



**USAID**  
FROM THE AMERICAN PEOPLE



# The Role of Mother Tongue Language Complexity in Determining L2 and L3 Reading Outcomes in the Philippines

## SUMMARY OF RESULTS AND RECOMMENDATIONS

**Research Question:** *Is the ability to acquire second (L2) and third (L3) language literacy correlated with the complexity of the mother tongue (L1) orthography?*

This study uses national Grade (G) 3 Early Grade Reading Assessment (EGRA) data from 2013, when G3 students learned to read in Filipino and English rather than a mother tongue, and comparable data from 2019, when G3 students would have, according to policy, first learned to read in their mother tongue. The data were used to better understand the role of L1 complexity in L2 and L3 reading acquisition.

**Sample:** **241 schools**; 232 schools were the same in 2013 and 2019. Final sample used for analysis: **2,264 G3** students in 2019 and **2,267 G3** students in 2013. Children were assessed in Filipino (L2) and English (L3). Secondary analysis of the data set looked at reading performance and changes in reading performance according to language complexity.

### More information

Sarah Pouezevara  
spouez@rti.org  
RTI International  
[www.rti.org/idg](http://www.rti.org/idg)

RTI International is a trade name of Research Triangle Institute. RTI and the RTI logo are U.S. registered trademarks of Research Triangle Institute.

## Study Design

There are many factors that may influence a child's ability to acquire foundational reading skills besides the language of instruction. How well are teachers trained to teach reading in a given language? Do students have access to reading materials in the appropriate language? Do teachers and students come to school? One rarely considered factor is the complexity of the L1 and the role this may play in the time it takes to acquire foundational reading skills in L1 and, subsequently, L2 and L3.<sup>1</sup>

For the purposes of this study, “complexity” was defined in terms of factors that may make learning to read more difficult, including phonological, orthographical, and morphological characteristics, and how different these are from the target L2 and L3 languages. Three categories or complexity groups were established by a Philippine language expert to classify the languages groups represented (according to self-reports of home language) in the 2019 EGRA dataset and are described in a methodological report (Lobel and Pouezevara, 2020).

Tagalog is considered a complexity of “1” and acts as a control in analysis of Filipino oral reading fluency (ORF; measured as the number of correct words read per minute [cwpm]) since Tagalog and Filipino are very closely related.<sup>2</sup>

A series of regression analyses were conducted based on student performance in ORF and reading comprehension (the percent of comprehension questions answered correctly), adjusting for factors that have been found to influence reading achievement globally—gender, socio-economic status, and availability of reading materials in the home.

<sup>1</sup> In a study in Uganda (Brunette, Piper, Jordan, King, & Nabacwa, 2019), language complexity was found to be a more powerful predictor of reading achievement than either socio-economic or implementation factors.

<sup>2</sup> The linguist Jason Lobel has been studying Philippine languages for over 20 years and teaches at the University of Hawaii. The language names used in this brief are those currently reflected in Philippine Department of Education (DepEd) learning materials. The study authors recognize that many alternative language names and spellings exist and those published here do not reflect any preference by RTI or USAID.

**Complexity Group 1.** Tagalog

**Complexity Group 2.** Central Bikol, Sinugbuanong Binisaya, Hiligaynon, Ivatan, Pangasinan, Sama, Tausug

**Complexity Group 3.** Ilokano, Kapampangan, Magindanawn, Meranaw

# Summary of Findings

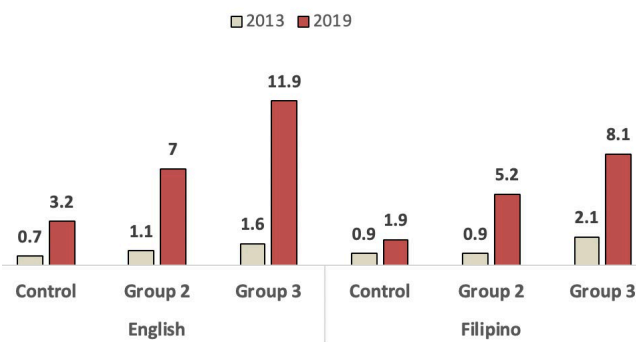
**Figure 1: English and Filipino ORF (cwpm) by Language Complexity Group, 2013 and 2019**

	English		Filipino	
	2013	2019	2013	2019
Group 1	70.2	63.7	75.0	70.4
Group 2	67.3	55.4	67.0	57.3*
Group 3	65.9	49.0*	66.4	54.8*

\* = significantly different from control (Group 1)

In 2013, English and Filipino ORF are lower for the most complex languages, than for Group 1 (control), but the differences ranging between 2.9 and 8.3 fewer words are small. In 2019, after children should have started learning to read in their mother tongue, the pattern is more pronounced. English and Filipino ORF fell across language complexity groups, but it decreased the most for Group 3. The difference between mean ORF in Group 3 (49.0) and Group 1 (63.7) is 14.7 cwpm for English and 15.6 for Filipino. In 2013 children were not being taught to read in their mother tongue, so the effect of complexity is largely speculative and may indicate a baseline difference based on other factors.

**Figure 2: ORF Zero Scores (percent of students) by Language Complexity, 2013 Compared to 2019**



Analysis by zero scores in ORF yields a similar finding: no meaningful difference by complexity in the proportion of zero scores in both English and Filipino in 2013 (see light bars, above), but increasing percentages of zero scores by complexity group in 2019 (dark bars). A similar pattern is found for reading comprehension zero scores (not shown)—little difference found according to complexity in 2013, but in 2019 6% of Tagalog speakers scored zero, but 13.7% in Group 2 and 18.2% in Group 3. (A “zero score” is attributed to a child who could not correctly read one word of the short story presented.)

Finally, a linear regression model looking at ORF and reading comprehension in 2019 only, shows a pattern of lower achievement with increasing complexity, but it is only significant for Group 3. This group reads English less fluently than Group 1 by 8.2 cwpm, and Filipino less fluently by 9.4 cwpm. Overall, across multiple analyses conducted by the study team, higher complexity is associated with lower achievement in Filipino and English reading in 2019, but not in 2013, and the differences are not always significant, except for Group 3. Moreover, differences are more apparent in English, for which the nature of the control group is no longer valid (all groups being equally different from English in complexity).

## Conclusion

It is unsurprising that no difference in reading achievement by language complexity is found in 2013 data, since children were not learning to read in LI in 2013. The differences noted in 2019 suggest that there is a complexity threshold that must be reached to negatively impact L2 and L3 reading acquisition. Overall, although there appears to be an association, language complexity is not a strong predictor of reading outcomes, and it appears that all Filipino children can learn to read (or fail to learn) despite the nature of their LI. The quality of teaching and learning, and characteristics of the home environment, are more likely to be the most important factors for learning in any language.

## Recommendations

The study has limitations, notably the changing and often contested orthographies of the languages. This means that the complexity as defined by the linguist may not match what is actually being used in schools. Additionally, languages are inherently linked to geographies and other factors that may be associated with education inequality. It is not possible to control for these factors in our dataset. The study findings, therefore, point to inequities in education achievement that must be addressed by ensuring equal opportunity to learn for all, through access to quality instructional materials, teaching methods, and support for literacy development across homes, schools, and community.

References:  
Brunette, T., Piper, B., Jordan, R., King, S., & Nabacwa, R. (2019). The impact of mother tongue reading instruction in twelve Ugandan languages and the role of language complexity, socioeconomic factors, and program implementation. *Comparative Education Review*, 63(4), 591–612. doi:10.1086/705426  
Lobel, J. & Pouezevara, S. (2020). Characteristics of select Philippine mother tongue languages used in basic education teaching and learning. Prepared for USAID under the All Children Reading-Philippines Project, AID-OAA-TO-16-00017. Research Triangle Park, NC: RTI.