

## Investigating the disconnect of theory and practice: Differentiating instruction in secondary mathematics

Andrew Marks

*Southern Cross University*

<andrew.marks@lism.catholic.edu.au>

Christos Markopoulos

*Southern Cross University*

<christos.markopoulos@scu.edu.au>

Geoff Woolcott

*Southern Cross University*

<geoff.woolcott@scu.edu.au>

Lisa Jacka

*Southern Cross University*

<lisa.jacka@scu.edu.au>

A teacher's ability to effectively differentiate instruction in the classroom is crucial in catering for student individuality and diversity, especially in the context of inclusive learning. Tomlinson (2004) defines differentiated instruction as a pedagogical approach where teachers modify curriculum content, proactively develop a variety of teaching strategies, and continually revisit the desired product of learning. The goal of the teacher in a differentiated classroom, therefore, is to allow students to make connections with their prior learning and build upon their knowledge quickly and efficiently.

In the secondary mathematics classroom, however, the most common approach used to address diverse learning needs is to place the students into homogenous ability groupings (“streaming” or “tracking”). A flexible-grouping alternative, heterogeneous grouping, assembles a mixture of abilities in the same classroom, aiming to create a well-rounded blend of all levels that allows higher achieving students to mentor their peers in a supportive and cohesive environment, promoting the concept of inclusive education.

Differentiated instruction offered in heterogeneous groupings could foster positive learning environments in the Australian secondary mathematics classroom. Any potential advantages, however, such as embracing diversity in a way that provides for individual growth in learning (based on a student’s ability, interest and readiness levels) have not been fully investigated. Therefore, the present study focuses on the ability and motivation of mathematics teachers to implement differentiated instruction effectively and sustainably and to thereby provide a new model of learner engagement.

This presentation outlines a prototype practice framework for mathematics teachers designed to transform mathematics education by leveraging recent progress in adapting theory to practice. Implementation of the framework should enable mathematics teachers, regardless of teaching experience, to progress on a continuum of practice, leading to differentiated instruction that is integral to their teaching. The framework engages collaboration and co-creation using a design-based implementation approach (Woolcott et al., 2019), in conjunction with a strategic focus on the guiding questions that form the basis of generative dialogue (Adams et al., 2019).

### References

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