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Data To Drive Instruction: A Guide To Effective Reading Literacy

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Abstract: This study investigated the factors influencing reading literacy among Grade 4 learners in Northern Iloilo, Philippines. The study collected data from 300 learners based on sex, residence, parents' highest educational attainment, and estimated monthly income. The study found that the overall reading literacy level of the learners was "instructional." Still, learners whose parents had only completed elementary school were described as "frustration," while those whose parents were high school and college graduates were described as "instructional." The study identified learner-related, teacher-related, and school-related factors as vital contributors to reading literacy, while home-related factors were moderate contributors. The findings emphasize the need for educators to monitor reading literacy data and consider the identified factors to develop practical instructional guides to enhance learners' reading comprehension.

Keywords: learners, factors, educational attainment, instructional changes, monitoring, effective instructional guides

STATEMENT AND DECLARATION

The authors have no competing interests to declare that are relevant to the content of this article.

INTRODUCTION

Reading literacy is comprehending, assessing, utilizing, and engaging with written materials. Individuals must participate in their community, achieve their objectives, and improve their knowledge and skills (Din, 2020; Usman et al., 2022). Studies have shown that those with solid reading literacy skills are more inclined to engage in lifelong learning opportunities and have better career prospects (Organisation for Economic Cooperation and Development, 2019). Reading literacy is also one technique to improve a learner's second language skills, primarily when the language is rarely heard or spoken (Syahrin, 2020; Teng, 2020). The Philippines' education system has installed the Mother Tongue-Based Multilingual Education (MTB-MLE) policy (Parba, 2018) to enhance literacy skills and offer quality education in the context of the learners; thus, teachers facilitate learning using the native language (Galdo & Serdan, 2019).

Genetic factors, abnormal brain development, and unfavorable environmental conditions can cause reading difficulties. It is essential to offer proactive support through teacher training, scalable screening tools, access to evidence-based interventions and curricula, and trained professionals to prevent recurrent failures in reading instruction (Brevik, 2019; Fagan et al., 2019). Additionally, providing explicit and systematic phonics instruction and using assistive technology can improve reading skills among individuals with reading difficulties (Mize et al., 2022; Redcay, 2023). Evidence-based interventions and support systems can help address the complex nature

of reading difficulties and promote positive outcomes for struggling readers (Alqahtani, 2020; Neitzel et al., 2022). However, several factors need to be considered to decrease low literacy levels, such as aligning reading curricula with current scientific knowledge (Aukerman & Chambers Schuldt, 2021), developing culturally appropriate screening tools that are multilingual (Monsrud et al., 2022), and using technology to teach reading (Maatuk et al., 2022) on a global scale.

Studies have shown that implementing evidence-based reading curricula can improve reading outcomes, and culturally appropriate screen tools effectively identify children at risk of reading deficiencies. Addressing these factors is crucial in reducing the global illiteracy rate. Research has shown that access to quality education, and resources is a fundamental challenge in addressing global illiteracy. Screening tools are necessary to identify children at risk of developing reading difficulties, and technology-based interventions have been shown to improve literacy skills. Learners' reading literacy can be influenced by internal and external factors, such as gender, residence, parents' education level, and monthly income, as well as external factors, such as the learner, teacher, school, and family.

Several studies have investigated the factors that influence learners' reading literacy, with parental involvement, family income, and teacher motivation all significantly influencing literacy. Therefore, it is essential to rethink and build the educational pyramid from the bottom to address this problem.

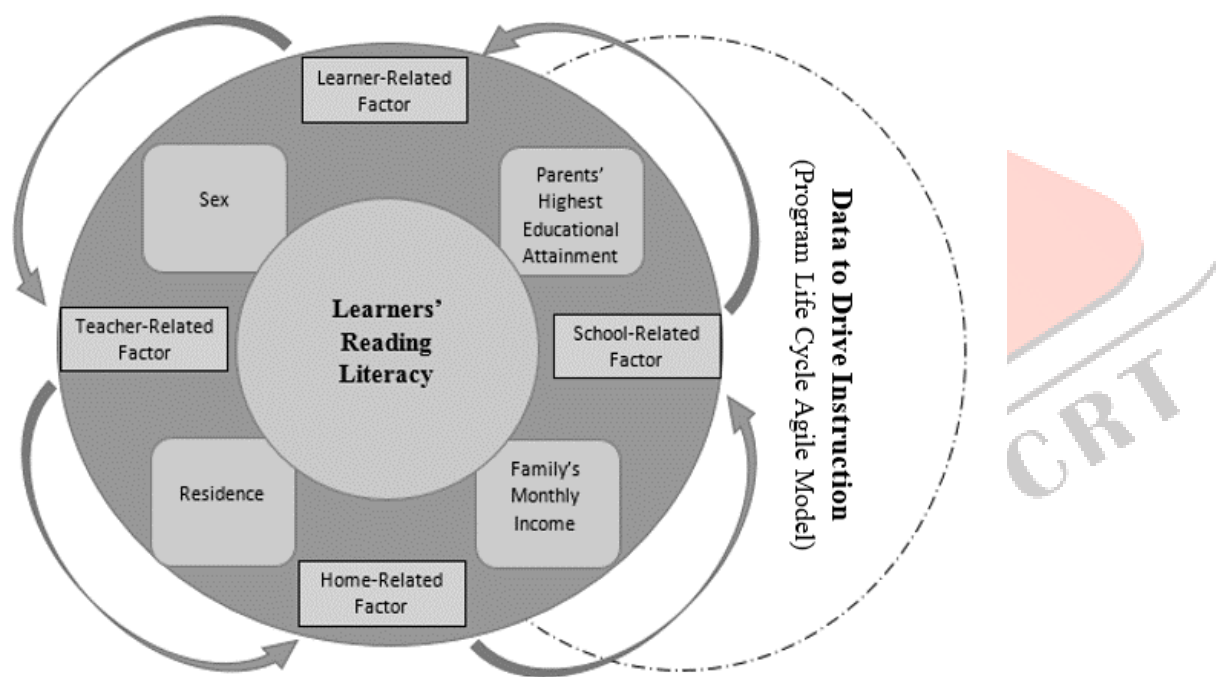


Figure 1. Learners' Reading Literacy Framework

Objectives of the Study

This research aimed to assess the reading proficiency of Grade 4 students in public elementary schools in Northern Iloilo, Philippines. The study also intended to identify the factors that contributed to students' reading skills and determine if there were significant differences in reading proficiency based on sex, residence, parents' highest educational attainment, and family's monthly income. Additionally, the researcher investigated the correlation between reading skills and learner-related, teacher-related, school-related, and home-related factors. Finally, based on the study's results, the researcher developed a model for effective reading literacy instruction.

METHODS

The study used a descriptive-correlational research design conducted in 23 public elementary schools in Northern Iloilo, Philippines. Stratified random sampling was used to select 300 Grade 4 learners, classified by sex, residence, parents' highest educational attainment, and estimated monthly income. The Philippine Informal Reading Inventory (Phil-IRI) was used to assess the learners' reading level. In contrast, a researcher-made questionnaire was used to identify the contributing factors to their reading literacy. The questionnaire was peer-reviewed and reliability-tested on 35 non-respondents, with a Cronbach's alpha of 0.84. The learners underwent oral reading for word reading scores and took a comprehension test, combining both scores to determine their reading level. The questionnaire had two parts: the respondents' profile and the questionnaire proper, consisting of 54 items divided into four factors: learner-related, teacher-related, school-related, and home-related. The data were analyzed using mean, standard deviation, independent sample t-test, Analysis of Variance (ANOVA), and Pearson's r.

RESULTS AND DISCUSSION

The results present the level of reading literacy of Grade 4 learners when taken as an entire group and classified as sex, residence, parents' highest educational attainment, and parents' estimated monthly income.

Results revealed that the level of reading literacy of the Grade 4 learners, when taken as an entire group (1.63 ± 0.71) and classified as to sex (male, 1.59 ± 0.71 ; female, 1.66 ± 0.71), residence (mainland, 1.64 ± 0.70 ; upland, 1.39 ± 0.62 ; island, 1.86 ± 0.85), parents' highest educational attainment (elementary, 1.35 ± 0.56 ; high school, 1.62 ± 0.66 ; college, 1.72 ± 0.78) and parents' estimated monthly income, (below ₱5,000, 1.59 ± 0.67 ; ₱5,000 - ₱10,000, 1.66 ± 0.72 ; above ₱10,000, 1.62 ± 0.72) were described as "instructional."

This meant Grade 4 learners were at the level they profit from teacher-directed reading instruction. Males and females had the same level of reading literacy. The residence of the learners could not serve as a basis for determining the reading literacy of all learners of different areas of the location. The parents' estimated monthly income did not contribute to learners' reading literacy. When classified as parents' highest educational attainment, learners whose parents were at the elementary level were described as "frustration" or learners who find reading materials difficult. In contrast, learners whose parents were in high school and college levels were described as "instructional."

The study results suggest that the learners, regardless of their sex, residence, and parents' estimated monthly income, are at an instructional level of reading literacy. This implies they require teacher-directed reading instruction to develop their reading skills further. Furthermore, the study suggests that parents' highest educational attainment is crucial in determining a learner's reading literacy level. Learners whose parents have achieved high school or college-level education are more likely to be at an instructional level of reading literacy than those whose parents have only achieved an elementary level.

A differentiated reading instruction program positively affects learners' reading achievement (Ma'youf & Aburezeq, 2022). Tailored instruction based on students' reading levels and needs led to significant reading comprehension and accuracy improvements. Similarly, the relationship between parents' education and their children's reading ability among learners found a positive correlation between parents' educational attainment and their children's reading ability (Wagley et al., 2022). The parents' education plays a crucial role in promoting reading literacy, and educational programs should target parents with low levels of education to improve their children's reading skills. Furthermore, the learners in urban schools outperformed those in rural schools in reading proficiency (Haw et al., 2021). The findings suggest that rural schools' lack of resources and support may contribute to lower reading achievement levels among learners.

Table 1

Level of Reading Literacy of Grade 4 Learners when Taken as an Entire Group and when Classified as to Sex, Residence, Parents' Highest Educational Attainment, and Parents' Estimated Monthly Income

Category	F	Mean	SD	Description
Entire group	300	1.63	0.71	Instructional
Sex				
Male	141	1.59	0.71	Instructional
Female	159	1.66	0.71	Instructional
Residence				
Mainland	228	1.64	0.70	Instructional
Upland	44	1.39	0.62	Instructional
Island	28	1.86	0.85	Instructional
Parents' Highest Educational Attainment				
Elementary	40	1.35	0.56	Frustration
High School	141	1.62	0.66	Instructional
College	119	1.72	0.78	Instructional
Parents' Estimated Monthly Income				
Below ₱5,000	111	1.59	0.67	Instructional
₱5,000-₱10,000	110	1.66	0.72	Instructional
Above ₱10,0000	79	1.62	0.72	Instructional

Note: mean \pm standard deviation; (1.00-1.50) frustration; (1.51-2.50) instructional; (2.51-3.00) independent

The learner-related (3.66 ± 0.6), teacher-related (3.95 ± 0.7), and school-related (3.76 ± 0.7) factors were "strong" contributing factors to reading literacy. In contrast, the home-related factors (3.29 ± 0.7) were considered "moderate" contributing factors when Grade 4 learners were taken as an entire group and classified as to sex, residence, parents' highest educational attainment, and parents' estimated monthly income. The result showed that the learners, teachers, and school strongly influenced the learners' reading performance. The results suggest that educational policies and interventions to improve reading literacy should focus on enhancing learner-related, teacher-related, and school-related factors. For instance, teachers should be provided with professional development opportunities to improve their instructional practices and classroom management skills. Additionally, schools should ensure adequate resources, such as access to instructional materials, technology, and support services, are available to support effective teaching and learning. Finally, learners should be encouraged and supported to take an active role in their learning by fostering a love for reading and providing opportunities for independent reading.

The quality of school facilities and teachers, parental education, and involvement in their child's education were significant predictors of reading literacy (Cruz et al., 2020; Merz et al., 2020). Home and school environments significantly impacted reading performance, with parental support and involvement playing a crucial role. Similarly, parental involvement and support were vital to improving children's reading abilities (Misirli & Ergulec, 2021; Ramanlingam & Maniam, 2020). In addition, the quality of teacher instruction and the home literacy environment were crucial predictors of reading achievement (Ma et al., 2022; Sun & Ng, 2021). Overall, it is important to note various factors influencing reading literacy achievement, such as learner-related, teacher-related, and school-related. Hence, it is prudent to emphasize the significance of home-related factors, such as parental education and involvement, in supporting children's reading development.

Table 2.

Contributing Factors to the Reading Literacy of Grade 4 Learners when Taken as an Entire Group

Factors	Mean	SD	Description
Learner-Related Factor	3.66	0.6	Strong
Teacher-Related Factor	3.95	0.7	Strong
School-Related Factor	3.76	0.7	Strong
Home-Related Factor	3.29	0.7	Moderate

Note: mean \pm standard deviation; (1.00-1.50) very weak; (1.51-2.50) weak; (2.51-3.50) moderate; (3.51-4.50) strong; (4.51-5.00) very strong

Table 3 presents the results of a statistical analysis examining the differences in the level of reading literacy of Grade 4 learners based on sex, residence, parents' highest educational attainment, and parents' estimated monthly income.

An independent-samples t-test was conducted to compare reading literacy levels for males and females. Results revealed that there was no significant difference in level for males and females ($t(298) = -0.87, p = .38$), and the effect size is very small ($\eta^2 = 0.0025$). This suggests that sex does not play a significant role in determining reading literacy levels. The magnitude of the differences in the means is also very small, indicating that any existing differences are insignificant. This finding has important implications for educators, suggesting that gender-based approaches to improving reading literacy may not be necessary or effective.

On the contrary, girls outperformed boys in reading literacy across various countries and grade levels. However, they also found that the gender gap in reading literacy varied depending on the specific measure of reading literacy used. Some measures showed more significant gender differences than others (Breda & Napp, 2019; Støle et al., 2020). The gender gap in reading literacy was smaller in countries with higher levels of gender equality. Socioeconomic status and home literacy environment were important predictors of reading literacy, and these factors partially mediated the gender gap in reading literacy (Luo et al., 2021; Tompkins, 2022). These suggest that while there may be gender differences in reading literacy, these differences may be influenced by a range of factors such as specific measures of reading literacy, socioeconomic status, home literacy environment, reading engagement, and parental involvement in reading.

Respondents were categorized into three groups based on their residence: Mainland, Upland, and Island. The results indicated that there was a statistically significant difference in the level of reading comprehension among the three groups ($F(2, 300) = 4.17, p < .05$). However, the effect size was small ($\eta^2 = 0.03$), indicating that only 3% of the variance in reading literacy can be explained by this factor. Further analysis using the Tukey HSD test revealed that the mean score for the upland group was significantly lower than that of the island group. In contrast, the mainland group did not differ significantly from either the upland or the island groups. These findings suggest that Grade 4 learners' place of residence significantly impacts their reading comprehension level. Specifically, learners from the upland area had lower scores than those from the island. Nevertheless, it is important to note that the effect size was small, which means that the practical significance of the difference is not substantial.

The reading habits and reading performance of learners in urban areas had better reading habits and higher reading performance scores than their rural counterparts. This similar finding attributed this difference to the availability of reading materials, exposure to technology, and parental involvement in reading activities (Letsholo-Tafila & Alimi, 2019; Raslie et al., 2020; Yi et al., 2019). Access to resources, such as libraries and internet connectivity, might influence the reading attitudes of students in rural areas (Mukuna & Aloka, 2020). Although many reasons have been advanced for this, there seems to be less focus on learners' reading needs, taking the variables of gender, school location, and class levels as significant constraints to learners' performance.

Respondents in this study were grouped according to their parents' highest educational attainment, which included three categories: Elementary, High School, and College. The results revealed a statistically significant difference in the level of reading literacy among the three groups ($F(2, 300) = 4.23, p < .05$). However, the effect size was small ($\eta^2 = 0.03$), indicating that only 3% of the variance in reading literacy can be explained by this factor. Further analysis using the Tukey HSD test showed that the mean score for learners whose parents completed elementary education significantly differed from those whose parents completed college education. On the other hand, there was no significant difference in mean scores between learners whose parents completed high school education and those with parents who only completed elementary education or college education. These findings suggest that learners with parents who completed college education have a higher reading literacy level than those who only completed elementary education.

Parental educational attainment significantly influences Filipino learners' reading literacy (Alampay & Garcia, 2019; Cheung et al., 2020). Learners with highly educated parents performed better in reading literacy than those with less educated parents. The results suggest that parental educational attainment is essential when developing interventions and programs to improve learners' reading literacy levels.

Respondents were classified based on their parents' estimated monthly income, which was categorized into three groups: below ₱5,000, ₱5,000– ₱10,000, and above ₱10,000. However, the results of the one-way analysis of variance showed no significant difference in the level of reading literacy among the three groups ($F(2, 300) = .265, p=0.767$), and the effect size was very small ($\eta^2 = 0.0018$). These findings suggest that parents' income level may not be a significant factor in determining the reading literacy skills of their children. Nonetheless, other factors such as access to reading materials, parental involvement in education, and teaching quality should still be considered when developing interventions and programs to improve reading literacy skills.

In contrast, learners' socioeconomic status (SES) significantly impacted their reading comprehension skills, with students from higher SES families performing better than those from lower SES families. In addition, private school learners had higher reading comprehension scores than public school learners, regardless of SES (Suna et al., 2020). It indicated that home literacy environment, teacher quality, and instructional practices significantly influenced reading literacy skills. Moreover, socioeconomic status had a significant but minor effect on reading literacy compared to these other factors (Vadivel et al., 2023). On the other hand, parental support and involvement in reading activities, such as reading to their children and providing access to reading materials, were positively associated with reading performance (Allen & Anderson, 2020; Çalışkan & Ulaş, 2022). These pieces of evidence suggest that while socioeconomic status may impact reading literacy skills among Filipino learners, other factors such as home literacy environment, teacher quality, and parental support may be more significant predictors.

Table 3.
Differences in the Level of Reading Literacy of Grade 4 Learners

	df	t	F	p	η^2
Sex	298	-0.87	-	.38	0.0025
Residence	2,300	-	4.17	.02	0.03
Parents' Highest Educational Attainment	2,300	-	4.23	.011	0.03
Parents Estimated Monthly Income	2,300	-	0.27	.767	0.0018

*alpha level is set at .05

Table 4 presents the results of a statistical analysis examining the differences in the contributing factors to the reading level of Grade 4 learners based on four categories: learner-related factors, teacher-related factors, school-related factors, and home-related factors.

The first section of the table shows the results for learner-related factors, including sex, residence, parents' highest educational attainment, and parents' estimated monthly income. There were no significant differences in reading level based on sex ($t(298) = -1.16, p = .22, \eta^2 = 0.0045$) and residence ($F(2,300) = 1.14, p = .321, \eta^2 = 0.0076$),

and the effect sizes are very small. Parents' highest educational attainment ($F(2,300) = 2.33, p < .05, \eta^2 = 0.0369$) and parents' estimated monthly income ($F(2,300) = 5.68, p < .05, \eta^2 = 0.0154$) showed significant differences, and the effect sizes are moderate respectively.

The second section of the table shows the results for teacher-related factors, including sex, residence, parents' highest educational attainment, and parents' estimated monthly income. There were no significant differences in reading level based on sex ($t(298) = 0.54, p = .593, \eta^2 = 0.001$), residence ($F(2,300) = 1.65, p = .194, \eta^2 = 0.0109$), parents' highest educational attainment ($F(2,300) = 1.53, p < .05, \eta^2 = 0.0102$), and parents' estimated monthly income ($F(2,300) = 2.2, p = .113, \eta^2 = 0.0146$) and the effect sizes are small to moderate respectively.

The third section of the table shows the results for school-related factors, including sex, residence, parents' highest educational attainment, and parents' estimated monthly income. There were no significant differences in reading level based on sex ($t(298) = 0.68, p = .500, \eta^2 = 0.015$) and residence ($F(2,300) = 0.88, p = .412, \eta^2 = 0.0059$), and the effect sizes are very small. Parents' highest educational attainment ($F(2,300) = 6.51, p < .05, \eta^2 = 0.419$) and parents' estimated monthly income ($F(2,300) = 3.37, p < .05, \eta^2 = 0.0222$) showed significant differences, and the effect sizes are large and moderate respectively.

For home-related factors, the table shows that there is no significant difference in the reading level of male and female students ($t(298) = 0.0003, p = .998, \eta^2 = 3.02 \times 10^{-8}$). Parents' highest educational attainment ($F(2,300) = 0.42, p = .657, \eta^2 = 0.0028$), and the effect sizes are very small. However, the table shows that there were significant differences in the reading level based on parents' monthly income ($F(2,300) = 3.47, p < .05, \eta^2 = 0.0228$) and residence ($F(2,300) = 5.63, p < .05, \eta^2 = 0.0365$), and the effect sizes, as measured by η^2 , are moderate.

Based on the results presented in Table 4, all four categories of factors (learner-related, teacher-related, school-related, and home-related) play a role in contributing to the reading level of Grade 4 learners. Notably, parents' highest educational attainment and estimated monthly income were found to have a significant impact across all four categories, with effect sizes ranging from 0.0222 to 0.419.

Reading achievement, especially among children from lower socioeconomic backgrounds, was positively associated with parental involvement in children's reading, including reading aloud and providing books at home (Lau & Richards, 2021; Shen & Del Tufo, 2022). Parental reading practices were predictive of children's reading skills, and these effects were partially mediated by socioeconomic status (McGinnity et al., 2022; Şengönül, 2022). Moreover, socioeconomic status was strongly associated with reading achievement, and this relationship was partially mediated by access to reading resources at home (Kavanagh, 2019; Zhang et al., 2020; Zuilkowski et al., 2019). Thus, the relationship between family socioeconomic status and reading achievement was mediated by learners' motivation to read and self-efficacy beliefs (Kavanagh, 2019). Consequently, parental involvement and socioeconomic status are critical in promoting children's reading achievement directly and indirectly through access to reading resources and children's motivation and beliefs about reading (Gómez & Rivas, 2022).

These findings have important implications for policy and practice. Specifically, it suggests that efforts to improve the reading level of learners should take into account the various factors that contribute to this outcome, including not only learner-related factors such as sex and residence but also parent-related factors such as educational attainment and income. In particular, policies and programs aimed at improving parental education and income levels may positively impact children's reading abilities. Moreover, the findings highlight the importance of a holistic approach to education that considers multiple factors in promoting academic success. This includes academic support for learners and support for families, teachers, and schools in creating an environment conducive to learning.

Table 4.

Differences in the Contributing Factors to the Reading Level of Grade 4 Learners

Reading Level	df	t	F	p	η^2
Learner-Related Factors					
Sex	298	-1.16	-	.22	0.0045
Residence	2,300	-	1.14	.321	0.0076
Parents' Highest Educational Attainment	2,300	-	2.33	<.05	0.0369
Parents Estimated Monthly Income	2,300	-	5.68	<.05	0.0154
Teacher-Related Factors					
Sex	298	0.54	-	.593	0.001
Residence	2,300	-	1.65	.194	0.0109
Parents' Highest Educational Attainment	2,300	-	1.53	.217	0.0102
Parents Estimated Monthly Income	2,300	-	2.2	.113	0.0146
School-Related Factors					
Sex	298	0.68	-	.500	0.015
Residence	2,300	-	0.88	.412	0.0059
Parents' Highest Educational Attainment	2,300	-	6.51	<.05	0.419
Parents Estimated Monthly Income	2,300	-	3.37	<.05	0.0222
Home-Related Factors					
Sex	298	0.0003	-	.998	3.02x10 ⁻⁸
Residence	2,300	-	5.63	<.05	0.0365
Parents' Highest Educational Attainment	2,300	-	0.42	.657	0.0028
Parents Estimated Monthly Income	2,300	-	3.47	<.05	0.0228

*alpha level is set at .05

Lastly, Pearson product-moment correlation was used to investigate the reading level and contributing factors to the learners reading literacy. Results revealed that the reading level and the contributing factors had a significant relationship with the reading literacy of Grade 4 learners. There was a medium positive correlation between reading level and teacher-related factors ($r=.30$, $p<.05$) and a small positive correlation between reading level and learner-related factors ($r=.27$, $p<.05$), school-related factors ($r=.21$, $p<.05$), and home-related factors ($r=.12$, $p<.05$). The results suggest that there is a significant relationship between the reading level of Grade 4 learners and the contributing factors, including teacher-related, learner-related, school-related, and home-related factors. The medium positive correlation between reading level and teacher-related factors indicates that teachers are crucial in improving learners' reading literacy. Therefore, teachers should receive adequate training and support to enhance their teaching skills and strategies to improve learners' reading abilities. The small positive correlations between reading level and learner-related, school-related, and home-related factors also suggest that these factors contribute to the reading literacy of Grade 4 learners. Therefore, learners should receive adequate support from their families, schools, and communities to improve their reading skills.

Teacher factors, such as teacher preparation and professional development, were positively related to student reading achievement. The quality of instructional practices, including differentiation and scaffolding, had a moderate to strong relationship with student reading achievement (Schmitt et al., 2022). Several school-related factors were positively related to students' reading literacy, including the availability of reading materials and resources, effective teaching strategies, and positive school climate and culture (Açıkgül Firat & Torun, 2021; Ertem, 2021). On the other hand, home-related factors, such as parental involvement in reading and literacy activities, access to reading materials at home, and family literacy practices, were positively related to student reading achievement (Bernardo et al., 2021; Ha, 2023; Srijamdee & Pholphirul, 2020). Thus, teacher-related, school-related, and home-related factors are important in students' reading literacy. Teachers need adequate training and support to improve their instructional practices, and schools and communities must provide resources and create positive environments that support reading and literacy development. Additionally, parents and

families can play a crucial role in promoting reading and literacy at home by providing access to reading materials and engaging in literacy activities with their children.

Table 5.

Relationship on the Contributing Factors to the Reading Level of Grade 4 Learners

Reading Level	N	r	p
Learner-Related Factors	300	0.27	.001
Teacher-Related Factors	300	0.30	.001
School-Related Factors	300	0.21	.001
Home-Related Factors	300	0.12	.046

*alpha level is set at .05

CONCLUSION

The study highlights the factors that influence the reading literacy level of Grade 4 learners, including learner-related, teacher-related, school-related, and home-related factors. The findings suggest that learners with higher parental educational attainment levels and higher estimated monthly income tend to have better reading literacy levels. The study emphasizes the importance of continuously monitoring reading literacy data and prompt implementation of instructional changes to ensure all students become established readers. The study's implications include the need for investment in teacher training, support for families, and evidence-based literacy programs in schools, tailored to address the specific needs of learners based on their backgrounds and circumstances.

RECOMMENDATIONS

In summary, the following recommendations can be made to improve the reading literacy of Grade 4 learners: targeted interventions for learners with parents who have low levels of education, professional development for teachers to enhance their reading instruction skills, a supportive school environment that promotes reading, engagement of parents in promoting reading at home, and regular monitoring and evaluation of reading literacy data. These recommendations were based on findings that identified teacher-related factors, home-related factors, and parental education levels as significant contributors to reading literacy. Implementing these recommendations ensures that all students become proficient readers and continue on the path toward reading for meaning and comprehension.

Making judgments concerning English reading instruction is as important as offering instruction itself. When supporting learners at risk of poor reading results, it is especially crucial to ensure that the judgments made have the maximum likelihood of correctness and lead to improved reading outcomes. The most precise and effective decisions are required for the learners with the greatest needs. Effective use of reading literacy assessment data to design and critically review instruction is a fundamental ability for good teaching now more than ever. Thus, it is essential to consider these factors by using the data to drive instruction as a guide to effective reading instruction and adopt a Program Life Cycle Agile Model (See **Appendix 1**) approach in designing educational systems to improve learners' reading literacy.

REFERENCES

- Açıkgül Firat, E., & Torun, F. (2021). A Structural Equation Modelling of Factors Affecting the Prospective Teachers' Innovativeness Level. *International Journal of Contemporary Educational Research*. <https://doi.org/10.33200/ijcer.927884>
- Alampay, L. P., & Garcia, A. S. (2019). Education and Parenting in the Philippines BT - School Systems, Parent Behavior, and Academic Achievement: An International Perspective (E. Sorbring & J. E. Lansford (eds.); pp. 79–94). Springer International Publishing. https://doi.org/10.1007/978-3-030-28277-6_7
- Allen, A. G., & Anderson, S. C. (2020). Universal Design for Learning and Instruction: Overcoming Barriers Facing Students with Disabilities in Colleges and Universities. *Journal of Education & Social Policy*, 7(4). <https://doi.org/10.30845/jesp.v7n4p10>
- Alqahtani, S. S. (2020). Technology-based interventions for children with reading difficulties: a literature review from 2010 to 2020. *Educational Technology Research and Development*, 68(6), 3495–3525. <https://doi.org/10.1007/s11423-020-09859-1>
- Aukerman, M., & Chambers Schuldt, L. (2021). What Matters Most? Toward a Robust and Socially Just Science of Reading. *Reading Research Quarterly*, 56(S1). <https://doi.org/10.1002/rrq.406>
- Bernardo, A. B. I., Cordel, M. O., Lucas, R. I. G., Teves, J. M. M., Yap, S. A., & Chua, U. C. (2021). Using Machine Learning Approaches to Explore Non-Cognitive Variables Influencing Reading Proficiency in English among Filipino Learners. *Education Sciences*, 11(10), 628. <https://doi.org/10.3390/educsci11100628>
- Breda, T., & Napp, C. (2019). Girls' comparative advantage in reading can largely explain the gender gap in math-related fields. *Proceedings of the National Academy of Sciences*, 116(31), 15435–15440. <https://doi.org/10.1073/pnas.1905779116>
- Brevik, L. M. (2019). Explicit reading strategy instruction or daily use of strategies? Studying the teaching of reading comprehension through naturalistic classroom observation in English L2. *Reading and Writing*, 32(9), 2281–2310. <https://doi.org/10.1007/s11145-019-09951-w>
- Çalışkan, E. F., & Ulaş, A. H. (2022). The Effect of Parent-Involved Reading Activities On Primary School Students Reading Comprehension Skills, Reading Motivation, and Attitudes Towards Reading. *International Electronic Journal of Elementary Education*. <https://doi.org/10.26822/iejee.2022.260>
- Cheung, S. K., Dulay, K. M., & McBride, C. (2020). Parents' characteristics, the home environment, and children's numeracy skills: How are they related in low- to middle-income families in the Philippines? *Journal of Experimental Child Psychology*, 192, 104780. <https://doi.org/https://doi.org/10.1016/j.jecp.2019.104780>
- Cruz, R. A., Manchanda, S., Firestone, A. R., & Rodl, J. E. (2020). An Examination of Teachers' Culturally Responsive Teaching Self-Efficacy. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, 43(3), 197–214. <https://doi.org/10.1177/0888406419875194>
- Din, M. (2020). Evaluating university students' critical thinking ability as reflected in their critical reading skill: A study at bachelor level in Pakistan. *Thinking Skills and Creativity*, 35, 100627. <https://doi.org/https://doi.org/10.1016/j.tsc.2020.100627>
- Ertem, H. Y. (2021). Examination of Turkey's PISA 2018 reading literacy scores within student-level and school-level variables. *Participatory Educational Research*, 8(1), 248–264. <https://doi.org/10.17275/per.21.14.8.1>

- Fagan, A. A., Bumbarger, B. K., Barth, R. P., Bradshaw, C. P., Cooper, B. R., Supplee, L. H., & Walker, D. K. (2019). Scaling up Evidence-Based Interventions in US Public Systems to Prevent Behavioral Health Problems: Challenges and Opportunities. *Prevention Science*, 20(8), 1147–1168. <https://doi.org/10.1007/s11121-019-01048-8>
- Galdo, M., & Serdan, G. (2019). School Language versus Home Language: The Paradox of Mother Tongue-Based Multilingual Education in the Philippines. *Journal of Educational and Human Resource Development (JEHRD)*, 7(SE-), 110–121. <https://www.ijterm.org/index.php/jehrd/article/view/290>
- Gómez, G., & Rivas, M. (2022). Reading Achievement, Resilience, and Motivation in Contexts of Vulnerability: A Study of Perceived Self-Efficacy, Intrinsic Motivation, and Family Support in Chile. *Reading Psychology*, 43(5–6), 357–379. <https://doi.org/10.1080/02702711.2022.2106333>
- Ha, C. (2023). How parental factors influence children's literacy development: Inequity in education. *Education* 3-13, 51(3), 493–508. <https://doi.org/10.1080/03004279.2021.1981422>
- Haw, J. Y., King, R. B., & Trinidad, J. E. R. (2021). Need supportive teaching is associated with greater reading achievement: What the Philippines can learn from PISA 2018. *International Journal of Educational Research*, 110, 101864. <https://doi.org/10.1016/j.ijer.2021.101864>
- Kavanagh, L. (2019). Relations between children's reading motivation, activity, and performance at the end of primary school. *Journal of Research in Reading*, 42(3–4), 562–582. <https://doi.org/10.1111/1467-9817.12284>
- Lau, C., & Richards, B. (2021). Home Literacy Environment and Children's English Language and Literacy Skills in Hong Kong. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.569581>
- Letsholo-Tafila, R., & Alimi, M. M. (2019). Reading comprehension skills of Standard 4 pupils: a comparison of private and public schools in Botswana. *Per Linguam*, 35(2). <https://doi.org/10.5785/35-2-800>
- Luo, R., Pace, A., Levine, D., Iglesias, A., de Villiers, J., Golinkoff, R. M., Wilson, M. S., & Hirsh-Pasek, K. (2021). Home literacy environment and existing knowledge mediate the link between socioeconomic status and language learning skills in dual language learners. *Early Childhood Research Quarterly*, 55, 1–14. <https://doi.org/https://doi.org/10.1016/j.ecresq.2020.10.007>
- Ma, L., Xiao, L., & Hau, K.-T. (2022). Teacher feedback, disciplinary climate, student self-concept, and reading achievement: A multilevel moderated mediation model. *Learning and Instruction*, 79, 101602. <https://doi.org/https://doi.org/10.1016/j.learninstruc.2022.101602>
- Maatuk, A. M., Elberkawi, E. K., Aljawarneh, S., Rashaideh, H., & Alharbi, H. (2022). The COVID-19 pandemic and E-learning: Challenges and opportunities from the perspective of students and instructors. *Journal of Computing in Higher Education*, 34(1), 21–38. <https://doi.org/10.1007/s12528-021-09274-2>
- Ma'youf, N. A., & Aburezeq, I. M. (2022). The Effectiveness of Differentiated Teaching Strategy in Developing Reading Comprehension Skills of Fourth Grade Students in the United Arab Emirates. In *Theory and Practice in Language Studies* (Vol. 12, Issue 1, pp. 17–27). <https://doi.org/10.17507/tpls.1201.03>
- McGinnity, F., McMullin, P., Murray, A., Russell, H., & Smyth, E. (2022). Understanding differences in children's reading ability by social origin and gender: The role of parental reading and pre-and primary school exposure in Ireland. *Research in Social Stratification and Mobility*, 81, 100729. <https://doi.org/https://doi.org/10.1016/j.rssm.2022.100729>

- Merz, E. C., Maskus, E. A., Melvin, S. A., He, X., & Noble, K. G. (2020). Socioeconomic Disparities in Language Input Are Associated With Children's Language-Related Brain Structure and Reading Skills. *Child Development*, 91(3), 846–860. <https://doi.org/10.1111/cdev.13239>
- Misirli, O., & Ergulec, F. (2021). Emergency remote teaching during the COVID-19 pandemic: Parents experiences and perspectives. *Education and Information Technologies*, 26(6), 6699–6718. <https://doi.org/10.1007/s10639-021-10520-4>
- Mize, M., Park, Y., & Martin, M. (2022). Technology-assisted reading fluency interventions for students with reading difficulties: evidence from a meta-analytic approach of single case design studies. *Disability and Rehabilitation: Assistive Technology*, 1–11. <https://doi.org/10.1080/17483107.2022.2060351>
- Monsrud, M.-B., Rydland, V., Geva, E., Thurmann-Moe, A. C., & Halaas Lyster, S.-A. (2022). The advantages of jointly considering first and second language vocabulary skills among emergent bilingual children. *International Journal of Bilingual Education and Bilingualism*, 25(1), 42–58. <https://doi.org/10.1080/13670050.2019.1624685>
- Mukuna, K. R., & Aloka, P. J. O. (2020). Exploring Educators' Challenges of Online Learning in Covid-19 at a Rural School, South Africa. *International Journal of Learning, Teaching and Educational Research*, 19(10), 134–149. <https://doi.org/10.26803/ijlter.19.10.8>
- Neitzel, A. J., Lake, C., Pellegrini, M., & Slavin, R. E. (2022). A Synthesis of Quantitative Research on Programs for Struggling Readers in Elementary Schools. *Reading Research Quarterly*, 57(1), 149–179. <https://doi.org/10.1002/rrq.379>
- Organization for Economic Cooperation and Development. (2019). *OECD Skills Outlook 2019*. OECD. <https://doi.org/10.1787/df80bc12-en>
- Parba, J. (2018). Teachers' shifting language ideologies and Teaching practices in Philippine mother Tongue classrooms. *Linguistics and Education*, 47, 27–35. <https://doi.org/https://doi.org/10.1016/j.linged.2018.07.005>
- Ramanlingam, S., & Maniam, M. (2020). Teachers' Perspective on the Importance of Parents' Roles in Students' Academic Achievement Using School and Family Partnership Model (Epstein): A Qualitative Study. *Universal Journal of Educational Research*, 8(8), 3346–3354. <https://doi.org/10.13189/ujer.2020.080806>
- Raslie, H. binti, Deli, R. M., John, D. S., Mikeng, D., & Pandian, A. (2020). The Effects of Parental Reading Socialisation on the Reading Skill Performance of Rural Primary School Students in Sarawak. *International Journal of Asian Social Science*, 10(3), 159–170. <https://doi.org/10.18488/journal.1.2020.103.159.170>
- Redcay, J. (2023). Ludus Reading and RoboKind™ Robots Increase Early Literacy Rates. In *Technology for Learning [Working Title]*. IntechOpen. <https://doi.org/10.5772/intechopen.110603>
- Schmitt, H. A., Witmer, S. E., & Rowe, S. S. (2022). Text Readability, Comprehension Instruction, and Student Engagement: Examining Associated Relationships during Text-Based Social Studies Instruction. *Literacy Research and Instruction*, 61(1), 62–83. <https://doi.org/10.1080/19388071.2021.2008561>
- Şengönül, T. (2022). A review of the relationship between parental involvement and children's academic achievement and the role of family socioeconomic status in this relationship. *Pegem Journal of Education and Instruction*, 12(2). <https://doi.org/10.47750/pegegog.12.02.04>
- Shen, Y., & Del Tufo, S. N. (2022). Parent-child shared book reading mediates the impact of socioeconomic status on heritage language learners' emergent literacy. *Early Childhood Research Quarterly*, 59, 254–264. <https://doi.org/https://doi.org/10.1016/j.ecresq.2021.12.003>

- Srijamdee, K., & Pholphirul, P. (2020). Does ICT familiarity always help promote educational outcomes? Empirical evidence from PISA-Thailand. *Education and Information Technologies*, 25(4), 2933–2970. <https://doi.org/10.1007/s10639-019-10089-z>
- Støle, H., Mangen, A., & Schwippert, K. (2020). Assessing children's reading comprehension on paper and screen: A mode-effect study. *Computers & Education*, 151, 103861. <https://doi.org/https://doi.org/10.1016/j.compedu.2020.103861>
- Sun, H., & Ng, E. L. (2021). Home and school factors in early English language development. *Asia Pacific Journal of Education*, 41(4), 657–672. <https://doi.org/10.1080/02188791.2021.1932742>
- Suna, H. E., Tanberkan, H., Gür, B., Perc, M., & Özer, M. (2020). Socioeconomic Status and School Type as Predictors of Academic Achievement. *Journal of Economy Culture and Society*, 61, 41–64. <https://doi.org/https://doi.org/10.26650/JECS2020-0034>
- Syahrin, S. (2020). Less Is More: An Implementation of an Extensive Reading Program in an English Proficiency Course in the Sultanate of Oman. *International Journal of English Linguistics*, 10(6), 171. <https://doi.org/10.5539/ijel.v10n6p171>
- Teng, (Mark) Feng. (2020). The benefits of metacognitive reading strategy awareness instruction for young learners of English as a second language. *Literacy*, 54(1), 29–39. <https://doi.org/10.1111/lit.12181>
- Tompkins, V. (2022). Relations between the home literacy environment and young children's theory of mind. *Cognitive Development*, 62, 101179. <https://doi.org/https://doi.org/10.1016/j.cogdev.2022.101179>
- Usman, Y., Isyaku, M., & Isah, A. T. (2022). Literacy: A Way Forward for Quality Education in Nigeria. *Kashere Journal of Education*, 3(1), 33–39. <https://doi.org/10.4314/kje.v3i1.5>
- Vadivel, B., Alam, S., Nikpoo, I., & Ajanil, B. (2023). The Impact of Low Socio-economic Background on a Child's Educational Achievements. *Education Research International*, 2023, 1–11. <https://doi.org/10.1155/2023/6565088>
- Wagley, N., Marks, R. A., Bedore, L. M., & Kovelman, I. (2022). Contributions of bilingual home environment and language proficiency on children's Spanish–English reading outcomes. *Child Development*, 93(4), 881–899. <https://doi.org/10.1111/cdev.13748>
- Yi, H., Mo, D., Wang, H., Gao, Q., Shi, Y., Wu, P., Abbey, C., & Rozelle, S. (2019). Do Resources Matter? Effects of an In-Class Library Project on Student Independent Reading Habits in Primary Schools in Rural China. *Reading Research Quarterly*, 54(3), 383–411. <https://doi.org/10.1002/rrq.238>
- Zhang, F., Jiang, Y., Ming, H., Ren, Y., Wang, L., & Huang, S. (2020). Family socioeconomic status and children's academic achievement: The different roles of parental academic involvement and subjective social mobility. *British Journal of Educational Psychology*, 90(3), 561–579. <https://doi.org/10.1111/bjep.12374>
- Zuilkowski, S. S., McCoy, D. C., Jonason, C., & Dowd, A. J. (2019). Relationships Among Home Literacy Behaviors, Materials, Socio-economic Status, and Early Literacy Outcomes Across 14 Low- and Middle-Income Countries. *Journal of Cross-Cultural Psychology*, 50(4), 539–555. <https://doi.org/10.1177/0022022119837363>

Appendix 1: Data to Drive Instruction (Program Life Cycle Agile Model)

The Program Life Cycle Agile Model is an iterative software development approach emphasizing flexibility, collaboration, and customer satisfaction. This model can be used to continuously collect and analyze data on student performance, adjust instruction accordingly, and measure the effectiveness of those adjustments. Also, it can be used to identify, validate, plan, implement, evaluate, and maintain effective reading instruction. Here is how the Agile Model can be applied to address reading problems:

1. **Identify:** The first step is identifying the specific reading problems that must be addressed. This could include difficulties with phonics, comprehension, fluency, or vocabulary.
2. **Validate:** The next step is to validate the reading problems by collecting data on student performance. This could include assessments such as running records, reading fluency probes, or comprehension quizzes.
3. **Plan:** A plan can be developed to address the identified reading problems based on the data collected. This plan should include targeted interventions and evidence-based strategies tailored to each student's specific needs.
4. **Implement:** The plan is then implemented, with teachers providing direct instruction and support to students using the identified interventions and strategies.
5. **Evaluate:** Ongoing data collection is critical to evaluating the effectiveness of the interventions and strategies. Teachers should continue to use assessments to track student progress and adjust instruction as needed.
6. **Maintain:** Once effective interventions and strategies have been identified, they should be maintained and incorporated into ongoing instruction to support continued growth and progress in reading.

The Agile Model provides a flexible and iterative approach to addressing reading problems, allowing for ongoing data collection and analysis and adjustment of instruction based on student needs. This approach ensures that students receive targeted and effective reading instruction that supports their individual needs and promotes reading success. This intends to assure critical English reading literacy results for individual students and systems at the classroom, school, and district levels. In an agile model for data-driven instruction, the focus is on continuous improvement, collaboration, and a flexible approach to instruction that can be adjusted based on ongoing data analysis. If the outcomes are satisfactory, then the instruction and support are satisfactory. However, if the results are insufficient, a modification is required. Changes that improve outcomes are kept; changes that worsen outcomes are dropped. The continuous monitoring of reading literacy data enables prompt implementation of instructional changes to ensure that all students reach the goal of becoming established readers and continue on the path toward reading for meaning and understanding in the Implementation Phase.

