

# TERTIARY STUDENTS' ENGAGEMENT IN A MATHEMATICS SUPPORT PROGRAM

Harkirat S. Dhindsa, Lyn Armstrong, Carmel Coady, John Nicholls, Jim Pettigrew, Donald Shearman

Presenting Author: Donald Sherman ([D.Shearman@uws.edu.au](mailto:D.Shearman@uws.edu.au))

Mathematics Education Support Hub, Learning and Teaching Unit, University of Western Sydney, Kingswood NSW 2761, Australia

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## BACKGROUND

Mathematics is often perceived to be a difficult subject and students struggle with it. A combination of factors including a compromise with tertiary admission requirements, such as prerequisites, a link between Federal funding and student number at an institution, relaxed mathematics requirement to complete secondary education, ATAR based admission to programs, and admission of mature age and international students with diverse backgrounds elevates the number of tertiary students struggling with mathematics. At UWS, to support these students with their mathematics, various services including lecturer consultation time, tutorials, pre- and within-semester workshops, library roving, online tutoring, peer-assisted student support and free internet sites are made available to them. This study deals with students' engagement in pre-first semester workshops.

## AIMS

The aim of this study was to evaluate (i) age and gender based influences on students' engagement in the workshops, (ii) perceived reasons to participate in the workshops and (iii) post-workshops perceptions of their mathematical competency.

## METHODOLOGY

The workshops were advertised on the UWS web and emails were sent to the prospective students to encourage them to register for these voluntary workshops. The workshops aimed to revise basics of algebra, trigonometry, calculus and statistics to prepare students for their first year mathematics units. The students attended 1 – 3 day(s) workshops in these areas before starting degree programs at UWS. The students were asked to complete two surveys one each on their first- and last-day of the program, and, pre- and post-achievement tests. The first- and last-day survey targeted students' reasons to participate in and satisfaction from attending the workshops respectively. Only 57.3% of those who completed the first day survey (616) from 2011 to 2014 completed the last-day survey. The data were analysed to evaluate areas of interest specified under aims.

## RESULTS

The results of the study revealed that students' intention to engage and actual engagement in the workshops were significantly different. The participation was significantly higher of male (62.1%) than female (37.9%) students and 33.5% of them were older than 20 years indicating a high percentage of mature age students. The major reason for participation in the workshops was the students perceived weak or very weak background in these areas. The number of weak or very weak students in calculus and statistics was higher than algebra and trigonometry. Analysis of the post-workshops survey revealed a significant improvement in the students perceived knowledge of these mathematics areas. This claim was partly supported by significantly improved post-test scores in 2014. Gender, age and year to year based trends in these findings will also be discussed.

## CONCLUSIONS AND FUTURE DIRECTIONS

Students perceived their engagement in pre-semester workshops was helpful in improving their desired mathematics content knowledge. Further research to investigate students' performance in their required mathematics subjects and programs is warranted.

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