

CROSSLINGUISTIC TRANSFER OF MATHEMATICAL KNOWLEDGE AMONG CHINESE-FILIPINO STUDENTS

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The principle of linguistic relativity suggests that language influences thought. Jarvis and Pavlenko (2008) described it such that speakers of different languages who are looking at the same object are actually viewing the same thing, but the attention directed by the language(s) they speak allows them to see the same object differently. In relation, they also defined crosslinguistic influence or transfer as “the influence of a person’s knowledge of one language on that person’s knowledge or use of another language” (p. 1). While linguistic relativity and crosslinguistic transfer mostly dealt with grammar and semantics, Prediger et al. (2019) provided a demonstration of both principles vis-à-vis mathematical thinking through the translanguaging episodes observed among German-Turkish bilingual students.

Anchoring on the aforementioned ideas, this presentation reports on the crosslinguistic transfer of mathematical knowledge of ten Chinese-Filipino university freshmen who were part of a Bilingual Mathematics Program (BMP) during their K-10 schooling. That is, they were taught mathematics in English and then also in Chinese in separate classes. They were first asked to rate their perceived frequency of knowledge transfer between the two mathematics classes through a survey. They were then interviewed about their BMP experiences and also later observed while performing mathematical tasks, such as solving a word problem presented in one language but whose lesson was taught in the other. Results showed that most of the participants reported being able to reconcile the content taught in both languages. While the transfer from English to Chinese Mathematics was more prevalent, they found the BMP a beneficial experience overall. Moreover, most were also able to transfer their knowledge between the languages in the tasks. However, it was also found that the crosslinguistic transfer of mathematical knowledge may be dependent on the pedagogical choices of the teacher, among others. The findings suggest that learners are generally capable of utilizing mathematical knowledge as taught in two languages and these offer insight into the interdependence of languages with respect to mathematical thinking and performance.

References

- Jarvis, S., & Pavlenko, A. (Eds.) (2008). *Crosslinguistic influence in language and cognition*. Routledge. <https://doi.org/10.4324/9780203935927>
- Prediger, S., Kuzu, T., Schüler-Meyer, A., & Wagner, J. (2019). One mind, two languages – separate conceptualisations? A case study of students’ bilingual modes for dealing with language-related conceptualisations of fractions. *Research in Mathematics Education*, 21(2), 188–207. <https://doi.org/10.1080/14794802.2019.1602561>