

**Ecological Factors Affecting Functional Literacy of
Indigenous Learners in Tanay, Rizal
School Year 2018-2019**

*Dulce P. Catolos¹
Jhenine E. Fulgueras²
Ronafe O. Peñueco³
Mark Alfred F. Regalario⁴*

*College of Education
University of Rizal System, Pililla, Rizal
ted347_frence@yahoo.com¹
jhenfulgueras111895@gmail.com²
ropenueco@gmail.com³
regalariomark69@gmail.com⁴*

Abstract: This study aimed to assess the level of functional literacy of indigenous learners of selected elementary schools in Tanay, Rizal. It also aimed to assess the ecological factors that surround the learners, and ultimately, how these factors affect the development of their literacy skills. A sample of sixty-one students were randomly selected from a population of 160. The sample was narrowed down to students from grades four to six, and the school they attended was used as the stratum. The researchers administered a validated questionnaire-checklist to the respondents. The questionnaire is composed of three parts – the respondent’s profile, a Likert Scale, and a literacy test. The results showed that the average reading rate was way slower than what is expected of a functionally literate individual. The average score for comprehension was also slightly lower than a passing score. In terms of writing and numeracy, the average scores passed. Multiple regression analysis showed a significant relationship between home conditions and literacy skill. The results of ANOVA showed that females outperform males in reading speed and writing. Older respondents were also better in the same aspects. Grade 4 respondents perform worse than grades 5 and 6. A significant difference between the three schools was not found.

Keywords: Indigenous People, Literacy, Public Elementary School

Introduction

Literacy is one of the most important skills to have, despite its ever-expanding definition. It remains as the most basic tool that is necessary for social development and mobility. Illiterate groups are unable to fully participate in and compete with the developing world.

Since 1948, the acquisition of basic literacy skills has been recognized as a basic human right. Literacy for all is at the heart of basic education for all. Creating literate environments and societies is essential in order to achieve the goals of eradicating poverty, reducing child mortality, curbing population growth, achieving gender equality and ensuring sustainable development, peace and democracy. It is evident that a vital component of the right to education is literacy; not only as a tool, but as a right that helps achieve the fulfillment of this universal human right, the full

development of the person, and therefore, the possibility of enjoying and exercising all other human rights (UNESCO, 2013).

UNESCO defines functional literacy as the capability to engage in all those activities in which literacy is required for effective function of his or her group and community and also for enabling him or her to continue to use reading, writing and calculation for his or her own and the community’s development. In contrast to basic literacy, which is simply the capability to read and write, functional literacy is the mastery of reading and writing in such a way that it is practical enough to be used in one’s daily activities.

In order for reading to be useful in everyday applications, it has to be done in a practical pace. Too slow and it would be far too difficult to perform tasks that require reading. The Philippine Informal Reading Inventory (2018) puts the standard of reading speed at

110 words per minute. Many intermediate learners, who are expected to be functionally literate, fall far behind this metric (Gillaco, 2014).

The government continues to provide support for the development of education, especially in rural areas. The determined implementation of Enhanced Basic Education Curriculum or K to 12 is a valiant move manifesting the sincere attempt of the education sector towards providing proper education to everyone. This includes programs that ensure maximum participation rate of citizens relative to their right to quality education. To name a few, ALS or Alternative Learning System, ADM or Alternative Delivery Modes, Multi-Grade Education, SPED OR Special Education, Mother Tongue-Based Multilingual Education or MTB-MLE, and a host of other special program that would suit the need of every unique learner. These are besides the basic elementary and secondary curricula (Basilio, 2017).

In 2011, the Department of Education (DepEd) adopted the National Indigenous Peoples Education (IPEd), an education policy framework for IPs that intends to make the educational system of the Philippines inclusive and respectful of the diversity of learners especially those in the minority groups. The education policy framework for IPs seeks to ensure that the provision of equality basic education for all IPs will lead to functional literacy.

Illiteracy remains prevalent in public elementary schools in the Philippines. The OECD (2018) found that 80% of the Filipino learners are only at Proficiency Level 1. This means that they can only understand literal sentences and passages – far too low compared to the international standard.

The researchers firmly believe that it is necessary to understand the roots of illiteracy in order to properly address it. This study is their small contribution towards this cause. In addition, this study serves as a means to develop the researchers' skills that will be necessary in the service of their communities as future educators.

Scope and Limitation of the Study

This study focused on measuring ecological factors and functional literacy rates of indigenous learners of selected elementary schools in Tanay, Rizal, namely, Tablon Elementary School, San Andres Elementary School, and Sto. Niño Elementary School. The respondents were limited to pupils from grades 4 to 6 during the School Year 2018-2019. The factors that were observed were limited to five (5), namely, home

conditions, school conditions, access to services, peers, and personal factors. The study did not include quality of instruction as one of its variables.

Setting of the Study

The study was conducted across three different schools in Tanay District 2B that cater to indigenous people, namely, Tablon Elementary School, San Andres Elementary School, and San Antonio Elementary School.

Related Studies

The most recent FLEMMS Survey (2013) divides literacy into 5 levels – cannot read and write (Level 0), can read and write (level 1), can read, write, and compute (level 2), can read, write, compute, and comprehend (level 3), and high school graduate or higher (level 4). 91.1% of Filipinos age 10-14 can read and write. 83.2% can read, write, and compute, while only 54.8% can read, write, compute, and comprehend.

The score for basic comprehension is alarmingly low. Moreover, emergent learners have been found to perform worse in higher levels of comprehension (Brito, 2018). Within this age group, a child is expected to be functionally literate. At the same time, this is also when he starts to use his reading abilities to acquire other skills of his interest (Chall, 1983). For this reason, it is important to develop reading skills in elementary school. Difficulties in reading may persist in secondary school and cause further hindrance to the learner (Tizon, 2010).

One of the groups with highest levels of functional illiteracy is the indigenous peoples. Their communities remain among the poorest and most disadvantaged regions. Their remote locations mean less access to basic services and material (De Vera, 2007). These poor socio-economic conditions have a detrimental effect on reading development. Furthermore, these issues may be a reflection of the poor reading background of the parents who play crucial supporting roles in the child's development (Absolon, 2010). A child's first experiences of reading come from home, and it is something that illiterate parents cannot provide adequately (Akubuilio et al., 2015).

While the gaps in reading ability are determined by factors that exist prior to schooling, the responsibility to close them falls upon schools (Lyon, 2015). Formal education is responsible for reading development, and definitely impacts the literacy skill of its learners. Teaching quality is a large factor in

development, second only to the child's home (Waldfoegel, 2012). Therefore, if the school is lacking, reading development is adversely affected.

The physical condition of the schools can also influence student achievement. Availability of facilities and materials has a significant effect in student development (Doane, 2008). Class size has a small observable effect on literacy (Watson, 2016). Schools that are overcrowded or are lacking in facilities usually have their students sharing books and equipment which can limit the quality of instruction.

Peers also have a significant positive effect in academic performance and literacy development (Ngussa, 2015). Interacting with peers who are performing better academically promotes healthy competition which encourages a learner to do better (Mihaly, 2009). The more motivated and interested a student is in the learning process, the more likely that the student will display a greater effort and more interest in learning (Cooc & Kim, 2016).

All of these environmental factors affect literacy development to varying degrees. However, the difference between the living conditions between the dominant social group and the indigenous peoples is so great that it leaves the natives years behind their peers.²⁰

Objectives of the Study

The main objective of the study is to assess functional literacy rates of students belonging to indigenous groups in Tanay, Rizal and its relationship to selected ecological factors.

Specifically, the study aimed to answer the following questions:

1. What is the profile of the respondents in terms of school, sex, age, and grade level?
2. What is the level of ecological factors in terms of home conditions, school conditions, access to services, peers, and personal factors?
3. What is the level of functional literacy of indigenous learners in terms of reading speed, writing, comprehension, and numeracy?
4. Is there a significant relationship between ecological factors and functional literacy?
5. Is there a significant difference between the level of functional literacy with respect to reading, writing, comprehension, and numeracy in terms of school, sex, age, and grade level?

Theoretical Framework

This study used Urie Bronfenbrenner's Ecological Systems Theory as its framework. The

Ecological Systems Theory identifies five environmental systems that an individual interacts with. These systems affect and provide context to his development. (1992)

The five systems are as follow: microsystem, mesosystem, exosystem, macrosystem and chronosystem. The microsystem refers to the institutions and groups that most immediately affect the individual, like his home, school, peers, and his biology. The mesosystem refers to the interconnections between these groups, e.g., the involvement of his family in school activities, or simply the interaction of his parents and their neighbors. The exosystem refers to social systems in which the individual does not function directly. Examples of this are work schedule of parents and access to resources and services. The macrosystem, the outermost layer, involves laws, values, and cultural contexts that influence the development of the child.²⁵

The study used this framework because it explains the development of an individual without removing him from his community – it acknowledges that development is contextual. The challenges in reading development that indigenous learners face are not limited to the confines of the classroom, but rather stems out from a larger, multifaceted social issue that involves his home, community, and the policy making of the Philippines. However, given the expanse of this theory, this study focused only on the learner's immediate environment – the microsystem.

Methodology

Research Design

The researchers used the descriptive research method. Descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way.

By merely observing at a given instance without any manipulation of its natural context, it makes the behaviors exhibited more credible because they are occurring in a real, typical scenario as opposed to an artificial one generated in controlled conditions.

Sampling Procedure

Stratified sampling was used to determine the ideal sample size and distribution across the three schools. Due to the limited availability of the respondents during the testing period, only 61 samples were collected out of a population of 160. While less than ideal, the sample size is still well within reasonable numbers, as Jenkins and Quitana-Ascencio (2020)

recommend a minimum of 25 samples for regression analysis.

Instrument

A validated questionnaire-checklist was used to assess both the literacy of indigenous learners and the ecological factors that affect them. The questionnaire checklist was composed of three parts.

The first part consists of respondent profiling – age, school, grade level, and sex.

The second part is a 5-point Likert Scale used to assess the selected ecological factors. It was composed of 5 categories: Home Conditions, School Conditions, Access to Services, Peers, and Personal Factors. Each category was composed of 6 Likert items. The rating scale that was used is as follows:

| Scale | Interval | Verbal Interpretation |
|-------|-------------|-----------------------|
| 5 | 4.20 – 5.00 | Outstanding |
| 4 | 3.40 – 4.19 | Very Satisfactory |
| 3 | 2.60 – 3.39 | Satisfactory |
| 2 | 1.80 – 2.59 | Fair |
| 1 | 1.00 – 1.79 | Needs Improvement |

The last part is a literacy test, composed of a reading exercise, a short comprehension assessment, a writing test, and a basic numeracy test.

Procedure

The questionnaire-checklist was administered to the respondents. The Likert Scale was accompanied with an interview in order to assist the respondents in answering them as accurately as they can. During the literacy test, the respondents were also timed while they were reading the passages in aloud. The respondents then answered the rest of the items on their own.

Data Analysis

Percentage frequency and rank distribution was used to summarize the profile of the respondents. Weighted mean was used to assess the levels of ecological factors. The results of the literacy test were also averaged.

Multiple regression was employed to determine whether a significant correlation exists between the factors and the respondents’ performance.

Lastly, ANOVA was used to compare the respondents grouped by school, age, sex, and grade level.

Findings

Table 1. Profile of respondents

| Characteristics | Frequency | Percentage | Rank |
|--------------------|-----------|------------|------|
| Age | | | |
| < 10 yo | 15 | 24.59 | 2 |
| 10 – 14 yo | 46 | 75.41 | 1 |
| Grade Level | | | |
| 4 | 19 | 31.15 | 2 |
| 5 | 17 | 27.87 | 3 |
| 6 | 25 | 40.98 | 1 |
| Sex | | | |
| Male | 24 | 39.34 | 2 |
| Female | 37 | 60.66 | 1 |
| School | | | |
| Tablon | 25 | 40.98 | 2 |
| San Andres | 19 | 31.15 | 3 |
| Sto. Niño | 17 | 27.87 | 1 |

Table 1 shows the profile of the respondents in terms of age, grade level, sex, and school attended.

The results show that most of the respondents are at least 10 years old. In terms of grade level, most of them are in the intermediate level, with grade 6 pupils composing 40.98 percent of the sample.

Functional literacy is generally expected from children at least 9.5 years old. It is also equivalent to the reading capabilities of a grade 4 pupil. It is also during this period that children begin reading to learn, adding more importance to early intervention for disadvantaged readers.

Chall and Jacobs (2003) noted a stagnation of reading development in low-income children during this period, dubbing it the “fourth grade slump”. This deceleration creates a gap between disadvantaged children and their peers, placing them years behind in development as they progress throughout formal schooling.

Table 2. Levels of ecological factors that affect functional literacy of indigenous learners.

| Factors | Mean | Rank | Verbal Interpretation |
|--------------------|------|------|-----------------------|
| Home Conditions | 4.18 | 3 | Very Satisfactory |
| School Conditions | 4.58 | 1 | Outstanding |
| Access to Services | 3.77 | 5 | Very Satisfactory |
| Peers | 4.12 | 4 | Very Satisfactory |
| Personal Factors | 4.36 | 2 | Outstanding |
| Average | 4.20 | | Outstanding |

Table 2 presents the mean score of each ecological factor as rated by the respondents. On average, the ecological conditions are outstanding. However, it should be noted that the objectivity of these results is limited.

Home Conditions. A very satisfactory score in home conditions implies that the respondent's parents are capable readers and are actively showing concern on their child's reading development. It also means that the respondent has access to reading materials at home and regularly reads them.

School Conditions. Surprisingly taking the highest rank, the selected schools have shown adequate facilities despite their remote locations. Due to small student population, class sizes are maintained at less than 30 pupils. There are also enough books to go around, removing the necessity for sharing. All the schools have open libraries. They also have access to electricity through solar panels.

Access to Services. The remote location of the respondents creates geographical challenges to accessibility. Receiving the lowest rank, the respondents noted the limited of access to electricity at home. Some of the respondents have access to solar panels that provide power enough for lighting and radio, while others had no electricity at all. Without power, the respondents can only do their schoolwork and other reading activities during daytime. This also means they have no access to internet sources and multimedia devices, which could have enhanced their reading development.

Respondents also noted their travel time to and from the school. A long travel time means less time spent on instruction. This can be observed in Tablon Elementary School, where classes start an hour later than usual.

Peers. The results imply that the school provides a friendly environment to the respondents. An occurrence of discrimination against indigenous groups was not observed. However, there was one case of a respondent being bullied due to their underdeveloped reading skill.

When asked about the reading abilities of their peers, the respondents generally rated them with a low score.

Personal Factors. A very satisfactory score in personal factors indicate that the respondents have a positive outlook towards reading. It implies a personal motivation to read, whether for learning or for leisure. Michalak (2014) stresses the importance of the personal drive of learners in academic achievement. The more

motivated a learner is, the more likely he is to exert necessary effort to attain his own goals.

Table 3. Results of the literacy test

| Score | Frequency | Percentage |
|----------------------|-----------|------------|
| Reading Speed | | |
| < 111 WPM | 49 | 80.33 |
| 111-139 WPM | 9 | 14.75 |
| > 139 WPM | 3 | 4.92 |
| Comprehension | | |
| < 60% | 22 | 36.07 |
| 60% - 80% | 30 | 49.18 |
| > 80% | 9 | 14.75 |
| Writing | | |
| < 60% | 18 | 29.51 |
| 60% - 80% | 16 | 26.23 |
| > 80% | 27 | 44.26 |
| Numeracy | | |
| < 60% | 20 | 32.79 |
| 60% - 80% | 11 | 18.03 |
| > 80% | 30 | 49.18 |

Reading Speed. Over 80 percent of the respondents fall below the expected reading speed at their age group. The average reading speed is 69.09 words per minute, far too slow to be useful in daily activities. Most of the respondents syllabicate while reading aloud. Several authors have noted the prevalence of reading delay in public elementary schools, especially those in far flung areas. (G. Estremera & M. Estremera, 2018; Orale & Quejada, 2018).

Comprehension. Majority of the respondents performed adequately in the comprehension test, especially in the literal level. The respondents encountered difficulties in higher levels of comprehension, specifically the interpretive level. This indicates that while the respondents have no issues recalling facts that have been mentioned in the text, they may find reading between the lines and inferencing implicit details challenging.

Writing. Most of the respondents shown the capability to reproduce letters and characters legibly. They can also write commonly practiced words such as their own names. However, when tasked with writing their own sentences, it was observed that some of the respondents had difficulties producing grammatically correct sentences, relying on strings of words to convey

thought. This implies that they are still in the early stages of sentence writing.

Numeracy. Majority of the respondents are capable of performing basic mathematical operations. Despite this, a third of the respondents did not manage to perform satisfactorily. The prevalence of delays in mathematical skill of indigenous learners has also been observed by David and Sicat (2011), citing language and material incompatibilities as its main causes.

Table 4. Multiple regression analysis

| Factor | Coef | SE Coef | T-value |
|--------------------|-------|---------|---------|
| Home Conditions | 13.47 | 3.67 | 3.94* |
| School Conditions | -6.49 | 6.08 | -1.11 |
| Access to Services | 3.68 | 3.99 | 0.83 |
| Peers | 0.79 | 4.84 | 0.13 |
| Personal Factors | 7.05 | 5.78 | 1.31 |

Out of all the selected ecological factors, only home conditions returned a significant relationship with functional literacy.

The results cement home conditions as the strongest determiner of early literacy skills. Reading development begins far before a child enters schooling. Their first experiences begin at home with his parents. Without parents who can read, a child lacks the exposure to words that they need before school, and does not receive support for school activities.

This result also implies that there are several other factors that have not been addressed by the study.

Table 5. Significant Difference on the Literacy Skills of the Respondents in Terms of School Attended

| Skill | TES ^a | | SAES ^b | | SNES ^c | | F (2, 58) |
|---------------|------------------|------|-------------------|------|-------------------|------|-----------|
| | M | SD | M | SD | M | SD | |
| Reading Speed | 75.2 | 38.4 | 61.1 | 40.3 | 69.4 | 38.4 | 0.73 |
| Comprehension | 55.2 | 21.4 | 54.5 | 25.4 | 55.6 | 20.3 | 0.01 |
| Writing | 67.2 | 29.4 | 64.0 | 27.2 | 66.3 | 29.4 | 0.07 |
| Numeracy | 66.4 | 30.9 | 59.0 | 32.8 | 52.5 | 30.9 | 0.97 |

^aTablon Elementary School

^bSan Andres Elementary School

^cSto. Nino Elementary School

The test revealed that there are no statistically significant differences between the reading speed ($p = 0.488$), comprehension ($p = 0.988$), writing ($p = 0.795$) and numeracy ($p = 0.383$) skills of respondents from different schools.

The three schools selected for the study are in similar good conditions. They have fairly adequate equipment and facilities for their students. They cater to a small population of pupils, allowing for manageable

class sizes. All of them have access to electricity through solar panels. They can also afford a 1:1 book to pupil ratio, which is still a problem in other schools despite the claims of the Department of Education (2019).

Table 6. Significant Difference on the Literacy Skills of the Respondents in Terms of Grade Level

| Skill | Grade 4 | | Grade 5 | | Grade 6 | | F (2, 58) |
|---------------|---------|------|---------|------|---------|------|-----------|
| | M | SD | M | SD | M | SD | |
| Reading Speed | 40.1 | 28.6 | 71.0 | 26.4 | 89.8 | 39.3 | 12.33* |
| Comprehension | 37.4 | 25.8 | 62.4 | 17.9 | 63.6 | 12.5 | 12.06* |
| Writing | 44.2 | 24.6 | 70.6 | 24.6 | 79.2 | 22.0 | 12.39* |
| Numeracy | 42.1 | 31.2 | 65.9 | 27.2 | 70.4 | 29.5 | 5.41* |

* $p < 0.05$

The analysis revealed that the differences in scores in reading speed ($p = 0.000$), comprehension ($p = 0.000$), writing ($p = 0.000$), and numeracy ($p = 0.000$) across the grade levels are statistically significant. A post-hoc analysis (Tukey's) reveals that no significant difference exists between grades 5 and 6 in all literacy skills.

This indicates that the learners continuously develop their literacy skills as they get promoted to higher grade levels. However, it appears that this growth slows down in grades 5 and 6, implied by the lack of significant increase in literacy skill between the two grade levels

In addition, cases of basic illiteracy, that is, the complete inability to read, have only been observed in grade 4 respondents.

Table 7. Significant Difference on the Literacy Skills of the Respondents in Terms of Sex

| Skill | Male | | Female | | F (1, 59) |
|---------------|------|------|--------|------|-----------|
| | M | SD | M | SD | |
| Reading Speed | 78.7 | 39.7 | 52.0 | 30.7 | 7.48* |
| Comprehension | 59.0 | 19.3 | 48.2 | 25.6 | 3.47 |
| Writing | 74.9 | 27.4 | 50.0 | 20.2 | 13.81* |
| Numeracy | 61.0 | 32.4 | 59.1 | 30.5 | 0.05 |

* $p < 0.05$

For the comprehension and numeracy parts of the test, both sexes performed equally ($p = .068$ and $p = 0.820$ respectively). However, there is a significant difference between the scores for reading speed ($p = 0.008$) and writing ($p = 0.000$) with the females averaging with higher scores.

The superior literacy skills of females are consistent with the national score stated in the FLEMMS Survey Results (Bernales, 2013) despite the

national goal of 1:1 male to female literacy ratio. This difference may be attributed to established gender roles and stereotypes that cause males and females to have different attitudes and preferences towards reading. (Uusen & Mürsepp, 2012)

Table 8. Significant Difference on the Literacy Skills of the Respondents in Terms of Age

| Skill | < 10 years old | | ≥ 10 years old | | F (1, 59) |
|---------------|----------------|------|----------------|------|-----------|
| | M | SD | M | SD | |
| Reading Speed | 49.9 | 23.6 | 75.4 | 40.7 | 5.28* |
| Comprehension | 46.0 | 21.3 | 58.0 | 21.9 | 3.47 |
| Writing | 50.7 | 23.7 | 70.9 | 27.2 | 6.60* |
| Numeracy | 49.3 | 28.2 | 63.9 | 32.0 | 2.48 |

*p<0.05

For the comprehension and numeracy parts of the test, both age groups performed equally ($p = .067$ and $p = 0.121$ respectively). However, there is a significant difference between the scores for reading speed ($p = 0.020$) and writing ($p = 0.023$).

This difference is largely due to biological development. According to Chall (1983), functional literacy is expected at 9.5 years of age. Younger respondents are expected to only be approaching the necessary skill threshold. It should also be noted that younger respondents belong to lower grade levels.

Conclusions

1. All of the respondents are expected to be functionally literate based on their age and grade level.
2. In general, the ecological factors of the learners are sufficient, the lowest being access to services with a satisfactory score. School conditions in particular received outstanding scores.
3. The learners are very slow readers. They need improvement in comprehension. They achieved passing scores in writing and numeracy, although the average barely passed the threshold.
4. Home condition is the most important factor among the selected ecological factors and possesses the greatest influence to functional literacy.
5. Female respondents outperform male respondents in reading and writing. Older respondents can read faster and are more proficient in writing. Functional literacy skills improve as the respondent moves through grade levels.

Recommendations

1. Provide more opportunities for reading to enhance reading speed and comprehension.
2. Ensure that the home environment is conducive for reading.
3. Encourage reading and other literacy activities, especially at home.
4. Involve the parents in the development of emergent readers.
5. A similar but in-depth study on the factors and functional literacy may be conducted in the future without the restrictions of time and budget to include other factors, such as instruction, and to increase accuracy and precision.

References

- Absolon. K (2010) Indigenous Wholistic Theory: A Knowledge Set for Practice. *First Peoples Child & Family Review*, 5(2). Retrieved September 20, 2018, from <https://fpcfr.com/index.php/FPCFR/article/view/95>
- Akubuilu, F., Uloh-Bethels, C., Okorie, E., & G.T. Onwuka. (2015). Reading Readiness Deficiency in Children: Causes and Ways of Improvement. *Journal of Education and Practice*, 6(24). Retrieved September 20, 2018, from <https://files.eric.ed.gov/fulltext/EJ1078814.pdf>.
- Basilio, M. B. (2017) Education and Constitution Revisited. *The Modern Teacher*.
- Bernales, L. S. (2013). *Functional Literacy, Education and Mass Media Survey*. Retrieved September 20, 2018, from [psa.gov.ph/sites/default/files/2013 FLEMMS Final Report.pdf](https://psa.gov.ph/sites/default/files/2013_FLEMMS_Final_Report.pdf).
- Bronfenbrenner, U. (1992). *Ecological Systems Theory. Six theories of child development: Revised formulations and current issues*.
- Brito, J. (2018). *Stages of reading development*. Retrieved March 29, 2019 from https://www.nads.org/wp-content/uploads/2018/08/Brio-NADS-Stages-of-Reading-Development-2018_Brito.pdf.
- Cabardo, J.R. (2015). *Reading Proficiency Level of Students: Basis for Reading Intervention Program*. Retrieved September 20, 2018, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2712237
- Chall, J. S. (1983). *Stages of reading development*. McGraw Hill

- Cooc, N., & Kim, J. (2016). Peer Influence on Children's Reading Skills: Social Network Analysis of Elementary School Classrooms. *Journal of Educational Psychology*. Retrieved October 2, 2018 from https://scholar.harvard.edu/files/jameskim/files/jep-peer_influence_in_reading.pdf.
- Department of Education. (2018). National Report of the Philippines. *PISA 2018*. Retrieved March 21, 2020, from <https://www.deped.gov.ph/wp-content/uploads/2019/12/PISA-2018-Philippine-National-Report.pdf>
- De Vera, D. E. (2007). *Indigenous Peoples in the Philippines: A Country Case Study*. Retrieved September 20, 2018, from www.iapad.org/wp-content/uploads/2015/07/devera_ip_phl.pdf.
- Gillaco, M. (2014). Level of Word Recognition and Reading Comprehension: A Basis for a Reading Program. *Asia Pacific Journal of Education, Arts, and Sciences*. 1.(5). Retrieved September 20, 2018, from www.academia.edu/download/51551597/APJEAS-2014-1-088.pdf
- Sicat, L., & David, E. (2011). Performance in Basic Mathematics of Indigenous Students. *IPEDR.5*
- Doane, BT. (2008). *The Relationship Between School Facilities and Academic Achievement*. Retrieved October 2, 2018 from <https://www.ohio.edu/education/academic-programs/teacher-preparation/department-of-teacher-education/masters-programs/loader.cfm?csModule=security/getfile&PageID=2184634>
- Jenkins, D.G, & Quintana-Ascensio, P.F. (2020). A solution to minimum sample size for regressions. *PLoS ONE*, 15(2). <https://doi.org/10.1371/journal.pone.0229345>
- Luistro, A.B. (2011) Department of Education DepEd Order No. 62 S. 1: Adopting the Indigenous Peoples (IP) Educational Policy Framework. Retrieved September 20, 2018, from <http://www.deped.gov.ph/wp-content/uploads/2011/08/DO-No.-62-s.-2011.pdf>.
- Lyon, R.G (2015). *Why Reading is not a Natural Process*. Retrieved September 20, 2018, from <https://www.reidlyon.com/edpolicy/4-WHY-READING-IS-NOT-A-NATURAL-PROCESS>.
- Michalak, R. (2014). *Environmental factors and literacy learning and instruction*. Retrieved October 2, 2018 from https://dspace.sunyconnect.suny.edu/bitstream/handle/1951/64563/Rebecca_Michalak_Masters_Project_May2014.pdf?sequence=1.
- Mihaly, K. (2009). *Do More Friends Mean Better Grades? Student Popularity and Academic Achievement*. Retrieved October 2, 2018 from https://www.rand.org/content/dam/rand/pubs/working_papers/2009/RAND_WR678.pdf.
- Ngussa, N.K. (2015). *Factors Contributing to Low Literacy Among Primary School Pupils: A Case of Mkuranga District, Tanzania*. Retrieved October 2, 2018 from <http://www.suaire.suanet.ac.tz:8080/xmlui/bitstream/handle/123456789/1010/NEEMA%20KUSEKWA%20NGUSSA.pdf?sequence=1&isAllowed=y>.
- Records of the 20th General Conference of UNESCO: Resolutions*. (1978). p.18. Retrieved September 20, 2018, from <http://uis.unesco.org/sites/default/files/documents/gaml4-functional-literacy-numeracy.pdf>.
- The Philippine Informal Reading Inventory Manual 2018*. (2018). Retrieved July 12, 2019, from www.depedbataan.com/resources/130/phil_iri_full_package_v1.pdf
- Tizon, M. N. (2010). *Reading Comprehension Ability of Grade VI Pupils of Kinangay Sur Elementary School*. Retrieved September 20, 2018, from local.lsu.edu.ph/institutional_research_office/publications/vol.16no.1/3.html
- UNESCO. (2013). *Paper on Literacy from a Right to Education Perspective*. Retrieved October 2, 2018, from <http://unesdoc.unesco.org/images/0022/002214/221427e.pdf>.
- Waldfogel, J. (2012). *The role of out-of-school factors in the literacy problem*. Retrieved September 20, 2018, from <https://www.jstor.org/stable/23317410>
- Watson, K. (2016). *The influence of class size upon numeracy and literacy performance*. Retrieved October 2, 2018 from <https://www.emeraldinsight.com/doi/abs/10.1108/QAE-07-2014-0039?journalCode=qaee>