

Building Capability for Prep-12 Teachers in Mathematical Inquiry Pedagogies

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Mathematical inquiry is a process of solving ill-structured problems that significantly rely on mathematics in the solution process (Makar 2012). The pedagogy of inquiry underpins the Australian Curriculum: Mathematics and is encouraged in mathematics teaching across all phases of schooling in Queensland. In the senior schooling phase, a required assessment Problem-Solving and Modelling Task (PSMT) is completed by students in their mathematics course. This assessment task is designed to evaluate a student's ability to respond to an investigative mathematical scenario or stimulus (QCAA, 2021). In most cases, the key features of this task provides a response that addresses the real-life application of mathematics, using technology and diagrams. The Queensland Department of Education has built a Prep to Year 12 approach to developing students' problem solving skills with a focus on building teacher capability in inquiry pedagogies in the P -10 phase of schooling.

This short communication will present the department's strategies that support teachers in adopting inquiry pedagogies. The 'M in STEM' professional learning suite was developed to support the P-12 mathematics pedagogy across a range of topics including Problem-solving—Inquiry, developed in collaboration with a leading academic researcher. Each topic provides a self-paced two hour professional development module.

Mathematical guided inquiries (MGIs) for Prep to Year 9 were developed using the inquiry pedagogy model (Allmond et al., 2010) and are situated in real world problems. For state-wide use appropriate scaffolding was provided to support teachers (Debritz & Horne 2013). The MGIs are being updated to align with the Australian Curriculum: Mathematic (v9) and surface the proficiencies and mathematical processes. Both these resources are shaping mathematical inquiry pedagogy across the state and are supporting the connections and continuities and in students mathematical learning journey from Prep to Year 12.

References

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