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DIFFERENCES AMONG STUDENTS ENTERING, LEAVING, AND REMAINING IN AN ELEMENTARY EDUCATION PROGRAM.

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DIFFERENCES WERE INVESTIGATED IN APTITUDES, STUDY HABITS, AND VALUES AMONG FOUR CATEGORIES OF FEMALE ELEMENTARY EDUCATION MAJORS WHO WERE 1961 AND 1962 FRESHMAN MATRICULANTS AT THE UNIVERSITY OF DELAWARE. THE CATEGORIES WERE (1) EDUCATION MAJORS FROM MATRICULATION THROUGH GRADUATION (N 105), (2) EDUCATION MAJORS IN GOOD STANDING WHO WITHDREW (N 25), (3) EDUCATION GRADUATES WHO TRANSFERRED INTO EDUCATION AFTER MATRICULATION (N 34), AND (4) EDUCATION MATRICULANTS WHO GRADUATED IN ANOTHER MAJOR (N 25). COLLEGE ENTRANCE EXAMINATION BOARD VERBAL AND MATHEMATICAL APTITUDE (CEEB), THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES, THE BROWN-HOLTZMAN SURVEY OF STUDY HABITS AND ATTITUDES, HIGH SCHOOL CLASS RANK, AND PARENTS' EDUCATION WERE USED. NO SIGNIFICANT VALUE DIFFERENCES WERE FOUND AMONG THE GROUPS. HOWEVER, CEEB SCORES SHOWED THAT THOSE WHO LEFT SCHOOL (GROUP 2) TENDED TO HAVE LOW SCORES, THOSE WHO TRANSFERRED FROM EDUCATION TO ANOTHER MAJOR (GROUP 4) TENDED TO HAVE HIGH SCORES, WHILE THE SCORES OF THOSE WHO COMPLETED AN EDUCATION MAJOR (GROUPS 1 AND 3) TENDED TO FALL BETWEEN THE EXTREMES. ELEMENTARY EDUCATION STUDENTS WHO COMPLETED THE PROGRAM COULD BE DESCRIBED IN J.L. HOLLAND'S TERMS AS "SOCIAL," THAT IS, SOCIABLE, FEMININE, RELIGIOUS, AND VERBALLY SKILLED. THIS PAPER WAS PRESENTED AT THE 1967 ANNUAL MEETING OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (FEBRUARY 1967). (RP)

DIFFERENCES AMONG STUDENTS ENTERING, LEAVING, AND REMAINING IN AN ELEMENTARY EDUCATION PROGRAM

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This paper presents the results of a study that concerns itself with college students who at various times throughout their undergraduate years identified themselves as elementary-education majors. Specifically, our study was an attempt to determine what differences there were in aptitudes, study habits, and values among four categories of female elementary-education majors. These four groups were made up of: students who began and completed their undergraduate degrees as elementary-education majors (Education); students who began as elementary-education majors and who were in good academic standing, but withdrew from college (Withdraw); students who began college as non-education majors, but who transferred to elementary education (transfer in); and students who began as elementary-education majors, but transferred to a non-education curriculum (transfer out).

The importance of the problem and its implications, of course, are not new. Well over a half century ago, Coffman reflecting the naivete of his era stated:

> The kind of people we have in teaching necessarily affects the kind of teaching we get.... If we knew the class of people which is contributing the teachers, its fecundity, its ambitions and its outlook, its possibilities for refinement, for culture, and for personal improvement, we could, with the aid of modern science, tell something of the intellectual grade of people we are getting, (Coffman, 1911; italics added)

After fifty years of "modern science," the problem apparently still is with us. Getzels and Jackson (1963) cautiously note that "there has always been a concern with the personal qualities of teachers, and recently this concern has become the basis for a growing body of research."

The citation of a few of these studies on characteristics of teacher-education students will be sufficient to indicate why caution is necessary.

Rosenberg (1957) reported that persons in education who are high on a scale of people-oriented values are three times more likely to remain in the field than those who are high on non-people-oriented values. If one accepts the checking of such questionnaire items as "interest in children" and "desire to work with children" as people-oriented responses, the findings of Jantzen (1959) and Fox (1961) are consistent with those of Rosenberg. But another reason which is checked on questionnaires as often as the "interest-in-children" type of response is the need for "security" or the economic reason. Studies by Statler (1959), Haubrich (1960) and Cook (1961) all report such findings. Perhaps, pertinent at this point is Lang's (1960) conclusion that teachers (like most other people), when asked about the motivating factors in their career decision, tend to rate socially acceptable reasons as most influential and socially unacceptable reasons as least influential.

Two studies are particularly relevant to our research. Seagoe (1945) looked at students who completed an education degree and at those who dropped the program. She found no differences in the values and in the intelligence of these students.

Much more recently, Durflinger (1963) studied the academic and personality differences of women students who complete their teacher training and of those who express interest in teaching at some point

in their college careers, but do not complete the teacher training program. Students who were dropped from the program had significantly higher aptitude than the education students. Durflinger also felt that the women elementary-education majors had more desirable personality traits, even though the differences seldom were statistically significant. A point of special interest is his finding that women students who were in good academic standing, but withdrew from the university, reflected a lower level of educational background on the Iowa Tests of Educational Development than did the elementary credential students. We shall refer again to Durflinger's study later.

Like Durflinger, we in our study were not so much concerned with the reasons given for entering or leaving teaching, but rather in the relative values, study habits, aptitudes and other traits these various groups of individuals possessed.

Our sample was drawn from female students originally matriculating at the University of Delaware in 1961 (Class of 1965) and 1962 (Class of 1966). Persons transferring from other institutions and persons re-classified downward into another graduating class were not included. Also for this study we were not concerned with students who were dropped for academic deficiencies. The very fact that these students were dropped was in itself an indication that they belonged to a different academic population. Our analysis of scholastic ability and other data revealed highly significant differences ($p < .01$) when the dropped group was compared to the others. Interestingly enough, no significant differences in values were found. In sum, we focused on four types of female students

who came into contact with the elementary-education program. Two of these groups ended up as graduates of the program (Education and Transfer in) and two ended up elsewhere (Withdraw and Transfer out). The total number for each category was: Education, 105; Withdraw, 25; Transfer in, 34; and Transfer out, 25.

Data from the following tests were used for the analyses: the Verbal Aptitude Test (VAT) and the Mathematical Aptitude Test (MAT) of the College Entrance Examination Board; the Allport-Vernon-Lindzey Study of Values which yields scores on Theoretical, Economic, Aesthetic, Social, Political and Religious values; and the Brown-Holtzman Survey of Study Habits and Attitudes. The aptitude test scores date back to the senior year in high school. The other tests were taken during the latter half of the sophomore year of college. A summary of the performance for each group on all the tests appears in Table 1. In addition to the test data we were able to compare the four samples of students on other variables, which we will discuss presently.

For each set of test scores we did a simple analysis of variance, the data for which appear in Table 2 and Table 3. Only the F ratio for the Mathematical Aptitude Test indicates a significant difference among the four groups.

The data from Tables 1, 2 and 3 suggest that students who declare themselves as elementary-education majors at some point in their college careers are remarkably similar in the values they profess to hold. In order to determine just how much the four groups are in agreement, we calculated

the coefficient of concordance (ranking across values) and found it to be .76, which is significant at the .01 level.

For the MAT data in Table 2, we did a posteriori comparison following Scheffe's method between all pairs of means. The significant differences are between the Education and Withdraw groups ($p < .10$) and the Withdraw and Transfer out group ($p < .01$).

Of course, the thought did occur to us that the MAT data might be just one of those quirks that turn up when a number of comparisons are made. Hence, we decided to look further at the background of these students. Tables 4 and 5 describe respectively the distribution of high-school class ranks and the educational level of the mothers and fathers of each of the four categories.

The data were originally reported more precisely than the tables show, but were combined to test for the significance of differences among the four categories. All of the chi-square values in Tables 4 and 5 are significant and indicate that the category of elementary-education student is not independent of high-school rank or parents' levels of education. In each case it is the Withdraw group that makes the greatest contribution to the total chi-square value. These data on the Withdraw students are consistent with Durflinger's findings on the student who drops voluntarily from college. It would appear that such students, although not in any academic trouble, have neither the academic background nor the environment to facilitate their overcoming the tasks confronting them in college.

When taken in their entirety, the results of this study suggest that a group that is rather homogeneous in values becomes also quite homogeneous in other respects in the process of attaining the degree in elementary education. In other words, as students enter and leave the elementary education program, the ones who leave elementary education are the least and most able with respect to aptitude.

One final observation seems relevant at this point. Holland (1962) in his theory of vocational choice has stated that a person, when deciding about a vocation, looks for those environments which are congruent with his personal orientation. According to his theory, teachers best fit a model type he calls "social." The "social" type is "sociable, responsible, feminine, humanistic, religious; needs attention, has verbal and interpersonal skills; avoids intellectual problem solving, physical activity, and highly ordered activities." Holland's description of his "social" model could quite readily summarize the data of this study. The elementary education students who completed the degree program (Education and Transfer in) could, without stretching the meaning of our data, be described as sociable, feminine, religious, and verbally skilled, to say the least.

TABLE 1

Means and Standard Deviations on VAT, MAT
SSHA and Study of Values for Four
Categories of Elementary Education Students

Test	Category							
	Education		Withdraw		Transfer in		Transfer out	
	M	s	M	s	M	s	M	s
VAT	503.4	76.0	497.2	105.5	499.7	83.9	532.3	99.5
MAT	499.8	83.8	440.3	90.2	494.3	88.7	547.3	76.8
SSHA	37.6	8.1	36.1	10.7	39.4	7.1	37.9	8.6
Study of Values								
Theoretical	36.3	6.4	34.1	4.4	37.2	7.2	35.3	6.0
Economic	38.4	7.3	37.3	5.2	36.9	5.9	35.1	7.6
Aesthetic	38.0	7.6	37.8	6.8	39.8	8.9	42.1	6.8
Social	42.1	6.3	41.9	6.2	42.8	6.4	40.8	8.9
Political	38.7	5.9	39.2	6.7	36.7	6.6	40.3	6.0
Religious	46.5	7.7	49.7	6.7	45.6	10.5	46.1	10.6

Table 2

Analysis of Variance for VAT,
MAT and SSHA for Four
Categories of Elementary Education Students

Test	Source of Variation	Sum of Squares	Degrees of freedom	Variance estimate	F
VAT	Between	16,498	3	5,449.3	0.76
	Within	1,043,629	146	7,148.1	
	Total	1,060,127	149		
MAT	Between	102,628	3	34,209.3	4.76*
	Within	1,048,880	146	7,184.2	
	Total	1,151,508	149		
SSHA	Between	147	3	49.00	0.69
	Within	12,065	169	71.39	
	Total	12,212	172		

* $p < .01$

TABLE 3

Analysis of Variance for Study of Values Scores for Four Categories of Elementary Education Students

Score	Source of variation	Sum of squares	Degrees of freedom	Variance estimate	F
Theoretical	Between	146	3	48.7	1.20
	Within	6644	164	40.5	
	Total	6790	167		
Economic	Between	208	3	69.3	1.48
	Within	7671	164	46.8	
	Total	7879	167		
Aesthetic	Between	345	3	115.0	1.94
	Within	9716	164	59.2	
	Total	10061	167		
Social	Between	53	3	17.7	0.40
	Within	7,320	164	44.6	
	Total	7,373	167		
Political	Between	177	3	59.0	1.59
	Within	6,103	164	37.2	
	Total	6,280	167		
Religious	Between	232	3	77.3	1.06
	Within	11,983	164	73.1	
	Total	12,215	167		

TABLE 4

Frequencies of High-School Class Ranks for Four Categories of Elementary Education Students

Category	High-School class Rank Stanine 1-3	4-6	7-9
Education	6	69	29
Withdraw	9	13	3
Transfer in	2	25	7
Transfer out	3	8	13

Chi square = 39.37
$p < .001$

TABLE 5

Frequencies for Four Categories of Elementary Education Students Classified by Educational Level of Mother and Father

Category	Mother's Education		Father's Education	
	High school or less	Post High school	High school or less	Post High school
Education	56	42	49	45
Withdraw	18	2	17	4
Transfer in	13	18	11	18
Transfer out	10	10	9	11

Chi square = 12.14
$p < .01$

Chi square = 9.77
$p < .05$

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