learning styles and needs of the students.

When COVID-19 hit the Philippines, crisis in economy happened, development assistance comes under strain, and education financing faces major challenges and many other agencies were affected. Schools were closed and education of the children were put at stake. Unfortunately, COVID-19 brought not only the virus but this crisis has stimulated innovation within the education sector. Teachers and other school personnel think and crafted ways on how to make learning easier and accessible to all. Basic Education (BE)-Learning Continuity Plan (LCP) was crafted in order to address this new normal way of learning (3). Innovative approaches in support of education and training continuity: from radio and television to take-home packages is visible. Distance learning solutions were developed by governments and partners all over the world supporting education continuity, including the Global Education Coalition convened by UNESCO. During this time, essential role of teachers is reminded and that governments and other key partners have an ongoing duty of care to education personnel.

In almost four months of adopting distance learning, the modular distance learning modality, it was found out that among the subjects in Grade VI, most of the pupils struggled in answering the Math modules due to difficulty in understanding the concepts and most of the learning facilitators had little knowledge on the topics discussed in the modules. It was also observed during the 1<sup>st</sup> quarter assessment that some pupils were not able to master some of the skills in Math. Thus, this needs much attention by the teachers.

In this regard, teachers have to make innovations to address the problem. Some teachers crafted printed strategic intervention materials to supplement learners' learning on distance learning aside from the learning activity sheets and self-learning kits. By using these printed strategic intervention materials, the teachers can capitalize on the strengths and improve the students' self-advocacy skills. The function of education is to teach one to think intensively and critically. Intelligence plus character—that is the goal of real education.” (5).

Republic Act No. 10533, otherwise known as “Enhanced Basic Education Act of 2013”, section 5 of the curriculum development states that the production and development of locally produced teaching materials shall be encouraged, and approval of these materials shall devolve to the regional and division education units (7). Thus, the researcher decided to develop a teacher-made printed strategic intervention material to improve students' level of understanding of the least learned concepts in Math 6 and investigate its impact on pupils' academic performance on distance learning. According to Bunagan (1), Strategic Intervention Materials (SIMs) is an aid in re-teaching the least mastered topics and competencies that were not developed during regular classroom instruction.

In this premise, the researcher decided to conduct this study to determine the effectiveness of printed strategic intervention materials as tool in distance learning to improve the performance of Grade 6 pupils in Math. Findings of the study will be the basis in formulating an improvement

plan. In the aforementioned rationale, the researcher who is currently teaching in the above mentioned local would like to delve worthy research undertaking that will benefit the school she is currently teaching and that of her Graduate Program. This study determined the effectiveness of printed strategic intervention materials (SIM) as tool for distance learning to improve the performance of Grade 6 pupils in Math. Specifically, this study sought to answer the following questions:

1. What is the pre-test performance of the Grade 6 pupils in Math before using the print strategic intervention materials?
2. What is the post-test performance of the Grade 6 pupils in Math after using the print strategic intervention materials?
3. Is there a significant difference in the pre-test and post-test performances of the Grade 6 pupils in Math before and after using the print strategic intervention materials?
4. What improvement plan can be proposed based on the findings of this study?

## II. Methodology

**Design.** This study utilized the Quasi-Experimental research employing the pretest and posttest design to evaluates the effectiveness of printed strategic intervention materials (SIM) as a tool for distance learning to improve the performance of Grade 6 pupils in Math. Tugbong Central School, Kananga II District, Leyte Division is the main locale of the study. The 20 identified slow learners in Grade V enrolled in the current school year are the main respondents of the study. Teacher-made tests were utilized and administered before and after the intervention. This research is mainly focused on determining the significant difference in the pre-test and post-test performances of Grade 6 pupils in Math. A Proposed Improvement Plan based on the findings of the study is the output.

**Sampling.** There are 20 identified slow learners in Math involved in this study. A researcher-made test was administered through face-to-face interaction with consent from the Local IATF and strictly following the prescribed Health Protocol.

**Research Procedure.** The researcher prepared the research design and tools to be utilized in the study. Approval and recommendation from the Panel of Examiner of the Graduate Studies was sought. A letter request to conduct this study was forwarded to the Office of the Schools Division Superintendent. Upon approval, permission from the District Supervisor and School Head was secured before gathering data. Validation of the instruments through the School Head and District Supervisor was sought. The survey was pre-tested and undergone validation. The orientation of the participants by groups was done. Permission from the parents and Barangay was secured. Administering of the survey followed. After the pupils were able to answer the pre-test, checking and tallying of data. Printed Strategic Intervention Materials were distributed for six (6)

weeks then post-test was given. Data were tallied and submitted for statistical treatment. Analysis and Interpretation of Data. Making of Proposed Improvements.

**Ethical Issues.** The right to conduct the study strictly adhered through the approval of the Schools Division Superintendent of the Division, District Supervisor of the District and school principal. Orientation of the respondents was done using face to face modality. In the orientation, issues and concerns were addressed and consent to be included in the study were signed.

**Treatment of Data.** The Simple Percentage and Weighted Mean was employed to determine the pre-test and post-test results. t-Test of Mean Difference was used to determine the significant difference in the pre-test and post-test scores in Math.

### III. Results and Discussion

**Table 1**

**Pre-Test Performance of Grade 6 Pupils in Math (N=20)**

Score Range	Description	Grade 6	
		Frequency	%
25-30	Excellent	0	0
19-24	Very Good	1	5
13-18	Good	10	50
7-12	Fair	9	45
0-6	Poor	0	0
Total		20	100
<b>Weighted Mean</b>		<b>13.15</b>	<b>Good</b>

Table 1 presents the pre-test performance of Grade 6 pupils in Math. It was revealed on the table that the pre-test performance of the Grade 6 pupils in Math has weighted mean of 13.15 which is interpreted as good. This means that they get the scores ranges between 13-18 out of 30-item test conducted. This implies that based on their scores they need intervention to improve their performance in Math. Moreover, this table revealed that among the 20 pupil-respondents, 10 or

50% are good, 9 or 45% were fair while 1 or 5% was very good. It is evident on the table that most of them were not able to get the passing score or meet the 75% standard in order to pass the test. They need manipulative materials and other learning activities which will help them understand the lessons to enhance learning.

**Table 2**  
**Post-Test Performance of Grade 6 Pupils in Math (N=20)**

Score Range	Description	Grade 6	
		Frequency	%
25-30	Excellent	13	65
19-24	Very Good	6	30
13-18	Good	1	5
7-12	Fair	0	0
0-6	Poor	0	0
Total		20	100
<b>Weighted Mean</b>		<b>25.10</b>	<b>Excellent</b>

Table 2 presents the post-test performance of Grade 6 pupils in Math. It was revealed on the table that the post-test performance of Grade 6 pupils in Math has a weighted mean of 25.10 which is interpreted as excellent. This means that the Grade 6 pupils were able to achieve the 75% passing score after giving the intervention of using the print strategic intervention materials in Math as supplementary materials to improve their performance. This implies that the print strategic intervention materials are effective supplementary materials to improve the Grade 6 performance in Math and to attain mastery of the lesson. Moreover, it was revealed on the table that there are 13 pupils or 65% get an outstanding rating or they are the pupils who gets the score between 25-30 while 6 or 30% got a very good rating or with scores between 19-24 and only 1 or 5% got a good rating or with score between 13-18.

This implies that pupils learn best if they manipulate the materials. Strategic Intervention Materials (SIM) is a teaching tool where pupils are grouped to do the activity. Through collaborative learning using the SIM and interacting with peers makes the learning outcomes positive.

**Table 3**
**Test of Difference Between the Scores of Pre-test and Post-Test (N=20)**

Groups	Test Scores		p value	Level of Sig	Decision	Interpretation
<b>Grade 6</b>	Pre	13.15	0.00	0.05	Reject H <sub>0</sub>	Significant
	Post	25.10				

Table 3 presents the test of difference between the scores in the pre-test and post-test. It was revealed that the test of difference between the scores in the pre-test and post-test has a p value of 0.00 at .05 level of significance, so null hypothesis is rejected. This means that there is a significant difference between the scores in the pre-test and post-test. This implies that print strategic intervention material is an effective supplementary learning resource to improve the performance of Grade 6 pupils in Math. It was shown on the table that there is great increase from the pre-test mean of 13.10 to post-test of 25.10 weighted mean.

#### IV. Conclusion

The data revealed that there is significant difference between the scores of the pre-test and post-test performances of the Grade 6 pupils in Math. This means that Printed Strategic Intervention Materials (PSIM) is an effective tool in improving Grade 6 slow learners' performance. This is because PSIM can stimulate the learners' visual needs, materials are relatable, friendly, and easy to follow.

#### V. Recommendations

1. The Proposed Improvement Plan formulated should be utilized;
2. School Heads should provide technical assistance to the teachers in crafting the Print Strategic Intervention Materials (PSIM);
3. School Heads should conduct LAC session on how to construct and use Print Strategic Intervention Materials (PSIM) at home and in school;
4. Teachers should try to learn to construct Print Strategic Intervention Materials (PSIM) for classroom and home utilization especially in addressing the least learned skills;
5. Teachers should encourage parents to guide and assist their children while using the learning resources provided to them by the teachers during this time of pandemic;

6. School Heads should encourage teachers for further learning on ICT integration in teaching like joining the Microsoft Education and other IT related courses especially in the construction of PSIM in other subjects; and
7. Future researchers should replicate this study to include different locale, and include different variables aside from the mentioned in this study.

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## AUTHOR'S PROFILE



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The author was born on June 05, 1979 at Ormoc City. She completed her elementary education at Concepcion Elementary School Ormoc City and graduated in secondary education at Ormoc City High School, Ormoc City. She finished her Bachelor of Science in Home Technology in Palompon Institute of Technology, Palompon, Leyte. She is currently pursuing her Master's degree at Western Leyte College of Ormoc City.

She has been serving at the Department of Education for 18 years now. She is currently handling a position of Teacher III and presently assigned at Tugbong Central School, Kananga II District, Kananga, Leyte, teaching Grade 6 pupils. She attended series of trainings in the Division and District most specifically on teaching the Distance Learning Education. She was able to receive different awards and recognition of her exemplary performance in teaching.