

STUDENT SELECTION

Report of a Study Group at the Conference.

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Introduction

The constraints of time and the lack of comprehensive information prevented any complete examination of the question of tertiary selection. In addition, the group tended to follow up issues that were raised out of the topic but had wider implications. This report, although it is entitled "student selection", is both narrower and broader than that: it considers only some parts of the topic, and it also considers other related questions.

An attempt was made to identify reasons why selection is necessary without attempting to make judgements about the validity of the reasons. Those identified were:

1. To reduce wastage - the philosophy behind this appears to be that tertiary places should be offered to those students most likely to succeed.
2. To maintain standards of the entry cohort.
3. Although selection may not be necessary in all departments and/or institutions, there are some departments (e.g. medicine) where the demand greatly exceeds the number of places available.

The discussion which follows concerns the first of these only.

Reduction of Wastage

There is an intuitive expectation that the use of a selector based on previous academic performance will lead to minimum wastage and that any relaxation of this type of selection will lead to significant increases in wastage. An example of this view came from a recent editorial in a Melbourne newspaper: "If there are to be no tertiary entrance requirements... there would be massive failure rates....." (Melbourne Herald, 2nd January 1976).

Unfortunately there is no way of testing whether this is so because we cannot know how people whose scores are below the cut-off (or indeed people who would be admitted under a "no ... requirements" system) would have performed if they had been admitted. One way of inferring this is to examine the change in wastage if the cut-off point had been higher. Schonell, Roe and Meddleton (1962) did such an analyses on a sample of the 1955 intake at the University of Queensland. Their results are shown in Table 1.

TABLE 1

1955 intake at University of Queensland.
Percentage "making satisfactory progress" (i.e. pass all
or fail only one subject at first year.)

GROUP	MAKING SATISFACTORY PROGRESS
Total sample	68.5%
Total sample with "bottom" 20% excluded	71.8%

A similar result was found by West and Slamowicz (1976) for the 1972 engineering intake at Monash University (Table 2). In each case the removal of the "bottom" group was based on performance in the public examinations at the end of secondary school. In the latter case the tertiary selector - Anderson Score - was used. In the former a composite score based on the examination results was used as there was, at that time, no selector in operation.

TABLE 2

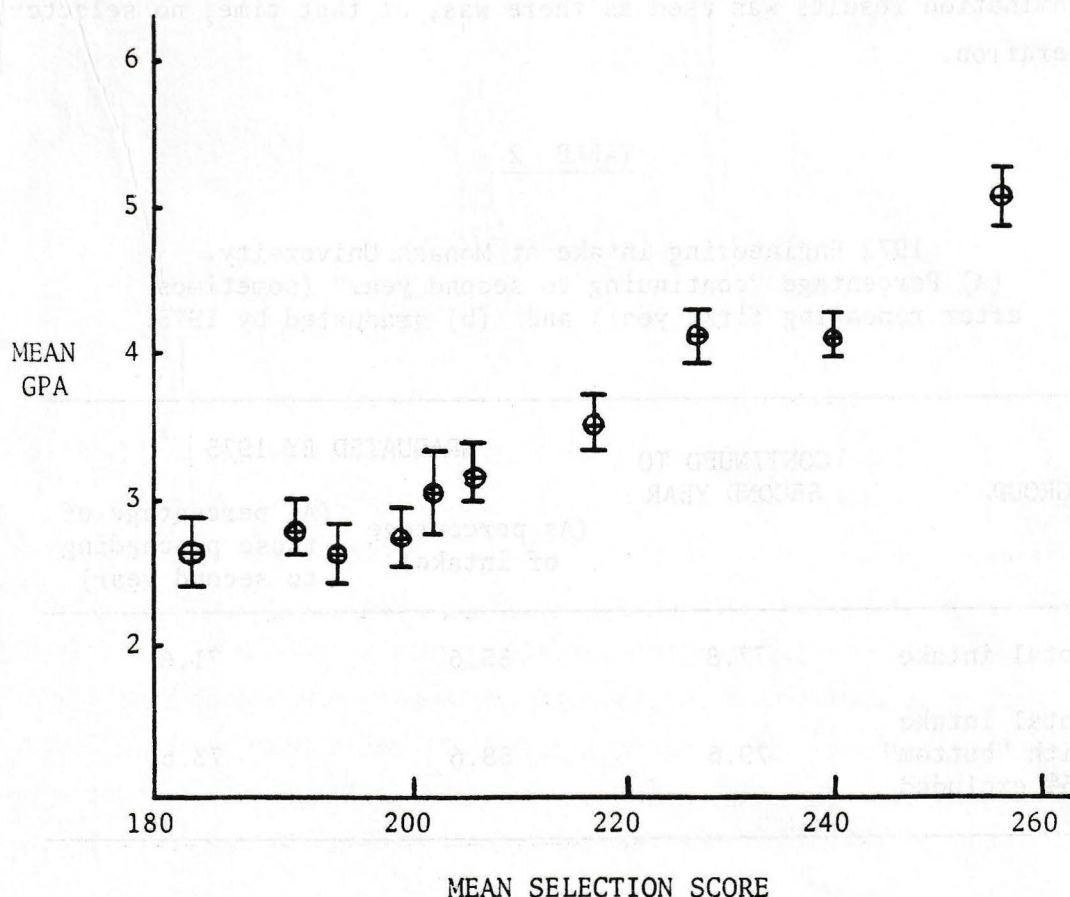
1972 Engineering intake at Monash University.
(a) Percentage "continuing to second year" (sometimes
after repeating first year) and (b) graduated by 1975.

GROUP	CONTINUED TO SECOND YEAR	GRADUATED BY 1975	
		(As percentage of intake)	(As percentage of those proceeding to second year)
Total intake	77.8	55.6	71.6
Total intake with "bottom" 25% excluded	79.6	58.6	73.6

In both studies, the increase in pass rate is not dramatic and in each case the use of the higher cut-off point would have excluded significant numbers of successful students. As an example, in the West and Slamowicz study, the higher cut-off would have excluded 64 students, 30 of whom had graduated by 1975. It is obvious that any extrapolation of these results to students below the actual cut-off implies assumptions that may not be valid. In particular it assumes that the form of the relationship between the selector and subsequent performance over the bottom range continues to be the form of the relationship below the cut-off. West and Slamowicz studied the form of this relationship for the students selected and showed that it is non-linear. The measure of subsequent performance used was Grade Point Average (GPA). (Figure 1).

FIGURE 1

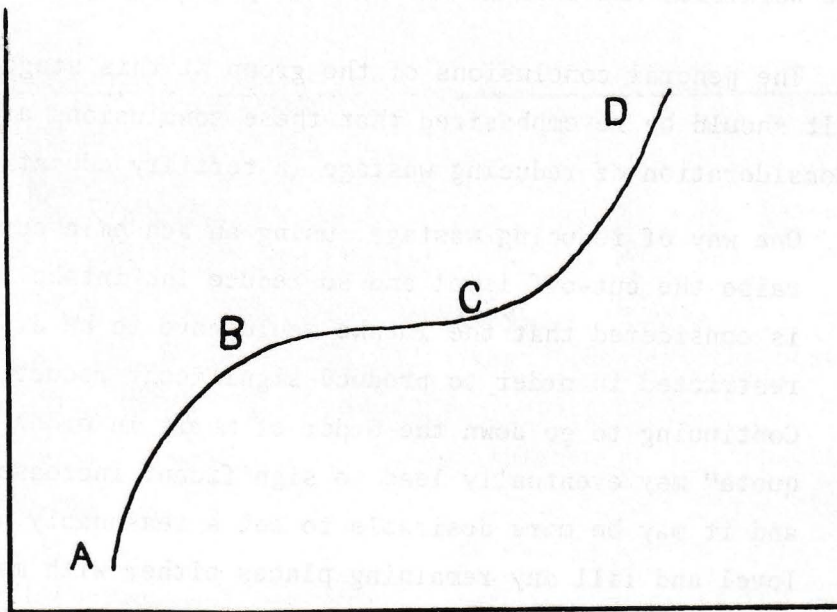
Plot of mean first year GPA and mean selection score
(Anderson Score) for deciles based on selection score.
(Engineering Students, 1972, Monash University).



This plot "explains" the small increase in pass rate obtained by increasing the cut-off. In this region the relationship is approximately parallel to the selection score axis but the problem of extrapolation still exists. Does the relationship continue to be horizontal? Does it turn down again? If so, where? The study group postulated that the relationship between selection score and first year tertiary performance had the theoretical form shown in Figure 2.

FIGURE 2

Proposed theoretical relationship between academic selection score and Tertiary performance.



The top end of this relationship (BCD) is consistent with the results of Schonell, Roe and Meddleton, and of West and Slamowicz. The bottom end (ABC) is based on the experience, hunches, etc., of the members of the study group. It was concluded that, ideally, the best cut-off point (with respect to reducing wastage) would be at C, but that in many faculties this would be impossible to implement. An inspection of Figure 1 shows that such a selection cut-off would have excluded more than 50% of the 1972 Engineering intake. At the same time it is clear that significant increases in the wastage rate may occur if the cut-off is allowed to fall below point B.

There is one group of tertiary entrants that consists of people who usually are rejected by current selection procedures, namely, mature age students. Many of these are unqualified and are admitted under special schemes. There are a number of studies of their performance (e.g. Barrett (1977)) and the general conclusions appear to be that such students perform as well as, if not better than, students admitted in the normal way. Again there are problems of extrapolating these results to normal aged students who are rejected under current selection procedures. It may be that it is their motivation which leads to their good performance. It may be more valid to extrapolate such results to normal students who are similarly motivated e.g. students who leave school and enter the workforce and then decide to attempt tertiary education.

The general conclusions of the group at this stage are summarised below. It should be re-emphasized that these conclusions are based solely on the consideration of reducing wastage in tertiary education.

1. One way of reducing wastage, using an academic cut-off, is to raise the cut-off level and so reduce the intake. However it is considered that the intake would have to be drastically restricted in order to produce significant reductions in wastage.
2. Continuing to go down the order of merit in order to "fill the quota" may eventually lead to significant increases in wastage and it may be more desirable to set a reasonably high cut-off level and fill any remaining places either with mature age applicants or with other people wishing to enter tertiary education from the workforce. In this regard the group considered it important to monitor the new Swedish proposal which provides for a separate quota for applicants aged over 25 and for a selector based on a composite of school performance scores which can be augmented by work experience (a minimum of fifteen months).
3. Tertiary institutions need to see the opportunity to reduce wastage existing beyond the point of selection: improvement in success rates can be made notwithstanding the type of student selected. In the section which follows an examination is made of other methods that could be used to reduce wastage.

Other Methods of Reducing Wastage

(a) Bridging courses.

Bridging courses are likely to be useful when the entry group has a wide range of backgrounds. If everyone is poor in their entry background then it would seem more sensible to modify the course - not necessarily to make it a lower level but to cover fewer areas. Bridging courses may be of more use in disciplines like mathematics or science where specific prerequisite skills and/or knowledge are required. Even here they should not require a crash course of all the sections of the syllabi of prerequisite school courses: not only is this impossible in terms of time but it is demonstrably unnecessary. Most of the "good" students entering tertiary courses have not mastered all the parts of the prerequisite courses yet they learn effectively despite this. What is clearly required is an analysis of the minimum knowledge and abilities entering students need and an assessment of which of these they actually have. Any difficulties this reveals can often better be accommodated within existing courses (e.g. by concurrent self-paced study programmes, or by allotting more tutorial time early in the main course) rather than by more rigid bridging courses, the relevance of which may be lost on the student, if not the tutor. Bridging courses may also have a propensity to get longer, thus taking the pressure off the need for curriculum reform: the bridging course becomes a preparatory term, then a preparatory year, and finally junior college degree.

(b) Information to students

Many students continue to university because it is the "thing to do", without thinking out positively their needs and expectations. Many enter institutions or courses that are not their first choice.

There was no hard evidence available to the group to indicate whether these factors lead to greater wastage, although group members believed that this was likely to be so. We return again to the performance of mature age students. Is their better performance due to the fact that their decision to undertake tertiary studies is a much more positive one? The performance of deferred students who return to take up their places and the performance of appropriate categories of students admitted to Swedish universities will provide valuable information on this question.

In the meantime the group felt there were sufficient grounds for assuming that wastage would be reduced as a result of deferment. It is recommended that deferment provisions be extended, that school students be better informed about deferment and its advantages, and that some positive encouragement, even inducement, be offered to students to defer entry.

(c) Social contact

There was a general belief among the group that the inability to make friends and the loneliness experienced by many students, especially in large institutions, are important factors in "causing" failures. There is little evidence of this, although a study by Cally (1972) of engineering students provides some support for the notion. It was suggested that acquaintanceship exercises and activities to help first-year students to "get to know" staff, were approaches that would be likely to reduce wastage.

(d) Teaching methods

There is a widely held view, for which the group did not see any need to produce evidence, that wastage can be reduced by teacher initiated action. Varying teaching methods, awareness of such things as different learning styles, limited attention span, and so on, were a few of the topics mentioned. It seemed to this group to be illogical to resist changes to current selection procedures on the grounds of minimising wastage and at the same time take the view that "I teach, you learn". If one is concerned about reducing wastage then that concern should be consistent and hence be reflected in the use of teaching activities to minimise wastage as well as in the selection of students to achieve the same end.

Since time did not permit any detailed discussion either of the other two reasons listed in the introduction or of the many other issues that could be raised, it is important to stress that the examination of this important topic is incomplete and that general conclusions are not possible.

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