Reframing Schooling: Reforming Science and Mathematics Education.

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Innovation and radical reform are the reasons for the development of the Australian Science & Mathematics School (ASMS). The school was established in 2003 in partnership with Flinders University as a "community of thinking" for senior secondary students and educators. The approaches to teaching and learning are supported by a highly innovative and purpose built, physical learning environment. Learning is based on constructivist principles, and is significantly designed around collaborative, inquiry based and problem solving approaches. Personal Learning Plans (PLPs) enable students to shape and document the breadth and depth of their learning and curriculum choices. Students are big on the use of ICT's. They are learning in their preferred way, at their own pace, developing their individual pathway and sharing their learning with others. The ASMS curriculum is organised within an interdisciplinary framework that focuses on interrelated perspectives, skills and processes, concepts and content of the four disciplines of Sciences, Mathematics, Humanities and the Arts. The inclusion of leading edge science and its technological applications in industry and community is an imperative in the development of the curriculum. The learning environment of staff shapes the learning environment of the students. The school was developed to provide a focus for exploration and creation of new ways of teaching and learning science and mathematics by creating an environment for interaction between practising teachers, professional scientists and mathematicians, educators and students within the university and industry. This paper will explore the connections in the development of an innovative schooling experience driven by the pedagogies that engage students. Attention will be given to curriculum design and development, learning environment, teacher professional learning and authenticity of the learning experiences of students.

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