Predictive Validity of Various Sets of HSC Courses in NSW, and of the ASAT, for Grade Point Average in Certain Faculties at the University of Newcastle

Presentation to the
1992 AARE/NZARE JOINT CONFERENCE
Deakin University, Geelong
Victoria
22-26 November 1992

E J Manning, L R Killen, A O Taylor
The University of Newcastle

Predictive Validity of Various Sets of H.S.C. Courses in NSW, and of the ASAT, for Student Performance in Certain Faculties at the University of Newcastle

E J Manning, L R Killen, A O Taylor

Equity of selection procedures for university places is particularly important when there is a large unmet demand. The ease of using an objective measure such as the NSW Tertiary Entrance Rank (TER), or the Teriary Entrance Score (TE Score), as the sole criterion is attractive because selection can be automated reducing lead time to admission without utilising alternatives which may be labour intensive or may appear less objective. However, continuing concern is expressed about the equity of a selection process that does not consider personal characteristics such as motivation towards and interest in a particular university course or profession and does not credit achievement in HSC subjects closely related to the course. In particular, concern has been expressed about decisions made at the margin, that is, those just above or just below the HSC TER cut-off.

Earlier studies have reported the predictive validity of the HSC in some Australian states (Beswick, 1987; Power, Robertson and Baker, 1987; West, 1985), but the New South Wales HSC is not conspicuous in the research literature, and comparisons between faculties, or between the HSC and other selection tests have not often been reported. Little has been reported on the effects of modifying the entry criterion to include achievement in HSC subjects closely related to the course of entry, or on the effects of varying the cut-off scores.

The university admissions process in New South Wales uses HSC results in the form of the TER derived from the TE Score. Applicants may have attended a government, independent or Catholic high school, or a TAFE college. The type of school does not enter consideration as such. The school assessments are externally moderated, and the examination papers are externally set and marked. But in Victoria there is evidence

of a difference between applicants from government, Catholic, and independent schools. Specifically, a given HSC selection score has been found to predict a higher university GPA if gained from a government school than if gained from a non-government school (Dunn, 1982; West, 1985). As this trend could be regarded as a bias, or at least an anomaly, it is desirable to know how widely it extends. If the effect is replicable in New South Wales, research to identify its sources would be desirable.

For mature age entry, the Australian Scholastic Aptitude Test (ASAT) has been widely used, though the ASAT is now being replaced by the Special Tertiary Admissions Test (STAT). Evidence of the predictive validity of the ASAT as a selection instrument should be useful for purposes of comparison with the new mature age test.

This study, albeit limited in scope, monitored certain aspects of the selection system by following a group of students beginning with their HSC or mature age entry test, and relating scores on the entry test and pass/fail results in First Year to university performance. The aims were to examine the predictive validity of the ASAT and the HSC TE Score, the effect of different high school systems, the effect on predictive validity of using HSC subjects closely related to course of entry as prerequisites, and the effect on university performance of varying the cut-off score for selection.

PROCEDURE

From student records a database was created (N=6335) from which were selected in turn the subsets needed for each analysis. The database contained the students who commenced under-graduate courses of more than one year's duration in the years 1988 to 1991 in the Schools of Education (N=3128), Health (N=2152), and Visual & Performing Arts (N=1055) except for a small number of records, not

systematically
located, which were not entered because data elements were missing. These Schools
in 1988 comprised three of the four Schools of the Hunter Institute of Higher
Education, a predecessor of the new University of Newcastle established through
amalgamation in November, 1989.

Predictive Validity of HSC and ASAT

Correlation co-efficients were obtained relating students' GPAs to either their TE
Score or their ASAT score, whichever was the student's basis of entry. Records were
dropped from the calculation if the year of the HSC was more than four years earlier
than the year of university enrolment. Records were also dropped if the GPA was
zero, because it was not feasible to distinguish between zero GPAs which represented
failure in assessments and withdrawal in the early stages of a course.

The GPAs were those on record in mid-1991 for students who commenced in 1987
to 1990 and in mid-1992 for students who commenced in 1991. A GPA of 1.0
represents Pass average, 2.0 Credit average, 3.0 Distinction average, and 4.0 High
Distinction average. The GPAs available from the university records were cumulative,
not per Year. For students who had completed Second Year, the GPA combined the
results of First and Second Years. These GPAs did not permit the analysis of
students' results in terms of the separate Years of the course.

A Probability of Success index was calculated for certain courses and Schools. For
the purpose of this study probability of success, Pr(s), is defined as the ratio of the
number of a student cohort with a GPA in excess of 1.0 and the total number of
students in the cohort. That is probability of success is an indicator of the proportion
of students likely to graduate. Whilst some students with a GPA less than 1.0 can
graduate through repetition of subjects, there are also those with GPA greater than 1.0
who will not graduate for a variety of reasons including not being able to meet a

particular prerequisite. The Pr(s) index assumes a reasonable balance between the two
anomalous groups.

For students admitted on the basis of HSC TE scores, correlations and probabilities
of success were obtained for all students enrolled in:
- courses offered by the three schools,
- courses offered by the School of Education,
- courses offered by the School of Health,
- courses offered by the School of Visual and Performing Arts.
- a particular course offered by the School of Education with variations in
selection using prerequisite subjects and/or elevated cut-off scores.

HSC from Government and Non-Government High Schools

The institutions where students had been candidates for the New South Wales HSC
were classified as government schools, Catholic schools, other independent high
schools, and TAFE colleges (all called "schools" below, as a convenient term).

Analysis of covariance was used in the same manner as West (1985) used in research
on prediction of university performance in Victoria. The aim was to test the statistical
significance of differences between the GPAs of students from the four categories of
school and to locate the line of best fit to relate the students' TE Scores to their
GPAs, while taking into account the four types of school. Systat (Wilkinson, 1991)
was used to check the assumption of equal slopes, estimate the parameters of a linear
regression equation using effect coding, and test the statistical significance (‡=.05) of
differences between all pairs of means. Bonferroni-adjusted probabilites were used
to preserve the type I error rate. After deletion of inter-state and overseas examination
centres, the number of cases for analysis was 2137.

Patterns of Student Failure

The method used to determine the antecedents and consequences of early

failures was
to track each cohort of full-time students in the database who commenced in 1988 or
1989, identifying those who failed one or more subjects in each year. The TE Scores
of the students who had one or more failures in First Year were compared with those
of the students who had no failures. Also determined were the subsequent failure
rates of students who did, and did not, have failures in First Year. Since the majority
of students were enrolled in three-year courses, the study was restricted to the first
three years of enrolment for all students.

It should be noted that during the period studied the Hunter Institute had a progression
policy which allowed students to continue in their course until they breached the
"show cause" regulations. Students were required to "show cause why they should
not be excluded from the course" under four circumstances: if they did not pass 75
per cent of the credit points in which they were enrolled; if they failed a compulsory
module for the second time; if they failed practicum requirements; or if they reached
a point where they could no longer complete the course in the maximum time allowed
(normal length of the course plus one year). Students who were asked to show cause
were able to present a written case and appear before a Student Progression Committee.

RESULTS and DISCUSSION

Predictive Validity of TE Scores and ASAT

Pearson correlation co-efficients relating the TE Scores or ASAT scores to the
students' subsequent GPAs at university are shown in Table 1. The corresponding
scattergrams are shown in Figure 1.

Table 1
Correlation of Entry Score with Grade Point Average

BASIS OF
ENTRYCORRELATION
OF ENTRY SCORE
WITH GPAN HSC (TE score)
All
Education
Health
V & P Arts
0.415
0.446
0.521
0.223
2287
1052
733
502 ASAT (Form 101)0.202252

Figure 1. Scattergram of Grade Point Average against TE Score.

The correlations of the TE Score, viewed as measures of predictive validity, range
from satisfactory for the School of Health to low for the School of Visual and

Performing Arts. Appropriately, the selection procedure used by the School of Visual
and Performing Arts for visual arts courses includes supplementary

assessment of
portfolios of applicants' work if Art is not among their HSC subjects.

The correlations can be compared with those in South Australian data reported by
Power et al. (1987). For the School of Education, the correlation is similar to the
South Australian figure for immediate school-leaver entrants (.48), but the more
appropriate comparison would be with .23 which was the figure for South Australia's
general school-leaver entrants, as the Newcastle data included students whose HSC
examinations were up to four years earlier than the year of entrance.

For the School of Health, whose largest enrolments are in nurse education, the
correlation is noticeably higher than the South Australian counterpart for Nursing
(.26), but for the School of Visual and Performing Arts the correlation is of the same
order as that for Art and Design (.28) at the South Australian College of Advanced
Education.

Figure 2 is an illustrative example taken from the School of Education data to show
some of the characteristics of probability of success.

The line graph, Figure 2a, shows the effect on Pr(s) for a selected cohort of students
by hypothetically varying cut-off scores. Given a hypothetical TE Score cut-off x, the
cohort of selected students is determined by selecting those having a TE Score greater
than or equal to x. The annotated numbers indicate the numeric size of the selected
cohort. For example, if the cut-off x were hypothetically determined to be 250, 1009
students of the 1052 enrolled students in the database, would have been selected with
a probability of success of 0.84. It is interesting to note moving the cut-off x up or
down in the 230 to 300 region has little effect on the probability of success of the
selected cohort albeit the number of students accepted would vary appreciably.

The line graph, Figure 2b, shows the Pr(s) of group of potential students that have a

TE Score higher than 230 but less than the hypothetical cut-off x and therefore
rejected. The annotated numbers indicate the numeric size of the hypothetically
rejected cohort. For example, if the cut-off x were 250, 43 of the 1052 enrolled
students in the data base would have been rejected although they would have had 55
per cent chance of succeeding had they been selected.

Similarly, considering Figures 2a and 2b concurrently, if the cut-off x were raised to
300, 892 students of the 1052 enrolled students in the data base would have been
selected with a probability of success of 0.85; and 160 would have been rejected
although they would have had 70 per cent chance of succeeding had they been selected.

Whilst there are not enough cases to make a useful analysis of Pr(s) for TE Score less
than 230, the data suggest that selection of cut-off points is more related to supply and
demand than it is to predictive validity in terms of potential success in the course.

Figure 2. Pr(s) Plotted against Hypothetical Cut-off TE Score for Entry, BEd (all specialisations).

Table 2 provides, by way of example, a summary of results obtained by the analysis of predictive validity using HSC performance in various subjects (or group of subjects) as the basis of entry into a particular course - in this case the BEd(Industrial Arts Technology) program. The data indicate that improvement in both predictive validity and probability of success can be achieved on the basis of setting minimum performance in prerequisite subjects, though admittedly at the expense of a substantially reduced intake of students.

The data also suggest that improvement in predictive validity and probability of success may be achieved by selecting on the basis of satisfactory performance in one of a basket of subjects (in this case achieving more than 50 in Engineering Science OR more than 25 in General Studies). Reaching intake quotas would depend on the existence of a reasonable supply of such people in the rejected group.

Table 2

Examples of Effect on Predictive Validity [R(TES/GPA) and Pr(s)] of Selecting by HSC Marks 50+ in Specific Subjects, Sub-groups from BEd(Industrial Arts Technology) Students

SPECIFIC HSC
SUBJECTSCORRELATION
OF TE Score
WITH GPAPROBABILITY
OF
SUCCESSNAs selected 0.465 0.626   99
Single subjects:EnginSc>50
GenStud>25*
IndTech>50
Maths>50
English>50
SocSc>50
Science>50
VisArts>500.554
0.538
0.493
0.471
0.441
0.389
0.376
0.1560.645
0.737
0.600
0.632
0.629
0.609
0.676
0.20031
38
60
95
97
69
71
5A key subject, plus one other subject out of group:EnginSc>50 &
GenSt>25
IndTech>50
Maths>50
GenSt>25 &
IndTech>50
Maths>50
IndTech>50 &
Maths>50
0.780
0.482
0.554

0.573
0.569

0.498
0.875
0.375
0.645

0.750
0.765

0.621
8
8
31

16
34

58One subject from set of key subjects: EnginSc>50 OR
GenSt>25
IndTech>50
Maths>50
GenSt>25 OR
IndTech>50
Maths>50
IndTech>50 OR
Maths>50
0.547
0.461
0.471

0.519
0.465

0.465
0.672
0.639
0.632

0.623
0.626

0.619
61
83
95

77
99

* General Studies has 50 marks maximum.
Boldface indicates improvement relative to actual selection.

HSC from Government and Non-Government High Schools

The mean GPAs of students in the database, classified by high school systems and categories of entry, are shown in Table 3. These figures can be related to the whole database, in which 1.67 was the mean of all non-zero GPAs, and 0.72 was the SD. As percentile ranks of this database the highest mean GPA in Table 3, 1.768, equates to Percentile Rank 60, and the lowest mean GPA, 1.334, equates to Percentile Rank 37.

Table 3

Mean GPA of Students Grouped by Basis of Entry and School System

ENTRY GROUP

MEAN GPAMEAN GPA Adjusted by TES as Covariate

N HSC Government Schools1.5071.5081638 HSC TAFE Colleges1.4451.49934 HSC Catholic Schools1.3341.337363 HSC Independent Schools1.4191.371102 ASAT Mature Age1.768248

Table 3 also shows the mean GPAs after covariate adjustment by their TE Scores. This column shows the GPAs which would be expected if all four ex-HSC groups had the same mean TE Score. Because the groups had similar TE Scores, adjustment by the covariate made only small differences.

The analysis to test the significance of differences between students' university results

in terms of where they studied for the HSC is shown in Table 4. The regression lines
are shown in Figure 3. The parallel linear structure, part of the model, was supported
by a non-significant interaction term for the slopes in a preliminary analysis.

The difference between government and Catholic schools is statistically significant.
The government school students entering with TE Scores at the mean of this sample,
331, obtained GPAs which averaged 0.172 higher (about 0.25 SD's) than the Catholic
school students entering with the same TE Score. TE Score 331 is equivalent to TER
76 in the 1990 HSC.

The effect can be expressed, alternatively, as the different TE Scores from government
schools and Catholic schools which are associated with the same GPA in the least-
squares model. In this sample, in order to have a university GPA 1.47, which was the
mean GPA of the students in this analysis, the Catholic school students had a TE
Score of 351, whilst the government school students had 325. Measured against all
New South Wales TE Scores, the difference is about 0.3 SD's, as the SD of all TE

Scores awarded was approximately 90 in the relevant years. This difference is of the
same order as reported in Victoria by West (1985).

Other pairwise differences between school systems are not statistically significant.
But subsets of the data, when analysed individually in the same way, were consistent
in showing that the adjusted least-squares mean GPA was higher for government
schools and TAFE on the one hand, than for Catholic and independent schools on the
other. These subsets were the School of Education, the School of Health, and the
School of Visual & Performing Arts, in males and females, and in each of the four
cohorts commencing university courses in 1988 to 1991. As these trends are in the
same direction as reported in Victoria (Dunn, 1982; West, 1985), some

additional
research to clarify the situation appears warranted.

Table 4
Analysis of Variance

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
SCHOOL GROUP	9.891	3	3.297	10.516	0.000
HSC TE SCORE	131.273	1	131.273	418.694	0.000
ERROR	668.443	2132	0.314		

MATRIX OF PAIRWISE MEAN DIFFERENCES IN LEAST-SQUARES ESTIMATE GPA,
(BONFERRONI-ADJUSTED PROBABILITIES IN PARENTHESES)

	CATHOLIC	INDEPENDENT	GOVERNMENT
INDEPENDENT	0.035 (1.000)		
GOVERNMENT	0.172 (0.000)	0.137 (0.100)	
TAFE	0.162 (0.640)	0.127 (1.000)	-0.010 (1.000)

Figure 3. Regression Lines of GPA on TE Scores for School Groups.

Patterns of Student Failure

Typically, 60 per cent of show cause students chose to present a case to
the Student

Progression Committee (the others withdrew) and ultimately only about 5 per cent of them
were excluded. The remainder were allowed to continue, often on restricted programs. All
other students with failures were also allowed to continue. Table 5 summarises the patterns
of failure and progression of the 1521 students in the sample.

Points of particular interest are:

1.Across the three schools approximately 18 per cent of First Year students failed one or
more subjects.

2.Of those students who failed one or more subjects in their First Year (and continued),
approximately 48 per cent failed one or more subjects in their Second Year of attendance.
This contrasts with the 14 per cent of students who failed a subject in Second Year when
they had not failed anything in their First Year.

3.Of those students who failed at least one subject in each of their First and Second Years
of enrolment, approximately 50 per cent failed at least one subject in their third year of
enrolment. This contrasts dramatically with the 6 per cent of students who failed subjects
in Third Year when they had no previous record of failure.

4.Of the students who failed one or more subjects in their First Year (and continued in their
course), approximately 59 per cent had at least one more failure in their second or third
year of enrolment. This can be contrasted with the 18 per cent of students who had no
failures in First Year (continued in their course) and had one or more failures in their
second or third years.

5.Overall, only about 53 per cent of the students who commenced the courses in the study
reached the end of Third Year without failing at least one subject.

This analysis suggests that the pass/fail record of students in the first year of their university
course provides a reasonable indication of the likelihood that they will accumulate failures
in later years of their course. It is probably a clearer indication, in

most cases, than the HSC
or selection test before the student began the course.

The TE Scores of students who had been school-leaver entrants were compared as between
those who had no failures, and those who had one or more failures, in First Year. The means
were 328.3 (N=907) and 316.4 (N=189) respectively. The t-test indicated that the difference
was statistically significant (t=3.280, p=.001). Clearly, higher TE Scores were indicative of
better First Year university performances in terms of number of subjects passed.

CONCLUSION

The need for selection procedures arises out of the need to limit the number of students
entering the first year of courses, and to do so by methods which are fair, rational, and not
too expensive in terms of staff time and resources. Traditionally, because the majority of
students entered university directly from school, the end-of-school examination, the HSC, was
used. It has been assumed that it continues to select the students who are most likely to
succeed at university, and does so fairly, but systematic scrutiny of this aspect of the HSC's
performance has been limited. In three Schools of the University of Newcastle, in the
combined student intake of four consecutive years, the TE Score was found to be moderately
efficient in general, but not in the School of Visual and Performing Arts, where it proved to
be a weak predictor.

Analyses of the students' results by two different procedures indicated that, in the range TE
Score 230 to about 300, no great improvement in undergraduates' performances would be
obtained by raising the minimum TE Score score for entry. This is indicated by the
correlation co-efficients, which show that a change in TE Score is associated with a
considerably smaller changes, relatively, in GPA. It is also indicated by

the Probability of
Success indices, which reveal that the proportion of students identified as succeeding does not
increase much if we hypothetically raise the entry TE Score so as notionally to exclude
students who are in our database.

The TE Score as a university selection instrument is limited by its global nature, being a
measure of attainment across a range of subjects, different for different applicants, and
containing no special recognition of subjects closely related to the course of entry.

With the New South Wales HSC we should be seeking a more flexible university entry
policy, particularly at the margins where there is potential for improving the probability of
success by considering other objective factors such as relative performance in subjects which
have a proven relationship to the course of entry. If applied to marginal applicants only, the
resources needed would not be excessive. One feasible method has been described by
Tognolini and Andrich (1989). There is evidence that interviews of applicants, also, can
improve the prediction of success of students in teacher education (Meade and Smith, 1985;
Hannan and Mulford, in press).

The high schools where students prepared for the HSC, classified into systems, were found
to indicate a difference in the university results predicted by their TE Scores. With a given
TE Score, students from government high schools achieved higher GPAs than students from
Catholic schools. The finding agrees with the results of similar research on the HSC in
Victoria, and is approximately the same in magnitude.

This effect of high school systems might appear at first to call for different minimum entry
marks for students from the different high school systems. But the sources of the difference
are likely to be complex and need not reside in the school systems. The students' own
attributes and educational attitudes are likely to enter the equation. There may be differences
in the HSC subjects chosen at the different types of schools, in attitudes to higher education,

in motivation for study at high school and at university, and in accuracy of expectations

regarding tertiary education. The Catholic school students at the HSC may be over-achieving relative to government school students, or, equivalently, the government school students may be under-achieving relative to Catholic school students. Similar hypotheses could be stated regarding university results. There is some suggestion in the data that independent schools have a tendency in the same direction, though not necessarily for all the same reasons. Further research is needed to clarify the situation with independent schools and to identify the sources of the effect of high school systems generally.

These conclusions are not a criticism of the HSC itself. The HSC examination and the university results are measures of different things. There is a difference in the learning environment between school and university. A school student can be successful in a situation where teachers provide specific details of what is to be learned and in what form it is to be reproduced in examination which is stable over a period of years. This does not indicate that the same student can be successful in a university environment, where lecturers provide less direction, expect higher levels of understanding, and are more likely to change the assessment procedures or requirements from year to year. Even when university subjects are closely related to the subjects studied for the HSC, the kind of learning necessary for success at university can be quite different from that required for success in the HSC.

The ASAT, although a weaker predictor than the TE Score, is not necessarily faulty as a test. The explanations need not lie in the test itself. No group test of general ability is likely to yield very accurate predictions across a diversity of educational courses. Further, applicants who use the mature age basis of entry are more diverse in educational background, in age, and in the future course of their lives. As a group they are less predictable than school leavers. This has been shown in South Australia, where the ASAT gave

similar results (Power et al., 1987). With ASAT now being replaced by the Special Tertiary Admissions Test (Australian Council for Educational Research, 1992) it will be important for the new test to be regularly monitored.

The ideal approach would be to determine what knowledge, skills and dispositions are necessary for success at each university course, to develop valid and reliable ways of assessing these things and to use this information to develop entrance assessment procedures. But there would be a high a price to pay in terms of lost flexibility of choice, and this approach could still make only a modest improvement on HSC results used optimally, because there is no way of knowing how the student will respond to living and studying in a totally new environment. Life as a university student is complex, and the pressures on students from lecturers, peers, family and possibly employers, create a volatile mix which can have unpredictable outcomes.

It is noticeable that students admitted to Visual and Performing Arts by the HSC, and to all schools by the ASAT, obtained university results at least as good as other groups, even though the entry criterion scores were poor discriminators. The information needed for complete evaluation of these selection instruments is the performance that never took place - that of the applicants who were rejected.

The absence of data from those who applied but were not selected is a limitation of all studies, like this one, based on successful applicants whose university results are a matter of record. Some of the missing ones would have been admitted if we had lower, or modified, selection criteria. An experimental program could be established to admit students who would normally be excluded, to allow comparison of academic performance among three groups:
A: excluded by TE Score, included by modified criteria;
B: included by TE Score, excluded by modified criteria;
C: included by both HSC Score, and modified criteria.

REFERENCES

Australian Council for Educational Research (1992). Special Tertiary Admissions Test 1992 - 93. Hawthorn: ACER.

Beswick, D. (1987). Current issues in selection. Journal of Tertiary Educational Administration, 9, 5-32.

Commonwealth Department of Education (1986). Selection for higher education: A discussion of issues and possibilities by an education portfolio discussion group. Canberra: Commonwealth Department of Education.

Dunn, T. R. (1982). An empirical demonstration of bias in HSC examination results. The Australian Journal of Education, 26, 190-203.

Hannan, G. J., & Mulford, W. R. (in press). Using interviews as a prediction of success of teacher education students. Paper submitted to South Pacific Journal of Teacher Education.

Meade, P., & Smith, D. (1985). Admission of student teachers using both academic and non-academic criteria. Board of Teacher Education, Queensland, Research Grants Series, 1, 1-10.

Power, C., Robertson, F., & Baker, M. (1987). Success in higher education. Canberra: Commonwealth Tertiary Education.

Tognolini, J., & Andrich, D. (1989, November). Profile analysis of students applying for entry to tertiary institutions. Paper presented at International Association for Educational Assessment, Sydney.

West, L. H. T. (1985). Differential prediction of first year university performance for students from different social backgrounds. Australian Journal of Education, 29, 175-187.

Wilkinson, L. (1990). Systat: The system for statistics. Evanston, IL.: Systat Inc.

Table 5. Summary of Patterns of Failure of 1988 and 1989 Student Intakes

School of EducationSchool of HealthSchool of Visual and Performing ArtsOverallNumber of full-time students who commenced First Year in 1988 and 1989 5686183351521Percentage of students who failed at least one subject in their First Year18.8%19.4%14.6%18.1%
Percentage of students who failed one or more subjects in Second Year after having failed at least one subject in First Year51.6%49.3%16.7%48.3%Percentage of students who passed all subjects in First Year and then failed one or more subjects in Second Year 7.6%23.1%9.6%13.8%Percentage of students who failed one or more subjects in First Year and then failed at least one subject in either Second or Third Year72.6%59.4%20.8%58.7%Percentage of students who passed all First Year subjects and then failed one or more subjects in Second or Third Year12.1%25.6%14.7%18.2%Percentage of students who failed one or more subjects in Third Year after failing one or more subjects in either First or Second Year (but not both)60.0%21.6%46.7%34.8%Percentage of students who failed one or more subjects in Third Year after failing one or more subjects in both First Year and Second Year47.1%60.9%0% 50.5%Percentage of students who failed one or more subjects in Third Year who had not failed anything in First Year or Second Year8.1%4.7%10.2%6.2%