Effectiveness of Information Communication Technology Integration in the Reading Performance of K-3 Learners in a Public Elementary School

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Abstract: *Reading is a very important skill that a learner should learn and developed at an early age to cope up with all the learning tasks, instructions, and activities in school and to be successful in their entire school life and after. This study aimed to determine the effectiveness of Information Communication and Technology Integration in the reading performance of K-3 learners of Naulo Elementary School for the SY 2020 -2021. The researcher utilized the experimental design with the questionnaire and reading texts derived from ELLN reading materials as the main instrument. Control and experimental groups were applied to determine the effectiveness of the traditional method and ICT integration in the reading performance of the non-readers. Statistical tools used in the treatment of data were percentage, weighted mean, and t-test. Results revealed that reading taught by using ICT integration is more effective in the improvement of reading performance of the K-3 learners. This implies that ICT integration can be of great help in making good and more effective reading programs that will enhance the learners' engagement and motivation in reading and will make every learner a reader.*

Keywords: ICT. ICT Integration, K-3, Non-Readers, Traditional Instruction, Reading Performance, Teaching-Learning

1. Introduction

Reading is fundamental in almost all endeavors in life. It is an essential part of basic education and a primary avenue to knowledge. It is the cornerstone of education and the foundation of lifelong learning. It unlocks the unknown and carries the reader to discoveries and learning and one of the most indispensable skills that need to be developed because it opens a child's mind to the world and greatly increases one's life prospects. It can open up new opportunities and enrich lives. Thus, the ability to read is highly valued and realized for social and economic advancement. It influences us on how we interact with the world and most importantly, it is a requisite medium by which many students learn. Moreover, it is the path to lifelong learning that hones a child to be successful in life.

The ability to read is the foundation for a successful education. Reading is important because if a child can read, he can easily learn anything about everything and everything about anything (Tomie de Paola). A child who fails to develop his reading skills at a certain level of his education finds reading boring and difficult to achieve. If children are not independent readers by the end of the third grade, most likely they will not be able to succeed in the middle grades and beyond and will not be able to "catch up" with their peers. This phenomenon of reading failure makes the child inattentive, irritable, and passive. Therefore, his failure in this area hampers him to achieve academically in other content area subjects. Based on observation, this may even lead to a negative attitude towards schooling and are more likely to be retained and drop out of school. Thus, preventing reading difficulties early in children's school careers is very important to make them well-developed and successful learners.

Learning how to read is the main concern of the teachers in the elementary grade particularly the primary teachers. It is in their hands that lie the responsibility of making every learner a reader. They are the ones responsible for opening the child's mind to give value and importance to reading. If there is one important thing that teachers can do to help a child become successful in school and life, it is to encourage him to be a reader and love reading. If a child becomes a good reader, it would be easy for him to learn the lessons in other subjects. Learning tasks and activities in school would be easier and enjoyable because the learners can read and follow instructions and can perform what is required of them. Thus, making every learner motivated, inspired, and active in schooling.

The foundation of equipping the reading capacity of a child is being done during the primary grade of schooling (Manolito Basilio, 2018). According to him, it is in this period that the learners should learn and acquire the knowledge and skills in reading. Based on the interview with a Grade I teacher for 35 years, Wilma M. Sison, the ten months of first grade are certainly the most important and critical stage in a child's schooling. It is during first grade that most children can define themselves as good or poor readers. The reason why a child's reading materials should feature a high proportion of new words that use letter-sound relationships. Based on her experiences in teaching, the development of learners' reading skills and habits at this early stage of learning would make the learners easy to learn and develop their reading abilities at a higher grade level. According to her, good academic performance in school can be easily acquired if the learners are good readers.

The Department of Education strongly believes that reading is a learning tool and has given priority and importance to developing the reading skills and abilities of our young learners through the K to 12 Curriculum. However, based on the 2018 Programme for International Student Assessment (PISA) National Report, the Philippines ranks in the low 70's in Reading, Mathematics, and Science across 79 countries doneby the Organization for Economic Cooperation and Development (OECD). Specifically, it ranked 79th in reading literacy. PISA defined reading literacy as "understanding using evaluating, reflecting on, and engaging

with texts to achieve one's goals and to develop one's knowledge and potential to participate actively in the society." Based on the PISA report, Filipino students obtained an average score of 340 points in Overall Reading Literacy, which was significantly lower than the OECD average of 487 points. Based on the result, their proficiency is too low to enable them to participate effectively and productively in everyday life.

In line with the Dep. Ed. Memorandum No. 067, the goal of Dep. Ed. Order No. 18, s. 2017 which is the "Every Child a Reader Program (ECARP)" had also been emphasized. The main objective is to develop among Filipino children the literacy, numeracy skills, and attitudes that will contribute to lifelong learning. In response to this matter, the Department established a sustainable and cost-effective professional development system for teachers by providing seminars and trainings to improve the literacy, numeracy skills, and attitudes of the learners from Kindergarten to Grade III for lifelong learning. In line with the K - 12 program which is the Early Language, Literacy and Numeracy Program (ELLN) which has a goal of making every child a reader and had also been implemented to strengthen the Dep. Ed reading programs for every school to address the reading needs and difficulties of the learners from K-3.

2. Background of the Study

A child's reading skills are important to their success in school. The complexity of teaching this skill lies in motivating the learners to be interested and fully engaged with the reading activities. It is also important that the teacher should be knowledgeable, innovative, creative, and sensitive to the reading needs of the learners in the primary grade level.

Researchers in the field stress that no learning takes place without the teacher, the learner, and the learning environment. Teachers are the key factors in classroom learning. They are the ones responsible for creating the best possible conditions for learning. They should have enough and a thorough understanding of the nature of their learners and how learning occurs. Besides, the teachers' knowledge and abilities on how to make the reading lessons interesting to the primary grade learners encouraged them to learn, love, and enjoy reading. Most importantly, teachers should have thorough, creative, and effective skills and strategies in making reading interesting, fun, and enjoyable so that the learners will be motivated and eager to learn every day. Thus, preventing the problem of absenteeism among the learners that may hinder their opportunities to learn. Yet, with the advent and introduction of Communication Information and Technology (ICT) in the classroom, the teaching practices undergo critical changes that promise the alignment of teaching language with the prompt changes of technologies.

The learners today are quite different from the learners before. Traditional teaching is no longer applicable since the learners today are exposed to technologies and gadgets which also changed their way of learning. Based on observation and experience, using technology in the classroom motivates children to learn, sustain interest, and

enhance reading instruction. Many students are more stimulated and eager to learn when the way of learning is aided with technology.

It is a fact that children learn differently. Some of them need visual experiences. Others respond to auditory cues and some need hands-on familiarity. Some need all three. The same is true when children learn to read. Technology gives teachers exciting new ways to accommodate individual differences among the learners. Using appropriate technologies, children can see, hear and feel the concepts of reading and writing.

The Department of Education (Dep. Ed) is geared towards the transformation of education through the Dep. Ed Computerization Program (DCP), as stated in the Dep. Ed order no. 78, s. 2010. DCP aims to provide public schools with appropriate technologies that would enhance the teaching and learning process and meet the challenges of the 21st century. One of the objectives of the DCP is to integrate ICT in the school system and raise the ICT literacy of the learners, pupils, students, teachers, and school heads.

Information and Communication Technology (ICT) is an instructional technology to enhance teaching and learning in schools. It is the application of organized or scientific knowledge to practical tasks of teaching and learning, especially in pre-schools. According to Akinola and Aromo (2011), instructional technologies incorporate the tools and making present support to reinforce teaching and learning on pre-school pupils. Their findings revealed that having technology tools in the classroom greatly increased the pupil's achievement because many interactive activities in the classroom can be provided to them.

ICT is considered at present as a potential tool that provides educational opportunities in both formal and non-formal ways. In the teaching and learning process, ICT can increase learners' motivation and engagement in classroom learning (Tinio, 2012). It equips the learner with digital-age literacy, inventive thinking, higher-order thinking and sound reasoning, effective communication, and high productivity. This was supported by Warschauer (2014) which considered ICT as a powerful tool in the landscape of language teaching. According to Jung (2016), the use of ICT in the arena of modern language education is no longer a choice, but a necessity that gives life to the different vistas on how language is effectively taught and learned.

The integration of technology challenged the teachers' traditional methods of teaching and developed new skills such as applying the Constructivist approach to teaching, learning, and orchestration, where the teachers fulfilled various roles and systematically organized different activities with technology depending on students' needs. (Wake and Whittingham, 2013). The technology was looked upon as a tool to help teachers deliver a better lesson and better reading instruction.

The integration of Information, Communication, and Technology into education provides also opportunities for teachers and students to work better in a globalized digital age, particularly in the teaching and learning environment

(Lawrence, 2013). Technological innovations are increasingly being used to derived changes intended to deliver significant improvement in education. The use of ICT is to improve and enhance the quality of teaching and learning essential for successful education in the 21st century.

The research conducted by Moreno (2015) showed that Information Communication and Technology is considered an effective teaching innovation that may improve the teaching and learning process. Using ICT in the classroom motivates students to be attentive and participative. Teachers facilitate instruction without losing time and energy in achieving the learning outcomes. The integration of ICT in the classroom provides meaningful and productive learning experiences through a student-centered classroom and demonstrated good academic performance in their lessons.

The effective use of technology in education has changed the face of education and it has created more educational opportunities. Both teachers and students have benefited from various educational technologies. Teachers have learned how to integrate technology in their classrooms and students are getting more interested in learning with technology. The use of technology education has removed educational boundaries. Both students and teachers can collaborate in real-time using advanced educational technologies.

Researches and studies showed that technology does have the potential to enhance reading instruction. Decisions about the effectiveness and utilization of technology need to be based on an understanding of the school or district reading program synchronized with an understanding of the potential uses of technology and careful analysis of the alignment between the needs of the reading program and the capabilities brought by the technology. Furthermore, researches and studies also suggest that educational technologies can improve student achievement in such a way that, tools are integrated thoughtfully and carefully in teaching and learning and incorporated meaningfully into instruction.

3. Research Methodology

This portion provides a presentation and description of the research methodology, respondents of the study, construction and validation of the instruments, data gathering, and treatment of data.

The research utilized an experimental method. Experimental means that pre-test and post-test were made to discover the effectiveness of ICT integration on the reading performance of K - 3 non - reader learners.

Control and experimental groups were used to determine the effectiveness of ICT integration in the reading performance of the non - readers. A pre-reading assessment with the same content of words was administered to the two groups before the experiments. The experimental group was exposed to the use of ICT integration in reading instruction while the control group used the traditional way of teaching reading. The post-reading assessment was also given to the two

groups with the same content of words. Results of the respondent's scores during the pre-test and post-test were tabulated and interpreted. The data were treated through mean and t-test.

The instrument used in this study were the reading texts derived from the reading materials of Early Language Literacy and Numeracy (ELLN) which is a K-12 program aim to strengthen the Dep. Ed reading programs for every school to address the reading needs and difficulties of the learners from K-3. There were 25 words given which served as a learning standard for the respondents to measure their reading abilities and performance. Both the pre-reading and post-reading tests were the same when administered.

The following statistical tools were employed:

Percentage (%): This was used to determine the proportion of respondents in terms of personal–related variables.

Weighted Mean (X): This was also used to know the final weight of each item on the survey – questionnaire and the frequency of each answer given by the respondents.

t-Test. This was employed to determine if there are significant differences between the pre-assessment and post-reading assessment of the respondents in terms of the traditional method of reading instruction and the integration of ICT in reading instruction.

Independent Sample t-Test (t): This was used to test the significant mean difference between the pre-assessment of reading performances as well as the post-assessment of reading performances of the students taught using the traditional methods and those taught with ICT integration. The level of significance used was 5%.

5. **Dependent t-Test**. This was used to determine the significant difference between the pre-a post-reading assessment of the students taught using the traditional method as well as the pre-and post-assessment of reading performances of the students taught with ICT integration. The level of significance used was 5%.

The following hypotheses were tested:
1) There is no significant difference between the pre-assessment reading performances of the students taught using the traditional method and those students taught with ICT integration.
2) There is no significant difference between the pre-reading assessment and post-reading assessment of the respondents in both groups.
3) There is no significant difference between the post-assessment reading performances of the two groups.

4. Results and Discussions

1) Profile of the Learner Respondent
Age: The age of the respondents range from 5-10 years old, 46% of them were 6 years old, 22% were 5 years old, 12% were 7 years old, 14% were 8 years old, 4% were 9 years old and 2% were 10 years old.

Gender: The greater number of non-readers were male which composed of 58% or 29 learners while female non-reader respondents composed of 42% or 21 learners.

Dialect: there were only two dialects being used by the respondents , thirty eight (38) or 76% of the respondents usedTagalog and twelve (12) or 24 % of the respondents were Zambal.

2) **Parent's Educational Attainment:** The distribution of respondents according to father's educational attainment. It can be reflected that thirty eight (38) or 76% of the respondent's father were high school and twelve (12) or 24% were elementary graduate while the greatest percentage of the mother's educational attainment were high school graduate which composed of thirty two (32) or 64 % , twelve (12) or 24% were elementary graduate and two (2) or 4% has no educational attainment. Pre- and Post Reading Performances of the Learners Taught Using Traditional Method and Learners Taught with ICT Integration. The Pre-reading assessment results of the K-3 learners using the Traditional Method and with ICT Integration in reading instruction. The result shows that the range of scores of the respondents range from poor and very poor with a mean of 3.88 in Traditional Method and 3.84 in reading instruction with ICT integration.

3) Post Reading Assessment Results of the K-3 Learners.. It is reflected that there is a great improvement to the reading performance of the respondents to both of the two methods used . However, there is much increased in the reading performance of the leaners who undergone reading instruction with ICT integration as shown in the mean value of 20.44 and their scores range from Good to Outstanding as compared to 17.08 as the mean value of the respondents' reading performance using the Traditional Method and their scores range from Poor to Outstanding. It can be seen that reading instruction with ICT integration can be an effective way of improving the respondents' reading performance.

4) Significant Difference between the Pre-assessment of Reading Performances of the Two Groups.. It is reflected that there are significant differences with computed t-values of 20.815 for traditional method and 25.717 for students taught with ICT integration. The null hypothesis is rejected in both groups because the computed value is significant at 5% level. This indicates that the two strategies are effective in increasing the reading performance of students since the increase in scores is significant.

5) Significant Difference between the Post Assessment of Reading Performances of the Two Groups. The t-test value for the significant difference between the post assessment of the students taught using the traditional method and the post assessment of reading performance of students taught with ICT integration. The computed t is 2.067 which is significant at 5% level. The null hypothesis is rejected.

6) Implication of the Study.
Based on the result and findings of the study , reading instruction with ICT integration can be an effective way of improving the reading performance of the learners of K-3 at Naulo Elementary School. Hence, it could be the basis of crafting an effective reading program which could be applied by the teacher in developing the reading skills of the learners and in making every learner a reader.

5. Conclusions and Recommendation

Based from the findings, the following conclusions were drawn:
1) It showed that the higher percentage of non- readers were at young age of five and six and mostly were male learners. Parental support and assistance in developing the reading skills and abilities of the children were not given by both the mother and the father due to no stable source of income brought by the level of educational attainment.
2) It showed that the use of the two methods or strategies of reading instruction are both effective using the traditional and ICT integration. However, there is a great increase in the improvement of the reading performance of the learners using ICT integration.
3) It showed that there is no significant difference in the pre- test result between the two method of reading instructions. Hence, it means that learners from both groups (experimental and control group) had the same level of reading performance before ICT integration has been used.
4) It can be concluded that the two strategies are effective in increasing the reading performance of the K-3 learners, therefore both strategies can still be used as reading instructions. Knowledgeable and dedicated teachers are the critical element in successful reading instruction programs because teaching children to read is too complex. It requires insight into children's nature, abilities and needs which can only be done by caring and knowledgeable teachers. However, the use of ICT integration can support teachers and help them be more successful in teaching the children.
5) It can also be concluded from the results that after the two method was being implemented, the post test reading assessment indicates a significant difference. It showed that with the integration of ICT in the reading instructions, the reading performance of the learners increased much better as compared to the traditional reading instruction.
6) The study found out that ICT integration in reading instructions has a positive effect on the reading performance of K-3 learners of Naulo Elementary School.

In the light of the findings and conclusions derived from the investigation, the following recommendations were offered:
1) Intensive implementation of reading instruction should be done at the age of 5-7 because this is the foundation of learning. If they become good readers at this early age, most likely they will be able to be successful in the higher grade level and it would be easy for them to learn other learning tasks and activities in school.
2) Conduct conference with the parents of the K-3 learners and explain to them the importance of their participation and support in teaching their children to read. Encourage them to give time and make a constant follow-up of their children at home by providing them reading materials so that the learners will not forget the

words they read in school and to sustain their interest and habits of reading.

3) Provide a well-organized teachers training on how to integrate ICT effectively in reading instructions to enhance the learning process of reading and maximize the learners' abilities in reading.

4) Primary teachers should focus in developing the reading abilities skills and habits of the K-3 learners by making their reading instructions creative, fun and interesting so that the learners will be motivated, engaged and develop positive attitude towards reading. Most importantly, to make every learner a reader.

5) Constant monitoring and evaluation in the implementation of ICT integration in reading instruction to sustain its effectivity and functionality.

6) The findings claimed that there is a need to implement the action plan in school regarding the ICT integration in the reading instructions of K-3 learners to have a better performance in reading and to have a zero non-reader learner.

7) Follow up study regarding the topic should be conducted to gather more insights about the effectiveness of ICT integration in the reading instructions.

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