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ABSTRACT

To examine the 2-year college environment, 1969-70 catalogs for 94 2-year colleges were studied. The number of faculty, courses, and degrees in various fields were classified into six types--Realistic, Intellectual, Social, Conventional, Artistic, and Enterprising--based on Holland's theory of vocational choice. The resulting profiles were analyzed in terms of three components: elevation, scatter, and shape. The faculty and curriculum profile are closely tied to psychological theory, are independent of student characteristics, appear to reveal differences among colleges in relative emphasis on subject matter areas, and are meaningfully related to other measures of the college environment. Therefore, such profiles appear promising for the study of 2-year college environments, and provide a common framework for studying 2-year and 4-year colleges. (Author/CA)

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How to characterize the environments of colleges has been a persistent problem in research on higher education. One approach measures college environments by scoring student responses to questionnaires. Pace and Stern used this approach when they developed the College Characteristics Index which views the environment in terms of need-press theory. Also, Pace later developed the College and University Environment Scales (CUES) which use five scales to assess the perceived atmosphere of colleges. Astin has used questionnaires in studies which view the college environment simply as a set of potential stimuli for students. Another approach is to factor analyze data obtained from compendia and other public records. This approach was used by Astin to study four-year colleges and by Richards, Rand, and Rand to study two-year colleges and medical colleges.

Still another way to describe college environments, developed by Astin and Holland, is the Environmental Assessment Technique (EAT) which attempts to assess the environment in terms of eight characteristics of the student body: size, average score on a college aptitude test, and six "personal orientations"--Realistic, Investigative, Social, Conventional, Enterprising, and Artistic--based on the proportion of graduates who majored in each of six areas of study. EAT is a direct outgrowth, of course, of Holland's theory of the relationship between personality and vocational choice.

Although it is moderately correlated with several other measures of college environment, EAT has been severely criticized on the grounds that it confounds environmental characteristics with student characteristics

and that last year's graduates cannot be the "environment" for this year's students. In response to these criticisms, Richards and Seligman modified EAT by classifying the faculty and curriculum, rather than graduates, into the six types. In separate studies of four-year undergraduate environments and of graduate school environments, the resulting measures were fairly reliable, independent of student characteristics and related in meaningful ways to other measures of college environments. Therefore, these techniques appear promising for the study of college environments.

A difficulty with many past studies of college environments, however, is that different procedures or data were used for two-year colleges, four-year colleges, and graduate institutions. Consequently, it has been difficult to study the entire spectrum of higher education in a common framework. Because it is closely tied to Holland's theory, this modification of EAT potentially could provide a common conceptual and empirical scheme for describing institutions of higher education at all levels. Accordingly, the purpose of the present study is to extend these techniques to the study of two-year colleges.

Method

The basic sources of data for this study were 1969-70 catalogs for 94 two-year colleges. This study was carried out as part of the continuing research program Project TALENT, a longitudinal study of the development of human abilities and the educational experiences which further or inhibit such development conducted by the American Institutes for Research. Accordingly, a request for a catalog was sent to every two-year college attended by 10 or more students in the combined 11th grade and 12th grade samples for Project TALENT, and 94 colleges responded to this request. Undoubtedly such a sampling procedure yields a group of colleges biased toward larger institutions. This is confirmed by the college means, shown in Table 1, on factor scores developed in an earlier study. However, these institutions should more nearly constitute a sample of colleges representative of students in two-year colleges.

The basic procedure was to count the number of courses and of faculty members falling into each of the six types in Holland's theory. In contrast to earlier studies of four-year colleges, all courses and faculty members were counted rather than selecting a few disciplines representative of each type. Also, data about degrees in various fields obtained from

U.S. Office of Education compendia were classified according to the six types. For the most part, the assignment of disciplines to types was based on Holland's empirical classification of occupations and major fields, but a few disciplines not included in his study had to be classified on the basis of his overall pattern of results. Scores for curriculum, faculty, and degrees were converted separately to normalized standard scores with a mean of 50 and a standard deviation of 10. To permit estimation of relative emphasis on each of the six types, the total distribution was transformed rather than making separate transformations for the six type distributions.

The six transformed scores for an individual college comprise a profile. Like all profiles, it can be analyzed most appropriately in terms of three components: elevation, scatter, and shape. Elevation is the average of the six scores comprising the profile. Here it mainly reflects the size of the college. In this study, the standard deviation of the profile scores measured scatter. Shape was measured by the six profile scores for a given college equated for mean and standard deviation.

Results and Discussion

The statistical analysis involved computation of type means and standard deviations for all colleges, and correlation of the faculty, curriculum, and degrees profile scores with each other and with environmental measures from an earlier factor analytic study.

Table 2 shows the college means for the faculty, curriculum, and degrees profiles. Both the original profiles and the 8 measures of elevation, scatter, and shape are shown. As might be expected, all profiles have high scores on the Social type. When the profiles are compared with each other, the faculty and curriculum place relatively more emphasis on the Investigative and Artistic types, while the students, as reflected in degrees, place relatively more emphasis on Realistic, Enterprising, and Conventional. (The curriculum, however, emphasizes Realistic more than does the faculty.) These findings should not be over interpreted. For example, it is uncertain to what extent students transfer to four-year colleges without receiving a degree from their two-year college and therefore without appearing in the Office of Education figures. Also, the profile for number of degree fields classified into the various types is similar to the profile for degrees.

Taken at face value, however, these results imply that two-year colleges are organized more in terms of academic values about what a college should be like rather than in terms of the students' predominant goals of obtaining practical vocational training. Perhaps this is related to the very high dropout rates in two-year colleges.

Table 3 shows the correlations between corresponding profile scores for faculty, curriculum, and degrees. These correlations were computed by a missing data computer program, so the degrees of freedom vary. In general, the correlations range from low to moderate, with correlations for the original profile generally being somewhat higher due to the influence of college size. These correlations suggest a moderate degree of consistency in the college environments, especially for the faculty and the curriculum. However, the results also suggest that it is important to explore such questions as the relative influence of the faculty culture vs. the student culture. In general, these correlations are lower than the corresponding correlations obtained previously in a similar study of four-year college environments.

Table 4 shows the correlations of the curriculum, faculty, and degrees profile scores with the factor environment scores computed by Richards, Rand, and Rand in their study of two-year college environments. It should be noted that profile scores transformed within colleges are ipsative, so the significance tests are not independent. In general, these correlations are consistent with the construct validity of the profile scores. The factor scores seem more correlated with profile scores for the curriculum and faculty than with profile scores for degrees. The overall pattern of correlations may reflect mainly contrasts between larger and smaller colleges and between colleges which do and do not offer technical training.

To summarize, the faculty and curriculum profiles are moderately consistent, are closely tied to psychological theory, are measured independently of student characteristics, are related in meaningful ways to other measures of the college environment, and appear to reveal differences among colleges in relative emphasis on various subject matter areas. Therefore, such profiles seem promising for the study of two-year colleges, and provide a common framework for studying two-year and four-year colleges.

TABLE 1

College Means and Standard Deviations on Factor Environment Measures

	Mean	S.D.
Private Control (Cultural Affluence)	4.53	1.59
Technological Specialization	5.36	1.57
Size	6.64	1.77
Conventionalism (Age)	4.41	1.91
Transfer Emphasis	5.13	2.04
High Cost (Business Orientation)	5.36	1.74

Note.--This table based on estimated factor scores expressed in stanines.

TABLE 2

Means and Standard Deviations
for Profile Scores

	Curriculum		Faculty		Degrees	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Original Profile						
Realistic	51.88	13.48	47.15	10.05	53.15	9.69
Investigative	50.27	5.08	52.75	6.80	44.09	5.97
Artistic	56.95	7.63	56.11	7.77	43.35	7.39
Social	55.94	7.76	57.70	8.03	58.51	7.81
Enterprising	44.78	5.75	47.49	6.76	52.99	8.51
Conventional	39.94	4.45	39.31	6.19	48.63	6.83
Transformed Profile						
Elevation	49.96	5.99	50.08	6.19	50.13	4.87
Scatter	8.34	6.61	7.38	2.22	7.71	2.41
Realistic	52.44	10.65	46.07	8.95	53.69	7.87
Investigative	50.67	4.26	53.52	3.43	42.02	6.72
Artistic	59.23	5.94	58.28	4.23	41.14	7.01
Social	57.85	4.53	60.50	3.62	61.36	6.26
Enterprising	42.97	4.35	46.27	4.53	53.63	7.87
Conventional	36.85	4.58	35.36	4.87	48.17	6.68

TABLE 3

Correlations Between Corresponding Profile Scores
for Curriculum, Faculty, and Degrees

	Curriculum vs. Faculty	Curriculum vs. Degrees	Faculty vs. Degrees
Original Profile			
Realistic	.82**	.68**	.80**
Investigative	.65**	.41**	.27*
Artistic	.64**	.40**	.42**
Social	.68**	.58**	.44**
Enterprising	.57**	.45**	.51**
Conventional	.53**	.52**	.36**
Transformed Profile			
Elevation	.68**	.62**	.60**
Scatter	.14	-.02	.43**
Realistic	.83**	.68**	.74**
Investigative	.57**	.28**	.26*
Artistic	.70**	.11	.12
Social	.51**	.40**	.51**
Enterprising	.34**	.22*	.32**
Conventional	.72**	.24*	.27*

*p <.05
**p <.01

TABLE 4

Correlations Between Profile Scores and Factor Measures of the College Environment

	Private Control	Technological Specialization	Size	Conventionalism	Transfer Emphasis	High Cost
Curriculum Profile						
Elevation	-33**	37**	70**	-15	09	-42**
Scatter	00	-03	24*	-06	17	-15
Realistic	-30**	58**	38**	08	-09	-55**
Investigative	10	03	-33**	03	04	41
Artistic	08	-40**	01	-05	43**	10
Social	07	-26*	00	-15	-02	20
Enterprising	19	-35**	-14	-06	-10	32**
Conventional	22*	-23*	-42**	06	-27*	22*
Faculty Profile						
Elevation	-35**	32**	61**	-32**	03	-07
Scatter	02	05	38**	-06	-18	29**
Realistic	-26*	63**	20	19	-31**	-45**
Investigative	06	03	00	07	36**	22*
Artistic	10	-54**	04	-13	42**	20
Social	04	-21	03	-23*	10	00
Enterprising	07	-26*	-22*	-06	-02	31**
Conventional	25*	-30**	-22*	-05	-14	18
Degrees Profile						
Elevation	-10	38**	48**	10	-30**	-20
Scatter	02	12	00	24*	-50**	00
Realistic	-26*	58**	16	19	-19	-37**
Investigative	09	-02	-18	17	00	09
Artistic	09	-05	12	-10	02	-07
Social	25*	-24*	-10	03	24*	05
Enterprising	-11	-21	12	-25*	-09	27
Conventional	01	-10	-17	-01	09	03

Note.--Decimals omitted.
*p <05
**p <01