

**Investigating if working collaboratively through an online
environment can support problem-solving skills of
post-primary mathematics students**

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Abstract:

Problem solving is an important skill needed in today's world. It is recognised as such by the National Council for Curriculum and Assessment; problem-solving skills should be embedded in the teaching and learning of mathematics in Irish post-primary schools. The Project Maths syllabus was introduced to the post-primary curriculum in 2008. One of the aims of the syllabus is to empower students to develop problem-solving skills. However, these skills are still lacking in classrooms despite the introduction of Project Maths and many students are still taught mathematics through a traditional, didactic model. This research investigated if working collaboratively through an online environment can support problem-solving skills. Google Docs, the online environment used for this research, allows for collaborative editing of a document. An exploratory case study was carried out which involved 30 post-primary students from a 2nd year Mathematics class, ages 13-14 years. Working in groups of 4 or 5, students were given problems to solve on the Google Doc environment over a two week period. The research employed mixed methodologies. Analysis of the findings demonstrated that in the Google Doc environment, students were reflecting and attempting problems, they were using words to describe what they were doing and applied a multi-representational approach to problem solve. The environment facilitated collaboration between students and scaffolding by the teacher. As these are all key components of problem solving, the research paper concludes that working collaboratively through an online environment can support problem-solving skills of post-primary mathematics students.