



PHIL-IRI – BASED EBOOK FOR READING FLUENCY AMONG GRADE 3 LEARNERS

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Phil-IRI – Based eBook for Reading Fluency Among Grade 3 Learners

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Abstract

Reading fluency significantly influenced academic achievement, and technology offered potential benefits in education. The purpose of the study is to determine the effect of using the Phil-IRI eBook in improving the reading fluency of Grade 3 learners. A quasi-experimental design was employed, participated by 19 learners. The data were analyzed using mean and t-test for the significant difference. Learners in the control group consistently displayed a reading fluency level classified as "Frustration" in both the pretest and posttest assessments. In contrast, the experimental group initially displayed a level of "Frustration" in the pretest but showed a notable improvement to an "Instructional" level in the posttest. Compared to the control group, this positive shift in the experimental group suggests that the intervention had a significant influence, promoting a more instructive and favorable reading fluency level. Statistical analyses reveal significant differences in reading fluency levels between control and experimental groups, indicating that these differences are not coincidental but linked to the treatment given to each group. Additionally, the study reveals significant improvement in reading fluency between two groups, with the experimental group showing greater focus and motivation. The difference in progress can be attributed to the intervention phase, suggesting these factors play a crucial role in reading proficiency. In conclusion, Phil-IRI-based eBook is an effective tool for enhancing reading fluency among Grade 3 learners.

Keywords: academic achievement, technology, motivation, focus, improvement

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Context and Rationale

Reading fluency is quite crucial. It is critical in bridging the gap between word recognition and understanding so that students may comprehend what they are reading. Reading and understanding are two of the most important reasons why some students struggle in class. Majority of primary school students are not proficient readers that affect their comprehension abilities. A learner's reading fluency can be improved in a variety of ways at school.

It is quite concerning when Ludewig, et al. (2022) revealed that pupils did not improve their reading fluency over the following few months following the start of COVID-19 school closures. Disruptions were to be expected, given how abruptly schools ended in 2020 and that teachers had no time to be ready for remote instruction. However, these relative losses are quite high. In terms of reading development, no progress indicates that pupils are roughly a third of a year behind where they should be as stated in the study of Paguyan, et al. (2022).

Reading fluency has been studied extensively as an independent reading process, but it is better thought of as the result of multiple, lower-level reading skills that, when functioning in a synchronous and efficient manner, results in smooth, expressive reading that is critical to understanding text, according to Paige (2020). Similarly, Walczyk and Griffith-Ross (2011) found in their research that certain major reading instruction and assessment methodologies, as well as influential reading theories, are founded on the premise that reading fluency is required for successful comprehension.

Many tactics and exercises can be used to help a student acquire, improve, and increase their fluency skills. Partner reading, reader's theatre, choral reading, aided reading, and other similar activities are examples. These activities are considered traditional reading fluency development strategies, and they are still very effective in the twenty-first century. We also talked about how fluency is important because it connects word recognition and comprehension.

According to Lin, et al. (2019), as technology improves, paper-based material is being replaced by e-books, which has an impact on all aspects of educational processes. It is vital to encourage student literacy. The ability to read is a crucial skill that permits young kids to learn. Fluency is substantially connected with reading comprehension ability, according to several studies. However, tracking pupils' reading activity during a paper-based learning process was challenging in the past. According to Akbar, et al. (2015), e-reading may increase students' reading rate progress, which could be attributed to the use of reading application features that encourage students to practice quicker reading rates.

Reading is the foundation in all academic learning. Learning to read, write and count is crucial to a child's success in school and in later life. Literacy improvement is one of the priorities of the Department of Education (DepEd). This is anchored on the flagship program of the Department: "Every Child A Reader Program," which aims to make every Filipino child a reader and a writer at his/her grade level (DepEd Order Number 14, s. 2018). Reading is a complex process that involves sensation, perception, comprehension, application and integration. It is the process of making and getting meaning from printed words and symbols.

Reading as a whole, is a means of communication and of information and ideas as stated by Estremera and Estremera (2017). It can be safely said that reading is the true backbone of most learning. After all, everything starts with the written word - whether it's math, science or even home economics. As students step up the educational ladder, more reading is usually required as subjects become denser and challenging. The difficulty level simply increases - not the other way around. If a student's reading comprehension is poor, chances are his/her performance in other subjects will be compromised. Given that, just how do students in the country rate in reading (PhilStar, 2010).

A comprehensive review of research on vocabulary development concludes that vocabulary knowledge promotes reading fluency, boosts reading comprehension, improves academic achievement, and enhances thinking and communication. Reading fluency improves reading comprehension (Cadiz-Gabejan, and Quirino, 2021).

As a teacher, one must continue to develop and improve students' reading fluency skills. Some students' reading fluency skills have been observed to require additional instruction. The teacher used the Phil-IRI to determine who among the students need reading fluency intervention. The outcome of learners' level in the Phil-IRI assessment was not good. Based on the pre-test conducted last September 7 – 8, 2022, there are 19 grade III students out of 40 students' of Mayoyao Central School who fall under the frustration level. Most of them have low reading rate and incurred many miscues due to mispronunciations, repetition, does word-by-word reading, and disregards punctuation. Even in this current universal circumstance, reading through student and parent feedback is an issue that must be addressed. Parents were also interviewed to learn more about the things that affect their children. Parents highlighted two characteristics that influence their children's reading fluency. The first is a smartphone addiction brought on by gaming apps, and the second is a reading comprehension deficit that leads to boredom when answering questions. The teachers identified one of the learning gaps that affect learners' understanding in practically all of the learning categories as reading fluency, which includes comprehension. There are still learners who struggle with reading fluency despite remedial reading sessions and activities focusing on fluency and comprehension.

Based on the citations, it was critical that the proponent considered completing the action study, which employed an eBook reading technique. Phil-IRI passages were compiled into an electronic book accompanied by audio to make it interactive, and it was made available on smartphones. This was done to help students improve their reading fluency. Participants used their personal smartphones since all of them had it, which was confirmed by their parents.

The findings of this study will be of great help to the researcher in addressing reading fluency with all incoming Grade 3 learners. It will also assist other teachers, particularly primary and English teachers, in developing their own treatments to increase students' fluency in reading. Subject coordinators, administrators, and policymakers could use the findings of this study as the basis for action plans and policies in the department.

Action Research Questions

The focus of this study was primarily on determining the effect of a Phil-IRI – Based eBook in improving the reading fluency skill of Grade 3 learners of Mayoyao Central School, Mayoyao, Ifugao. Specifically, it aimed to answer the following questions:

1. What is the level of reading fluency of the learners in the control and experimental groups in their pretest and post-test?
2. Is there a significant difference in the level of reading fluency between the pretest and post-test scores of the learners in the control and experimental groups?

H₀: There is no significant difference in the level of reading fluency between the pretest and post-test scores of the learners in the control and experimental groups.

3. Is there a significant difference in the level of reading fluency in the pretest and post-test scores of the learners between the control and experimental groups?

H₀: There is no significant difference in the level of reading fluency in the pretest and post-test scores of the learners between the control and experimental groups.

Innovation, Intervention, and Strategy

Phil-IRI – Based eBook

Learners could use the Phil-IRI – Based eBook to help them improve their reading fluency. As stated by Kurniati (2019), mobile based extensive reading was likely to build students' reading fluency which was supported by the statement of Kaman and Ertem (2018) that the use of digital texts had influence on improving fluency and reducing reading mistakes.

The intervention did not only focus on developing reading fluency but also in letting the learners enhance their cognitive skills which was also proven by Acosta (2022) that when the interactive features in eBooks require the learner to go back and forth between text features, cognitive overload may occur. According to Leahy and Sweller (2011), when both visual and auditory features are involved in the reading process, the learner's working

memory is increased. Moreover, the Cognitive Load Theory (CLT) by Sweller (1988) suggests that our working memory is only able to hold a small amount of information at any one time and that instructional methods should avoid overloading it to maximize learning.

The intervention was an electronic book composed of excerpts from the Phil-IRI that were converted to digital form. The story was accompanied by audio. Learners were able to hear each word as they read. By simply clicking the words, they could also hear each word spoken. The researcher took advantage of this chance to allow the learners to read short stories via eBooks rather than letting them spend their days playing games on their smartphones. The participants in this study had personal smartphones, which were confirmed by their parents before developing this proposal. They utilized these for this study.

The collection of passages from the Phil-IRI was compiled into an electronic book. Recorded audios of these stories with proper pronunciation and diction were included in the eBook as a supplement to the stories. Learners could also determine their reading speed through a given timer per passage. The eBook material could be manipulated offline.

Before the start of the intervention, the learners underwent the Phil-IRI pre-test. The eBook reading was conducted twice a week every Wednesdays and Fridays for eight weeks of School Year 2022–2023.

Application of the Phil-IRI – Based eBook

The learners brought their smartphones and earphones/headphones to school every Wednesday and Friday only. They gave them to the researcher upon entering the classroom for safety. The following steps were followed in using the intervention:

Step 1: The researcher then transferred the passage to the smartphones of the learners through Bluetooth or Share it thirty minutes before the time of the intervention. The researcher shared one passage at every meeting.

Step 2: Each learner was given 30 minutes to read and listen to the given passage using earphones/headphones.

Step 3: After which, the learners were given a hard copy of the passage for them to read individually.

Step 4: The researcher then called each learner to read aloud the given passage while recording the time spent by the learner in reading the passage and the learner's miscues using the Phil-IRI Form 3B to determine the speed and rate in reading, and the reading level for the passage in both word reading and comprehension.

These steps were done for 8 weeks to accommodate the 16 passages. At the end of the 8th week, a post-test was administered to the learners.

Action Research Methods

Research Design

In this study, the researcher utilized the Quasi-experimental research design. It aims to establish a cause-and-effect relationship between an independent and dependent variable according to Lauren Thomas. The research employed quantitative data gathering and analysis. Pretest and posttest were administered to the learners in the control and experimental groups to determine the effect of the intervention and the difference in the groups.

Participants and/or other Sources of Data and Information

This study was conducted at Mayoyao Central School, Mayoyao, Ifugao during the fourth quarter of the school year 2022-2023. The study covered one quarter. The target participants were the 19 learners of the Grade 3 class. The sampling used was the purposive sampling because the researcher purposively chose the participants based on their fluency level. Section A with 10 students was the experimental group, and section B with 9 students was the control group.

Data Gathering Methods

Data was gathered through Phil-IRI pre-test and post-test. The researcher made use of the Phil-IRI Word Reading Criteria in assessing the fluency of the students. The pretest and the posttest had different passages but had a similar grading process. There was only one passage for the pretest and one passage also for the posttest. The time taken by the

learner to read a passage was recorded, and the number of words that he/she could read per minute was computed to determine the fluency level of the learner.

Furthermore, a qualitative description of the learner's manner of reading was described via a checklist. The Phil-IRI Form 3B, which was the Grade Level Passage Rating Sheet, was used wherein the teacher indicated the time spent by the learner in reading the passage. Likewise, the learner's miscues were marked and summarized, and the comprehension responses were recorded in this form. This form yielded the speed and rate in reading, and the reading level for the passage in both word reading and comprehension. The post-test was administered after the implementation of the strategy.

Data Analysis

This study used the mean to determine the level of reading fluency and described the scores of the participants in the control and experimental groups before and after the implementation of Phil-IRI-Based eBook. Independent sample t-test was used to determine the difference in the reading fluency of the learners after the implementation of Phil-IRI-Based eBook. The Phil-IRI Word Reading Criteria, adopted from the Phil-IRI Manual 2018, was used in the interpretation of scores (Table 1).

Table 1

Level of Reading Fluency

Score Range	Descriptive equivalent	Description
97-100%	Independent	Reads with varied volume and expression; Reads with good phrasing, adhering to punctuation, stress, and intonation; Reads smoothly; and Reads at a conversational pace throughout the reading.
90-96%	Instructional	Reads with minimal volume and expression; Reads with a mixture of run-ons, mid-sentence pauses for breath, and some choppiness; Reads with occasional breaks in rhythm; and Reads fast and slow throughout the reading.
89% and below	Frustration	Reads in a quiet voice; Reads in two or three word phrases, not adhering to punctuation, stress, and intonation; Reads with extended pauses or hesitations; and Reads moderately slowly throughout the reading.

Ethical Issues

To better implement the research and ensure no data was compromised, the researcher abided by the policy of confidentiality and privacy of participants, especially on their academic performance. First, the researcher sought permission from the school head to conduct the study. The researcher also sought permission from the parents of the participants that their academic performance would be used in this research. Parents' consent was distributed for the parents of the participants to sign. Assent forms were also given to the experimental group for them to sign if they were willing to participate in the study.

The eBook material to be used was validated by the School Learning Resource Committee together with the Master Teachers and English Majors. In terms of compensating the participants for the time used in the said study, the researcher provided minimal but reasonable snacks for them. Plagiarism and any ethical issues that may have arisen before, during, and after the conduct of the research were taken seriously with utmost confidentiality by the researcher. After the implementation of the intervention to the experimental group, the researcher also implemented it to the control group.

Discussion of Results and Reflection

Level of Reading Fluency of the Learners

Table 2 presents the level of reading fluency of the learners in the pretest and post-test. The level of reading fluency of the learners in the pretest is “Frustration” for both groups with below 89 MPS, 81.67 for the control group, and 78.40 in the experimental group. The learners read in a quiet voice; reads in two or three word phrases, not adhering to punctuation, stress, and intonation; reads with extended pauses or hesitations; and reads moderately slowly throughout the reading.

The finding implies that the learners cannot read more than three word phrases and has long pauses or hesitations throughout the reading and their reading speed is moderate that causes them not to understand the lesson. Pupils did not increase their reading fluency over the following several months following the start of COVID-19 school closures. In terms of reading development, there is no improvement, which suggests that students are around three quarters of a year behind schedule as revealed in the study of Ludewig, et al. (2022). According to Paige (2020) expressive reading is significant in understanding a text. This also agrees with Walczyk and Griffith-Ross (2011) findings that effective reading comprehension is founded by reading fluency.

Post-test result showed that the learners in the experimental group at least improved to instructional level while the control group were under frustration level. This shows that the learners in the experimental group can read with minimal volume and expression; reads with a mixture of run-ons, mid-sentence pauses for breath, and some choppiness; reads with occasional breaks in rhythm; and reads fast and slow throughout the reading while the control group read silently and slowly without following punctuation, emphasis, or intonation rules; they also read with prolonged pauses or hesitations.

This implies that printed reading materials and digitized materials can enhance reading fluency of learners. However, the use of eBook has a greater impact in enhancing reading fluency among learners. Acosta (2022) stated that multimedia eBooks tend to be

effective because of the technology-based interactivity, which enables children to relate to stories in ways that print books do not.

The Mean Percentage Scores (MPS) are provided for both groups, indicating the average performance across all learners in each group. The control group experienced frustration consistently during the intervention, and their average posttest score increased by a moderate amount while the experimental group, which had learners experiencing both instructional and independent conditions during the intervention, showed a more significant improvement in posttest scores, increasing from 78.40% to 95.80%.

Table 2

Mean Percentage Score on Reading Level of Learners

Control Group					Experimental Group				
Learner	Pretest	Description	Posttest	Description	Learner	Pretest	Description	Posttest	Description
1	78%	Frustration	79%	Frustration	1	77%	Frustration	95%	Instructional
2	86%	Frustration	91%	Instructional	2	81%	Frustration	98%	Independent
3	80%	Frustration	82%	Frustration	3	79%	Frustration	93%	Instructional
4	82%	Frustration	84%	Frustration	4	74%	Frustration	97%	Independent
5	77%	Frustration	79%	Frustration	5	69%	Frustration	92%	Instructional
6	85%	Frustration	86%	Frustration	6	78%	Frustration	98%	Independent
7	80%	Frustration	83%	Frustration	7	85%	Frustration	91%	Instructional
8	81%	Frustration	87%	Frustration	8	81%	Frustration	97%	Independent
9	86%	Frustration	85%	Frustration	9	76%	Frustration	99%	Independent
					10	84%	Frustration	98%	Independent
MPS	81.67	Frustration	84.00	Frustration	MPS	78.40	Frustration	95.80	Instructional

Difference Between the Pre-test and Post-test Scores

The significant difference between the pre-test and post-test scores in the experimental and control groups is presented in table 3. Results shows significant and large difference between the pre-test and post-test scores. This means that with or without intervention, significant improvement can still happen but not as large as when the eBook was used which improved the scores of the learners in the experimental group from frustration level to instructional level. It further implies that even the learners in the control group also improved although they are still classified under frustration level. The results supported the result that the intervention or treatment had a significant impact on the learners' reading fluency in both groups.

It was supported by Villegas, et al (2023) in their research that digital reading materials improve students' reading efficiency more effectively. The research provides substantial evidence for the idea that accessing digital texts improves pupils' reading comprehension and fluency significantly.

Table 3

T-test Result between Pre-test and Post-test Comparisons

Group	Test	MPS	t-value	p-value	Cohens d	Remarks
Experimental	Pre-test	78.40	-10.309	<.001	3.26	Significant and large
	Post-test	95.80				
Control	Pre-test	81.67	-3.300	.011	1.04	Significant and large
	Post-test	84.00				

Difference in the Pre-test and Post-test Scores Between the Control and Experimental Groups

Table 4 shows that while there wasn't a significant difference in pre-test scores between the groups, the post-test scores show a significant and large difference. The Cohen's d values provide insight into the practical significance of the observed effects. The large effect size in the post-test scores suggests that the intervention or treatment had a

substantial impact on the experimental group's performance. This implies that the learners in the experimental group improved better than the learners in the control group in terms of word recognition. This strong evidence supports the claim of significant improvement in reading fluency from pretest to posttest for both groups. The large difference can be from what was transpired during the implementation wherein learners from the experimental group was more concentrated and more motivated in reading than that of the control group.

The result of the study of Karman and Ertem (2018) is in corroboration with the findings of the current study where they discovered a substantial difference between the groups reading digital text and the groups reading printed text in their investigation. They discovered that reading activities using digital texts improved fluency.

Table 4

T-test Result Between the Pre-test Scores and the Posttest Scores of the Control and Experimental Groups

Test	Group	MPS	t(17)	p-value	Cohens d	Remarks
Pre-test	Control	81.67	1.708	.106	0.8	Not Significant
	Experimental	78.40				but with Large Effect Size
PostTest	Control	84.00	-7.650	<.001	3.51	Significant
	Experimental	95.80				and Large

Note. Cohens d (.2-small, .5-medium, .8-large)

Reflection

The study's results demonstrated a positive and significant impact of the intervention on reading fluency for both the control and experimental groups. Notable improvements were observed in reading fluency from pretest to posttest, with the control group reaching a mean of 84 and the experimental group achieving a more substantial mean of 95.80. The intervention effectively enhanced participants' reading abilities.

Moreover, posttest data revealed larger standard deviations within each group, indicating increased variability in reading fluency scores. This suggests that the intervention

had varying effects on individual learners, resulting in a wider spread of scores. However, overall, there was a noticeable improvement in reading fluency across both groups.

The statistical analysis, with very small p-values for both groups, strongly rejected the null hypothesis of no difference in reading fluency. The significance level (0.05) was surpassed, further supporting the claim of significant improvement from pretest to post-test. This reinforced the notion that the intervention played a vital role in the observed improvements.

As a researcher, I have learned several key insights from the conduct of this study. The results, illustrate the impact of the intervention on reading fluency scores for both the control and experimental groups. The pretest and post-test mean scores, along with the corresponding p-values, shed light on the effectiveness of the intervention in enhancing reading fluency. As a teacher, I have gained valuable insights into the effectiveness of the intervention, which can guide future educational strategies and research endeavors in the field of reading fluency improvement.

The success of the research can be attributed to the effectiveness of the intervention, the use of a well-designed experimental approach with a control group, careful participant selection, and randomization. Additionally, the use of robust statistical analysis and the expertise of the researchers played key roles in achieving meaningful and statistically significant results.

In conclusion, the study's findings were encouraging, showing that the intervention positively influenced reading fluency in both the control and experimental groups. These results have important implications for enhancing reading skills and can contribute to educational strategies aimed at improving learners' reading abilities. Further research exploring individual learner characteristics could shed light on the varying effects and factors influencing the observed improvements in reading fluency.

Summary of Findings

1. The level of reading fluency of the learners in the control group is “Frustration” for both pretest and post test. The experimental group level of reading fluency in the pretest is “Frustration” which improves to “Instructional” level in the post test.
2. There is a significant in the level of reading fluency of the learners for both control and Experimental groups.
3. There is a significant improvement in reading fluency from pretest to posttest for both groups. The large difference can be from what was transpired during the implementation wherein learners from the experimental group was more concentrated and more motivated in reading than that of the control group.

Conclusions and Recommendations

Conclusions

Based on the findings, the following conclusions were drawn:

1. The PhillRi ebook improves the reading fluency level of the Grade 3 learners.
2. The PhillRi ebook is an effective intervention material for the reading fluency level of the Grade 3 learners.
3. The PhillRi ebook is more effective than using printed materials in improving the reading fluency of Grade 3 learners.

Recommendations

Based on the conclusions, the researcher would recommend the following;

1. Integrate the PhillRi ebook into the Grade 3 curriculum, creating lesson plans that align with specific reading fluency goals.
2. Conduct training programs for Grade 3 teachers, ensuring they are proficient in using the PhillRi ebook and can effectively incorporate it into their literacy instruction.

3. Promote the use of digital resources, emphasizing the benefits of the PhillRi ebook over printed materials. Share research findings to encourage broader adoption within the educational community.

Action Plan

Based on the results of the study, which indicate notable improvements in reading fluency for both the control and experimental groups following the intervention or treatment, the researcher will adopt the intervention for the upcoming Grade 3 learners. It will also be shared and presented to other teachers in the school. The findings will be presented in a research forum, seminar-workshop, or SLAC in Mayoyao District. The researcher also designed a plan to enhance reading fluency and improve educational outcomes by focusing on five key objectives. Firstly, it emphasizes providing ongoing professional development for teachers, ensuring they have the necessary skills and knowledge to effectively teach reading fluency. Secondly, it aims to identify learners in need of additional support through systematic assessments and targeted interventions. Thirdly, it seeks to foster collaboration among teachers and researchers to align efforts and share insights. Fourth, the plan includes sharing study findings and successful strategies with other schools and stakeholders to create a broader impact. Lastly, it prioritizes continued investment in research and evaluation to refine and optimize reading fluency interventions over time. Together, these objectives form a comprehensive approach to improve reading fluency and drive positive educational outcomes. By implementing this action plan, teachers and school heads can build upon the positive outcomes observed in the study and create an environment that fosters significant and sustained improvements in learners' reading fluency levels.

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Financial Report

A. Supplies and Materials							
Activity	Item	Unit	Quantity	Estimated Cost	Total	Actual Cost	Total Actual Cost
Implementation of the study and Preparation of Research Papers, Instructional Materials/Worksheets, and other documents	A4 Bond Paper	ream	10	250.00	2,500.00	250.00	2,500.00
	A4 Folder Tag Board with Fastener	Pc	10	10.00	100.00	12.00	120.00
	Printer Ink Black	bottle	6	300.00	1,800.00	330.00	1,980.00
	Printer Ink Cyan	bottle	2	300.00	600.00	330.00	660.00
	Printer Ink Magenta	bottle	2	300.00	600.00	330.00	660.00
	Printer Ink Yellow	bottle	2	300.00	600.00	330.00	660.00
	USB Flash Drive	Pc	1	1,000.00	1,000.00	800.00	800.00
	Ballpen	pc	60	15.00	900.00	12.00	720.00
	Pencil	pc	60	15.00	900.00	15.00	900.00
	Notebook	pc	20	25.00	500.00	25.00	500.00
B. Domestic Travel Expenses							
Submission of deliverables- First Tranche with wet signatures	Courier		1	200.00	200.00	200.00	200.00
C. Food and other incurred expenses during the conduct of research							
Validation of Pretest and Posttest Materials	Meal and snacks of Evaluation Team	pax	5	500.00	2,500.00	500.00	2,500.00
Implementation of the intervention	Snack of Learners/Participants (Control and Experimental Group)	pax	19	100.00	1,900.00	100.00	1,900.00
D. Reproduction, Printing, and Binding Cost							
E. Communication Expenses for the Implementation / Conduct of the Study							
Implementation of the Study - Data Gathering/Collection, Preparation and Submission of Research Papers and other documents.	Cellphone and Internet Load	Card	6	1,000.00	6,000.00	1,000.00	6,000.00
F. Other Expenses							
					20,100.00		20,100.00

Prepared by:

YVONNE SHANE N. BATUNA

Research Grantee