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WHO GOES WHERE TO JUNIOR COLLEGE?

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Summary

For 102 two-year colleges, correlations were computed between student body characteristics and a factorially derived description of institutional environments. Student characteristics covary in interesting ways with the characteristics of the college environment; the pattern of variation is meaningful; and for the most part the pattern is consistent with the interpretation given the environmental measures in earlier studies. These conclusions are true only in a broad sense, however, for most of the correlations are moderate to low. Therefore, the environmental factor scores are not, and are not intended to be, a completely satisfactory substitute for a detailed description of the student body.

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American College Testing Program

Two-year colleges probably constitute the fastest growing segment of American higher education. Since 1961, nearly 200 two-year colleges have been established, and enrollment in two-year colleges has almost doubled (American Association of Junior Colleges, 1967). It has been estimated that by 1970 there will be 1000 two-year colleges enrolling nearly 2 million students. Moreover, a two-year college will be the first college attended by an increasing proportion of entering college freshmen.

The growing importance to American society of two-year colleges emphasizes the need for comprehensive information about these institutions. Although a sizeable body of literature has become available to meet this need (Clark, 1960; Gleazer, 1963; Medsker, 1960; Fields, 1962; Knoell & Medsker, 1964; Blocker, Plummer, & Richardson, 1965; Seibel, 1965; Richards, Rand, & Rand, 1965, 1966; Cooley, 1966; Hoyt & Munday, 1966; Collins, 1967; Alkin & Hendrix, 1967; Hendrix, 1967; Pace, 1967), many areas of comparative ignorance remain. The purpose of this study is to reduce this ignorance, thereby facilitating intelligent planning for two-year colleges. The specific area of concern is the allocation of students to and among two-year colleges. Although it is commonly assumed that two-year

colleges differ greatly in the kinds of students they enroll, very little information is actually available concerning what kind of student attends what kind of college. It should be recognized, of course, that many factors, including legal restrictions, affect student attendance at one two-year college rather than another so that the present study is descriptive, not prescriptive.

Our basic technique was to compute correlations between an "objective" description of two-year college environments and a comprehensive set of information about the entering classes of a sample of two-year colleges. The study, therefore, resembles Astin's (1965) earlier study of four-year colleges.

Procedure

Description of College Environments

In previous research on two-year college environments (Richards et al., 1966), 36 different characteristics of two-year colleges were identified. By means of factor analysis, the complex relationships among these 36 college characteristics were reduced to a limited number of categories that can be interpreted in terms of their underlying nature. Six such categories, or factors, were obtained and given names which seemed to reflect their general meaning: Cultural Affluence, Technological Specialization, Size, Age, Transfer Emphasis, and Business Orientation.

In a second study (Richards et al., 1965), multiple correlation

techniques were used to estimate scores on these factors for 581 accredited two-year colleges. Inspection of the high-scoring and low-scoring colleges on each factor suggested that it might be desirable to modify the interpretation of three of the six factors. Specifically, Private Control appears to be a more appropriate title than Cultural Affluence, Age might well be renamed Conventionalism, and High Cost would be more appropriate than Business Orientation.

The estimated factor scores for the colleges were converted to stanines (Guilford, 1956, p. 503),[1] which are normalized standard scores with a mean of 5 and a standard deviation of 1.96. These estimated factor scores organize the information currently available about two-year colleges into a brief profile. This brief profile can be used to characterize individual colleges or groups of colleges. In the present study, the factor scores for a sample of colleges were correlated with the characteristics of the same colleges' student bodies.

Measures of Student Characteristics

The data concerning the characteristics of entering students were obtained from the battery administered by the American College Testing Program in high schools to students applying to colleges

[1]A Xerox copy of the table showing the stanine score for each college on each factor is available for $1.00 from the Research and Development Division, American College Testing Program, Iowa City, Iowa 52240. Make checks payable to American College Testing Program.

using the ACT assessment. This battery provides a comprehensive set of information about each student: test scores, high school grades, special interests, campus needs, and non-classroom accomplishments. As part of its Class Profile Service (American College Testing Program, 1966), ACT provides summary statistics to colleges about the characteristics of its entering class on this comprehensive set of information. Information is provided both for "enrolled" students and for "non-enrolled" students; that is, those students who had ACT scores sent to that college but did not enroll. These summary statistics provide the basic data for this study. The specific pieces of information included are discussed below.

ACT Composite. The ACT test yields the following subtest scores: English, mathematics, social studies, and natural science. Each score is converted to a common scale with a mean of approximately 20 and a standard deviation of about 5 for college-bound high school seniors. The four subtest scores are averaged to yield a Composite score. The ACT test is a typical test of academic potential, with reliabilities and validities against grade criteria of the magnitude to be expected for such tests (American College Testing Program, 1965). Two scores were used for each college: the mean and the standard deviation on the ACT composite for its students.

High School Grades. As a regular part of the ACT procedure, persons taking the ACT battery are asked to report their most recent high school grades in each of four areas: English, mathematics, social studies, and natural science. Research by Davidsen (1963) indicates that such self-reported grades correspond closely to high school transcripts. A reanalysis of Davidsen's data yielded a correlation of .92 between student-reported and school-reported grades. A grade point average (GPA) is computed for each student by assigning scores to grades so that A = 4, B = 3, etc. The score for colleges is the mean high school GPA of its students.

Non-Academic Achievement Scales. A checklist of extra-curricular accomplishment in high school yields scores in the following areas: leadership, music, drama and speech, art, writing, and science. Each scale consists of eight items ranging from common and less important accomplishments to rarer and more important accomplishments. For example, science items include such accomplishments as "performed an independent scientific experiment" or "won a prize or award of any kind for scientific work or study." In general, the accomplishments involve public action or recognition so that, in principle, the accomplishments could be verified. The score on each scale for a student is simply the number of accomplishments he marks "yes, applies to me." Students with high scores on one or more of these simple scales

presumably have attained a high level of accomplishment which requires complex skills, long time persistence, or originality. The score for colleges in each area was the percent of its students with one or more accomplishments in that area.

Influences on Choice of College. Each student rated 27 kinds of influence according to how much each one had affected his choice of a college. Each item was rated on a three point scale ("of no importance," "a minor consideration," "a major consideration"). In an earlier study (Richards & Holland, 1966), factor analysis was used to reduce the complex interrelations among these items to a small number of categories. Four major areas of influence were found--intellectual emphasis, practicality, advice of others, and social emphasis.

In the present study, scores for each of these areas of influence were derived for each college by taking three influences with high loadings in that area and low loadings in the other areas, determining the percentage of students at that college citing each of the three as a major influence, and adding the percentages.

Educational Aspiration. Students report their educational aspiration by choosing one alternative from possibilities ranging from "less than a B.A." to "Ph. D." (or its equivalent). For the present study, student choices were grouped into three categories --"less than a B.A.," "B.A.," "More than a B.A." A college's

scores are simply the percent of students in each category.

Goals in Attending College. Students choose one of ten possibilities as their most important goal in attending. Because three goals account for the majority of student choices, the present study is restricted to these three. They are (1) to develop my mind and intellectual abilities, (2) to secure vocational or professional training, and (3) to earn a higher income. Scores for colleges are the percent of their students choosing each of these purposes as their primary goal in attending college.

Intended Major. Each student chooses his intended major from a list of possible majors that are grouped into nine broad areas: Social Science, Administration, Business, Agriculture, Medical, Arts and Humanities, Other, and Undecided.

Extracurricular Participation. Each student reports whether or not he expects to participate in each of nine extracurricular activities--intercollegiate athletics, intramural athletics, music, writing, student government, science clubs, debate, acting, and departmental clubs. College scores are the percent of students indicating that they do expect to participate in each of these activities.

Background Information. Students are asked several questions about their background. Two of these questions were included in the present study. The first question elicited information about the student's home community. Responses were classified into

three categories--farm, suburb, and central city. College scores are the percent of their students indicating a home community falling into each of these categories.

The second question inquired about the income of the student's family. Responses were classified into three categories: 0 - $7499, $7500 - 14999, and $15,000 and up. Students had the option of saying that they did not know this information or that they considered it confidential, and these two categories were also included in the analysis. College scores are the percent of students whose responses fall into each of these five categories.

Sample of Colleges

A sample of 102 two-year colleges was obtained by taking all colleges that (1) participated in the 1965 post-enrollment ACT Class Profile Service (American College Testing Program, 1966), and (2) were listed in the table of junior college factor scores. In order to know to what degree this sample of colleges represents two-year colleges in general, the means and standard deviations on the junior college factor scores were computed and are summarized in Table 1. The results indicate that the sample colleges are somewhat below average on Private Control and High Cost and somewhat above average on Technological Specialization, Size, Conventionalism, and Transfer Emphasis. The small size of these deviations from average suggests that our results are fairly repre-

sentative of the national population of two-year colleges.

Table 1

Means and Standard Deviations for a Sample of 102 Colleges on Junior College Factor Scores

	Mean	S. D.
Private Control (Cultural Affluence)	4.75	1.65
Tech. Specialization	5.15	1.42
Size	5.25	1.64
Conventionalism (Age)	5.18	2.11
Transfer Emphasis	5.50	1.65
High Cost (Business Orientation)	4.76	1.87

Results

We first computed the correlation between student characteristics and attendance at a two-year rather than a four-year college by combining the 102 two-year colleges with 179 four-year colleges participating in the ACT 1965 Class Profile Service. A score of 1 was given to each two-year college and a score of 0 to each four-year college so that the correlations are point biserials. The Pearson product-moment correlations between the junior college factor scores and the student characteristics for the 102 two-year colleges were computed next. Those correlations[2] are shown in

[2]These correlations were computed at the University of Utah Computer Center.

Table 2

Correlation of Attending Two-Year College and Junior College Factor Scores with Student Body Characteristics

		Factor Scores (N = 102)					
	Atdg. Two Year Coll.	Pri. Con. (Cult. Aff.)	Tech. Spec.	Size	Conven. (Age)	Trans. Emph.	H. Cost (Bus. Or.)
ACT Composite	(N = 281)						
Mean	-34	-09	19	10	-05	05	24
S. D.	29	-16	-02	20	01	21	-25
High School GPA							
Mean	-62	30	-39	05	40	-16	-25
Non-Class. Accomp.							
Science	-24	07	17	-31	03	-02	09
Art	00	-15	-03	10	-21	03	21
Writing	-52	14	-41	-30	17	-08	-12
Leadership	-52	30	-29	-36	31	-14	-23
Music	-39	20	-38	-14	25	-02	-28
Drama	-40	33	-37	-28	31	02	-31
Influ. on Choice of College							
Intell. Emph.	-47	25	-10	-14	13	00	28
Practicality	24	-59	18	14	-38	09	00
Advice of Others	16	-07	03	-23	-06	-18	-07
Social Emph.	-25	22	-15	-09	35	03	-17
Educ. Aspiration							
Less than B.A.	69	-11	-19	-05	18	-19	-34
B.A.	-29	-17	10	-07	-28	23	36
More than B.A.	-45	25	16	14	03	06	08
Primary Goal in Atdg. Coll.							
Develop Mind	-39	26	-21	22	08	06	37
Voc. Trng.	08	-04	13	20	03	-04	-17
Higher Inc.	49	-30	19	-07	-07	01	-21
Intnd. Major							
Soc. Sci.	-30	22	-44	-31	04	05	-02
Admin.	10	06	29	08	-11	02	31
Business	47	01	-23	01	02	-14	04
Science	-34	-12	21	-14	-10	10	06
Agric.	24	-14	48	05	01	-05	-18
Medical	-15	03	-08	34	07	02	01
Arts & Humanities	-32	-24	15	44	-09	00	04
Other	44	-14	11	36	-06	-08	03
Undecided	28	-08	09	-15	07	08	-21

Table 2 (cont.)

	Atdg. Two Year Coll.	Pri. Con. (Cult. Aff.)	Tech. Spec.	Size	Conven. (Age)	Trans. Emph.	H. Cost Bus. Or.
Extra-Curr. Plans							
Inter-Coll. Ath.	29	19	10	-22	-14	-05	23
Intra-Mural Ath.	00	19	19	-20	-07	-14	36
Music	-28	33	-54	-35	20	-09	-11
Writing	-28	16	-36	-26	05	02	04
Stu. Govern.	-46	45	-33	-40	17	-14	13
Science Clubs	-17	12	07	-21	12	-02	-01
Debate	-16	17	-22	-30	-04	-04	-04
Acting	-24	27	-44	-35	09	-08	-06
Dept. Clubs	-61	19	-25	-09	21	-03	04
Background							
Home Community							
Farm	14	18	-22	-29	33	-08	-49
Suburb	-06	-25	26	12	-31	06	59
Central City	-10	09	-03	27	-03	02	-10
Income							
0-7499	08	07	-23	-28	24	05	-33
7500-14999	02	-29	43	23	-39	03	48
15000 and up	-12	09	24	36	-08	07	15
Confidential	14	01	15	04	-14	-10	21
Don't Know	-11	22	-44	-08	24	-09	-26

Note.--Where N = 281, $r_{05} = .12$ and $r_{01} = .15$; where N = 102, $r_{05} = .20$ and $r_{01} = .25$. All decimal points have been omitted in table.

Table 2.

We also computed correlations[3] between the junior college scores--applying to a two-year college and six factor scores--and the characteristics of "non-enrolled" students, or students who had their scores sent to the college as part of their application but did not enroll. The pattern of correlations is quite similar to that shown in Table 2. These results strongly imply that the characteristics of a college's

[3]A table showing these correlations is presented in the Appendix.

student body are determined more by who applies than by the college's selection process.

Discussion

The results shown in Table 2 pertain to two questions: (1) Who goes to a two-year rather than a four-year college and (2) What kind of student goes to various types of two-year colleges? The results pertinent to the first of these questions show that students at two-year colleges tend to be less able academically than their peers in four-year colleges, both on the ACT test and on high school GPA. However, at two-year colleges students vary more in academic talent than do students at four-year colleges. These findings support earlier results (Seibel, 1965; Cooley, 1966; Hoyt & Munday, 1966). Students at two-year colleges also had fewer non-academic accomplishments (except in art) than did four-year college students. In short, two-year colleges tend to have less talented students than four-year colleges have, regardless of how talent is defined.

Students entering a junior college are influenced more by practical considerations and less by intellectual or social emphasis in choosing their college. Similarly, they are more concerned with the instrumental value of college for a higher income and less concerned with personal intellectual development. As we would expect, they tend to aspire to less than a B.A. degree and to reject

graduate training as a goal. Similarly, they intend to major in business, agriculture, or fields not included in a list more suitable for students at four-year colleges,[4] and they are less interested in the humanities, science, or the social sciences. Except for intercollegiate athletics, they have less expectation of participating in extracurricular activities. The exception may result, in part, from the growing tendency of four-year colleges to request academically marginal athletes to go to a two-year college for a year or two and then transfer to the four-year school.

To summarize this pattern, two-year colleges attract pragmatic students seeking vocational training; they are less attractive to talented students who are intellectually and academically oriented, who plan a degree in one of the traditional subject areas, and who expect to take part in a wide variety of activities in college. From this pattern one might guess that the student attending a two-year college is likely to be the first in his family to attend college and that for him college is primarily an instrument of social mobility.

We do not, however, intend a disparaging judgment of two-year colleges. Two-year colleges typically have different goals than four-year colleges, and these goals emphasize opportunity for all,

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[4]The list has been modified recently to include more fields suitable for students at two-year institutions.

technical preparation, and a diversity of subject matter. The characteristics of students attending two-year colleges are quite consistent with these goals. In other words, two-year colleges appear to be performing their intended function in American higher education rather well.

When only junior colleges are considered, a number of other findings emerge. The student attending a high scoring college on the Private Control Factor earned relatively high grades in high school and achieved in a number of non-academic areas. In choosing a college, he was more influenced by intellectual or social considerations and less by practical matters than other junior college students. He aspires to advanced training, hopes to develop his mind, and is less interested in higher income as a goal in attending college. He expects to participate in a number of extra-curricular activities. He is less likely to come from a suburb, or from a middle income background.

A similar pattern was found for the Conventionalism factor. Students at high scoring colleges on this factor also had high grades, had non-classroom accomplishments in a number of areas, and emphasized social considerations but deemphasized practical matters in choosing a college. Compared to students at colleges high on Private Control, however, they were more likely to come from a farm or low income background.

Some similarities to this pattern were also found for the High Cost factor. On this factor, however, students at high scoring colleges may be "underachievers," for they have higher ACT scores but lower grades. They also have fewer non-classroom accomplishments. Students at High Cost colleges emphasized intellectual considerations in choosing a college, aspired to more than a junior college degree, and hoped for intellectual development during college. Unlike students at schools high on Private Control or Conventionalism, however, they are more likely to be from a suburban, middle income background.

The overall description of students attending colleges high on one or more of these three factors has many similarities to the description of students attending four-year colleges. Colleges scoring high on these factors, therefore, may resemble four-year colleges more than do other two-year institutions.

The student attending colleges high on Technological Specialization is likely to have low grades and few non-classroom accomplishments. He puts less emphasis on intellectual development and has fewer expectations of extracurricular participation. He is more likely to plan to study administration, science, or agriculture and less likely to study social science or business. He is more likely to come from a suburb and less likely to come from a low income family. In short, he is pragmatically oriented and has little

interest in academic or cultural activities.

Large colleges have student bodies with more variability in academic potential and fewer non-classroom accomplishments than do other two-year colleges. Students are frequently concerned with intellectual development or vocational training, and they are less likely to have been influenced by advice in choosing their college. Students frequently plan to study medical fields, arts and humanities, or a field not included in the list of majors--no doubt, partly because such majors are provided more often at large schools. They are less likely to plan participation in extracurricular activities. This may be a realistic expectation related to the number of "behavioral settings" (Barker & Gump, 1964) available to individual students at big colleges. Finally, students are more likely to come from urban, relatively high income families.

The results for the Transfer Emphasis factor are somewhat disappointing because one might expect many significant correlations between this factor and some student characteristics. However, only two correlations greater than .20 were obtained, indicating that students at colleges with high scores on Transfer Emphasis vary more in academic potential and are more likely to aspire specifically to the B.A. degree than do students elsewhere. In the factor analysis, Transfer Emphasis was a well defined factor, but it involved transfer by <u>graduates</u> of high scoring colleges

rather than by entering students at the colleges. It may be, therefore, that the college experience is more important than student characteristics in determining transfer rates.

The overall results, then, indicate that student characteristics covary in interesting ways with the characteristics of the college environment; the pattern of variation is meaningful; and for the most part the pattern is consistent with the interpretation given the environmental measures in earlier studies. These conclusions are true only in a very broad sense, however, for the absolute magnitude of most of the correlations is moderate to low. Therefore, the environmental factor scores are not, and were not intended to be, a satisfactory substitute for a detailed description of the student body.

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APPENDIX

Table A

Correlation of Junior College Characteristics
with Student Body Characteristics for "Non-Enrolled" Students

		Factor Scores (N = 102)					
	Atdg. Two Year Coll.	Pri. Con. (Cult. Aff.)	Tech. Spec.	Size	Conven. (Age)	Trans. Emph.	H. Cost (Bus. Or.)
ACT Composite	(N = 281)						
Mean	-22	-08	16	02	-11	07	09
S. D.	12	-07	12	20	-07	07	11
High School GPA							
Mean	-54	-19	-31	-03	24	-01	-34
Non-Class. Accomp.							
Science	-19	09	17	-28	05	-07	09
Art	08	14	-09	09	-16	-04	33
Writing	-41	27	-44	-30	14	03	-20
Leadership	-48	33	-20	-32	26	-08	-25
Music	-26	23	-31	-11	13	-01	-20
Drama	-27	36	-42	-27	29	-02	-37
Influ. on Choice of College							
Intell. Emph.	-45	09	-08	-16	-04	00	13
Practicality	35	-47	22	08	-47	06	22
Advice of Others	02	-02	-08	-26	-04	-23	09
Social Emph.	-20	21	-01	-04	25	04	-14
Educ. Aspiration							
Less than B. A.	60	00	-28	-15	26	-12	-34
B. A.	-37	-08	17	-01	-26	14	33
More than B. A.	-39	05	19	21	-12	03	24
Primary Goal in Atdg. Coll.							
Develop Mind	-32	10	-11	-09	-10	08	27
Voc. Trng.	05	02	04	11	-02	-11	-06
Higher Inc.	39	-19	20	-04	13	11	-24
Intnd. Major							
Soc. Sci.	-34	14	-42	-25	-03	00	04
Admin.	09	-07	29	03	-22	08	40
Business	44	-01	-17	05	06	-09	03
Science	-34	-25	21	-06	-23	01	12
Agric.	20	00	45	01	03	-02	-12
Medical	-09	-02	01	23	03	-03	-10
Arts & Humanities	-18	03	-07	27	00	03	03
Other	49	-07	16	11	03	00	-06
Undecided	20	-12	00	-10	24	03	-35

Table A (cont.)

	Atdg. Two Year Coll.	Pri. Con. (Cult. Aff.)	Tech. Spec.	Size	Conven. (Age)	Trans. Emph.	H. Cost (Bus. Or.)
Extra-Curr. Plans							
Inter-Coll. Ath.	18	05	29	-12	-23	00	33
Intra-Mural Ath.	02	08	33	-13	-14	-07	45
Music	-25	25	-51	-31	13	14	-13
Writing	-22	13	-29	-16	-13	00	08
Stu. Govern.	-41	26	-32	-26	02	-11	16
Science Clubs	-16	16	14	-25	-04	-09	13
Debate	-11	09	-13	-29	-21	03	13
Acting	-17	22	-44	-25	08	-13	-03
Dept. Clubs	-49	26	-27	-01	25	-09	06
Background							
Home Community							
Farm	14	21	-19	-27	33	-07	-56
Suburb	-03	-25	20	07	-30	10	62
Central City	-22	05	-01	28	-07	01	-01
Income							
0-7499	00	04	-13	-23	09	01	-26
7500-14999	-02	-24	40	26	-29	10	50
15000 and up	-01	07	21	30	-08	13	27
Confidential	18	14	06	-07	-05	-13	17
Don't Know	-03	17	-45	-18	29	-14	-45

Note.--Where N = 281, r_{05} = .12 and r_{01} = .15; where N = 102, r_{05} = .20 and r_{01} = .25. All decimal places have been omitted in table.

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