The relationship between performance on mathematical word problems and language proficiency for students learning through the medium of Irish.

Summary: Ireland has two official languages—Gaeilge (Irish) and English. Similarly, primary- and second-level education can be mediated through the medium of Gaeilge or through the medium of English. This research is primarily focused on students (Gaeilgeoirí) in the transition from Gaeilge-medium mathematics education to English-medium mathematics education. Language is an essential element of learning, of thinking, of understanding and of communicating and is essential for mathematics learning. The content of mathematics is not taught without language and educational objectives advocate the development of fluency in the mathematics register. The theoretical framework underpinning the research design is Cummins’ Thresholds Hypothesis (1976). This hypothesis infers that there might be a threshold level of language proficiency that bilingual students must achieve both in order to avoid cognitive deficits and to allow the potential benefits of being bilingual to come to the fore. The findings emerging from this study provide strong support for Cummins’ Thresholds Hypothesis at the key transitions (primary - to second-level and second-level to third-level mathematics education) in Ireland. Some implications and applications for mathematics teaching and learning are presented.

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Keywords: bilingualism; Cummins’ thresholds hypothesis; educational transitions; word problems and language proficiency; mathematics and language; empirical investigations; research

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