Academic and Socio-Economic Factors Related to Entrance and

Retention at Two- and Four-Year Colleges in the Late 1960's

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Introduction

Open Enrollment Plans and Programs

As we enter the 1970's, controversy mounts over open enrollment in American colleges, and especially so for selective 4-year ones. Most of the "target" students rank low on test distributions, and include few who followed college preparatory programs in high school. Earlier attempts to enroll such students in selective colleges were usually limited to relatively small groups. Today, however, pressures have increased for extended, or even universal, access to college.

One critical question concerns eventuations for less able students entering selective colleges, or even unselective ones. Considerable recent information is available on college entrance, type of college entered, and duration of attendance for students with various academic and socioeconomic characteristics, including the types of students open enrollment programs are addressed to. Such hard data on survival rates for various groups of students at different types of colleges afford insights into probable outcomes of open enrollment programs, minus special assistance to the relevant students. From such data one could roughly gauge how essential such assistance would be (assuming its effectiveness) to assure the less promising entrant a reasonable chance for academic survival.

The Study Data

In Fall, 1965, the Census Bureau interviewed a national sample of high school seniors as part of its Current Population Survey. Information was obtained on post-high school plans, plus personal and background information about the student. The seniors were followed up in Fall 1968 to determine proportions entering college, proportions attending 2- and 4-year colleges, and proportions still enrolled in Fall 1968. By that date a Fall 1966 college entrant would normally be in the junior year.

It was also possible to determine relationships between post-high school behavior and personal and background variables. In this paper we discuss such relationships for the following: (a) the student's high school curriculum; (b) his estimate of his brightness relative to high school classmates; (c) average high school grade; (d) the college entrant's estimate of his brightness

*This article reports upon findings from a larger study in progress (A. J. Jaffe, Director), supported by the U. S. Office of Education. The interviews were conducted by the U. S. Census Bureau and the tabulations and analysis were made at the Bureau of Applied Social Research. relative to college classmates; (e) average college grade; (f) family income; (g) occupation of household head; and (h) father's educational attainment.

The Analysis

We may ask a number of questions for the various student groups. First, is there any one variable with an especially strong relationship to post-high school behavior? If so, with what sorts of behavior is it most associated (college entrance per se, type of college entered, or continuation in college)? Second, which group of variables is most significantly related to post-high school behavior, the academic or the socio-economic ones? Are relationships about equally strong for all variables comprising each of these groups, or are there considerable differences between variables within each group? Next, can we determine whether it is the economic or the social component of socio-economic status that is the stronger determinant of post-high school behavior?

Overall, can we infer the likely outcome for less academically promising and/or lower socioeconomic students who might enter college under open enrollment? Here we would base our inferences on one of two assumptions. First, large numbers of students who would not have qualified in former years might be admitted to formerly selective 4-year colleges. The alternative assumption is that admission standards might be maintained at most 4-year colleges, but that increased numbers of less promising high school graduates would be encouraged and assisted to enter 2-year colleges.

Our main emphasis is on college dropout, since it is the survival rate that would largely determine success or failure of open enrollment. Nevertheless, we shall also consider college entrance, since it determines the cast of players who struggle for survival on the academic stage. We are further interested in variables which not only predict the likelihood of college entrance, but also the likelihood of survival at college. Should there be such variables, open enrollment might dissipate the relationship to entrance by simple fiat, but fail to weaken the relationship to dropout or continuation--assuming no radical changes were made in the colleges themselves, such as introduction of less demanding curricula. We now turn to the findings, and refer the reader to appended Tables 1 and 2.

Findings

The High School Curriculum

Of the eight student characteristics in our analysis, the high school curriculum is of overriding significance, not only for entering college, but also for type of college entered (2year or 4-year) and for survival at each type of school.

<u>College entrance</u>. By Fall 1968 about 53% of the high school graduates had entered college, one-third enrolling initially in 2-year and twothirds in 4-year ones. A few students transferred from one type of college to another. About three-quarters of the students ended up in 4-year colleges, or attended such schools only. In this analysis we classify the transfers by the type of colleges they finally reached, since these are the schools most relevant to dropout or continuation.

Overall, about 17 in 20 college preparatory students entered college, but only about 5 in 20 students who had followed other programs. About 17 in 20 students at senior colleges were college preparatory students. Nevertheless, this was the case for over 10 in 20 students in 2-year schools. In sum, college preparatory students predominate among all college entrants. If open enrollment were to eliminate the high school program as a criterion for college entrance we might well expect significantly larger proportions of noncollege preparatory entrants. We may well ask about the probable effect on college dropout.

College dropout. Overall, about a third of all the college entrants had dropped from college by Fall 1968. Additional students will drop, of course, subsequent to Fall 1968. About 5 in 20 preparatory entrants had dropped, whereas this was the case for 12 in 20 entrants who had followed other programs. Dropout was nearly three times as frequent at 2-year as at 4-year colleges, respectively representing 13 in 20 versus less than 5 in 20 students. But it is also true that at 2-year and 4-year colleges alike the high school program was a strong determinant of dropout. Under 4 in 20 orelege preparatory 4-year students dropped, compared with nearly 9 in 20 non-preparatory ones. About 11 in 20 college preparatory 2-year students dropped, compared with 15 in 20 non-preparatory ones.

Implications of the above findings for open enrollment. If substantially larger proportions of non-preparatory students were to enroll in 4year colleges under open enrollment we would expect nearly half of these students to drop within several years, basing our expected rate upon the observed one. The rate might be even higher if non-preparatory students who now enroll in 2-year colleges were to select 4-year ones instead, once the admissions criteria were relaxed. We would not expect them to fare as well at academically more demanding schools. In short, we would expect any large increase in non-preparatory 4-year enrollments to raise the dropout rate sharply, with whatever effects on the academic climates of the colleges. For the dropouts, benefits from a brief stay would seem extremely doubtful.

If substantially larger proportions of nonpreparatory students were to enter 2-year colleges under open enrollment, we would simply expect about 3 in 4 to drop without transferring or completing the 2-year program. The net effect would be to raise the current 64% dropout rate at these schools to appreciably more than 2 in 3 of all entrants.

Other Variables and Junior College Dropout

We found the very high dropout rate for noncollege preparatory students at 2-year colleges rather surprising. Presumably these colleges are designed to salvage this type of student. We therefore asked whether non-preparatory 2-year dropouts possess other unfavorable academic characteristics which might lead to dropout--or does dropout relate to financial or other components of socio-economic status? Very briefly, none of the seven other student characteristics tabulated, whether academic or socio-economic, had a statistically significant relationship to 2-year dropout. In contract, the high school curriculum was associated with 2-year college dropout at the .01 (chi square) probability level--a very strong relationship, given the small size of the sample. We infer, then, that high school curricular choice, though considerably related to ability and class, nevertheless reflects underlying personal attributes and predispositions, quite apart from income, class, and ability.

Grade and Academic Self-image Relative to Classmates in High School and College

Overall, grades in high school and college and the student's estimate of his brightness relative to high school and college classmates are strongly related to all aspects of post-high school behavior--college entrance, type of college entered, and continuation at college--with the exception of continuation at 2-year colleges. The student with poor marks at a 2-year college, for example, is about as likely to remain enrolled as a student with good marks.

<u>College entrance</u>. The grade and self-image variables are far less related to college entrance, however, than is the high school curriculum. College preparatory students are about three and a half times as likely to enter college as nonpreparatory ones. Students who think they are brighter than average in high school are about twice as likely as the pessimists to enter college. Students with better high school grades are about a third again as likely to enter college as students with poorer grades.

Type of college entered and 4-year college dropout. For type of college attended, however, and for the 4-year college continuation rate, average high school grade and academic self-image relative to high school classmates present roughly equal degrees of association.

Implications of the above findings. Many of the students for whom open enrollment programs are designed receive poor grades in high school. Most such students would have low self-images as well. Of all college entrants in the sample, 8 in 10 with better grades had better self-images and 7 in 10 with poorer grades had poorer selfimages. Since self-image is far more related to college entrance than grade, it would appear that liberalized college access for students with poorer grades might yield only modest increases in proportions entering. Major increases would probably stem from efforts to raise the confidence level of academically poorer high school graduates, whether by high school counselling, encouragement from colleges to apply, media emphasis on the availability of college, or other measures.

For those enrolled in a 4-year college both variables are about equally related to continuation. This would seem reasonable, since the college student is under pressure to earn reasonably adequate marks. Open enrollment, accordingly, though it might induce students with poor marks and/or poor self-images to enter college, might well find that large proportions of such students would drop. We argue as follows:

About half of the students had consistent grades and self-images in high school and college. Of this half, those with poorer grades and/or selfimages were particularly likely to drop from 4year schools. For the other half of the entrants, grades and/or self-images changed between high school and college, and the strong tendency was for depreciation for both variables--but especially so for self-image. Depreciation was strongly associated with dropout for both variables. Of all grade changes 63% were unfavorable, but of all self-image changes 86% were unfavorable. Presumably a student faces stronger competition, by and large, in college than in high school. Though some might manage to maintain acceptable grades by working harder, it would seem plausible that academic self-esteem would nevertheless suffer.

At 2-year colleges the lack of relevance of either high school or college grades or selfimages to dropout is itself not too relevant, given the extent of dropout at these schools, for whatever reasons.

Socio-economic Variables

<u>College entrance</u>. For college entrance all three socio-economic variables have strong and roughly equal relationships, but this relationship is not nearly as strong as for the high school curriculum, or even academic self-image in high school. For example, the difference in college entrance between students with family incomes of \$7,500 and over and those with under \$7,500 is 25 percentage points, whereas it is 38 percentage points between students with better and poorer self-images in high school, and 60 percentage points between college preparatory and non-preparatory students. Clearly the academic variables are more significant than the economic one for college entrance.

Further findings for family income. Apart from college entrance, family income has no apparent relationship to type of college attended, and no statistically significant relationship to retention at either 2- or 4-year colleges. It would seem that after the initial sorting of entrants and non-entrants by family income, most of those who do enter are able to finance college, and dropout or continuation are determined by non-financial factors. Apparently, then, continuation of low income college entrants, the likely entrants under open enrollment, would not be seriously threatened by inability to meet expenses, nor would increased student aid assure such continuation.

Occupation of head of the student's household and educational attainment of the student's father. It is important to note, however, that non-financial aspects of socio-economic status not only have statistically significant, and indeed strong, relationships to college entrance rates, but also to the dropout rate at 4-year colleges.

The occupation of the head of the student's household predicts college entrance about as well as family income. Roughly 7 in 10 white collar high school graduates entered college, whereas this was the case for only 4 in 10 graduates from blue collar backgrounds. For both occupation of head and educational attainment of father there are statistically significant relationships both to type of college attended and to continuation or dropout at 4-year colleges, in sharp contrast to the absence of such relationships for family income.

In sum, financial and non-financial indicators of socio-economic status are about equally and positively related to entering college, but only the non-financial elements have a significant positive relationship to attending a 4-year rather than a 2-year school, and to continuation in a senior college.

Implications of the above findings. Very simply, it would seem that financial liberalization of access to college might lead to some increase in proportions enrolling, though we doubt if the increase would be very large. For the less affluent entrant, however, increased student aid would not be likely to reduce the dropout rate appreciably. It would seem that it is the nonfinancial aspect of socio-economic status, including the educational tradition handed on from father to son, that most relates to continuation or dropout. To what extent open enrollment programs could develop effective means of countering the relationship between lower social class and a high incidence of college dropout we do not know, but it is nevertheless clear that the problem is a more complex one than if lack of money were the principal socio-economic determinant. Once again, assuring continuation in college appears appreciably more difficult than inducing more high school graduates to enter.

Policy Implications

Educators appear to have considerable awareness of the pivotal role of curricular choice for college entrance and for the type of college attended, but less awareness of its relationship to continuation or dropout from college. Nor do they seem to be aware of our inferential finding that it is not only the curriculum <u>per se</u> that determines post-high school behavior, but also, and perhaps more significantly, less understood and enduring social and psychological correlates of the curricular decision in the student's early teens.

It appears that advocates of limited access to senior colleges, but open enrollment at junior ones, are overly optimistic in their presumed belef that large proportions of non-college preparatory type students would survive at 2-year schools. If these students were admitted to more rigorous 4-year colleges they would be even less likely to survive. Furthermore, since at 2-year colleges academic performance and academic self-image bear virtually no relationship to retention or dropout, there is no particular reason to believe that supplementary or remedial academic assistance would appreciably reduce the dropout rate. There is more reason to believe that dropout might be reduced at 4-year colleges by academic assistance, since 4-year college retention appears to have a significant relationship to academic variables other than the high school curriculum.

In sum, we suggest that advocates of open enrollment, whether for 2-year or 4-year colleges, or both, must face the no doubt unpleasant possibility that the college careers of many of the target students would be brief. If open enrollment were to proceed rapidly without a full appraisal of this possibility, and without effective measures to assure continuation, disappointment and frustration consequent to widespread dropout might outweigh benefits for the students who would survive.

We suggest the advisability of open enrollment programs of limited size for the years immediately ahead, with extensive evaluation an essential feature of their design, and with options retained to modify such pilot programs, or even abandon them, should they fail to realize their objectives. Once widely adopted, an educational innovation such as open enrollment would be difficult to reverse, irrespective of its outcome for students and their colleges. Once conferred, it is politically awkward to withdraw egalitarian measures, which tend to be viewed almost immediately as inalienable rights.

We are not primarily concerned about more traditional open enrollment programs, such as the system which has pertained to California public higher education for many years. In that state all high school graduates have access to some sort of higher education, but the type of institution a student is eligible to enter depends upon his academic performance in high school. Rigorous academic requirements at the state university branches, and moderately rigorous ones at the state colleges, preserve the academic quality of these institutions, and assure that only students reasonably likely to survive enter them. Less able and/or less well prepared students enter public 2-year colleges, and if they do well have the option of transferring to senior ones. Even if the 2-year entrant drops after a couple of semesters, there is the strong possibility that he may benefit, occupationally and otherwise, from a program more commensurate with his academic capacity. There is considerable evidence that even limited exposure to 2-year terminal vocational courses represents an advantage for entry into a desirable job.

What we are most concerned about is the more recent version of open enrollment, whose advocates oppose the maintenance of elite. or even moderately selective, public colleges or universities. Irrespective of academic performance, it is claimed that all high school graduates should have access to the public college of first choice. however rigorous the program and unlikely the entrant's survival. For open enrollment of this sort, or approximations thereto, we foresee the waste, frustration, and demoralization consequent to frequent dropout, or else (and this we feel may be the more likely possibility) adulteration of the academic offering so as to accomodate the "high risk" student. If the latter were to occur, the damage would be sustained by the better students seeking rigorous training at formerly elite institutions, and by society in general, since it would lose the full measure of the able student's potential services. It is such open enrollment in all colleges, 4-year as well as 2-year, and academically rigorous as well as less rigorous, which we feel should be approached with extreme caution and subjected to scrupulous evaluation.

We conclude that the egalitarian impulse alone, however admirable, is insufficient justification for radical change in admission to higher education, and that open enrollment should stand or fall on the basis of demonstrable effects upon college and students.

Table 1. Post-high school behavior of 1966 high school graduates, as of Fall 1968, by academic characteristics of graduates

Post high-school behavior

Academic characteristics	All gradu No.	HS A ates e	All coll entrants %	All coll non- entrants %	All d entra No.	oll 4 ints c %	-yr 2011* %	2-yr coll** %	All co entran No.	11 ts Co %	ntd 1 %	Dropped %	All entr, No.	4-yr ants* %	Contd %	Dropped X	All entra No.	2-yr ants** (%	Contd D: %	ropped X
High school curriculum: College prep. All other All curr. Chi square	599 637 1236	100 100 100 p =/	84 24 53 <.001	16 76 47	501 153 654	100 100 100 p =4	81 50 74	19 50 26	501 153 654	100 100 100 p =<	74 41 67 .001	26 59 33	405 77 482	100 100 100 p =<	81 57 77 4.001	19 43 23	96 76 17 [,] 2	100 100 100 p =<.(45 25 36 01	55 75 64
Relative bright- ness in HS: Above average Av. or below All levels Chi square	505 741 1246	100 100 100 p =-	75 37 53 <.001	25 63 47	380 277 657	100 100 100 p =-	83 61 74 <.001	17 39 26	380 273 653	100 100 100 p =<	76 55 67 .001	24 45 33	317 169 486	100 100 100 p =<	84 66 77 4.001	16 34 23	63 108 171 Not	100 100 100 signific dire	38 35 36 cant, n ection	62 65 64 o clear
Average grade in HS: A or B Less than B All grades Chi square	546 701 1247	100 100 100 p =	62 46 53 <.001	38 54 47	340 319 659	100 100 100 p =-	87 60 74 <.001	13 40 26	340 319 659	100 100 100 p =<	77 55 67	23 45 33	296 191 487	100 100 100 p =-	84 68 77 <.001	16 32 23	44 128 172 Not	100 100 100 signific dire	34 37 36 cant, n ection	66 63 64 o clear
Relative bright- ness in college: Above average Av. or below All levels Chi square	Not applicable				224 431 655	100 100 100 p =-	81 70 74 <.01	19 30 26	224 431 655	100 100 100 p =<	80 60 67 .001	20 40 33	182 303 485	100 100 100 p =-	89 71 78 <.001	11 29 22	42 128 170 Not	100 100 100 signific dire	40 35 36 cant, n ection	60 65 64 o clear
Average grade in college: A or B Less than B All grades Chi square	Not	appl	icable		284 362 646	100 100 100 p =	81 70 74 < .01	19 30 26	284 362 646	100 100 100 p =<	80 58 68	20 42 32	229 252 481	100 100 100 p =-	89 68 78 .001	11 32 22	55 110 165 Not	100 100 100 signifi dir	40 36 38 cant, n ection	60 64 62 o clear

*Includes students who attended a 4-year college only and those who transferred to a 4-year college from a 2-year one. **Includes students who attended a 2-year college only and those who transferred to a 2-year college from a 4-year one. Table 2. Post-high school behavior of 1966 high school graduates, as of Fall 1968, by socio-economic characteristics of graduates

Post-high school	behavior
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Socio-economic <u>characteristics</u>	Al gra No.	1 HS duate	Al s en %	l coll trants %	All coll non- entrants %	All o entra No.	coll ants %	4-yr coll* %	2-yr coll** %	All c entra No.	coll ants Co %	ontd %	Dropped %	All enti No.	4-yr rants* %	Contd %	Dropped X	All a entra No.	2-yr ants** %	Contd %	Dropped X
Respondent's family income:	E / 7	1	00	65	25	250	100	76	95	25.0	100	60	21	26.0	100	70	01	00	100	30	61
97500 & over Under \$7500 All incomes	615 1162	10	00	40 52	60 48	246	100 100 100	73 74	25 27 26	246 604	100 100 100	69 60 66	31 40 34	179 447	100 100 100	79 73 75	21 27 25	67 157	100 100 100	39 25 33	75 67
Chi square	p =<.001				Not significant, no clear direction				p =<.05					Not significant, in expected direction				Almost .05, in expected direction			
Occupation of hea of household:	ad				<u></u>		1														
White collar	495	10	00	69 4 2	31	340	100	81	19	340	100	75	25	274	100	83	17	66	100	42	58
All occupations	3 124	1 10	00	53	47	654	100	74	26	654	100	67	33	482	100	70	23	172	100	36	64
Chi square p =<.001					p =<.001					p =<	.001	L		p =<	.001		Not significant, in expected direction				
Father's education:																					
College grad.	147	10	00	86	14	125	100	86	14	125	100	82	18	108	100	86	14	17	100	59	41
H.S.grad. Less than	134 338	10	00	72 59	28 41	199	100	09 74	26	199	100	64	37 36	147	100	72	28	52	100	43 29	57 71
H.S.grad.	507	1	00	35	65	178	100	66	34	178	100	56	44	118	100	71	29	60	100	28	72
AII levels Chi square	1126	10 P	=<.(53 001	4/	599	р =	/4 <.001	20	599	p =<	65 .001	35 L	440	p =<	.05	23	Not	signif: expecte	35 Lcant, ed dire	oc in ction

*Includes students who attended a 4-year college only and those who transferred to a 4-year college from a 2-year one. **Includes students who attended a 2-year college only and those who transferred to a 2-year college from a 4-year one.