

A Supplemental Worksheet in Teaching Mathematics 7

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Abstract

The study was primarily concerned with the utilization of supplemental worksheet in teaching mathematics 7.

Specifically, the study sought to answer the following questions: (1) What is the level of acceptability of the supplemental worksheet in terms of content with regards to objectives, analysis, activities and assessment; (2) What is the level of acceptability of the supplemental worksheet in terms of characteristics with regards to accuracy of materials, appropriateness of material, clarity of material and usability of material; (3) What is the level of the student's mathematical performance in terms of pre-test and post-test; (4) Is there a significant difference on the student's mathematical performance in terms of pre-test and post-test; (5) Is there a significant effect of using supplemental worksheet to the student's mathematical performance.

Findings revealed the following: (1) The majority of teachers who evaluated the supplementary worksheet found its contents which are objectives, analysis, activities and assessments to be highly acceptable. (2) Most of teachers who evaluated the supplementary worksheet found its characteristics which are accuracy, appropriateness, clarity and usability to be highly acceptable. (4) There is a significant difference in the student's mathematical performance in terms of pre-test and post-test. This mean that the mathematical performance of the students were improved after the use of supplemental worksheet, (5) It was also found out that there is no significant effect of using supplemental worksheet to the student's mathematical performance

On the basis of the foregoing findings and conclusion of the study, the following recommendations are offered: (1) The officials of the Department of Education may issue memorandum that will encourage teachers to develop supplemental worksheet as an intervention material to help the left - behind learners and maximize the teachers' potential in making more effective learning materials. (2) School heads and master teachers can include the making and implementation of more supplemental worksheet that uses a concept attainment strategy. (3) Teacher of asynchronous sessions may use these supplementary materials as a script in the teacher made video lesson. (4) The supplemental worksheet can be used by the learners at their own pace and time. They can enhance their knowledge and skills of their least - mastered competencies by using the developed intervention material (5) Future researcher may use the workbook in a larger number of respondents. They can also use the strategy in other mathematical topics and lessons. Future researcher may also use this study as their guide or reference for follow up and future studies.

Keywords: Supplemental Worksheet, Student's Mathematical, Performance, Acceptability, Objectives, Analysis, Activities, Assessment, Accuracy, Appropriateness, Clarity, Usability

1. Main text

Introduction

Teachers are the great sources of information about what students should learn. They are one of the first people actually believed in the learners and help them shape to be the people they are wanted for the future. Teachers are responsible to engage students to learn more in particular subject and engage them in educational goal for their future. For this premise, teachers should try to provide a good learning environment

and establish students' high level of interest in learning. To achieve this, a variety of motivation techniques, teaching strategies and materials are required. The appropriate selection and use of materials not only contribute to improve instruction and performance but also to increase interest in and enthusiasm for learning. Helping students locate materials of interest and at desired levels of difficulty is a key aspect to improving their level of immersion in available printed materials (Clark & Rumbold, 2012).

A key feature of effective teaching-learning process is the selection of instructional materials that meet the needs of students and fit the constraints of teaching and learning environment. The needs and uses of the instructional materials are regarded as very important factors for successful teaching and learning process.

Instructional material is a very important tool in teaching-learning process in a classroom situation. This is a form of textbooks, workbooks/worktext, reference text, the chalk and blackboard, computer-aided presentations and other materials that are important and useful during discussion and teaching. The most effective and important instructional materials are the textbooks, workbook/worktext, and reference test. These instructional materials contain all the topics that should be discussed in a particular course. These instructional materials should be curriculum bases and substantial for the purpose of teaching and learning of the students (Terano, 2015).

Worksheet is one of the most common learning materials that a teacher uses to practice and improve learning among students about their daily lesson. It provides opportunity for organizing numerous sequences of experiences to reflect special interest of the teacher and student. Further, they are favored because students can work directly, eliminating the need for loose leaf and copying questions from a textbook. From this claims, utilizing a supplemental worksheet in teaching Mathematics 7 is seen and perceived great help to the student.

Theoretical Framework

The study premised along the theories of: Cone of Experience Theory of Dale (1969), Reiguleth's (2009) Instructional Design, and "A Study of Thinking" by Jerome S. Bruner, Jacqueline J. Goodnow, and the late George A. Austin.

This study was based on the Cone of Experience Theory of Dale (1969) who states that learners retain more information by what they "do" as opposed to what is "heard" or "observed". The Cone was intended to describe various learning experience. Essentially, the Cone shows the progression experiences from most concrete (at the bottom) to the most abstract (at the top of the cone). This show that the students will be able to do each level of the Cone (the learning outcomes they will be able to achieve) relative to the type of activity they are doing (reading, hearing, viewing images, etc.). It is important to remember that this doesn't mean reading and listening are not valuable learning experiences, simply that "doing the real thing" can lead to the retention of the largest amount of information. To get the best results, instructional designers should mix approaches, balancing concrete and abstract experiences. It showcases how we can use a variety of materials and mediums to maximize learner experiences.

According to Reiguleth (2009), Instructional Design Theory is a twin pronged instrument for facilitating learning and human development. Contending that the methods of instructions and situations for learning are essential for learning to take place. Understanding the design of instruction and what is being learned in developing the skills needed to improve the quality of instruction. The modules cover the different kinds of learning, the invariant task, like rote memory, classification of concepts, using procedure, using principals, teaching for understanding, generic skills, like applicable skill, and attitudes. The research has lead educators towards chunking information be learned into smaller parts and scaffolding concepts.

Jerome S. Bruner, Jacqueline J. Goodnow, and the late George A. Austin developed the idea of concept attainment in their book "A Study of Thinking". The study focuses on how the definitions of some mathematical concepts vary from one another. Accordingly, Three sessions where done. The first and the last session include individual work or the paper and pencil test. The second session is a group discussion where students give their own meaning about concepts. The research found out that there is a sudden change of how

an individual define a concept. From this, the researcher thinks of a strategy that can be applied in teaching Geometry to the students in a more effective way. The researcher read studies saying that concept attainment strategy is one of the effective way to enhance the conception of the students.

There are many factors that affect the learning of the students. The ability of the students to conceptualize topics from the given is a good determinant that they are willing to learn. The fact that the concept plays a significant role in Mathematics means that it should be one of the main focus of the teacher in the beginning of the lesson. Some studies revealed the value of using instructional material such as worksheet that has proven the benefits of adjusting to the nature of the learners. From these, the researcher conceptualized that utilizing a teacher made supplemental worksheet using Concept Attainment Strategy in teaching Mathematics 7 will greatly help the students and also the teachers.

Statement of the Problem

This research focused on the utilization of supplemental worksheet in teaching Mathematics 7. Specifically, the study sought to answer the following questions:

1. What is the level of acceptability of the supplemental worksheet in terms of content with regards to:
 - 1.1 Objectives;
 - 1.2 Analysis;
 - 1.3 Activity; and
 - 1.4 Assessment?
2. What is the level of acceptability of the supplemental worksheet in terms of characteristics with regards to:
 - 2.1 Accuracy of Material;
 - 2.2 Appropriateness of Material;
 - 2.3 Clarity of Material; and
 - 2.4 Usability of Material?
3. What is the level of the student's mathematical performance in terms of:
 - 3.1. pre-test
 - 3.2 post-test?
4. Is there a significant difference on the student's mathematical performance in terms of:
 - 4.1. pre-test; and
 - 4.2. post-test?
5. Is there a significant effect of using supplemental worksheet to the student's mathematical performance?

Research Methodology

The Quasi-experimental Research Design method of research was used in this study. This research design is suitable for this study because the researcher conducted a pre-test and post-test in collecting data. The collected data was compared if there is a significant difference between the two. Moreover, Choueiry (2021) elucidated that the outcomes of the pre-intervention and post-intervention measurements are compared to evaluate the effect of the independent variable on the dependent variable.

The researcher utilized a developed supplemental worksheet in teaching selected topics in Mathematics 7 that help the students to master concepts. The result of the pre-test and post-test was compared to determine whether there is a significant difference in the score of the students before and after the use of the worksheet.

The participants are not randomly chosen because of the difficulty of the education system in the Philippines due to the pandemic. A heterogeneous group of Grade 7 students enrolled in Pagsanjan Integrated

National High School using a modular mode of learning.

Using a quasi-experimental research design allows the researcher to manipulate the independent variable as well as the treatment and the conditions that the participants are assigned to before measuring the dependent variable.

The respondents were chosen using convenient sampling in which the researcher chooses a section of Grade 7 in Pagsanjan National High School. Those students are the most appropriate respondents who can give the pertinent data or information for the study.

The respondents of the study were forty two (42) heterogeneous Grade 7 students of Pagsanjan National High School for the school year 2021 -2022. There are no groupings involved since the study emphasized on the individual performance. It also focused on the utilization of a teacher made supplemental worksheet in teaching Mathematics 7.

The following served as the instrument and medium for the research:

Questionnaire (Pre-Test and Post-Test). Pretest and posttest was utilized to gather information about the Mathematical Performance of Grade 7 students. The questionnaire was used as the main data gathering instrument for this study. The questions in the instrument were divided based on the cognitive process dimension as seen on the table of specifications. The questionnaire for both the pre-test and the post-test consists of thirty (30) questions multiple choice questions, the topics included in the questions were based from the Most Essential Learning Competencies.

Google Forms. Google form is widely used as an alternative way of conducting survey especially with the ongoing pandemic. Included in the Google form is a link where the respondents can access the developed material and the survey questionnaire.

Survey Form (Likert Scale). A 5-point Likert Scale Survey questionnaire for the level of acceptability of the developed supplemental worksheet in teaching Mathematics 7 was used. The criteria evaluated by the respondents were divided into parts. The first part is the content of the supplemental worksheet which is divided into objectives, analysis, activities and assessment. The second part is the characteristics of the supplemental worksheet with regards to accuracy, appropriateness, clarity and usability.

Results and Discussion

Level of Acceptability of the Supplemental Worksheet in Terms of Content

The respondents assessed the acceptability level of the content of supplemental worksheet in teaching Mathematics 7 with regards to objectives, analysis, activities and assessment as revealed in the following table, which shows the average mean, standard deviation, and verbal interpretation.

Table 1. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Objectives

<i>The objectives of supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...are specific and attainable</i>	4.68	.53	Strongly Agree
<i>...are relevant, clear and simple.</i>	4.65	.53	Strongly Agree
<i>...are compatible with its content.</i>	4.50	.64	Strongly Agree
<i>...describe what the students will do to demonstrate learning.</i>	4.48	.68	Strongly Agree
<i>...are sufficiently challenging to the learners.</i>	4.53	.64	Strongly Agree

Overall Mean = 4.57

Standard Deviation = 0.52

Remarks = Strongly Agree

Table 1 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Objectives. Among the statement below, “The objectives of supplemental worksheet are specific and attainable” got the highest mean score of 4.68 and standard deviation of 0.53 and with a remarked of Strongly Agree. This is followed by “The objectives of supplemental worksheet are relevant, clear and simple.” with a mean score of 4.65 and a standard deviation of 0.53 and with a remarked of Strongly Agree. The third highest statement “The objectives of supplemental worksheet are sufficiently challenging to the learners.” has a mean score of 4.53 and standard deviation of 0.64 and with a remarked of Strongly Agree. It is also been observed that the statement “The objectives of supplemental worksheet are compatible with its content.” has a mean of 4.50 and standard deviation of 0.64 with a remarked of Strongly Agree. Lastly, “The objectives of supplemental worksheet describe what the students will do to demonstrate learning.” received the lowest mean score of 4.48 and standard deviation of 0.68 with a remarked of Strongly Agree.

Overall, the level of the supplemental worksheet in teaching Mathematics 7 in terms of Objectives attained a mean score of 4.57 and a standard deviation of 0.52 and was Highly Acceptable among the respondents.

Table 2. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Analysis

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...provides questions that develop the students' higher-order thinking skills.</i>	4.23	.89	Strongly Agree
<i>...is arranged in a logical and orderly manner.</i>	4.63	.59	Strongly Agree
<i>...provides adequate exercises suitable to the level of the users.</i>	4.53	.78	Strongly Agree
<i>...provides mastery on the topics included.</i>	4.50	.68	Strongly Agree
<i>...develops the mathematical skills of the learners.</i>	4.68	.53	Strongly Agree
Overall Mean = 4.51			
Standard Deviation = 0.55			
Remarks = Strongly Agree			

Table 2 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Analysis. The first statement “The supplemental worksheet provides questions that develop the students’ higher-order thinking skills.” has a mean of 4.23 and a standard deviation of 0.89 and with a remarked of Strongly Agree. The second statement “The supplemental worksheet is arranged in a logical and orderly manner.” got a mean of 4.63 and a standard deviation of 0.59 with a remarked of Strongly Agree. The third statement “The supplemental worksheet provides adequate exercises suitable to the level of the users.” has a mean of 4.53 and a standard deviation of 0.78 and with a remarked of Strongly Agree. The fourth statement “The supplemental worksheet provides mastery on the topics included.” has a mean of 4.50 and a standard deviation of 0.68 and with a remarked of Strongly Agree. The last statement “The supplemental worksheet develops the mathematical skills of the learners.” got a mean of 4.68 and a standard deviation of 0.53 and with a remarked of Strongly Agree.

The overall mean value of 4.51 and a standard deviation of 0.55 revealed that the supplemental worksheet in teaching Mathematics 7 was highly acceptable in terms of Analysis.

Table 3. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Activities

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...creates motivation for the learners to become actively involved in the learning process.</i>	4.65	.58	Strongly Agree

<i>...provides an opportunity for the development/ enhancement of mathematical skills.</i>	4.60	.55	Strongly Agree
<i>...reinforces the mastery of the concept.</i>	4.40	.81	Strongly Agree
<i>...answers the expected outcome of the objectives.</i>	4.58	.68	Strongly Agree
<i>...helps and motivates students to express their work independently.</i>	4.35	.53	Strongly Agree

Overall Mean = 4.52

Standard Deviation = 0.58

Remarks = Strongly Agree

Table 3 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Activities. Among the statement below, “The supplemental worksheet creates motivation for the learners to become actively involved in the learning process.” got the highest mean score of 4.65 and standard deviation of 0.58 and with a remarked of Strongly Agree. This is followed by “The supplemental worksheet provides an opportunity for the development/ enhancement of mathematical skills.” with a mean score of 4.60 and a standard deviation of 0.55 and with a remarked of Strongly Agree. The third highest statement “The supplemental worksheet answers the expected outcome of the objectives.” has a mean score of 4.58 and standard deviation of 0.68 and with a remarked of Strongly Agree. It is also been observed that the statement “The supplemental worksheet reinforces the mastery of the concept.” has a mean of 4.40 and standard deviation of 0.81 with a remarked of Strongly Agree. Lastly, “The supplemental worksheet helps and motivates students to express their work independently.” received the lowest mean score of 4.35 and standard deviation of 0.53 with a remarked of Strongly Agree.

Overall, the level of the supplemental worksheet in teaching Mathematics 7 in terms of Activity attained a mean score of 4.52 and a standard deviation of 0.58 and was Highly Acceptable among the respondents.

Table 4. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Assessment

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...help increases understanding and retention of the topic covered.</i>	4.70	.56	Strongly Agree
<i>...measures the objectives that the students need to achieve.</i>	4.58	.55	Strongly Agree
<i>...covers the important competencies to be developed.</i>	4.65	.62	Strongly Agree
<i>...has provisions for self-assessment.</i>	4.10	.96	Strongly Agree
<i>...makes clear what the students must do to provide a high-quality response.</i>	4.33	.83	Strongly Agree

Overall Mean = 4.47

Standard Deviation = 0.55

Remarks = Strongly Agree

Table 4 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Analysis. The first statement “The supplemental help increases understanding and retention of the topic covered.” has a mean of 4.70 and a standard deviation of 0.56 and with a remarked of Strongly Agree. The second statement “The supplemental worksheet measures the objectives that the students need to achieve.” got a mean of 4.58 and a standard deviation of 0.55 with a remarked of Strongly Agree. The third statement “The supplemental worksheet covers the important competencies to be developed.” has a mean of 4.65 and a

standard deviation of 0.62 and with a remarked of Strongly Agree. The fourth statement “The supplemental worksheet has provisions for self-assessment.” has a mean of 4.10 and a standard deviation of 0.96 and with a remarked of Strongly Agree. The last statement “The supplemental worksheet makes clear what the students must do to provide a high-quality response.” got a mean of 4.33 and a standard deviation of 0.83 and with a remarked of Strongly Agree.

Overall, the level of the supplemental worksheet in teaching Mathematics 7 in terms of Assessment attained a mean score of 4.47 and a standard deviation of 0.55 and was remarks as Highly Acceptable among the respondents.

Level of Acceptability of the Supplemental Worksheet in terms of Characteristics

The respondents assessed the acceptability level of the characteristics of supplemental worksheet in teaching Mathematics 7 with regards to accuracy of material, appeal to the target user, clarity of material and usability of material as revealed in the following table, which shows the average mean, standard deviation, and verbal interpretation.

Table 5. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Accuracy of Material

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...help increases understanding and retention of the topic covered.</i>	4.25	.81	Strongly Agree
<i>...measures the objectives that the students need to achieve.</i>	4.58	.59	Strongly Agree
<i>...covers the important competencies to be developed.</i>	4.55	.64	Strongly Agree
<i>...has provisions for self-assessment.</i>	4.48	.75	Strongly Agree
<i>...makes clear what the students must do to provide a high-quality response.</i>	4.38	.77	Strongly Agree

Overall Mean = 4.45

Standard Deviation = 0.49

Remarks = Strongly Agree

Table 5 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Accuracy of Material. Among the statement below, “The supplemental worksheet measures the objectives that the students need to achieve.” got the highest mean score of 4.58 and standard deviation of 0.59 and with a remarked of Strongly Agree. This is followed by “The supplemental worksheet covers the important competencies to be developed.” with a mean score of 4.55 and a standard deviation of 0.64 and with a remarked of Strongly Agree. The third highest statement “The supplemental worksheet has provisions for self-assessment.” has a mean score of 4.48 and standard deviation of 0.75 and with a remarked of Strongly Agree. It is also been observed that the statement “The supplemental worksheet makes clear what the students must do to provide a high-quality response.” has a mean of 4.38 and standard deviation of 0.77 with a remarked of Strongly Agree. Lastly, “The supplemental worksheet help increases understanding and retention of the topic covered.” received the lowest mean score of 4.25 and standard deviation of 0.81 with a remarked of Strongly Agree.

Overall, the level of the supplemental worksheet in teaching Mathematics 7 in terms of Accuracy of Material attained a mean score of 4.45 and a standard deviation of 0.49 and was Highly Acceptable among the respondents.

Table 6. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Appropriateness of Material

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...provides activities suitable to the objectives of each lesson.</i>	4.40	.67	Strongly Agree
<i>...presents lessons that are based on real-life context.</i>	4.45	.55	Strongly Agree
<i>...includes objective exercises that assess the level of knowledge of the target learners.</i>	4.33	.97	Strongly Agree
<i>...contains suitable, interesting, and up-to-date topics.</i>	4.35	.83	Strongly Agree
<i>...takes into consideration the varying activities and capabilities of the learner.</i>	4.30	.85	Strongly Agree

Overall Mean = 4.37

Standard Deviation = 0.61

Remarks = Strongly Agree

Table 6 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Appropriateness of Material. The first statement "The supplemental provides activities suitable to the objectives of each lesson." has a mean of 4.40 and a standard deviation of 0.67 and with a remarked of Strongly Agree. The second statement "The supplemental worksheet presents lessons that are based on real-life context." got a mean of 4.45 and a standard deviation of 0.55 with a remarked of Strongly Agree. The third statement "The supplemental worksheet includes objective exercises that assess the level of knowledge of the target learners." has a mean of 4.33 and a standard deviation of 0.97 and with a remarked of Strongly Agree. The fourth statement "The supplemental worksheet contains suitable, interesting, and up-to-date topics." has a mean of 4.35 and a standard deviation of 0.83 and with a remarked of Strongly Agree. The last statement "The supplemental worksheet takes into consideration the varying activities and capabilities of the learner." got a mean of 4.30 and a standard deviation of 0.85 and with a remarked of Strongly Agree.

The overall mean value of 4.37 and a standard deviation of 0.61 revealed that the supplemental worksheet in teaching Mathematics 7 was highly acceptable in terms of Appropriateness of Materials

Table 7. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Clarity of Material

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...concepts are easy to understand.</i>	4.45	.55	Strongly Agree
<i>...has adequate margin, legible and reliable content.</i>	4.45	.75	Strongly Agree
<i>...has a font that is readable and can be easily recognized.</i>	4.38	.81	Strongly Agree
<i>...layouts and examples are attractive.</i>	3.90	1.13	Strongly Agree
<i>...presentation and definition are very easy to understand.</i>	4.28	1.01	Strongly Agree

Overall Mean = 4.29

Standard Deviation = 0.61

Remarks = Strongly Agree

Table 7 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Clarity of Material. The first statement “The supplemental help concepts are easy to understand.” has a mean of 4.45 and a standard deviation of 0.55 and with a remarked of Strongly Agree. The second statement “The supplemental worksheet has adequate margin, legible and reliable content.” got a mean of 4.45 and a standard deviation of 0.75 with a remarked of Strongly Agree. The third statement “The supplemental worksheet has a font that is readable and can be easily recognized.” has a mean of 4.38 and a standard deviation of 0.81 and with a remarked of Strongly Agree. The fourth statement “The supplemental worksheet layouts and examples are attractive.” has a mean of 3.90 and a standard deviation of 1.13 and with a remarked of Strongly Agree. The last statement “The supplemental worksheet presentation and definition are very easy to understand.” got a mean of 4.28 and a standard deviation of 0.61 and with a remarked of Strongly Agree.

Overall, the level of the supplemental worksheet in teaching Mathematics 7 in terms of Usability of Material attained a mean score of 4.29 and a standard deviation of 0.61 and was Highly Acceptable among the respondents.

Table 8. Level of Acceptability of the Supplemental Worksheet in Terms of Content with Regards to Usability of Material

<i>The supplemental worksheet . . .</i>	MEAN	SD	REMARKS
<i>...provides tasks that sharpen the target learner's mathematical skills.</i>	4.33	.73	Strongly Agree
<i>...contains problems that are relevant to the target learners' personal experiences.</i>	4.35	.77	Strongly Agree
<i>...can accommodate all types of learners.</i>	4.33	.73	Strongly Agree
<i>...illustrates real – life experiences that can be a basis for comprehension.</i>	4.43	.71	Strongly Agree
<i>...can be a supplement for students finding the topic difficult.</i>	4.48	.72	Strongly Agree
<i>Overall Mean = 4.38</i>			
<i>Standard Deviation = 0.63</i>			
<i>Remarks = Strongly Agree</i>			

Table 8 illustrates the level of the supplemental worksheet in teaching Mathematics 7 in terms of Usability of Material. Among the statement below, “The supplemental worksheet can be a supplement for students finding the topic difficult.” got the highest mean score of 4.48 and standard deviation of 0.72 and with a remarked of Strongly Agree. This is followed by “The supplemental worksheet illustrates real – life experiences that can be a basis for comprehension.” with a mean score of 4.43 and a standard deviation of 0.71 and with a remarked of Strongly Agree. The third highest statement “The supplemental worksheet contains problems that are relevant to the target learners’ personal experiences.” has a mean score of 4.35 and standard deviation of 0.77 and with a remarked of Strongly Agree. It is also been observed that the statement “The supplemental worksheet can accommodate all types of learners.” has a mean of 4.33 and standard deviation of 0.73 with a remarked of Strongly Agree. Lastly, “The supplemental worksheet provides tasks that sharpen the target learner’s mathematical skills.” received the lowest mean score of 4.33 and standard deviation of 0.73 with a remarked of Strongly Agree.

The overall mean value of 4.38 and a standard deviation of 0.63 revealed that the supplemental worksheet in teaching Mathematics 7 was highly acceptable in terms of Usability of Materials.

The result is supported by Cottler (2005), the usability of learning environment is defined as the way a user actually navigates, finds information, and interacts with the learning materials

The significant difference in the Mathematics performance of grade 7 in terms of pre – test and post – test is presented in table 10. It displays the mean, the mean difference of pre-test and post – test, the computed

value, the tabular value and the remarks.

Table 9. Level of Student's Mathematical Performance in Terms of Pre-test

Score	Frequency	Relative Frequency (in %)	Remarks
26-30	0	0%	Outstanding
21-25	0	0%	Very Satisfactory
16-20	9	21.53%	Satisfactory
11-15	17	40.47%	Fair
10 and below	16	38.10%	Poor
Total	42	100 %	

Overall Mean = 12.00

Standard Deviation = 3.35

Verbal Interpretation = Fair

Table 9 shows that there are no students scored 21-25 and 26-30 which is 0 or 0% under the level of Outstanding, 9 or 21.53% of them scored from 16 to 20 under the level of Satisfactory, 17 or 40.47% of them scored from 11 to 15 under the level of Fair, and, 16 or 38.10% of them scored from 0 to 10 under the level of Poor.

The overall mean of 12.00 with standard deviation of 3.35 reveals that the level of student's mathematical performance in terms of pre-test of the Grade 7 students was "Fair".

Table 10. Level of Student's Performance in Algebra In Terms of Post-test

Score	Frequency	Relative Frequency (in %)	Remarks
26-30	11	26.19%	Outstanding
21-25	14	33.33%	Very Satisfactory
16-20	11	26.19%	Satisfactory
11-15	6	14.29%	Fair
10 and below	0	0%	Poor
Total	42	100 %	

Overall Mean = 21.64

Standard Deviation = 4.45

Verbal Interpretation = Very Satisfactory

Table 10 shows that there are 11 student scored 26-30 which is 26.19 under the level of Outstanding, 14 or 33.33% of them scored from 21 to 25 under the level of Very Satisfactory, 11 or 26.19% of them scored from 16 to 20 under the level of Satisfactory, 6 or 14.29% of them scored from 11 to 15 under the level of Fair, and, 0 or 0% of them scored from 0 to 10 under the level of Poor.

The overall mean of 21.64 with standard deviation of 4.45 reveals that the level of student's mathematical performance in terms of pre-test of the Grade 7 students was "Very Satisfactory".

Table 11. Difference on the Student's Mathematical Performance in Terms of Pre-test and Post-test

Test	Mean	Difference	t - Value	P - value $p < 0.05$	Verbal Interpretation
Pre-test	12.00	9.64	16.50	0.00	Significant
Post - test	21.64				

Table 11 shows that the computed value ($t = 16.50$, $p = 0.00$) is less than alpha at 0.05 level of significance which signifies that there is a significant difference between the pre-test and post – test scores in

the level of performance as reflected in the difference between the pre – test and post -test scores which is 9.64. Since that the difference between the pre -test and post – test is significant, the hypothesis that there is no significant difference between the Mathematics performance of grade 7 learners in terms of pre – test and post – test after using the supplemental worksheet is rejected. This means that the utilization of the supplemental worksheet was effective in remediating the least – mastered competencies and it enhances the learning of the learners in Mathematics.

Table 12. Test of Significant Effect of Using Supplemental worksheet to the Student's Mathematical Performance in terms of Content

Contents	Performance of Students	Computed t-value	p-value	Analysis
Objectives		-0.381	0.705	Not significant
Analysis		1.709	0.096	Not significant
Activities		-1.686	0.101	Not significant
Assessment		-0.902	0.373	Not significant

$$\alpha = 0.05$$

Table 12 shows the effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students in terms of its content. The data were statistically treated using regression analysis. The following shows estimation for mean, mean difference, standard deviation, p-value, and its remarks.

The test of significant effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students in terms of content shows a computed value of (t-value = -0.0381; $p > .05$) for objectives, (t-value=-1.686; $p > .05$) for analysis, (t-value=-2.609; $p > .05$) for activities, and (t-value=-0.902; $p > .05$) for assessment which are all interpreted as Not Significant.

Based on the data, it is shown that there is no significant effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students in terms of its content at 0.05 level of significance. It shows that the null hypothesis "There is no significant effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students of Pagsanjan Integrated National High School" is being accepted.

Table 13. Test of Significant Effect of Using Supplemental Worksheet to the Student's Mathematical Performance in terms of Characteristics

Characteristics	Performance of Students	Computed t-value	p-value	Analysis
Accuracy		0.424	0.675	Not significant
Appropriateness		0.497	0.622	Not significant
Clarity		-0.080	0.937	Not significant
Usability		-1.153	0.258	Not significant

$$\alpha = 0.05$$

Table 13 shows the effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students in terms of its characteristics. The data were statistically treated using regression analysis. The following shows estimation for mean, mean difference, standard deviation, p-value, and its remarks.

The test of the effect between the characteristics of video tutorials to the students' performance in Mathematics 8 shows a computed value of (t-value= 0.424; $p > .05$) for accuracy, (t-value=-0.497; $p > .05$) for appropriateness, (t-value=-0.080; $p > .05$) for clarity, and (t-value=-1.153; $p > .05$) for usability.

Based on the data, it is shown that there is no significant effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students in terms of its characteristics at 0.05 level of significance. It shows that the null hypothesis "There is no significant effect of using supplemental worksheet to the Mathematical Performance of the 7th grade students of Pagsanjan Integrated National High School" is being accepted.

Summary of Findings

Different significant points were found after the conduct of the research. Based on the different findings of the study, the following findings are hereby enumerated based on the statement of the problem:

1. Acceptability Level of the supplemental worksheet in terms of content

Most of the teachers who evaluated the supplemental worksheet highly accepted its content with regards to objectives, analysis, activities, and assessment. Teachers strongly agreed that learning objectives are specific and attainable; provides questions that develop the students' higher order thinking skills; creates motivation for the learners to become actively involved in the learning process; and help increases understanding and retention of the topic covered.

2. Acceptability Level of the supplemental worksheet in terms of content

Most of the teachers who evaluated the supplemental worksheet highly accepted its characteristics with regards to accuracy, appropriateness, clarity and usability. Teachers strongly agreed that it provides topics that are well arranged in sequence of understanding; presents lessons that are based on real-life context; has adequate margin, legible and reliable content; and provides tasks that sharpen the target learner's mathematical skills.

3. Level of the Student's performance in Mathematics 10

The pre-test level of the respondents before using the supplemental worksheet in Mathematics 7 have a Fair remarks with some of the topics such as the Basic Concepts in Geometry, Angle, Polygon, Triangle, Quadrilateral and Circle. The students at this stage acquire a minimum level of knowledge and core understanding about the selected topics in Mathematics 7. After using the student learning packet, the post-test level became Very Satisfactory. This means that their before the use of the worksheet, the students only have a little understanding about concepts and theories. But after they use the material, they have exceeds the core requirements and can transfer their understanding about Geometry.

4. Test on the Significant Difference of the Student's Mathematical Performance in Mathematics 7 in terms of Pre Test and Post Test

It was found out that there was a significant difference in the student's performance in terms of pre-test and post-test of the Grade 7 students before and after the used of the material. The study shows that supplemental worksheet helped the students in ensuring a better performance after the competencies were met in this New Normal Education. The level of significance ($p < .05$) indicated that there is a significant difference between the pre-test and post-test scores in math performance.

5. Test on the Significant Effects of Using Supplemental Worksheet to the Student's Mathematical Performance

The Supplemental Worksheet was not observed to have any significant effect to the mathematical performance of the students based on the content and characteristics of the material. This is suggested from the computed p-values for all tests which were greater than the significance alpha 0.05, hence the absence of a significant result.

Conclusion

Based on the finding of the study, the following conclusions were drawn:

The test of the difference between the pre-test and post-test of the respondents resulted that there is a significant difference in the mathematical performance of the students. This implies that there is a significant improvement in 42 students' acquired skills and knowledge, therefore the null hypothesis there is no significant difference in the student's mathematical performance in terms of pre-test and post test has been rejected.

The study implies that the supplemental worksheet are sufficiently challenging to the learners, which creates motivation for the learners to become actively involved in the learning process as they are free to learn at their own pace. Hence, teachers should promote this kind of material for the students to learn to work on themselves. Teachers are encourage to create supplemental material in different subjects to help students who are struggling to learn the lesson and thereby they could

Recommendations

Based on the findings of the study and the conclusion drawn, the following are recommended:

1. The officials of the Department of Education may issue memorandum that will encourage teachers to develop supplemental worksheet as an intervention material to help the left - behind learners and maximize the teachers' potential in making more effective learning materials.
2. School heads and master teachers can include the making and implementation of more supplemental worksheet that uses a concept attainment strategy.
3. Teacher of asynchronous sessions may use these supplementary materials as a script in the teacher made video lesson.
4. The supplemental worksheet can be used by the learners at their own pace and time. They can enhance their knowledge and skills of their least – mastered competencies by using the developed intervention material.
5. Future researcher may use the worksheet in a larger number of respondents. They can also use the strategy in other mathematical topics and lessons. Future researcher may also use this study as their guide or reference for follow up and future studies.

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