it is in considerable degree determined by intelligence".*

The general truth of this statement has never been disproven, although the notion of general intelligence has been somewhat eroded. It suggests that the less intelligent undergraduates, although they may be able to achieve pass marks, may often be unable to make use of the abstract and theoretical formulations of many senior undergraduate courses. When senior undergraduates are interviewed, perhaps a third of them say that they do not fully understand their courses. They attend lectures which they seldom or never understand. They cannot see the point of theoretical courses, cannot see their vocational applications, and doubt that they will ever need them in their future careers. With these attitudes and with these difficulties in understanding, the chances of intelligent application are small.

Difficulty Levels of University Courses

If courses are too abstract and difficult for substantial minorities, then there are a number of possibilities of action:

(1) Universities should be more selective in their admissions.
(2) The more difficult and theoretical courses should be made less exacting.
(3) More time and more intensive teaching should be devoted to the more difficult courses.
(4) The more difficult courses should be made optional or should be reserved for the postgraduate years.

All these possibilities except the first run counter to traditional thinking: they involve adapting courses to students, rather than selecting students who can meet the demands of a fixed course.

The first possibility might well be appropriate in a research-oriented department, situated in an area in which less exacting courses were available in C.A.E.'s.

The second tends to meet with opposition from academic staff since it suggests lowering standards. But sometimes subjects are being taught in an unnecessarily abstract and rigorous way.

The third would be appropriate when the difficult course is deemed essential. This tactic is reported to be surprisingly effective. In the Keller Plan, for example, and in other modular learning systems in which 100% mastery of each segment is required, it is claimed that students get a better grasp of fundamental principles than in conventional courses.

*E. L. Thorndike and A. I. Gates. Elementary Principles of Education. N.Y. Macmillan 1929.

The fourth may be prudent in some branches of knowledge, which have been subjected to abstract and mathematical treatments, which are exceptionally difficult, or only tenuously related to practice.

To some extent all instruction must be adapted to students. An advertised syllabus may not be fully covered, certain parts of syllabus which have not been properly understood may not be included in the examinations, the pass standard may be lenient. (In the other direction, a lecturer may extend a syllabus, set questions which have not been covered, and mark examination papers severely.)

In a more general way progress through degrees can be regulated by systems of assessment, and by the amount of choice allowed in selecting courses as constituents of a degree. Pass-rates are increased by having term or end-of-topic rather than end-of-year examinations; by progressive assessment rather than by formal examintion; by allowing compensation when subtopic marks are combined (versus insisting on a pass in each subtopic); by allowing deferred or supplementary examinations: and by allowing 'standing' in parts of a subject, versus insisting on total subject repetition if a part is failed.

These arrangements clearly facilitate progress through a degree. Their effect on levels of attainment is debatable. Fewer students fail under progressive assessment, for example, than under end-of-year examinations. But progressive assessment tends to make students work more regularly, as well as removing the difficulties associated with a 'grand final'. Hence improved pass rates may reflect a more regular pattern of work and a genuine rise in attainment.

There is evidence that, in going over to a greater variety of assessment methods, Universities are reaching a kind of pragmatic adjustment to the capabilities of their students. The process seems to have gone furtherest in non-professional Faculties. In these Faculties pass rates have tended to improve in recent years. But there is little sign of improvement in many technical and professional Faculties, where the progress of students towards the degree is still depressingly slow.

*A related possibility is to reduce workload. In some applied science Faculties the average workload of full-time students exceeds 50 hours a week. As workloads increase they can be handled only by decreasing numbers of the more able students.

FAILURE AND WITHDRAWAL: STUDENT DROPOUT AT FLINDERS UNIVERSITY

Peter Sheldrake*

Student 'Wastage' is a somewhat provocative term, especially when it is related to the estimated cost of students' failure to complete courses (cf. Selby Smith, 1975). Among the factors that may contribute to the dropout rate among students — that is, to the proportion of students that fail to complete their degree or diploma studies — are failure, withdrawal because the student no longer feels able to complete the course, withdrawal because the student fears failure, withdrawal for a number of non-academic reasons (including financial or family matters, health, or moving to another district), and even withdrawal to study elsewhere. It is easy in a context where a relatively unselective entry to universities operates to equate dropout with failure, but to do so masks a far more complex reality.

In order to establish some of the factors that appear to contribute to university dropout, a small retrospective study was made of students who left Flinders University without completing their degree course. This study was based on a scrutiny of the records of a 25% sample of all students who left the university in the period 1966-1975. The data suggest an overall figure of around 46% as the dropout or 'wastage' rate for the first ten years, compared to the range of 31-42% quoted by Selby Smith (1975): however, it is clear that this figure reflects a high dropout in the first few years, as the current rate seems to be established in the region of 30-35%: included in these are several University of Adelaide medical students coming to Flinders for one year only. Overall figures are given in Table 1.

In the light of the expectation that most dropout is a screening or selection mechanism, Table 1 shows half of those who dropped out left either because they had failed courses (155 - 27.8%), or because they thought it likely they could do so (124 - 22.3%). In other words, approximately half of the dropouts apparently withdrew for 'other reasons'. Further, while the proportion fo students withdrawing for 'academic' reasons (i.e. failure, or likelihood of failure) has varied from year to year, overall there is a clear tendency for academic 'failure' to be a most likely reason for non- completion in the earlier years of the university, and for those withdrawing for 'other reasons' become a more appreciable group in more recent years. This is the more striking since the proportion of withdrawals appears to have decreased in recent years: in other words, there has been a significant decrease in the likelihood of academic failure being the reason for students to dropout.

The changing pattern and incidence of withdrawal suggests a number of possible contributing factors

Table 1

Dropout Rates 1966-1973 Entrants

	Overall Dropout Rate	Withdrawal through failure	Withdrawal through likelihood of failure	Withdrawal for other reasons
1966	42	13	8	21
1967	47	17	13	16
1968	47	15	16	16
1969	50	15	13	22
1970	38	10	15	13
1971	37	9	6	21
1972	33	8	7	18
1973	33	5	3	25
N	547	145	124	278

Figures given as a percentage of total enrolments.

that could be considered, and six of these are examined below in the light of the data available:—

The 'quality' of the intake has improved, so reducing 'failure', and the overall rate of withdrawal, and increasing to proportion withdrawing for non-academic reasons.

The proportion of men to women has changed over the period with a consequent change in the relative importance of academic and non-academic factors leading to withdrawal.

The proportion of mature to younger entrants has changed, again with consequent changes in the importance of the factors considered.

The proportion of part-time to full-time students has changed.

The proportion of local (metropolitan) to rural (S.A.) to interstate entrants has changed.

Or the proportion of students studying different subjects has changed.

Factors Influencing Withdrawal

No studies appear to have been made of the relationship between academic ability as measured in school examinations and the subsequent performance of students on entry to Flinders University. Moreover, as the data collected were for students who did not complete their studies, we are unable to compare directly successful students with those who were 'unsuccessful'. However, it should be noted that there have been many studies of the relationship between academic ability as measured at school and at the tertiary level. All show that there are low but consistent correlations between the two, with correlation coefficients of the order of 0.3 to 0.4. (This work is admirably summarised by McDonell, 1975; Selby Smith also provides a very useful discussion in Maclaine and Selby Smith, 1971). There is no reason to expect that the relationship between these factors would be substantially different at Flinders. Indeed, a number of points can be made which allow us to infer the probable relationship between 'quality' and withdrawal.

First, if the South Australian Score distribution is examined for those that did not complete, and compared with that for entrants as a whole, the 'quality' of the dropout group, as indicated by matriculation scores in the dropout group, is similar to that for the entrants as a whole. There are also differences in the matriculation scores for students in the three withdrawal categories. Overall we find that students who fail outright are more likely to have relatively low scores, and those who withdraw for 'other reasons' to have relatively high scores, when compared to the dropout group as a whole. However, in more recent years, there has been a tendency for the 'failing' groups to contain a greater proportion of students with scores above the median and the 'other reasons' group to contain more with scores below the median. Taken together these findings suggest that, as in other universities, there is evidence of a weak but positive relationship between entry ability (matriculation score) and later peformance (likelihood to complete the course). In recent years, when failing students and those who withdraw for other reasons have had a similar distribution of entry ability, measures like the matriculation score have become less valuable as indicators of later performance, (cf. Selby Smith, 1969: Sheldrake, 1975).

One further point is relevant here, when the types of withdrawal distinguished are considered in relation to the time the student studied at Flinders, as in Table 2. Students who drop out in their first year of study are equally likely to do so for reasons of failure, or for 'other reasons': withdrawing students in their first year comprise over three fifths of those who drop out as a whole. Students who withdraw in later years are more likely to withdraw to avoid failure, or for 'other reasons', and outright failure is less common. In a fairly unselective system of entry, we would expect first-year examinations to be important in establishing entrants' suitability for their courses, (cf. Schonell et al, 1962). Nonetheless, the data suggest that many withdraw for reasons other than academic failure, even at this stage.

Table 2

Withdrawal and Period of Study 1966-1972 Entrants

	Withdrawal through failure	Withdrawal through likelihood of failure	Withdrawal for other reasons	N
Studied for less than one year	29	2	31	265
Studied for one to two years	1	15	8	99
Studied for more than two years	1	11	4	64

N equals 428 (excludes one year enrolments, and 1973 entrants)
Figures given as percentage of total withdrawals

Moving to our second factor, it has often been asserted that men are either more or less likely to fail or withdraw from courses than women. There has been little support for either of these hypotheses in the literature, and there is similarly little support for this in the data collected. Men are just slightly less likely than women to withdraw from courses (if we compare the proportion of men and women in each year on entry with the same proportion for the group withdrawing). There are variations within the three categories of withdrawal over the period studied: women were less likely to fail in recent years than they were in the earlier years; equally, they appear more likely, in recent years, to have withdrawn to avoid failure, or for other personal reasons. None of these differences were statistically significant.

Similarly, when we turn to look at age, overall differences are small, but there are differences in proportions of each age group of those who fail, withdraw to avoid failure, and withdraw for other reasons. Looking at undergraduates only, two age groups are more likely to withdraw through failure or to avoid failure (those in the middle age group being the most likely to do so), and students in the oldest group are most likely to withdraw for non-academic reasons. There is no evidence to suggest that a higher proportion of older students have withdrawn in recent years despite the increase in acceptances in this age group, (in the Flinders Mature Entry Scheme).

The difficult position of part-time students is well recognised and it is not surprising to find higher dropout rates for part-time students, as shown in Table 3. The proportion of part-time students attending Flinders has been increasing year by year, so the proportion of withdrawals within the part-time group appears to have increased. However, it is important to emphasise that the identification of part-time sudents prior to 1973 is incomplete (as the records were themselves incomplete), and it is likely that the percentages for these years are higher than the figures given. As a result caution needs to be urged in putting forward the view that the proportion of failures within the part-time group has increased.

A rather different perspective on the contribution of part-time students to the dropout rate is given by looking at the proportions of part-time students in the three withdrawal categories when compared with the overall proportions of part-time students. In the years for which reasonable data are available, there is a higher proportion of students withdrawing to avoid failure among the part-time group than there is overall, and this is true to a less marked extent for withdrawal for 'other reasons'. Part-time students appear to be more likely to withdraw than full-time students, for non-academic reasons as much as for academic reasons, a finding which confirms similar observations made by Selby Smith, (as summarised in his 1975 article). As the proportion of part-time students has increased over the period studied, and the dropout rate has decreased, this means that full-time students have become markedly *less* likely to drop out.

Finally there is no evidence to suggest that students from outside the metropolitan areas are more likely to withdraw than those from inside. Similarly there is no simple relationship between the subject a student is studying and his propensity to withdraw. In general, it appears that the withdrawal rate is similar in relation to the number of students in each of the Schools of the University, though closer scrutiny of the results year by year suggests that there are considerable variations within any given school over time: it is likely that these reflect changes in examining policy and related factors as much as any change in the 'quality' of intake of the students. The same observation can be made if withdrawals are considered in relation to the type of withdrawal — again, overall rates appear to be similar for the various schools, but there are great variations within schools year by year. The data collected do not allow a more sophisticated analysis of the relationship

Table 3

Withdrawal Among Part-Time Students

	Dropout Rate	Withdrawals through failure	Withdrawals through likelihood of failure	Withdrawals for other reasons	Part-Time students as % of Entry
1970	53	—	27	27	4
1971	63	44	21	18	8
1972	44	—	13	31	13
1973	82	6	12	65	17

N equals 54
Results are given as percentage of total part-time enrolments for the year.

between subject, year and withdrawal.

Time of Withdrawal

As an extension of the original study, a further examination was made of dropout for students who entered in 1975. In this study, close attention was paid to the actual time of withdrawal, and the results are given in Table 4. The figure of 30% dropout in the period from enrolment in 1975 to May 1976 suggests an overall dropout rate of about 34-36%.

In examining time of withdrawal, it is clear that half of the dropout reported (about 40% of the expected total dropout) occurred in the first two terms of the year, with 11% of full-time, and 21% fo part-time students withdrawing. The withdrawal strategy of leaving before the end of terms 1 and 2 is related to the penalties that accrue from failing to complete a course — early withdrawal is recorded as simply "withdrawn", but late withdrawal is recorded as 'withdrawn—fail': most students contemplating withdrawal, it is clear, do so before the date on which withdrawal would be recorded as failure in the course. Apart from a small number who left in the third term, the rest of the loss is accounted for by failure in examinations, 9% overall, (8% of full-time students, 10% for part-time), or by failure to re-enrol, 7% overall (5% full-time, 11% for part-time). As a number of listed as 'failing' had only failed in some of their examinations, a substantial number of students have withdrawn without being outright failures in the academic sense — though some of these, of course, may feel they would be likely to fail in the future.

These figures reinforce the importance of the first year of studies — up to 80% or more of students who are going to withdraw from university do so in their first twelve months of study, at least on the basis of the evidence from Flinders University. It seems likely that attention to this transitional period must be regarded as a high priority.

Table 4

Dropout in 1975

	Full-time	Part-Time	Total
Withdrawals during 1975:			
Term 1	6	11	7
Term 2	5	10	7
Term 3	1	2	1
TOTAL	12	23	15
'Failure' in 1975:			
Outright failures	4	8	5
Some degree of failure	4	2	4
TOTAL	8	10	9
Students failing to re-enrol in 1976	5	11	7
Total Dropout	26	44	30
Enrolments in 1975	895	297	1192

Figures given are percentages of the total enrolments in each category.

Conclusion

A number of factors that might have been thought to be important in contributing to student dropout appear to have had little effect on variations in the dropout rate at Flinders — at least in any simple and direct manner. In particular, variations in entry ability (as measured by matriculation score), sex, age, and background have been inferred to contribute relatively little. However, two factors appear to be important.

First, the relatively open entry system to Australian universities is predicated on the expectation that a substantial number of students will withdraw in their first year at university. The data collected confirm this, but show that many do not withdraw because of failure, and more than half have dropped-out for non-academic reasons.

These findings emphasise that the first or transitional year at university is more than just an academic hurdle, and suggest that further consideration of pre-entry counselling and attention to the first year experience would be advisable.

Second, it seems that part-time students are more likely to fail than full-time students, especially for non-academic reasons. This may be due to the increased number of alternative commitments of part-time students, and the relative lack of contact with the university such students are able to maintain. Furthermore, some full-time students who find the work hard, change from a full-time to a part-time enrolment. Further research into ways of helping students in this area is clearly needed.

A final comment on the data is given by the explicit reasons for withdrawal stated by some students when completing a form notifying withdrawal from courses. Completion of this form has not been mandatory at Flinders University. As over half the students have no reason for withdrawal, the figures have to be viewed with considerable caution. They include 73 students who withdrew through failure, 72 who were unable to continue for work, health or financial reasons, 56 who moved or applied elsewhere, 27 who cited 'personal reasons' or felt the work was too hard, and 22 who deferred their studies and did not return. The need for a more detailed study of withdrawals is made extremely clear by these figures, which provide a slight, but tantalising insight into the reasons that students are prepared to offer for withdrawal: they hardly explain why so many 'successful' students decide to leave university.

FOOTNOTES:

1. The sample was not strictly random, but comprises a 1 in 2 sample from 50% of the alphabetical list of 'completed students', including those whose names fall in the range A-D and L-Ri.
2. Students in this category are those with a record of failure in courses, often combining failure in some with withdrawal from others before the end of the academic year.
3. The ages of 17.50 and 21.50 represent the first and third quartiles for the population as a whole, and in this case only full-time undergraduates are considered.

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