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Recent research by UAC shows that the ATAR is the best available predictor of university success, -year grade-point-average (GPA). The higher the ATAR, the higher -year GPA is likely to be.

Further, the ATAR is related to the likelihood of obtaining a failing first-year GPA (defined as less than 4). The higher the ATAR, the less likely the student would get a failing first-year GPA. For example, in our recent study, we found that for students with an ATAR in the 90s, only 8 per cent had a first-year GPA of less than 4. This rate increases as ATAR decreases, such that for students with ATARs in the 70s, 29 per cent would have a failing GPA, and for students with ATARs in the 50s, around half (52 per cent) would have a failing GPA.

Our findings are consistent with other research by the Grattan Institute[1] showing the value of the ATAR in predicting success at university. As with all predictors, the ATAR is not perfect. There will be instances where the prediction will miss the mark . Also, there will be cases where selection based on the ATAR alone would not be optimal. However, this has been acknowledged by institutions for a long time and they have been using alternative mechanisms for selecting students to certain courses like design and the performing arts.

However, for a large number of courses where the fundamental requirement of the student is to possess the right level of academic ability to meet the demands of the course, the ATAR is an effective tool in predicting the likelihood of this outcome.

Success at university can be defined in many ways. First-year university results are a useful way to define success due to the timeliness and availability of the associated data, and have been found to correlate with degree completion rates[1]. Many factors influence results in later years of university ranging from personal life circumstances to subject specialisation, which are less related to secondary study choices. For the purposes of this report, first-year success was primarily measured by first-year grade point average[2] (GPA) and defined by four outcomes:

   incomplete first year   achieving a GPA of zero with a non-zero study load (recording a fail for all subjects)

   GPA under 4   the student has failed one or more subjects

   completed first year with fails   recording a non-zero GPA but failing at least one subject

   completed first year with no fails   achieved a pass grade or better in all subjects.

A summary of first-year university outcomes (as defined in section 1.1 above) is shown in Figure 1 below for HSC students (2013 17) enrolling through UAC in a bachelor degree (2014 18). On average, over half of the students with an ATAR of 60 or above, pass all subjects in first year. This is reflected in the first-year GPA, which has a moderately strong correlation to ATAR.

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[1] Norton, A., Cherastidtham, I., & Mackey, W. (2018). Dropping out: The benefits and costs of trying university. Grattan Institute.

[2] https://www.uac.edu.au/future-applicants/admission-criteria/tertiary-qualifications

Figure 1: First-year outcomes of HSC students 2013–2017.

One of the strengths of the ATAR, as a tool for university entry, is that it is broad. There is no university degree from which you can graduate having studied only one subject, so to be prepared

ATAR is a single number, but it has been calculated using many inputs.
assessment results over the senior school years make up half of the marks for each subject, with the other half coming from the HSC exam taken at the end of Year 12. The ATAR is also based on the compulsory two units of English, the other eight units come from the remaining subjects where the student has excelled in.

Even between subjects where their contents seem to have little in common, we found strong positive relationships between their marks. For example, students who did both Chemistry and Economics, the correlation between their HSC marks in those two subjects was strong, at +0.8.

The correlation was of the same magnitude between Chemistry and PDHPE, and between Chemistry and Italian Beginners. All these subjects — Economics, PDHPE, Italian Beginners, are all from a different key learning area to Chemistry, and yet there is a strong association in the performance of students doing these combinations of subjects.

in different subjects, even when the subjects appear to be very diverse in their contents.

1.4.1 Analysis

Standard Pearson correlation coefficients were calculated between HSC subject marks from the various KLAs for the same year and for the same ATAR eligible (2013–17) HSC student (Table 1 below).

Correlations of HSC subject marks between KLAs range from 0.39 for Mathematics with Creative Arts, to 0.90 for Mathematics with Mathematics; these are medium and large effect sizes, respectively. These correlations confirm that, on average, student performance in HSC subjects and across KLAs is uneven — and strong performance in one area is associated with similar performance more strongly in some areas than others; however, this association is always at or above medium effect size. Furthermore, as shown in Table 1, the patterns of strongest correlations are different for each KLA.

This result reinforces the importance of students selecting HSC subjects and specialising in areas engths because, overall, results are affected by the combination of subjects; however, there is no single optimal set of subjects for all students. Whether students who study subjects from more closely correlated KLAs achieve better overall results is one potential area for further research.

Table 1: Correlations between HSC subject marks from Key Learning Areas 2013–17.
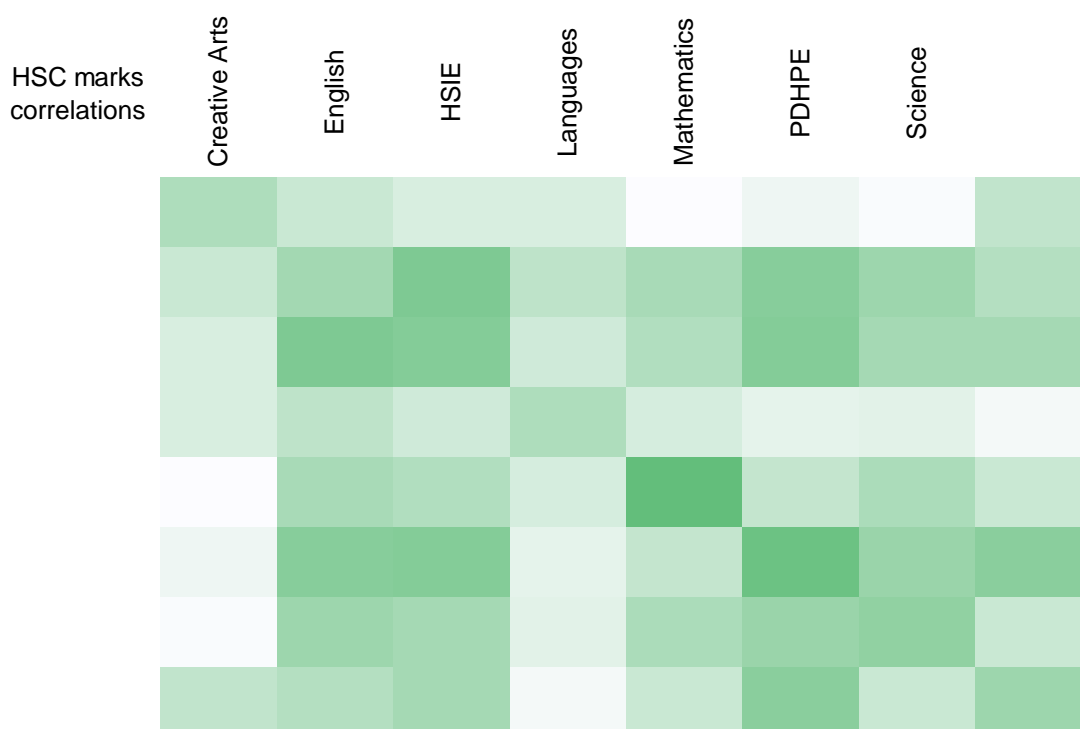
The ATAR is often criticised for being very different to the measures used by other countries.

It is important to note that Australia is also unique in the diversity of the senior secondary curriculum offered to students. To be eligible for an ATAR, NSW students can choose from over 100 different HSC subjects. This flexibility is not common in other countries. Most countries tend to stream students into a fixed group of subjects, such as the arts/humanities versus the science/technology