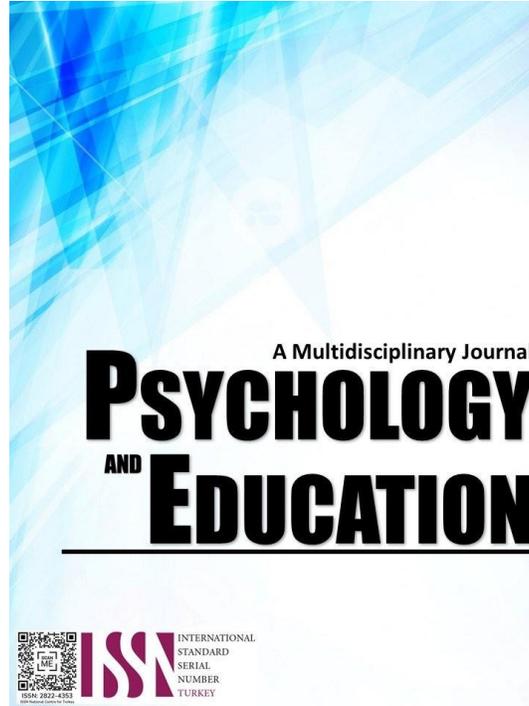


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Edpuzzle App: A Reading Remediation Tool for Grade 4 Struggling Readers

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Abstract

Reading has always been valued as a source of knowledge across all cultures and age groups. Men can have meaningful lives and contribute to society as a result, regardless of their generation. This makes reading crucial to man's existence. Reading has always been a learning tool; thus, it is taught in schools from the very beginning of schooling. The goal of this study is to help students' reading comprehension while also evaluating Edpuzzle App's efficacy as a reading intervention tool for struggling readers in grade 4. The study utilized quasi-experimental using one-group pretest-posttest single group design was used in this investigation. The research environment of this study was Sta. Filomena Central School, located in Barangay Sta. Filomena. It has 61 teachers and has a total number of 1807 learners. The study found out that before the utilization of Edpuzzle App, the reading comprehension levels of most of the pupils were under frustration. It was established in this study that there was a match in the inclusion criterion of getting the participants from the category of struggling learners. This match provided an authentic environment to the study and an authentic basis of its result.

Keywords: *reading, reading remediation, struggling readers, reading comprehension, edpuzzle app*

Introduction

Reading has always been valued as a source of knowledge across all cultures and age groups. Men can have meaningful lives and contribute to society as a result, regardless of their generation. This makes reading crucial to man's existence. Reading has always been a learning tool, thus it is taught in schools from the very beginning of schooling.

The ability of the students to grasp the texts they read is a key objective that teachers must incorporate when teaching reading. The monitoring of the learners' reading skills is a constant in this premise. However, this observation reveals how frustrated the kids are. Sixty-five percent (65%) of schoolchildren fall into the frustration level of reading comprehension, as shown by the annual findings of the Philippine Informal Reading Inventory (Phil-IRI) for Learners. In many institutions, especially primary schools, the children's weak reading comprehension skills have become a serious concern (Recamara, 2018).

In an effort to address this issue, the Department of Education issued the DepEd Memorandum 173, series of 2019 known as Hamon: Bawat Bata Bumabasa, which required every school to produce law-abiding, productive citizens who possess the fundamental knowledge and skills necessary for lifelong learning. Schools all around the nation are responsible with assisting students in the development of their reading abilities. However, these efforts are still insufficient in light of the most recent findings from national exams for student learning. In most classroom cases, children who have poor reading abilities are unable to participate significantly in discussions. They cannot correctly answer questions when asked about a specific text they read. They tend to reread the material or do the regression. They try to comprehend to be able to answer the questions posed.

Nonetheless, no matter how many regressions they made, they cannot accurately and significantly answer the questions. This proves that they do not have a grasp of what they read (Umali, 2016). The academic performance of the kids or learners is negatively impacted by this condition. They are unable to adequately follow instructions or directions because they have a difficult time understanding what words mean. They perform poorly academically. They don't develop concepts because they can't understand them. As a result, they are unable to express opinions about the material read. In a broad sense, the pupils' learning has not progressed. As a result, students wasted time in class and didn't complete important tasks in line with the goals the school set out to pursue (Decena, 2021).

The foregoing problem in the reading abilities of the learners and their poor reading comprehension abilities must be addressed to help these learners perform better in academics. The chances to fare better in life when they get out of school or proceed to further studies in order to grow more fulfilled. The call for endeavors to address the problem is now strongly happening (Mendones, 2014).

The researchers want to help with the problem's resolution as a primary school teacher. The learners' current circumstances have made it harder for them to improve their comprehension abilities. The pandemic that is causing chaos in the nation has made the learning gap worse. It has already been used by students who struggle with reading and comprehension. The nation will suffer from the surge of unskilled workers if this gap is disregarded.

The goal of this study is to help students' reading comprehension while also evaluating Edpuzzle App's efficacy as a reading intervention tool for struggling readers in grade 4. The researchers have already noticed the gap when looking at the study's setting. It becomes clear that students remotely enrolled in the institution had inadequate reading skills. The poor grades they receive for the actions that were extracted from them serve as clear evidence of this. There must be some ways found to deal with this issue. The researchers looked into the Edpuzzle App to help the Grade 4 students' reading comprehension in order to come up with one. The conduct of this study was in Sta. Filomena Central School of North II District, the Year 2021-2022.

Research Questions

As this study introduced the use of Edpuzzle App as a reading remediation for struggling readers, it ascertained the workability of this strategy. This study then examined the applicability of Edpuzzle App as a reading remediation tool for the Grade IV pupils of Sta. Filomena Central School, North II District, Iligan City during the school year 2022-2023. Specifically, this study aimed at addressing the following concerns:

1. What is the reading comprehension level of the Grade IV pupils in their pretest before the Edpuzzle App remediation program?
2. What is the reading comprehension level of the Grade IV pupils in their posttest after the Edpuzzle App remediation?
3. Is there a significant difference among the repetitions of the posttests in the experiment?

Methodology

This section presents the methodology of this study which is identified into research design, research environment, respondents of the study and sampling procedure, data gathering procedure, research instruments and their validity, and statistical treatment of data.

Research Design

The study utilized quasi-experimental using one-group pretest-posttest single group design was used in this investigation. Because this study tested the Edpuzzle app on the students to see its usability and to determine and describe it as a reading remediation tool for Grade IV struggling readers, the research design adhered to a scientific design that significantly included testing or proving a hypothesis through experimentation. Additionally, it discussed the respondents' level of comprehension as well as the stark contrast between and across factors. Additionally, because only one portion of the seven sections of grade four students at Santa Filomena Central School had participated in the five-week reading remediation utilizing the Edpuzzle App and the Phil-IRI questionnaire, the research combined experimental and descriptive research approaches.

Respondents

The participants of this study were the 12 female and 23 males, a total of thirty-five (35) struggling readers of Grade IV-JADE in Sta. Filomena Central School in North-II District in the Division of Iligan City, this School Year 2022-2023. There were only 7 sections in Grade 4. The purposive sampling technique was utilized as the participants were chosen because they fitted the purpose.

The researchers conducted a daily remedial class for five (5) weeks using Edpuzzle app. At the beginning of the week, pretest was given from the Phil-IRI passages and then at the end of each week posttest of the same tool was conducted. There were five (5) cases of posttest given. Individual scores were tallied and pupils' reading comprehension levels were identified as to frustration, instructional, or independent.

Instruments

The instruments used in this study were both the pretest and posttest. The selections were from Phil-IRI in English silent reading intended for Grade IV learners. Both the pretest and the posttest in the Phil-IRI were composed of 2 passages only since they were struggling readers. Each passage had 8 comprehension questions. A total of 16 questions in a multiple-choice type. One point was given for every correct answer while no point was given to incorrect answers. A score of 14 to 16 points or 83 to 100% indicated the learner to be an independent reader. Meanwhile, a reader needing no support or assistance from the teacher was classified to score 8 to 13 points or 50 to 82% for an instructional reader. On the other hand, a reader needing only little assistance from the teacher got a zero (0) to seven (7) points or 0 to 49% for a frustration reader. These were learners who cannot respond to the questions.

After administering the pretest, the instructor used the Edpuzzle app to deliver a daily remedial lesson during the entire week. The lessons covered vocabulary building, practicing pronunciation, understanding difficult words by using antonyms and synonyms, and understanding sentences by using context clues. The posttest was given at the conclusion of the week, and the results were analyzed.

The Bureau of Learning Delivery (BLD), Department of Education (DepEd), developed the Phil-IRI in accordance with DepEd Order number. 014-series of 2018, with the goal of determining the proficiency of students enrolled in basic education. Its development was based on the department's program's key thrust, "Every Child A Reader." Both the pretest and the posttest were created by DepEd after the Phil-IRI. These tools were considered standardized already.

Procedure

In the process of gathering the data needed in this study, the following procedures were followed: First, the researchers sought the approval from the dean of the graduate studies of St. Peter's College to conduct this study. Then, once the approval to conduct this study was obtained, he wrote three letters: One letter was addressed to the Schools Division Superintendent of Iligan City to ask his permission to conduct the study in the division under him; the other letters were addressed to the principal of the target school and the teacher-participants to inform them of the purpose of the study and to ask their permission. These letters were submitted to the researcher's thesis adviser for corrections, suggestions, and improvements. Second, when the letters were prepared, they were personally given to the authorities concerned by the researchers. He then waited for their approval.

When the researchers received permission from the authorities in mentioned, he then conducted the study. In the conduct of the study, the following steps were followed with utmost care. He personally distributed the questionnaire, which specified the data needed in the study to the participants, following the health protocol required in the new normal. Next, he explained to the participants what was expected in the activity in which they would be participating. Every week, a pretest was administered prior to the start of class, and a posttest would follow at the conclusion of the week. The results of their weekly pretest and posttest were added up. Then, using the repeated ANOVA measurement, the results from the pretest and posttest were evaluated and explained to see the difference in their comprehension level. He administered the pretest and posttest to collect the data required to address the study's problem because the study used a one-group research design.

Using the Edpuzzle App, students can view and interact with videos while the teacher collects data during the class. Edpuzzle App is a helpful supplement for videos to be seen at school instead of conventional text books as a teacher experiment with the flipped classroom philosophy.

When teachers focus on integrating technology into their lessons with Edpuzzle as the main tool, Edpuzzle may be more effective at fostering the enthusiasm and skills of students who struggle with reading. Additionally, effective teacher training in Edpuzzle usage can increase teachers' proficiency in incorporating technology in the classroom, particularly in reading classes. This study then proposed an action plan of training focused on the utilization of Edpuzzle in the classroom

Data Analysis

The following statistical tools were used in this study and analyzed using the Statistical Packages for Social Sciences (SPSS). Weighted average was used to determine the reading levels of the participants before (pretest) and after (posttest). Edpuzzle was administered to the pupils in the class. It answered problems 1 and 2.

Repeated ANOVA was utilized to determine the significant difference among the repeated posttest in the experiment. The repeated measures ANOVA compares means across one or more variables that are based on repeated observations. A repeated measures ANOVA model can also include zero or more independent variables. Again, a repeated measures ANOVA has at least 1 dependent variable that has more than one observation. It answered problem 3.

Results and Discussion

Problem 1: What are the reading comprehension levels of the participants in their pretest scores before the Edpuzzle App remediation program?

Table 1. Pretest Reading Comprehension Level of the Participants

Variable	Comprehension Level [n (%)]			Mean \pm SD	Description
	Frustration (0-7)	Instructional (8-13)	Independent (14-16)		
Pretest	31 (88.6)	4 (11.4)	--	5.31 \pm 1.98	Frustration

Table 1 presents the pretest reading comprehension levels of the participants. The result showed that majority (31 or 88.6%) of the participants belonged to the frustration level and only 4 or 11.4% of them were considered instructional readers. None were noticed to be independent readers. The summary description revealed that the participants were labelled frustration readers ($M=5.31$, $SD=1.98$). This result affirmed that the participants were struggling readers. This also meant that the great majority of the participants had poor reading ability and could not effectively respond to given text or materials read. Having poor reading ability, being unable to react to reading texts, and inability to retain ideas from the text they read were considered weakness of learners. This often led them to frustrations (Ricketts et al., 2014).

According to Mohammed and Amponsah (2018), instances of learners being frustrated were not unusual, but what was concerning was that their numbers were growing. Teachers from several educational institutions have recently reported that their cases of high-frustration students are currently getting worse. Due to the epidemic, the students did not receive sufficient reading instruction over the previous two years. Since face-to-face interactions were prohibited, it was difficult to give effective reading instruction. This disruption had a profound impact since it prevented many kids from having meaningful reading experiences. They were put in a frustrated position by this (Logsdon, 2019).

Similarly, in the claimed that many learners all over the world had frustration level of reading comprehension, Szadokierskiet al., (2017) forwarded that the world was much bothered by it. This called for programs that could bridge the learning gap in reading. It was also implied that teachers should instruct students at the instructional level, regardless of their race or ethnicity. Various reading programs, including Reading Camp, Reading Modelling, and Remedial Reading, were created in different settings and are currently used in many schools. This was appropriate for the children's reading learning needs (Hammerschmidt-Snidarich, 2019). It was thought that these reading programs would help the students' low reading comprehension skills.

With situations aligning to the result displayed in Table 1, implications of the result on the academic achievement of the learners could be significantly traced with their reading level. Spencer and Wagner, (2018) posited that individuals with low reading ability,

specifically at the frustration level would have difficulty in understanding the lessons. This would have poor decoding ability. They could not understand instructions. They also could not understand the questions because of poor decoding ability. As a result, they got high probability of failing the test and failing the academic subject. As many learners were in the frustration level, it could be said that many of them had marginal or even below the marginal level of academic achievement (Joseph, 2018).

Connor (2015) asserted that interventions for low reading proficiency and high levels of irritation must go beyond academic accomplishment for the time being. Future triumphs must be included. It was generally acknowledged that reading was a crucial learning tool. It helped people find answers to existential questions and stoked their interest in the complexities of nature and the unknown. However, if humans lacked this ability, they stayed the same and did not advance in their level of productivity. This study came to the conclusions that students' mastery of reading would play a significant role in determining their future academic achievement (Connor, 2015).

The study by Miñoza and Montero (2019), which confirmed that a Filipino child with sufficient reading abilities or who had mastered reading obtained a higher possibility of success than a child with weak reading skills, reflected the aforementioned claim made by Connor (2015). This information demonstrated that Filipino students with strong reading skills may take part in any class discussion. The child's performance has improved as a result of this circumstance.

Problem 2: What are the reading comprehension levels of the Grade IV pupils in their posttest after the Edpuzzle App remediation program?

Table 2. *Posttest Reading Comprehension Levels of the Participants*

Posttest	Comprehension Level [n (%)]			Mean ± SD	Description
	Frustration (0-7)	Instructional (8-13)	Independent (14-16)		
1 st posttest	29 (82.9)	6 (17.1)	--	5.20±2.17	Frustration
2 nd posttest	31 (88.6)	4 (11.4)	--	5.51±1.99	Frustration
3 rd posttest	24 (68.6)	11 (31.4)	--	5.89±2.52	Frustration
4 th posttest	22 (62.9)	13 (37.1)	--	6.86±2.41	Frustration
5 th posttest	7 (20.0)	23 (65.7)	5 (14.3)	9.77±2.49	Instructional

Table 2 presents the reading comprehension levels of the participants as determined by the posttest conducted after the administration of the intervention which was the Edpuzzle App remediation program. The result revealed that the participants had consistent frustration comprehension levels from 1st posttest through the 4th posttest. It further illustrated that they moved to instructional readers' level after the 5th posttest. In the 5th posttest, there were already 5 or 14.3% of them that were independent readers. Twenty-three (23) or 65.7% were instructional readers; nevertheless, there were still 7 or 20% of them classified as frustration readers. Overall, there was an increase of the scores of some as indicated in the changed from the frustration level to the instructional level.

The preceding result meant that the reading levels of the participants did not remain stagnant. Although there were still cases of frustration levels, it could not be said that the intervention was futile. As there were cases of independent readers and instructional levels when the intervention or Edpuzzle App remediation program was applied or utilized. Edpuzzle App had positive effect on the reading comprehension ability of the learners. This information further disclosed that the said intervention had the capacity or ability to improve the cognitive ability of the individuals. This could be sensed in the over-all description of the participants reading levels. A change from frustration to instructional was detected.

The study by Silverajah and Govindaraj (2018), which examined Edpuzzle activities in supporting the development of self-regulated learning skills among low achievers using the perspectives of the teachers and learners, revealed alignment between the previous findings of that study. The study's key findings demonstrated that Edpuzzle improved student performance, which meant that using Edpuzzle improved students' cognitive abilities. The study's important ramifications further proved that using Edpuzzle gave students access to a flexible or adjustable environment. This aided in the improvement of self-control in learning.

In the article, Karbach (2022) claimed that Edpuzzle was effective as an intervention because it allowed teachers to make and distribute annotated video lessons to their pupils. They might use YouTube videos or upload their own content (films, notes, or voiceovers) for the students to view or hear. The students responded to the annotated videos using text and some audio, too. This circumstance proved that Edpuzzle was beneficial to the students.

With the positive effect of Edpuzzle App on the students' learning, the result of the present study on the improvement of the students learning after Edpuzzle was applied did not show a strong indication of the usefulness of Edpuzzle. Hence, it could still be traced that the reading comprehension of the learners improved as indicated by the changed of the level from frustration to instructional after the fifth of using Edpuzzle in the class.

The duration of the Edpuzzle App application may have had an impact on the phenomena of the result that came before. Only five meetings were used to use the Edpuzzle App, which may indicate that students were only somewhat familiar with the intervention. However, if the goal was to determine whether the Edpuzzle app might be used as an intervention tool, it could be clearly shown. In other words, it aided the participants' success. Consequently, it might be a helpful intervention tool for struggling readers.

The preceding result implied that the utilization of Edpuzzle App could help teachers address the reading difficulties of their pupils. It specifically letting them comprehend a test. Giyanto et al. (2020) claimed that the teaching method used with Edpuzzle exercises helped students understand the lesson material better. Low achievers were also able to learn at their own pace because to this. Additionally, Mahmoodi et al. confirmed that the utilization of Epuzzle activities gave low achievers additional resources to support their learning rather than abandoning them intellectually, which was customary in the classroom. As a result, it was clear that the Edpuzzle activities had a good chance of helping students become more adept at managing their own learning. Particularly for the students that struggle with reading comprehension, this could be quite beneficial.

Problem 3: Is there a significant difference between the comprehension levels of the participants before (pretest) and after (posttest) the application of Edpuzzle App?

Table 3. Repeated ANOVA Measure1 for Edpuzzle App Effects on Comprehension

Variables	Comprehension Level ($M \pm SD$)	$F (5,170)$	P -value	Remark	h^2
Pretest	5.31 ^a ±1.98				
1 st posttest	5.20 ^a ±2.17	35.552**	.000	Significant	0.511
2 nd posttest	5.51 ^{ab} ±1.99				
3 rd posttest	5.89 ^{ab} ±2.52				
4 th posttest	6.86 ^b ±2.41				
5 th posttest	9.77 ^c ±2.49				

Table 3 or Figure 5 presents the repeated ANOVA measure for Edpuzzle app effects on comprehension levels of the participants. Results revealed that significant mean differences in comprehension performance of the participants across six tests administered, $F(5, 170) = 35.552$, $p=.000$, $\eta^2 = .511$ with medium effect size. The partial eta squared (η^2) value showed that 51.1% of the variance in the comprehension performance of the respondents was explained by the intervention (Edpuzzle App). The findings showed that lower pretest scores before the intervention ($M=5.31$, $SD=1.98$) subsequently increased in 4th posttest ($M=6.86$, $SD=2.41$) and 5th posttest ($M=9.77$, $SD=2.49$) after the administration of the intervention. The pairwise comparisons revealed that there were significant mean differences in some pairs of scores between pretest, 4th posttest, and 5th posttest. Thus, the Edpuzzle App had significant positive moderate effect on the reading comprehension level of the participants.

The preceding result denoted that the utilization of Edpuzzle App by the class had helped the struggling Grade IV pupils improved their reading level although it was only in the moderate level. This finding aligned with Yot-Domínguez and Marcelo (2017) which emphasized that the integration of technology in the teaching strategies of teachers, like the employment of Edpuzzle App, especially when it was as an intervention tool. This helped raise the achievement of the learners and helped address their difficulties in understanding what had been read.

The findings of Yot-Dominggo and Marcelo (2017) with the outcome of this study could imply that Edpuzzle had the capacity to develop the learners' decoding skills as well as that it could be an effective teaching strategy, particularly when improving the learners' ability to comprehend. Kuckian et al. (2022) referred to Edpuzzle as an interactive tool of teaching as it did not only increase the achievement of the students in their tests but also made them enjoy and got them motivated. When Edpuzzle was utilized as an intervention, even the challenging students were more motivated to take part in the activities.

Conclusion

The study found out that before the utilization of Edpuzzle App, the reading comprehension levels of most of the pupils were under frustration. It was established in this study that there was a match in the inclusion criterion of getting the participants from the category of struggling learners. This match provided an authentic environment to the study and an authentic basis of its result.

Considering that the Edpuzzle App was used as an intervention, there was a moderate amount of improvement in the participants' performance on the posttest. It was believed that the Edpuzzle App may be used as an educational tool, particularly in addressing the students' low comprehension skills, if the right conditions were present and the teachers were given the necessary background information. The Edpuzzle App might be a useful tool for helping struggling students who have trouble understanding the content read. As they learned to enjoy reading and recognize its value, they would be able to read beyond their level and become independent or instructional readers.

It was deduced that the findings of this study would be important to the learners, specifically the Grade 4 learners who were in the transition level of elementary education. As the app became a culture in the school, they got the opportunity to hone their reading ability and gain the skill to understand reading text or anything written they encountered and would encounter; therefore, they got the chance to acquire higher order thinking skills (HOTS).

Based on the findings, the following recommendations were offered for considerations: (1) To establish the genuine viability of this app as a remediation tool or technique, additional studies on the workability of the Edpuzzle App should be undertaken utilizing more trials. (2) Give the suggested LAC session a chance to be implemented so that the instructors would have a convenient opportunity to improve their technological literacy and skill, particularly the integration of the Edpuzzle App. (3) During the LAC session, the teachers

should receive technical assistance. (4) It is important to inspire future scholars to carry out additional research on Edpuzzle App with a focus on other areas. (5) Edpuzzle is very helpful to any teachers. It has been a solution for many teachers from Elementary to High School, and with their easy-to-use library, the teachers are able to share across the school and globally.

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