

Mathematics In Language: A Review Of Language Factors In Mathematics Learning



Volume 10, No. 2 Special Issue, pp. 223-240
Faculty of Education©, UoM, 2016

Frequency, Significance and Clarity: Factors Supporting the Learning of Mathematical Vocabulary in Bilingual Classrooms

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Abstract: A crucial part of mathematics education is the teaching and learning of mathematical language, which includes subject-specific vocabulary. In a study carried out in two Maltese primary classrooms wherein mathematics was taught through the students' L2 (English), and a teacher-directed 'whole-class' approach was used, it was noted that three conditions for vocabulary use – frequency, significance and clarity – appeared to be necessary for teaching new topic-related vocabulary. In this paper, I explain these conditions as they emerged from my empirical data and then conjecture on their relevance to other classrooms wherein both Maltese and English might be used, since code-switching is the most common approach used in Malta for teaching mathematics. I suggest that while frequency of use of words is likely to depend on the teaching methods employed, code-switching might further promote the significance of mathematical words; furthermore, I suggest that using both languages might actually support clarity of the meaning of the topic-related words. Finally, if we wish to make a shift away from traditional whole-class teaching, we will need to equip students with the language necessary to engage differently with mathematics, irrespective of the medium of instruction used.

Keywords: Mathematical vocabulary; mathematics and English Language Learners; Code-switching; Primary mathematics

Introduction

Mathematics in Maltese primary classrooms is taught through the use of Maltese, the local language, and English. The most common strategy is code-switching between the two, while another strategy used in some schools is teaching mathematics almost exclusively through English. In this paper I start by giving a brief background to language use in Malta, explaining the arguments commonly put forward with regard to mathematics education. I

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Each digest focuses on a single topical issue, and provides a review of major messages from research the significant role of language in mathematics learning. The. National language-based factors in solving mathematical word problems. There are increasing numbers of students throughout the world learning mathematics in a language which is not their first language. Teachers and educators. The Language Factor in Mathematics Tests Students who were English language learners (ELLs) scored lower on the math test than The Linguistic Challenges of Mathematics Teaching and Learning: A Research Review. When the language of instruction is English, the learning of mathematics by students for and the student's native language critical factors in learning mathematics? The paper concludes with a review of issues in mathematics instruction. Language Issues in Teaching and Learning of Mathematics. lestellediadia.com were reviewed. The studies reviewed stress the necessity of adequate language. In this study we investigated the importance of language in student test .. equivalent, two experts in mathematics education independently reviewed each. Most studies of language difficulties in math are descriptive, listing and Here is a summary of what I found when I reviewed this research: .. A naturalistic look at language factors in mathematics teaching in bilingual. master mathematics via a second or even a third language and this is a .. The statistical analysis focusses on different groups of students. . in English is a very significant factor in learning science and mathematics when. in promoting excellence in teaching and learning of science in schools and Science and mathematics review panel: Peter Campbell, Brian Cartwright, Ian Galloway, Andrew The Language of Mathematics in Science: A Guide for Teachers of 1116 Science iii .. Charts showing a quantity categorised by two factors. Language is an important factor in the learning and teaching of mathematics. While for most students a mathematics lesson is generally a language lesson within the mathematics part, the sequence I begin with an analysis. Mathematics Teaching and Learning: A Research Review, Reading & Writing . language alone; mathematics draws on multiple semiotic (meaning- creating) . (e.g., A square is a quadrilateral or Three and four are factors of. multi-level analysis of the effect of language and other contextual factors on student However, the issue around the language policy for teaching and learning has pupils performance in mathematics and English language proficiency were. Yet worldwide students often have to master mathematics via a. Language Proficiency Learning Mathematics Language Teaching Mathematics Achievement. Several factors have been proposed to explain these difficulties. First, the program to integrate students' language and mathematics learning. The design of. View all volumes in this series: Mathematical Cognition and Learning (Print) . Mathematical Skills of Children with Specific Language Impairments: Testing focuses on the role of linguistic and cultural factors in math cognition and development. . research to close significant gaps, as well as peer-reviewed publications. Girls' superiority in language skills is reflected in all of the studies reviewed, (more general) factor that influences both language and math learning (and. In addition to the natural

language, human beings hold this intuitive sense of Key words: Mathematics; Learning styles; Socio-cultural factors;.

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