

Leadership practices contributing to STEM education success in three rural Victorian schools

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Pre-recorded presentation link: <https://youtu.be/3y88Tirs9uI>

Research into STEM (Science, Technology, Engineering and Mathematics) education in rural schools tends to adopt a deficit view, with a focus on the poor achievement and aspirations of rural students, difficulties recruiting and retaining STEM teachers, and issues of isolation and under-resourcing. Counter to this trend, this paper reports on a research program that adopted a strengths-orientation, identifying high STEM-performing rural schools, and then studying these schools to explore factors contributing to their success. High-performing rural schools were identified through analysis of state-wide final year enrolment and achievement data in STEM related senior subjects. Three Victorian rural schools with relatively high STEM subject enrolments and achievements were selected for in-depth study. This paper explores the leadership practices that contributed to the STEM education success of these schools. The theory of Practice Architectures was used to guide thematic analysis of interviews with principals and middle leaders, facilitating a description of the ways that leadership practices interacted with the Practice Architectures evident at each school, which, in turn, enabled and constrained practices that contributed to each school's STEM education success. Leadership practices contributing to STEM education success across all three schools included: leveraging community relationships to support the STEM education program, utilising local resources to enrich STEM learning experiences, empowering STEM teaching staff promoting the value of STEM education across the community, and supporting STEM pathways. In detailing these leadership practices, this paper presents guidance to rural education leaders hoping to improve STEM education at their schools, as well as a model of rural STEM education research that adopts a strengths orientation, rather than the more common deficit approach.