Exploring the Mathematics Experiences of Students with Down Syndrome

Matt Thompson
Western Sydney University
matt.thompson@westernsydney.edu.au

Catherine Attard
Western Sydney University
c.attard@westernsydney.edu.au

Kathryn Holmes
Western Sydney University
k.holmes@westernsydney.edu.au

It is often assumed that individuals with Down syndrome struggle and have difficulties learning mathematics (Bird & Buckley, 2001). Fortunately, contemporary perspectives highlight the need for encouraging further mathematics education research, aiming to find new ways to bring positive mathematics experiences to this population (Faragher & Gil Clemente, 2019). This need is grounded in the fact "that mathematics can contribute, like other disciplines (language, theatre, sports) to the holistic development of people with Down syndrome especially with respect to thinking skills and awareness of the world" (Faragher & Gil Clemente, 2019, p. 112).

This presentation shares findings from a larger study exploring the mathematics experiences of students with Down syndrome in Australian schools. Drawing on seven case studies across mainstream and segregated settings (mainstream setting $n = 4$ case studies; segregated setting $n = 3$ case studies), data includes semi-structured interviews with parents, teachers, and teacher's aides, alongside two mathematics classroom observations per case study. Together, these data sources offer insight into the overall mathematics experiences of this student population.

Findings highlight the importance of authentically including students with Down syndrome in mathematics lessons, ensuring they do not develop an over-reliance on their teacher or teacher's aide. Additionally, regular, learning-focused communication between teachers and parents emerged as a significant factor in supporting student success in mathematics, alongside the need for teachers and teacher's aides to have dedicated opportunities to develop specialised knowledge in teaching and supporting this student population. Furthermore, the findings also point to the need to reconsider how the mathematical ability and knowledge of students with Down syndrome is understood and assessed, as shifting these perspectives is fundamental to creating meaningful opportunities for success in the subject.

These findings have significant implications for inclusive mathematics education practices as well as understanding how educational systems and student support structures can better prepare individuals with Down syndrome for mathematics success and independence.

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References

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