Home Literacy, Reading Fluency, and Comprehension of Grade 3 Learners

A Basic Research

[Copy for blind review: the researchers' names, positions, schools division, and schools are removed. The final copy lists them here.]

Conducted April to November 2026

Abstract

This basic research examined whether the home literacy environment of Grade 3 learners is related to their reading comprehension, whether oral reading fluency carries part of that relationship, and whether the path from fluency to comprehension differs for learners whose home language is not Tagalog. A correlational design with mediation and moderation was used. Ten public elementary schools in one schools division were drawn with probability proportional to Grade 3 enrollment, and 32 learners were drawn at random in each; 297 of the 320 had both a parent questionnaire and a reading assessment. Parents answered a 12-item home literacy questionnaire (ω = .88); learners read two Filipino passages aloud, scored as words correct per minute, and answered a 15-item comprehension test (KR-20 = .84). With family background, age, sex, home language, and school held constant, each scale point of home literacy was associated with 2.18 more comprehension items, 95% CI [1.43, 2.93]. Through fluency ran 1.02 items, bootstrap 95% CI [0.68, 1.39], about half of the association. The path through fluency was weaker for learners with another home language (0.54) than for Tagalog speakers (1.20); the index of moderated mediation was −0.67, 95% CI [−1.13, −0.25]. Home literacy goes with comprehension partly through fluency, and fluency in Filipino carries less of it for learners who speak another language at home. Schools should pair fluency practice with checks of meaning for these learners, and an intervention study should test a home reading program.

Keywords: home literacy environment, oral reading fluency, reading comprehension, mediation analysis, home language, Grade 3

Acknowledgment

The researchers thank the Schools Division Superintendent, who approved the study and its access to the ten schools; the school heads, who scheduled the reading assessments around the summative tests; the eight validators, two reading specialists, two Education Program Supervisors, two Master Teachers in Grade 3, a school head, and a linguist from a state university, who rated every drafted item; the teachers of the pilot school, who tried out the instruments in June; the Grade 3 advisers, who sent home and collected the parents' envelopes; the parents and guardians, who answered the questionnaire and gave their consent; and the learners, who read to us. The study was funded by the Basic Education Research Fund (BERF) for 2026.

Home Literacy, Reading Fluency, and Comprehension of Grade 3 Learners

Introduction of the Research

Reading is the foundation of every other subject. A learner who leaves Grade 3 unable to understand what they read meets longer texts in every subject from Grade 4 on, and the gap widens. The Philippines has measured how wide the gap is. In the Programme for International Student Assessment (PISA) 2025, 31% of Filipino 15-year-olds reached the minimum level of proficiency in reading, against an average of 69% in the countries of the Organisation for Economic Co-operation and Development (OECD, 2026). DepEd's own Comprehensive Rapid Literacy Assessment shows the gap opening earlier: at the end of School Year 2025–2026, 50.8% of Grade 3 learners in public schools read at grade level in Filipino (Llego, 2026; Second Congressional Commission on Education [EDCOM 2], 2026).

Schools are not the only place where children learn to read. Parents who read with their children, teach them letters and sounds, and keep something to read at home give their children practice and talk that a classroom of 40 cannot. Research abroad has found that such a home literacy environment goes with children's vocabulary, early literacy, and later reading (Sénéchal & LeFevre, 2002, 2014). How it reaches comprehension is less clear. One path runs through fluency: children who practice at home read words faster and more accurately, and fluent readers have attention left for meaning (Fuchs et al., 2001). Another runs around it, through the language and knowledge that talk about books builds.

The second path matters in a country of many languages. Since School Year 2025–2026, Filipino and English have been the primary media of instruction from Kindergarten to Grade 3 (Department of Education [DepEd], 2025b), under Republic Act No. 12027. A learner whose home language is Cebuano or Bikol learns to read in Filipino, a language they may decode before they fully understand it. For such a learner, reading fast may not mean reading with understanding, and the path from fluency to comprehension may be weaker.

Few Philippine studies have tested these paths with a probability sample and the methods that can separate them. Our division's language mapping in June 2026 showed that about a quarter of its Grade 3 learners speak a language other than Tagalog at home, mostly families who moved from the Visayas and Bicol. The division needed to know whether reading at home goes with better reading, and whether the same reading program serves every learner. This study therefore examined, in a probability sample of Grade 3 learners in one division, how the home literacy environment relates to reading comprehension, how much of that relationship runs through oral reading fluency, and whether the path differs by home language. It addresses the Teaching and Learning theme of the Basic Education Research Agenda (DepEd, 2016).

Literature Review

The literature reviewed here is organized around the study's questions: what the home literacy environment is and how it relates to reading; how fluency connects word reading to comprehension; what changes when a child

reads in a language not spoken at home; and why family background must be held constant.

The Home Literacy Environment

The home literacy environment is what a family does, and has, that bears on a child's reading: reading books together, teaching letters and words, reading in front of the child, and keeping things to read at home. The home literacy model separates two kinds of activity. In a five-year study of 168 English-speaking children, Sénéchal and LeFevre (2002) found that "children's exposure to books was related to the development of vocabulary and listening comprehension skills," which "were directly related to children's reading in grade 3," while "parent involvement in teaching children about reading and writing words was related to the development of early literacy skills" (p. 445). A later study of children who spoke English at home and were schooled in French, a situation close to that of many Filipino learners, gave the model "strong support" (Sénéchal & LeFevre, 2014, p. 1552). Across 59 studies from 1998 to 2018, the overall correlation between the home literacy environment and reading comprehension was moderate (Fisher's z = .32), and parents' involvement and literacy expectations correlated more strongly with reading comprehension than home literacy resources did (Dong et al., 2020).

Philippine evidence is recent and comes from younger children. Among 673 children aged 3 to 5 in low- to middle-income families in Cebu City, home literacy resources were related to the vocabulary of 5-year-olds, while the frequency of shared storybook reading was not related to the children's outcomes (Dulay et al., 2018). In 320 Cebu families with children aged 5 to 8,

book reading and direct literacy instruction at home correlated with the children's language and literacy skills, and "book-related behaviors were less frequently practiced relative to other behaviors" (Dulay et al., 2019, abstract).

Fluency as the Bridge to Comprehension

Oral reading fluency, the number of words a child reads correctly in a minute, has long been used as an indicator of overall reading competence (Fuchs et al., 2001). A meta-analysis of 41 studies found that it correlates r = .67 with standardized reading tests, the same in Grade 3 and for tests of comprehension (Reschly et al., 2009). Fluency also carries other skills' influence to comprehension: in Grades 2 to 4, text reading fluency "completely mediated the relation between word reading fluency and reading comprehension" (Kim & Wagner, 2015, p. 224). The home literacy environment reaches comprehension through the same channel. In 214 Canadian children, parent teaching and shared book reading "contributed indirectly to reading accuracy and fluency in Grade 1, which then mediated the effects of home literacy environment on reading comprehension in Grades 2 and 3" (Inoue et al., 2018, p. 273).

Reading in a Language Not Spoken at Home

The link between fluency and comprehension may be weaker when the language of the text is not the language of the home. Among 76 Spanish-speaking fifth graders reading in English, "only students with proficient text-reading fluency and well-developed oral language demonstrated skilled comprehension," and the authors concluded that assumptions about fluency and comprehension "may not readily apply" to such learners (Crosson &

Lesaux, 2010, p. 475). In a sample of English learners in Grades 2, 3, and 5, 55.5% showed a significant gap between their fluency and their comprehension, and the authors cautioned against decisions "based solely on oral reading fluency data" (Quirk & Beem, 2012, p. 539). Their overall correlation, $r = .56$, was in line with studies of native speakers; the gap showed in individual learners.

The question is pressing in the Philippines. Republic Act No. 12027 discontinued the mother tongue as the medium of instruction from Kindergarten to Grade 3, and since School Year 2025–2026 the primary media of instruction have been Filipino and English (DepEd, 2025b); in classes where 70 to 99 percent of learners share one first language, the others receive "linguistic support, oral scaffolding and planned translanguaging" (DepEd, 2025a, para. 22). The national Early Grade Reading Assessment of 2019 found that Grade 3 learners read a mean of 60.9 words correct per minute in Filipino, and that, holding region constant, "children who speak Tagalog at home have an advantage of about 7.8 cwpm in Filipino" (Pouezevara et al., 2019, p. 15). Whether the same fluency means the same understanding for both groups was not reported.

Family Background and the Problem of Confounding

Families that read more with their children differ in other ways, and those differences can produce a correlation between home literacy and reading that reading at home did not cause. In a sample of children at family risk of dyslexia, "after accounting for variations in maternal language, storybook exposure was not a significant predictor of children's outcomes,"

although direct literacy instruction remained one (Puglisi et al., 2017, p. 498). In the Cebu families, on the other hand, parents' own word reading skills "did not eliminate or attenuate influences from parent's education and home literacy activities" (Dulay et al., 2019, abstract). A correlational study must therefore hold family background constant and still say what it could not hold constant.

Synthesis

The studies agree that the home literacy environment goes with children's reading; one traces part of that relationship through fluency (Inoue et al., 2018), and another shows fluency carrying word reading's link to comprehension (Kim & Wagner, 2015). They leave three gaps that this study addresses. The fluency path has been tested mostly with children reading English as a home language; the Philippine studies reviewed here sampled children aged 3 to 8 in one city and did not test fluency as a path. The evidence that fluency can overstate comprehension for second-language readers comes from learners of English in Grades 2 to 5. And no study reviewed here asked whether the path through fluency differs between learners who read Filipino as the language of their home and those who do not. The study therefore tested, in a probability sample of Grade 3 learners, both the path and its difference by home language, with family background held constant.

Research Questions

This study answered four questions:

1. What are the home literacy environment, the oral reading fluency in Filipino, and the reading comprehension of Grade 3 learners, overall and by home language?
2. Is the home literacy environment significantly related to reading comprehension when family background, age, sex, home language, and school are held constant?
3. Does oral reading fluency mediate the relationship between the home literacy environment and reading comprehension?
4. Does the indirect relationship through oral reading fluency differ between learners whose home language is Tagalog and learners whose home language is another Philippine language?

Hypotheses

The study tested three null hypotheses at the .05 level of significance:

$H_0$1: The home literacy environment is not significantly related to reading comprehension when family background, age, sex, home language, and school are held constant.

$H_0$2: There is no significant indirect relationship between the home literacy environment and reading comprehension through oral reading fluency.

$H_0$3: Home language does not moderate the indirect relationship through oral reading fluency.

Scope and Limitation

The study covered Grade 3 learners enrolled in the public elementary schools of one schools division in School Year 2026–2027, sampled in two

stages from all 58 schools with Grade 3 classes. Data were collected from July 20 to August 14, 2026, in Term 1. The variables were the home literacy environment, as parents reported it; oral reading fluency in Filipino; reading comprehension in Filipino; home language, as recorded in the schools' language mapping; and family background, age, and sex as controls.

The study has four limitations. First, it is correlational: it describes how the home literacy environment goes with reading at one point in time and cannot show that reading at home causes better reading. Holding family background constant removes some, not all, of what travels with a reading home; the parents' own language and reading skills, which the study did not measure, may explain part of what remains. Second, the home literacy environment is what parents reported, and parents may report more reading than took place. Third, fluency and comprehension were measured in Filipino only, at the start of Grade 3. Fourth, the study had less power for the fourth question than for the others: the proposal's simulation gave a probability of about .64 of detecting the expected difference between language groups with 300 learners. Results describe this division's Grade 3 learners; other divisions, with other languages, may differ.

Research Methodology

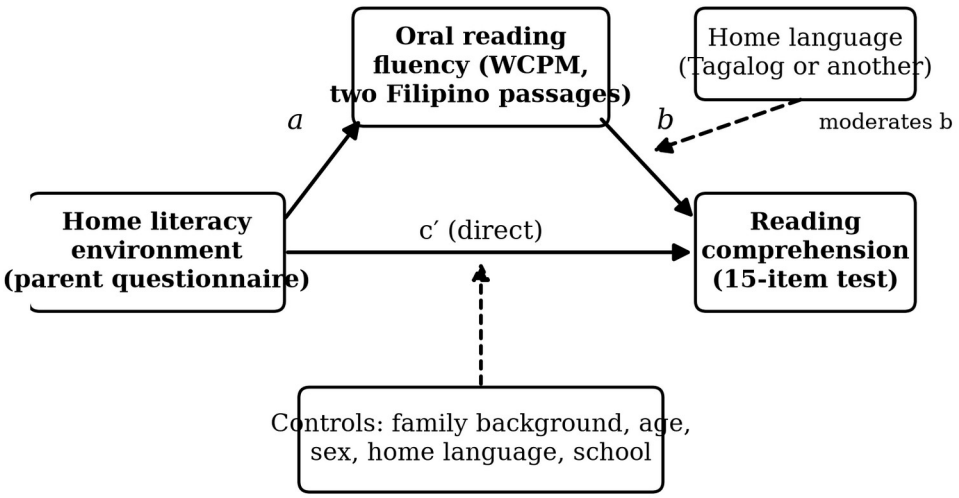
Research Design

The study used a quantitative, correlational design with mediation and moderation (Hayes, 2018). A correlational design examines the relationships among variables as they occur, without manipulating any (Creswell & Creswell, 2018). Mediation asks how much of the relationship between the

home literacy environment (*X*) and reading comprehension (*Y*) passes through oral reading fluency (*M*): the indirect relationship is the product of the path from *X* to *M* (*a*) and the path from *M* to *Y* holding *X* constant (*b*), and the direct relationship (*c*′) is what remains. Moderated mediation asks whether one of those paths differs across groups (Hayes, 2015); here the study expected the *b* path to differ by home language. Figure 1 shows the model. The design suits the questions because a home's reading cannot be assigned at random, and because the paths can be estimated in one sample at one time. It cannot establish cause, which the Scope and Limitations section states.

Figure 1

The Conceptual Model of the Study



Note. Family background (4Ps membership and the mother's schooling), age, sex, home language, and school were held constant in every model. The dashed arrow shows the expected moderation of the *b* path by home language.

A. Sampling

The population was the 5,407 Grade 3 learners enrolled in the division's 58 public elementary schools at the end of June 2026, as listed in the Learner

Information System. The study used two-stage cluster sampling (Fraenkel et al., 2019). In the first stage, 10 schools were drawn by systematic sampling with probability proportional to size: the schools were listed by district, their Grade 3 enrollments were added up, and a school was selected wherever a random start plus multiples of the sampling interval (5,407 ÷ 10 = 540.7) fell in its range. In the second stage, 32 learners were drawn by simple random sampling from each selected school's Grade 3 register (School Form 1). Because larger schools had a larger chance of selection and every school contributed the same number of learners, every Grade 3 learner in the division had the same chance of being sampled, 320 ÷ 5,407 = .059, so the sample needs no weights.

Published tables give the sample needed to detect a simple indirect relationship: with the percentile bootstrap, 162 when both paths are .26 and 78 when both are .39 (Fritz & MacKinnon, 2007). The study's model has more parts, a moderated path and school effects, so the sample size was set by a Monte Carlo power analysis, the approach recommended for complex mediation models (Schoemann et al., 2017), written for this design. Using values from earlier studies where they exist, a standardized *a* path of .25 and a *b* path of .50, and, for learners with another home language, the team's own assumption of half that *b* path, .25, with a direct path of .10, a quarter of learners with another home language, and a school intraclass correlation of .08, the study simulated 1,000 samples at each of seven sizes and tested each indirect relationship with a Monte Carlo confidence interval. With 300 learners, the probability of detecting the indirect relationship through fluency

was .996; for learners with another home language, .80; and for the difference between the two groups, .64, which would need about 400 learners to reach .80. The study sampled 320 learners to keep 300 after expected losses, the most the grant's travel budget could reach, and it reports the lower power for the fourth question as a limitation. Slovin's formula was not used: it sizes a sample to estimate a proportion within a margin of error and says nothing about the power to detect a relationship (Tejada & Punzalan, 2012).

Of the 320 learners sampled, the parents of 7 declined, 4 learners transferred before the assessment, 3 were absent on both assessment days, and 9 parents did not return the questionnaire, leaving 297 learners (92.8%) with complete data. Table 1 shows the schools.

Table 1

The Sampled Schools

School	Grade 3 enrollment	Learners sampled	Learners analyzed	Another home language (%)
S01	244	32	30	16.7
S02	380	32	28	14.3
S03	96	32	32	43.8
S04	70	32	31	35.5
S05	67	32	27	25.9
S06	62	32	29	41.4
S07	221	32	30	16.7
S08	160	32	29	3.4
S09	130	32	30	23.3
S10	43	32	31	41.9
Total	1,473	320	297	26.6

Note. Schools are numbered in the order drawn. Another home language: the share of analyzed learners whose home language is not Tagalog.

B. Data Collection

Recruitment of Participants

The Schools Division Superintendent approved the study in May 2026. After the sampling, each adviser sent home a sealed envelope with a letter explaining the study in Filipino, a consent form, and, once the parent consented, the questionnaire. Learners whose parents consented were asked for their assent before the reading assessment. Learners were included if they were enrolled in Grade 3 in a sampled school; none was excluded for low reading.

Data Collection Instruments

Home literacy questionnaire. The researchers wrote 14 items on how often, in the past month, the family did each of three kinds of literacy activity: shared reading (reading a story with the child, talking about it, asking questions about it, listening to the child read aloud), teaching (letter sounds, sounding out new words, spelling and writing, help with reading tasks from school), and materials and models (the child seeing an adult read, being given something to read, looking at books on their own, visiting a library or reading center), and two more on watching television in Filipino with the child and using reading apps, which were dropped after validation. Each item was answered on a four-point scale: never (0), once or twice this month (1), once or twice a week (2), and almost every day (3). The items were written in Filipino and read to parents who asked for help. The score is the mean of the items, from 0 to 3.

Reading assessment. Two Filipino passages at Grade 3 level, a 152-word narrative and a 147-word informational text, were written by the researchers and checked by the validators for vocabulary and length. Each learner read both aloud to a trained researcher, one to one, in a quiet room. The researcher marked the words read incorrectly or skipped in the first minute, and the score is the words correct per minute (WCPM); fluency is the mean of the two passages. After each passage, the learner answered comprehension questions asked orally and answered orally: eight on the narrative and seven on the informational text, for 15 items scored 0 or 1, with literal, inferential, and critical questions on both. Every reading was audio recorded on the researchers' own phones for checking.

Home language and background. Each learner's home language was taken from the school's language mapping records, which list the learner's first language from the enrollment form, confirmed by the teacher's interview and, where needed, the Language Identification Tool (DepEd, 2025a), and was checked against the parent's answer on the questionnaire; the two agreed for every learner. The questionnaire also asked whether the family is a member of the Pantawid Pamilyang Pilipino Program (4Ps) and the mother's or female guardian's highest schooling. The registers gave the learner's age and sex.

Validity and Reliability

Eight validators rated each drafted item as essential, useful but not essential, or not necessary, and the content validity ratio was computed for each (Lawshe, 1975): CVR = (ne − N/2) / (N/2), where ne is the number of validators rating the item essential and N is the number of validators. An item

was kept if its CVR reached .75, the critical value for eight validators (Ayre & Scally, 2014). Of the 14 questionnaire items, 12 were kept (CVR .75 to 1.00); the two dropped asked about watching television in Filipino with the child (CVR .25) and reading apps on a phone or tablet (.50). Of the 18 comprehension items, 15 were kept; three were dropped (CVR .00 to .50). The mean CVR of the kept items was .85 for the questionnaire and .92 for the test.

The instruments were tried out from June 22 to 26, 2026, with 30 Grade 3 learners and their parents in a school outside the sample. Parents took 7 to 15 minutes to answer the questionnaire (M = 10.8). The questionnaire's Cronbach's alpha was .90 and its McDonald's omega .91; the test's KR-20 was .84. Two items were reworded after parents asked what "reading center" meant.

In the study, the questionnaire's reliability was α = .87, 95% CI [.85, .89], and ω = .88, from a one-factor model; every item loaded .41 or higher, the lowest being the visit to a library or reading center, the least frequent activity. Omega is reported beside alpha because it does not assume that every item measures the home literacy environment equally well (Hayes & Coutts, 2020). The comprehension test's KR-20 was .84, in the range DeVellis (2012) calls very good (.80 to .90). The two passages' fluency scores correlated r = .93. A second researcher scored the recordings of 62 learners (21% of the sample), chosen at random; the agreement between the two scorers on WCPM was ICC(A,1) = .99, 95% CI [.98, .99], a two-way, absolute-agreement, single-rater intraclass correlation, which is excellent by Koo and Li's (2016) guidelines.

Data Collection Setting

The reading assessments took place in a quiet room in each of the ten schools: a library, a guidance office, or an empty classroom, during class hours. Each took 10 to 15 minutes.

Data Collection Timeline

Table 2

Data Collection Timeline

Activity	Dates
Validation of the instruments by eight experts	April 13 to 24, 2026
Pilot test in a school outside the sample	June 22 to 26, 2026
Drawing of the schools and learners	July 1 to 8, 2026
Consent forms and questionnaires sent home and collected	July 9 to 31, 2026
Reading assessments in the ten schools	July 20 to August 14, 2026, except summative test days
Second scoring of the recordings	August 17 to 21, 2026
Data analysis	August 24 to September 30, 2026

Note. The assessments ended before the Term 1 examination on August 28 and September 1, 2026, and after the testing window for beginning-of-school-year assessments, which closed on July 10 (DepEd, 2026b).

Data Recording and Storage

Scores were written on paper score sheets, entered into a spreadsheet by one researcher and checked against the sheets by another. Learners were identified only by a code; the list linking codes to names was kept by each school's adviser, not by the researchers. Recordings were moved from the phones to an encrypted drive the same day and deleted from the phones; they will be destroyed one year after the study ends. Paper forms are kept in a locked cabinet in the division office.

C. Ethical Issues

The study followed DepEd's Research Management Guidelines (DepEd, 2017) and the Data Privacy Act of 2012 (Republic Act No. 10173). Parents gave written consent, and learners gave their assent orally, in Filipino, before reading, and were told they could stop at any time. No learner's name or score was reported to anyone outside the research team except as follows: with their parents' consent, the 21 learners who read fewer than 25 words correct per minute on both passages were referred to their advisers for the school's reading program. Questionnaire answers were never shown to teachers. The researchers declared their use of an artificial intelligence (AI) tool in Appendix F (DepEd, 2026a). The assessments were scheduled with the advisers so that no learner missed a test, and every learner received a snack after reading.

D. Plan for Data Analysis

Descriptive statistics, means, standard deviations, frequencies, and percentages, answered the first question, and Welch's t tests compared the two language groups. The remaining questions were answered with four ordinary least squares regressions, each holding constant 4Ps membership, the mother's schooling (three dummy variables), age, sex, home language, and the school (nine dummy variables, which hold constant everything the learners of one school share). The total model regressed comprehension on the home literacy environment (question 2). The a model regressed fluency on the home literacy environment; the simple mediation model regressed comprehension on both (question 3); and the moderated model added the product of fluency (centered at its mean) and home language (question 4),

Hayes's (2018) Model 14. Standard errors were the heteroskedasticity-consistent HC3 type, which do not assume equal spread. The school dummies, rather than standard errors clustered by school, handle the sampling of schools, because ten clusters are too few for cluster-robust standard errors to be trusted (Cameron & Miller, 2015).

The indirect relationships, products of two estimates, are not normally distributed, so they were tested with a percentile bootstrap (Preacher & Hayes, 2008): 5,000 resamples, each drawing learners with replacement within each school, as many as the school had. An indirect relationship is significant if its 95% interval excludes zero. The index of moderated mediation, the a path times the interaction, tests whether the indirect relationship differs between the language groups (Hayes, 2015). Sobel's normal-theory test was computed for comparison. The analysis used Python 3.12 with statsmodels 0.15, pingouin 0.7, and semopy 2.3; the workbook recomputes every statistic Excel can.

Discussion of Results and Recommendations

Home Literacy, Fluency, and Comprehension of the Learners

Table 3 describes the 297 learners. Their parents reported a mean home literacy score of 1.55 on the scale of 0 to 3 (SD = 0.60), between once or twice a month and once or twice a week for the average activity. Help with reading tasks from school was the most frequent activity (M = 1.93) and visits to a library or reading center the least (M = 0.62). Learners read a mean of 53.3 words correct per minute in Filipino (SD = 20.3), from 6.5 to 107.5, and answered a mean of 7.7 of the 15 comprehension items (SD = 3.9).

Table 3

Descriptive Statistics of the Learners, by Home Language

Variable	All (n = 297) M (SD)	Tagalog (n = 218) M (SD)	Another language (n = 79) M (SD)	Welch's t	d
Home literacy (0–3)	1.55 (0.60)	1.61 (0.56)	1.39 (0.66)	2.63**	0.37
Fluency (WCPM)	53.3 (20.3)	56.3 (19.5)	45.0 (20.3)	4.26***	0.57
Comprehension (0–15)	7.71 (3.90)	8.13 (3.88)	6.53 (3.72)	3.24**	0.42
Age (months)	100.0 (5.9)	100.1 (5.9)	99.9 (6.0)		
Girls, n (%)	142 (47.8)	107 (49.1)	35 (44.3)		
4Ps members, n (%)	94 (31.6)	53 (24.3)	41 (51.9)		
Mother finished at most elementary school, n (%)	79 (26.6)	48 (22.0)	31 (39.2)		

Note. WCPM = words correct per minute. Another language: Cebuano (31), Bikol (16), Hiligaynon (13), Waray (12), and Ilocano (7). Welch's t compares the two language groups; df = 122.1, 134.0, and 143.8. d = Cohen's d. *p < .05. **p < .01. ***p < .001.

Learners with another home language read 11.2 fewer words correct per minute and answered 1.6 fewer comprehension items, and their parents reported somewhat less reading at home. Half of their families were in the 4Ps, against a quarter of the Tagalog-speaking families, so the differences in Table 3 mix language with family circumstances; the models below hold both constant.

The home literacy environment correlated with fluency, r = .41, and with comprehension, r = .43, and fluency with comprehension, r = .53 (all p < .001). The home literacy environment also correlated with the mother's schooling, r = .37, and negatively with 4Ps membership, r = −.34: families with more schooling and fewer economic difficulties read more at home, which is why the models hold family background constant.

The Home Literacy Environment and Comprehension

With family background, age, sex, home language, and school held constant, each scale point of home literacy was associated with 2.18 more

comprehension items, b = 2.18, SE = 0.38, $t(279)$ = 5.69, p < .001, 95% CI [1.43, 2.93] (Table 4, Model 1). The first null hypothesis is rejected. One scale point is the difference between a family that does the average activity once or twice a month and one that does it once or twice a week; in standard deviations, the association was β = .33. Without any controls the association was 2.80 items; family background accounted for most of the difference, and age, sex, home language, and school for little of it (Appendix E).

Table 4

Regressions of Fluency and Comprehension on the Home Literacy Environment

Predictor	Model 1: comprehension b (SE)	Model 2: fluency b (SE)	Model 3: comprehension b (SE)	Model 4: comprehension b (SE)
Home literacy (0–3)	2.18 (0.38)***	11.54 (1.87)***	1.15 (0.38)**	1.16 (0.38)**
Fluency (WCPM)			0.089 (0.010)***	0.104 (0.011)***
Fluency × another home language				−0.058 (0.019)**
Another home language	−0.35 (0.50)	−6.49 (2.51)**	0.22 (0.48)	−0.04 (0.48)
4Ps member	−0.90 (0.51)	−6.05 (2.68)*	−0.36 (0.48)	−0.47 (0.48)
Girl	0.56 (0.41)	3.68 (2.10)	0.24 (0.38)	0.27 (0.37)
R^2	.27	.34	.42	.43
Adjusted R^2	.23	.30	.38	.39

Note. N = 297. Model 1: the total relationship. Model 2: the a path. Model 3: simple mediation. Model 4: moderated mediation, with fluency centered at its mean (53.3 WCPM), so its coefficient is the b path for Tagalog speakers. All models also hold constant the mother's schooling (three dummy variables), age, and the school (nine dummy variables). Standard errors are HC3. *p < .05. **p < .01. ***p < .001.

The association is not proof that reading at home raises comprehension. The models removed what the study measured about family background; they could not remove what it did not, such as the parents' own language and

reading skills, which may shape both how much a family reads and how well a child reads; in one study abroad, mothers' language skills accounted for the link between storybook reading and children's outcomes (Puglisi et al., 2017).

The Path Through Fluency

The home literacy environment was associated with fluency: each scale point went with 11.5 more words correct per minute, b = 11.54, SE = 1.87, $t(279)$ = 6.18, $p < .001$ (Table 4, Model 2). Fluency, in turn, was associated with comprehension with the home literacy environment held constant, b = 0.089 items per word correct per minute, SE = 0.010, $p < .001$ (Model 3). The indirect relationship through fluency, $a \times b$, was 1.02 items, bootstrap 95% CI [0.68, 1.39], which excludes zero; the second null hypothesis is rejected. The direct relationship that remained was 1.15 items, SE = 0.38, p = .003. Fluency thus carried about half (47%) of the home literacy environment's association with comprehension (Table 5). Sobel's test agreed, z = 5.08, $p <$ .001, with an interval of [0.63, 1.42]; with 297 learners the bootstrap distribution was close to symmetric, and the two intervals differ little (Figure 3).

Table 5

Indirect, Direct, and Total Relationships of the Home Literacy Environment With Comprehension

Relationship	Estimate	Bootstrap 95% CI
Total relationship	2.18	[1.48, 2.89]
Indirect, through fluency (all learners)	1.02	[0.68, 1.39]
Direct (all learners)	1.15	[0.43, 1.87]
Indirect, through fluency: Tagalog at home	1.20	[0.80, 1.63]
Indirect, through fluency: another home language	0.54	[0.16, 0.96]

Relationship	Estimate	Bootstrap 95% CI
Index of moderated mediation	−0.67	[−1.13, −0.25]
Direct (moderated model)	1.16	[0.44, 1.87]

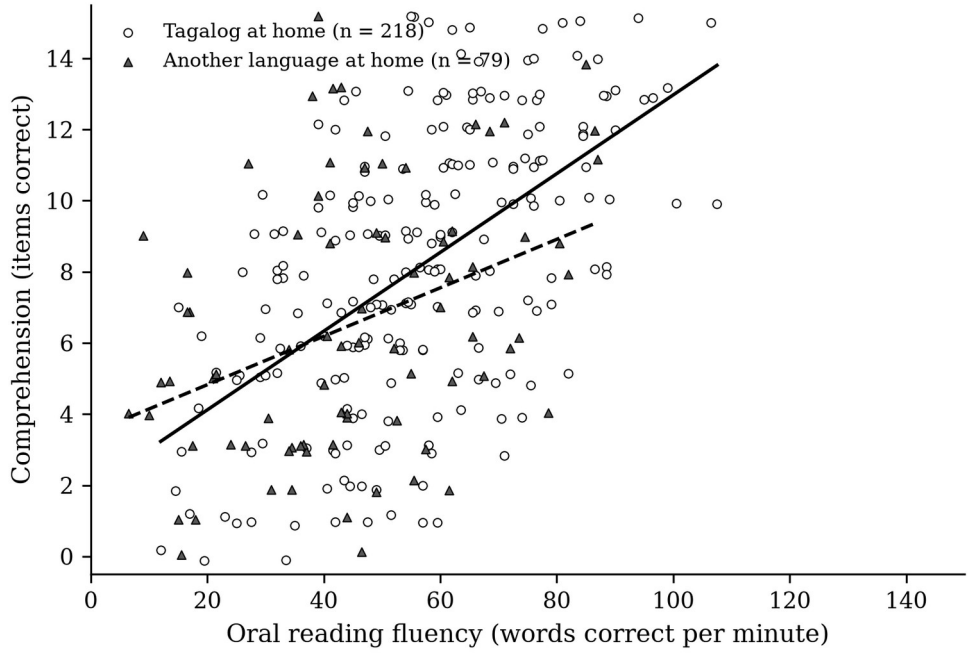
Note. Comprehension items, of 15, per scale point of home literacy. Percentile intervals from 5,000 resamples of learners within each school. The index of moderated mediation is the difference between the two groups' indirect relationships.

The Path for Learners With Another Home Language

The path from fluency to comprehension was weaker for learners with another home language (Table 4, Model 4). For Tagalog speakers, each word correct per minute went with 0.104 more comprehension items; for learners with another home language, with 0.047, a difference of −0.058, SE = 0.019, $t(277) = -3.07$, $p = .002$. Adding the difference raised the explained variance by $\Delta R^2 = .016$, $F(1, 277) = 7.77$, $p = .006$. Figure 2 shows it: at 50 words correct per minute, the two groups' lines are half an item apart; at 80, about two items.

Figure 2

Oral Reading Fluency and Comprehension, by Home Language

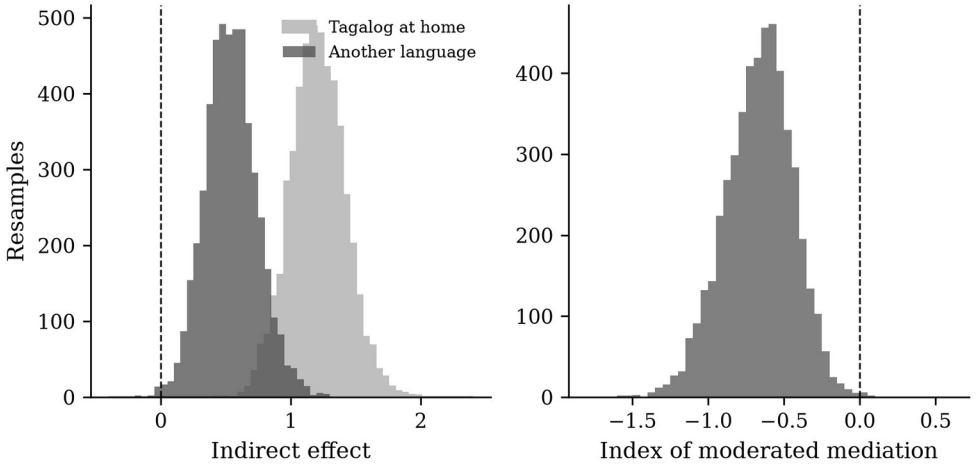


Note. Each point is a learner, spread slightly so equal scores show. Lines: each group's least-squares line, without controls.

As a result, the indirect relationship through fluency was 1.20 items for Tagalog speakers, 95% CI [0.80, 1.63], and 0.54 for learners with another home language, [0.16, 0.96]. The index of moderated mediation, their difference, was −0.67, 95% CI [−1.13, −0.25], which excludes zero; the third null hypothesis is rejected (Figure 3). The home literacy environment went with fluency equally in both groups: an interaction added to the *a* path was small and not significant, $b = -1.12$ words, $p = .77$.

Figure 3

Bootstrap Distributions of the Indirect Relationships and of Their Difference



Note. 5,000 resamples of learners within each school. Left: the indirect relationship through fluency for each language group. Right: the index of moderated mediation; the dashed line marks zero.

The study had a probability of only about .64 of detecting this difference. Its finding is therefore less certain than the others, and an estimate this size from a study with modest power is more likely to overstate the true difference than to understate it.

Discussion

The home literacy environment goes with reading comprehension in this division's Grade 3 learners, and about half of the association runs through how fluently they read. This is the pattern the home literacy model predicts, in which what parents do with children at home builds the skills that school reading draws on (Sénéchal & LeFevre, 2002), and it matches the Canadian study in which Grade 1 fluency carried the home literacy environment's relationship with comprehension in Grades 2 and 3 (Inoue et al., 2018). The half that did not run through fluency may run through vocabulary and the

knowledge of the world that talk about books builds, the path the home literacy model assigns to shared reading, which the study did not measure.

The weaker path for learners with another home language fits what studies of second-language readers have found: decoding a language and understanding it can grow apart, and only learners with both fluent reading and well-developed oral language in the language of the text comprehend well (Crosson & Lesaux, 2010). These learners read 6.5 fewer words a minute than Tagalog speakers of similar background (Table 4, Model 2), close to the national assessment's 7.8 (Pouezevara et al., 2019); but even at the same fluency, they understood less. A teacher who listens only to how fast they read will overestimate what they understand, as Quirk and Beem (2012) warned of fluency data alone.

Three cautions apply. The design is correlational, and the parents' own language and reading skills, which the study did not measure, may account for part of the relationships found, as mothers' language did for storybook reading in one study abroad (Puglisi et al., 2017), though parents' word reading did not remove the home's link in a study of Filipino families (Dulay et al., 2019). The home literacy environment is what parents reported. And the difference between language groups, though its interval excludes zero, came from a test with modest power and should be confirmed.

Recommendations

Based on the findings, the following recommendations are made:

1. **Check comprehension, not only fluency, for learners whose home language is not Filipino or Tagalog.** For these learners, words correct

per minute overstated what they understood. Teachers should ask comprehension questions whenever they listen to such a learner read, and the division should report comprehension beside fluency in its reading assessments.

2. **Pair fluency practice with work on meaning in Filipino for these learners.** Repeated reading builds speed; for learners still learning Filipino, it should come with talk about the words and ideas in the passage, the linguistic support and planned translanguaging that DepEd's language mapping guidelines ask for in classes where some learners speak another language (DepEd, 2025a).
3. **Give parents specific, short home reading routines, and test them.** The findings justify telling parents that reading with their children goes with better reading, and suggesting concrete activities: listening to the child read for ten minutes, talking about a story. Because the study cannot show that these activities cause better reading, schools should introduce them as an action research with a comparison group, not as a proven program.
4. **Use the language mapping records in planning reading programs.** The division should identify, from the schools' language mapping, the classes with many learners whose home language differs from the medium of instruction, and give their teachers the support in item 2 first.
5. **Future research should** follow learners over time or test a home reading program with random assignment; measure oral vocabulary in

Filipino and the parents' own reading, the two most likely explanations of the direct path; and sample at least 400 learners from more schools, to test the difference between language groups with adequate power.

Dissemination and Advocacy Plans

The researchers will share the findings with the people who can act on them: teachers, school heads, the division's curriculum office, and parents. Table 6 sets out the plan.

Table 6

Dissemination and Advocacy Plan

Target audience	Objective	Channel	Key message	Timeline	Evaluation
Grade 3 teachers of the ten schools	Check comprehension beside fluency for learners with another home language	A learning action cell session in each school	Fast reading is not always understanding	December 2026 to January 2027	Teachers who add comprehension questions to their fluency checks, by a follow-up survey
School heads and the division's curriculum office	Use language mapping in reading programs	Division research forum; two-page policy brief	Support first the classes where home and school languages differ	December 2026	Reading programs that cite the language mapping data
Parents of the ten schools	Share short home reading routines	Parent-teacher conference in the End-of-Term Block	Ten minutes of listening to your child read	December 2026	Parents who attend; routines reported in a short slip
Researchers in the region	Report the study and its methods	Regional research congress; division journal	Home literacy goes with comprehension partly through fluency	March to June 2027	Acceptance for presentation or publication

Note. The policy brief was paid from the grant's dissemination line (Financial Report); the division hosts the research forum.

References

Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: Revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development, 47*(1), 79–86. https://doi.org/10.1177/0748175613513808

Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources, 50*(2), 317–372. https://doi.org/10.3368/jhr.50.2.317

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.

Crosson, A. C., & Lesaux, N. K. (2010). Revisiting assumptions about the relationship of fluent reading to comprehension: Spanish-speakers' text-reading fluency in English. *Reading and Writing, 23*(5), 475–494. https://doi.org/10.1007/s11145-009-9168-8

Department of Education. (2016). *Adoption of the Basic Education Research Agenda* (DepEd Order No. 39, s. 2016).

Department of Education. (2017). *Research management guidelines* (DepEd Order No. 16, s. 2017).

Department of Education. (2025a). *Guidelines on the language mapping process for Key Stage 1* (DepEd Order No. 035, s. 2025).

Department of Education. (2025b). *Policy on the medium of instruction for Kindergarten to Grade 3 effective School Year 2025–2026* (DepEd Order No. 020, s. 2025).

Department of Education. (2026a). *Foundational guidelines on artificial intelligence (AI) in basic education* (DepEd Order No. 003, s. 2026).

Department of Education. (2026b). *Guidelines on the implementation of the three-term school calendar in basic education* (DepEd Order No. 009, s. 2026).

DeVellis, R. F. (2012). *Scale development: Theory and applications* (3rd ed.). SAGE.

Dong, Y., Wu, S. X.-Y., Dong, W.-Y., & Tang, Y. (2020). The effects of home literacy environment on children's reading comprehension development: A meta-analysis. *Educational Sciences: Theory & Practice, 20*(2), 63–82. https://doi.org/10.12738/jestp.2020.2.005

Dulay, K. M., Cheung, S. K., & McBride, C. (2018). Environmental correlates of early language and literacy in low- to middle-income Filipino families. *Contemporary Educational Psychology, 53*, 45–56. https://doi.org/10.1016/j.cedpsych.2018.02.002

Dulay, K. M., Cheung, S. K., & McBride, C. (2019). Intergenerational transmission of literacy skills among Filipino families. *Developmental Science, 22*(5), Article e12859. https://doi.org/10.1111/desc.12859

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*(3), 233–239. https://doi.org/10.1111/j.1467-9280.2007.01882.x

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading, 5*(3), 239–256. https://doi.org/10.1207/S1532799XSSR0503_3

Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research, 50*(1), 1–22. https://doi.org/10.1080/00273171.2014.962683

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But…. *Communication Methods and Measures, 14*(1), 1–24. https://doi.org/10.1080/19312458.2020.1718629

Inoue, T., Georgiou, G. K., Parrila, R., & Kirby, J. R. (2018). Examining an extended home literacy model: The mediating roles of emergent literacy skills and reading fluency. *Scientific Studies of Reading, 22*(4), 273–288. https://doi.org/10.1080/10888438.2018.1435663

Kim, Y.-S. G., & Wagner, R. K. (2015). Text (oral) reading fluency as a construct in reading development: An investigation of its mediating role for children from Grades 1 to 4. *Scientific Studies of Reading, 19*(3), 224–242. https://doi.org/10.1080/10888438.2015.1007375

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of*

Chiropractic Medicine, 15(2), 155–163. https://doi.org/10.1016/j.jcm.2016.02.012

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563–575. https://doi.org/10.1111/j.1744-6570.1975.tb01393.x

Llego, M. A. (2026). *Struggling readers at the end of School Year 2025–2026: CRLA results for 5.1 million Grade 1–3 learners in Philippine public schools* (NASH Reviewer Research Report No. 1). NASH Reviewer. https://doi.org/10.5281/zenodo.24621196

OECD. (2026). *PISA 2025 results (Volume I): Country notes: Philippines*. OECD Publishing. https://www.oecd.org/en/publications/pisa-2025-results-volume-i-country-notes_2d4ff9ea-en/philippines_3699b9d5-en.html

Pouezevara, S., Pressley, J., & Cummiskey, C. (2019). *2019 National Early Grade Reading Assessment (EGRA): English and Filipino, Grade 3 findings report*. RTI International. https://shared.rti.org/content/2019-national-early-grade-reading-assessment-egra-english-and-filipino-grade-3-findings

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Puglisi, M. L., Hulme, C., Hamilton, L. G., & Snowling, M. J. (2017). The home literacy environment is a correlate, but perhaps not a cause, of

variations in children's language and literacy development. *Scientific Studies of Reading, 21*(6), 498–514. https://doi.org/10.1080/10888438.2017.1346660

Quirk, M., & Beem, S. (2012). Examining the relations between reading fluency and reading comprehension for English language learners. *Psychology in the Schools, 49*(6), 539–553. https://doi.org/10.1002/pits.21616

Republic Act No. 10173. (2012). *Data Privacy Act of 2012*. https://lawphil.net/statutes/repacts/ra2012/ra_10173_2012.html

Republic Act No. 12027. (2024). *An act discontinuing the use of the mother tongue as medium of instruction from Kindergarten to Grade 3, providing for its optional implementation in monolingual classes, and amending for the purpose Sections 4 and 5 of Republic Act No. 10533, otherwise known as the "Enhanced Basic Education Act of 2013"*. https://www.officialgazette.gov.ph/2024/10/10/republic-act-no-12027/

Reschly, A. L., Busch, T. W., Betts, J., Deno, S. L., & Long, J. D. (2009). Curriculum-based measurement oral reading as an indicator of reading achievement: A meta-analysis of the correlational evidence. *Journal of School Psychology, 47*(6), 427–469. https://doi.org/10.1016/j.jsp.2009.07.001

Schoemann, A. M., Boulton, A. J., & Short, S. D. (2017). Determining power and sample size for simple and complex mediation models. *Social*

Psychological and Personality Science, 8(4), 379–386. https://doi.org/10.1177/1948550617715068

Second Congressional Commission on Education. (2026). *Early childhood care and development dashboard* [Data set]. https://edcom2.gov.ph/eccddashboard/

Sénéchal, M., & LeFevre, J.-A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development, 73*(2), 445–460. https://doi.org/10.1111/1467-8624.00417

Sénéchal, M., & LeFevre, J.-A. (2014). Continuity and change in the home literacy environment as predictors of growth in vocabulary and reading. *Child Development, 85*(4), 1552–1568. https://doi.org/10.1111/cdev.12222

Tejada, J. J., & Punzalan, J. R. B. (2012). On the misuse of Slovin's formula. *The Philippine Statistician, 61*(1), 129–136.

Financial Report

The study received a division-level Basic Education Research Fund grant of PhP 30,000.00, released in three tranches: 40% (PhP 12,000.00) on the submission of the work plan and the instruments, 40% (PhP 12,000.00) on the submission of the data collection and initial findings, and 20% (PhP 6,000.00) on the acceptance of the final report (DepEd, 2017). Expenses totaled PhP 29,720.00; the balance of PhP 280.00 was returned. Food came to PhP 120.00 more than its PhP 8,900.00 line, covered by transportation, which cost PhP 150.00 less than planned; the change was reported to the research committee's secretariat (DepEd, 2017). Equipment, software, and honoraria were not charged to the grant: the readings were recorded on the researchers' own phones, and the validators served without pay.

Table 7

Statement of Expenses

Date	Particulars	Receipt or document	Amount (PhP)	Category
2026-04-20	Snacks for the validation meeting (11 persons)	OR 2211	770.00	Food
2026-06-19	Envelopes, folders, and pens	OR 4518	2,350.00	Supplies
2026-06-19	Lamination of the passage cards (20)	OR 4519	500.00	Supplies
2026-06-22	Transportation to the pilot school (3 trips)	Itinerary and receipts	450.00	Transportation
2026-07-03	Photocopying of letters, consent forms, questionnaires, and score sheets (3,150 pages)	OR 0932	6,300.00	Reproduction
2026-07-20 to 2026-08-14	Transportation to the ten schools (36 trips)	Itinerary and receipts	5,400.00	Transportation
2026-07-20 to 2026-08-14	Snacks for the learners after the reading assessment (330)	OR 1187, 1203, 1219	8,250.00	Food

Date	Particulars	Receipt or document	Amount (PhP)	Category
2026-05-01 to 2026-09-30	Mobile load for the three researchers (five months)	Receipts	4,500.00	Communication
2026-11-16	Printing of the policy brief (60 copies)	OR 5560	1,200.00	Dissemination
	Total		29,720.00	

Note. Summary by category: food, PhP 9,020.00; reproduction, PhP 6,300.00; transportation, PhP 5,850.00; communication, PhP 4,500.00; supplies, PhP 2,850.00; dissemination, PhP 1,200.00.

Appendices

Appendix A. The Home Literacy Questionnaire (Items Kept)

In the past month, how often did you or someone in your home do each of the following with your Grade 3 child? Never (0), once or twice this month (1), once or twice a week (2), almost every day (3).

1. Read a storybook or other book with the child.
2. Talked with the child about a story you read or told together.
3. Asked the child questions about what the child read.
4. Listened to the child read aloud.
5. Taught the child the sounds of letters.
6. Helped the child sound out a new word.
7. Helped the child write or spell words.
8. Helped the child with reading tasks from school.
9. The child saw an adult at home reading a book, newspaper, or long text.
10. Gave or lent the child something to read, such as a book, comic, or magazine.
11. The child looked at books or other reading materials on their own.
12. Went with the child to a library, reading center, or bookstore.

Appendix B. The Reading Assessment Protocol

The researcher sits beside the learner, explains in Filipino that the learner will read two short stories aloud and answer questions, and asks if the learner is willing. The learner reads the first passage; the researcher starts

the timer at the first word and marks, on the score sheet, each word read incorrectly, skipped, or supplied after three seconds of silence. At one minute the researcher marks the last word read and lets the learner finish the passage. The researcher then asks the eight questions in order and records each answer as correct or not, accepting answers in any language. The same is done for the second passage. Self-corrections within three seconds count as correct. WCPM = words read in the first minute minus errors.

Appendix C. Content Validity Ratios of the Drafted Items

Eight validators; critical value .75. Questionnaire items (Q) and test items (T), with the number rating each essential and its CVR: Q1: 8 of 8, 1.00; Q2: 8 of 8, 1.00; Q3: 7 of 8, 0.75; Q4: 8 of 8, 1.00; Q5: 8 of 8, 1.00; Q6: 8 of 8, 1.00; Q7: 7 of 8, 0.75; Q8: 7 of 8, 0.75; Q9: 7 of 8, 0.75; Q10: 7 of 8, 0.75; Q11: 7 of 8, 0.75; Q12: 7 of 8, 0.75; Q13: 5 of 8, 0.25; Q14: 6 of 8, 0.50; T1: 8 of 8, 1.00; T2: 8 of 8, 1.00; T3: 7 of 8, 0.75; T4: 8 of 8, 1.00; T5: 8 of 8, 1.00; T6: 7 of 8, 0.75; T7: 8 of 8, 1.00; T8: 8 of 8, 1.00; T9: 7 of 8, 0.75; T10: 8 of 8, 1.00; T11: 8 of 8, 1.00; T12: 7 of 8, 0.75; T13: 8 of 8, 1.00; T14: 8 of 8, 1.00; T15: 7 of 8, 0.75; T16: 6 of 8, 0.50; T17: 4 of 8, 0.00; T18: 6 of 8, 0.50. Q13, Q14, T16, T17, and T18 were dropped; the kept items were renumbered.

Appendix D. Letter of Consent to Parents and Assent Script

The letter, in Filipino, explained the purpose of the study, what the child and the parent would be asked to do, the time it would take, that taking part was voluntary and could be stopped at any time without any effect on the child's grades, how the answers would be kept and destroyed, and whom to contact with questions. The assent script asked the learner, in Filipino,

whether they wanted to read two short stories with the researcher, and told them they could stop at any time.

Appendix E. Home Literacy's Relationship With Comprehension Under Each Set of Controls

Comprehension items per scale point of home literacy, 95% CI from HC3 standard errors, with each set of controls held constant. nothing: 2.80 [2.16, 3.44]; school: 2.76 [2.12, 3.41]; home language: 2.68 [2.02, 3.33]; home language, school: 2.67 [2.00, 3.33]; age and sex: 2.82 [2.18, 3.47]; age and sex, school: 2.78 [2.13, 3.44]; age and sex, home language: 2.70 [2.05, 3.36]; age and sex, home language, school: 2.69 [2.02, 3.36]; family background: 2.24 [1.53, 2.96]; family background, school: 2.17 [1.42, 2.91]; family background, home language: 2.21 [1.49, 2.93]; family background, home language, school: 2.15 [1.40, 2.89]; family background, age and sex: 2.28 [1.56, 3.00]; family background, age and sex, school: 2.20 [1.45, 2.94]; family background, age and sex, home language: 2.24 [1.52, 2.97]; family background, age and sex, home language, school: 2.18 [1.43, 2.93].

Appendix F. Declaration of AI Use

We, the researchers, declare that we used [the name of the AI tool, as the researchers would give it] only to check the grammar of the English text of this report, for the purpose of finalizing the research study. The prompt used was: "Check the grammar of this paragraph. Do not change its meaning or add content." We have reviewed, edited, and understood all the content, and we take full accountability for it. No names, codes, scores, recordings, or other data from the study were entered into the AI tool.