Concept Maps as a Resource for Teaching and Learning of Mathematics

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Although conceptual knowledge has been identified as key to students' mathematics understanding, there is limited focus on how to enhance its development at senior secondary level. This mixed methods study underpinned by constructivism explored teachers' perceptions on how concept maps relating junior prior mathematics knowledge (years 7 to 10) to senior mathematical knowledge (year 11 and 12) can enhance the teaching and learning of senior secondary mathematics. Surveys that included Likert scale items and open-ended questions were conducted with sixteen senior secondary mathematics teachers. To gain deeper understanding, eight semi structured interviews were also conducted. Results showed that concept maps relating junior to senior mathematics concepts can be a resource that enhances conceptual knowledge, consolidation, and assessment of students' mathematical knowledge. The role of visual representations in mathematics teaching and learning that is enhanced by concept maps is an area that needs more attention to help improve students' participation and achievement.

2022. N. Fitzallen, C. Murphy, V. Hatisaru, & N. Maher (Eds.), *Mathematical confluences and journeys* (Proceedings of the 44th Annual Conference of the Mathematics Education Research Group of Australasia, July 3–7), p. 584. Launceston: MERGA.