

Title

Foreign-Language Learning Exposure and Reading Performance in East Asia: A Comparative Analysis of Japan, Korea, and Chinese Taipei Using PISA 2018

Research Overview

This study examines how foreign-language instructional exposure and digitally mediated foreign-language learning are associated with reading performance in Japan, Korea, and Chinese Taipei. Using PISA 2018 student-level data and survey-weighted models with plausible values, it finds a consistent positive association for instructional hours and context-specific patterns in ICT-related learning exposure.

Purpose

This paper examines how foreign-language learning exposure is associated with reading performance across three East Asian education systems: Japan, Korea, and Chinese Taipei. It focuses on three dimensions of exposure: foreign-language instructional hours, in-class digital use for foreign-language learning, and out-of-class digital use for foreign-language learning.

The study addresses two issues. First, although East Asian systems are often compared in relation to academic achievement and language education, the relationship between foreign-language learning conditions and broader literacy outcomes remains underexplored in a cross-national framework. Second, policy discussions on digital learning often assume that ICT use is uniformly beneficial, even though its educational meaning may differ depending on whether it is embedded in classroom instruction or

located in more self-directed out-of-school learning.

The study therefore asks:

- (1) How are foreign-language instructional hours associated with reading performance in Japan, Korea, and Chinese Taipei?
- (2) How are in-class and out-of-class digital uses for foreign-language learning associated with reading performance?
- (3) To what extent do these associations vary across the three systems?

Methods

The analysis uses the PISA 2018 student dataset and focuses on students in Japan, Korea, and Chinese Taipei. After restricting the sample to cases with valid information on the principal covariates, the analytic sample consists of 18,419 students. Reading performance is measured using the ten plausible values for reading literacy.

The main explanatory variables are foreign-language instructional hours per week, time spent using digital devices during classroom lessons for foreign-language learning, and time spent using digital devices outside classroom lessons for foreign-language learning. These represent formal instructional exposure, classroom-based digital learning, and out-of-school digital learning engagement. Socioeconomic status is controlled using ESCS, and gender is included as an additional control.

The analysis proceeds in two stages. First, descriptive comparisons identify cross-national differences in reading performance, socioeconomic background, instructional hours, and

digital learning exposure. Second, survey-weighted regression models are estimated using PISA's final student weight, 80 BRR replicate weights, and plausible values for reading performance. Model 1 includes foreign-language instructional hours, ESCS, and gender. Model 2 adds in-class and out-of-class digital use and country indicators. Model 3 introduces interaction terms between country and the three focal predictors.

Results/Discussion

Descriptive comparisons show that Japan and Chinese Taipei report similarly high levels of foreign-language instructional hours, both above Korea. However, mean reading performance is highest in Korea, followed by Japan and Chinese Taipei. Korea also shows relatively higher averages in both in-class and out-of-class digital use for foreign-language learning, while Chinese Taipei has the lowest mean ESCS. These patterns suggest that cross-national differences in reading performance cannot be explained by instructional quantity alone.

The main analyses yield three findings. First, foreign-language instructional hours are positively associated with reading performance across all models. The interaction terms between instructional hours and country are not statistically significant, suggesting that this positive association is relatively stable across the three systems.

Second, digital learning variables are also positively associated with reading performance, but their meanings are not uniform across contexts. In the pooled model, both in-class and out-of-class digital use for foreign-language learning are positively associated with reading performance. However, the interaction model shows that these relationships vary

by country. The positive association between in-class digital use and reading is relatively stronger in Korea, whereas the positive association between out-of-class digital use is strongest in Japan. The out-of-class association is significantly weaker in Korea and Chinese Taipei than in Japan.

Third, the findings suggest that digitally mediated foreign-language learning is context-dependent. The comparatively strong association of out-of-class digital use in Japan may indicate that self-directed digital practices outside school function as meaningful literacy-related learning opportunities, whereas the Korean pattern points to a stronger relationship between classroom-based digital practices and reading performance.

Overall, foreign-language instructional time shows a relatively common positive association with reading performance across the three East Asian systems, whereas digitally mediated learning exposure is more context-sensitive. The study therefore highlights the importance of considering not only formal instructional time but also out-of-school learning environments when examining foreign-language education in East Asia. The analysis is correlational, and the foreign-language variables should be interpreted as indicators of learning exposure rather than English achievement itself.