

## Exploring the Incentive to Study a Higher-level Mathematics Course at Secondary School: A Western Australian Perspective

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A review of international literature highlights how mathematics course enrolments in the final years of secondary school are persistently low or declining for some time (Arnoux et al., 2009; Brown et al., 2008; Hogden et al., 2010; O'Meara et al., 2020). In an Australian context, this trend has also been reported and researched to better understand the many factors impacting on the elective study of mathematics. This replicated research project (see Hine, 2019) explored (i) the reasons why senior secondary students elected not to enrol in a higher-level mathematics course, and (ii) the extent to which students feel a bonus points initiative (i.e., a 10% bonus) introduced in 2017 is a sufficient incentive for students to enrol in higher-level courses. For this project, all Year 11 and Year 12 mathematics students within Western Australian schools (aged 17–18 years) were invited to participate in an anonymous, online survey comprised predominantly of qualitative items. 1633 students participated.

For the first aim of the project, students indicated several reasons influencing course enrolment decisions. These reasons included a general dissatisfaction towards mathematics, and the viability or attractiveness of other courses. The “dissatisfied” students described how higher-level courses were too challenging, unenjoyable and uninteresting, and that they generally lacked confidence to success in these courses. Comments concerning the viability or attractiveness of other courses revealed a tendency for students to “play the system” and maximise their final score with lower courses. At the same time, other students taking a lower-level mathematics course highlighted how lower-level courses require less time, effort and stress to complete successfully.

For the second aim, 47% of students felt the 10% bonus was sufficient, with 42% expressing that this incentive was insufficient and 11% were unsure. Consistent with findings from the first aim, students tended to anchor their responses in statements of course complexity, workload, and associated effort, time and stress. However, irrespective of which response students offered for Question 6 (viz., Yes, No, Unsure) they seemed unified in comments about the Mathematics Specialist (MAS) course. That is, students expressed unequivocally that the 10% was an insufficient incentive to attract enrolments for the MAS course, and that it should be greater.

### References

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