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Interactive Instructional Reading Materials: A Responsive and Comprehensive Intervention for the Struggling Readers

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Abstract: ***The study was a quasi-experimental research conducted to investigate the effect of Interactive Instructional Reading Materials: A Responsive and Comprehensive Intervention to Struggling Readers. The participants of the study were the identified 74 struggling readers from Grades 2 to 10 enrolled during the 2nd quarter SY 2021-2022 at Tawantawan Integrated School. One group was assigned as control group who was exposed to plainly printed reading materials while the other one was experimental group who was exposed to interactive reading materials. This study utilized interactive instructional reading materials to sustain the interest of the learners as teachers promote a holistic pedagogical strategy to make learning gratifying, engaging, and effective. The performance of the learners were measured using their test scores. To determine if the interactive reading materials influence the reading ability of the learners, the Analysis of Covariance model (ANCOVA) was utilized at 0.05 level of significance. Results revealed that the Interactive Instructional Reading Materials helped learners read on their own and with comprehension.***

Keywords: Interactive Instructional Reading Materials, Intervention, Struggling Readers, Reading Comprehension, Word Recognition.

1. INTRODUCTION

The learning to read is a developmental process that draws upon all that children have learned about language. Since its outbreak in late December 2019, COVID-19 has wreaked havoc across the world, and like any critical sector, education has been hit hard. learners, schools, colleges, and universities have been deeply impacted. Reading on the other hand was so devastated.

The most recent results of Program for International Student Assessment (PISA) show an alarming situation about Filipino learners' performance in reading capabilities [1]. The Program for International Student Assessment (PISA) by the Organization of Economic

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Cooperation and Development is intended to assess educational systems by measuring 15-year-old school learners' scholastic performance on mathematics, science and reading. Results reveal that Filipino learners' scores in reading was in the last rank or 77th out of 77 participating countries [2]. Reading was one of the major domain of assessment of the 2018 cycle of the Programme for International Student Assessment (PISA). The framework incorporates constructs involved in basic reading processes. These constructs, such as fluent reading, literal interpretation, inter-sentence integration, extraction of the central themes and drawing inferences, are critical skills for processing complex or multiple texts for specific purposes [1].

In this context, a teaching strategy to enhance learners' ability to read and comprehend is very important. Reading intervention should be given to every learner for which it can developed understanding of a situation, context, or concept by connecting it with existing knowledge, and it can also build an explanation in order to resolve a gap or inconsistency in knowledge [3]. However, the world has been experiencing a pandemic that resulted to significant impacts on all humanity. Physical and social distancing are strictly implemented which result to the temporary closure of face to face classes that affect the continuing education of all students. Hence, the Department of Education of the Philippines issued a memorandum that aids to strengthen the implementation of the Basic Education Learning Continuity Plan in time of the pandemic [4]. Based on the results of the Learner Enrollment and Survey provided by DepEd as of July 2020, it showed 7.2 million enrollees preferred to use modular distance learning, while 2 million enrollees prefer online for school year 2020-2021 [5] Thus, the Department of Education adapted the modular distance learning or often called modular approach and provided modules to the students.

The learning modules prepared by DepEd were designed to prioritize the most essential competencies only to accommodate the present learning modality. However, teaching reading is crucial for teachers to facilitate especially learners needs attention and motivation to do reading. This problem could resulted to the learners difficulty in reading and comprehension. Thus, the Department of Education (DepEd) Region 10 issued a memorandum that teachers should employ an answer for the deteriorating academic performance of students, so interventions should be made to address learning gaps [6].

Since the present modality is modular and the DepEd learning materials do not address the needs of the learners particularly on the motivation to read and could cause low level in word recognition and reading comprehension, the researchers initiate and introduced an interactive instructional reading materials: a responsive and comprehensive intervention to struggling readers. This study is designed to address this state of affairs by synthesizing the readers on reading words from the very beginning stages through skilled word reading in an interactive way.

Objectives of the Study

The main objective of this study was to determine the effectiveness of the Interactive Instructional Reading materials. Specifically, the study sought to answer the following questions:

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1. What is the level of ability of the learners in word recognition when exposed using Interactive Instructional Reading materials and Plainly printed reading materials?
2. What is the level of ability of the learners in reading comprehension when exposed using Interactive Instructional Reading materials and Plainly printed reading materials?
3. How do the interactive instructional reading materials and plainly printed reading materials influence the learners' ability in word recognition and reading comprehension?

2. METHODOLOGY

This study made used of quasi-experimental Pretest-Posttest Control design to determine the effectiveness of the interactive instructional reading materials as an intervention to the struggling readers. The experimental group was exposed to treatment using interactive instructional reading materials while the control group was exposed to plainly printed reading materials. The performances of the students were measured using their test scores. The study utilized the The Philippine Informal Reading Inventory (Phil-IRI) to provide classroom teachers a tool for measuring and describing reading performance. It is an assessment tool composed of graded passages designed to determine a student's reading level. It is important to note that the Phil-IRI only provides an approximation of the learner's abilities and may be used in combination with other reliable tools of assessment. The study was conducted for a quarter (2 months). The participants of the study were the identified 57 struggling readers of elementary and 17 of junior high school, a total of 74 struggling readers of Tawantawan Integrated School during the second quarter of SY 2021-2022. These participants were from Grades 2 to 10. These 74 struggling readers were the result during the PHIL-IRI test served as their pretest. Each group has 37 learners. One (1) group was the experimental group while the other one was the control group. The selection of participants and groups were done thru draw lots.

At the start of the study, all learners from Grades 2 to 10 were given PHIL-IRI test served as pretest to identify the struggling readers. Since face to face classes were suspended, researchers together with the team conducted the reading intervention through home visitation and reading carousel, and some reading materials were given attached to their modules. After the administration of the study, the posttest was followed and were conducted to the 74 identified struggling readers same method on how the pretest was administered. To describe the learners' abilities in word recognition and reading comprehension, the mean and standard deviation were computed. To determine the influence of the two methods of reading on word recognition and reading comprehension skills, the Analysis of Covariance (ANCOVA) was used, with the pretest as the covariate.

The PHIL-IRI descriptive level was adopted to interpret the learners' abilities in word recognition and reading comprehension as shown in the rating below:

Table 1: Learners' Word Recognition Level Rating Scale

Mean Score	Descriptive Level
97% – 100%	Independent
90% – 96%	Instructional
89% and below	Frustration

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Table 2: Learners' Word Reading Comprehension Level Rating Scale

Mean Score	**Descriptive Level**
80% – 100%	Independent
59% – 79%	Instructional
58% and below	Frustration

3. RESULTS AND DISCUSSION

The results of this study were presented in the following tables:

Table 3: Summary of the Mean and Standard Deviation of Word Recognition

Type of Appraisal	**Groups**	**N**	**Mean**	**SD**	**Level**
Pretest	Control	37	83.487	4.234	Frustration
	Experimental	37	83.973	4.010	Frustration
Posttest	Control	37	84.460	5.237	Frustration
	Experimental	37	90.568	4.207	Instructional

Table 3 presents the mean and the standard deviation of pretest and the posttest scores of both control and experimental groups in their word recognition scores. Pretest scores revealed that both control and experimental group were at the "Frustration" level resulted a mean difference of 0.486. The very close association of the mean of the two groups indicates that they were comparable prior to the conduct of the study. It also entails that the student in both groups have almost the same level of reading abilities prior to the experimentation period. This might be due to the fact that learners have similar prior reading experienced. Also, the standard deviation of the control group was 4.234, which is lower than that of the experimental group of 4.010. This indicates that the scores of learners in the experimental group had a wider dispersion and the scores of learners in the experimental group were closer to the mean than the control group. It then follows that during pretest learners in the control group got high and low scores while the experimental group had quite similar scores.

The post test scores revealed that the scores of the learners in the control group who were taught reading using plainly printed reading materials had significantly improved as indicated by the overall mean yet it still remained at "Frustration" level. The significant improvement in the test scores of the learners in the control group indicates that they are starting to get a grasp of the reading ability that was tackled during the experimentation period; however they were not able to reach a desirable level of mastery and understanding. A big improvement was also observed with the post test scores of learners in the experimental group who learned reading using interactive instructional reading materials as more than half of the learners has reached the "Instructional" level. This shows that learners in the experimental group acquired better understanding of reading. This might be due to the interactive instructional reading materials used during the conduct of the study. Corollary to the significant improvement of the posttest scores of both groups, there was an observable difference in their mean scores where the experimental group scored a great higher than the control group by a mean difference of 6.108. This might be due to the growing interest of learners to the special features of the interactive instructional reading materials which has a holistic, responsive and

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comprehensive instructional reading materials. However, despite of the above mentioned propositions, there is no enough evidence that supports the claim that learners in the experimental group who were exposed using interactive instructional reading materials has a better mathematical achievement than that of the control group who were exposed to plainly printed reading materials.

The varied response was indicated by the standard deviation of the posttest scores for both groups. It can be observed that the scores of learners in the experimental group has a lower standard deviation which means that their scores was closer to the mean compared to the scores of learners in the control group. In addition, the lower standard deviation in the experimental group means that the distribution of scores of the learners was less dispersed than those of the control group. This further employs that learners in the control group have very high or low scores as indicated by the higher standard deviation. On the other hand, learners in the experimental group were somehow homogeneous in performance on reading achievement. This close dispersion supports the notion that the learners have a relative understanding of the interactive instructional reading materials. Subsequently, it highly increased their scores in the reading recognition test.

Table 4: Summary of the Mean and Standard Deviation of Reading Comprehension

Type of Appraisal	Groups	N	Mean	SD	Level
Pretest	Control	37	50.730	3.942	Frustration
	Experimental	37	50.946	3.776	Frustration
Posttest	Control	37	57.270	10.227	Frustration
	Experimental	37	67.730	11.291	Instructional

Table 4 presents the mean and the standard deviation of pretest and the posttest scores of both control and experimental groups in their reading comprehension scores. Pretest scores revealed that both control and experimental group were at the “Frustration” level resulted a mean difference of 0.216. The very close association of the mean of the two groups indicates that they were comparable prior to the conduct of the study. It also entails that the students in both groups have almost the same level of reading abilities prior to the experimentation period. This might be due to the fact that learners have similar prior reading experienced. Also, the standard deviation of the experimental group was 3.776, which is lower than that of the control group of 3.942. This indicates that the scores of learners in the control group had a wider dispersion and the scores of learners in the experimental group were closer to the mean than the control group. It then follows that during pretest learners in the control group got high and low scores while the experimental group had quite similar scores.

The post test scores revealed that the scores of the learners in the control group who were taught reading using interactive instructional reading materials had significantly improved yet it still remained at “Frustration” level. The significant improvement in the test scores of the learners in the control group indicates that they are starting to get a grasp of the reading ability that was tackled during the experimentation period; however they were not able to reach a desirable level of mastery and understanding. A big improvement was also observed with the post test scores of learners in the experimental group who learned reading using interactive instructional reading materials as more than half of the learners has reached the “Instructional” level and around 14% reached the “Independent” level. This shows that

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learners in the experimental group acquired better understanding of reading. This might be due to the interactive instructional reading materials used during the conduct of the study. Corollary to the significant improvement of the posttest scores of both groups, there was an observable difference in their mean scores where the experimental group scored a great higher than the control group by a mean difference of 10.46. This might be due to the growing interest of learners to the special features of the interactive instructional reading materials which has a holistic, responsive and comprehensive instructional reading materials. However, despite of the above mentioned propositions, there is no enough evidence that supports the claim that learners in the experimental group who were exposed using interactive instructional reading materials has a better mathematical achievement than that of the control group who were exposed to plainly printed reading materials.

The varied response was indicated by the standard deviation of the posttest scores for both groups. It can be observed that the scores of learners in the experimental group has a lower standard deviation which means that their scores was closer to the mean compared to the scores of learners in the control group. In addition, the lower standard deviation in the experimental group means that the distribution of scores of the learners was less dispersed than those of the control group. This further employs that learners in the control group have very high or low scores as indicated by the higher standard deviation. On the other hand, learners in the experimental group were somehow homogeneous in performance on reading achievement. This close dispersion supports the notion that the learners have a relative understanding of the interactive instructional reading materials. Subsequently, it highly increased their scores in the reading recognition test.

Table 5: One Way ANCOVA Summary of Learners' Word Recognition Level

Source	SS	Df	MS	F-value	P-value
Adjusted Means	602.41	1	602.41	51.45	0.0001
Adjusted Error	831.26	71	11.71		
Adjusted Total	1433.67	72			

*significant at p<0.05 alpha level

Table 5 shows that there was a significant difference between the posttest scores of student in the control group and experimental group in their word recognition level as indicated by the F-value of 51.45 and p-value of 0.0001 which led to the rejection of null hypothesis. Based on the result, Interactive Instructional Reading Materials had helped learners improved their word recognition ability and subsequently increased their scores.

Table 6: One Way ANCOVA Summary of Learners' Reading Comprehension Level

Source	SS	Df	MS	F-value	P-value
Adjusted Means	2036.15	1	2036.15	17.37	0.00009
Adjusted Error	8325.13	71	117.26		
Adjusted Total	10361.28	72			

*significant at p<0.05 alpha level

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Table 6 shows that there was a significant difference between the posttest scores of student in the control group and experimental group in their reading comprehension level as indicated by the F-value of 17.37 and p-value of 0.00009 which led to the rejection of null hypothesis. Based on the result, Interactive Instructional Reading Materials had helped learners improved their reading comprehension ability and subsequently increased their scores.

4. CONCLUSION AND RECOMMENDATION

Based on the findings of the study, the Interactive Instructional Reading Materials enhanced the learners' word recognition and reading comprehension abilities. On this basis, teachers are encouraged to incorporate interactive instructional reading materials to their teaching pedagogy to enhanced learners' reading abilities such as word recognition and reading comprehension. Teachers may also utilize different functions of the interactive instructional reading materials to maximize communication, collaboration and active learning. Construction of interactive instructional reading materials may also be implemented to other subjects other than English as reading already integrated to all subjects to realize better outcome and performance rating. Similar studies may be conducted in a more controlled environment where teachers can directly guide and observe the learning progress of the learners and this is to ensure that learners can construct and evaluate the information better and can contribute to improving learners' performance in reading.

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