FACTORS RELATED TO SCHOOL RETENTION*

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RESUMEN

Examínanse en este estudio los factores demográficos y sociales y las aptitudes relacionados con la retención escolar. A los 5 y 6 años de edad (edad preobligatoria), las diferenciales según el ingreso, la educación de los padres y la residencia urbana o rural son substanciales. En la medida en que la asistencia a temprana edad contribuye éxito posterior en la escuela, tales diferenciales son importantes. Entre los 7 y los 16 años (edad de la enseñanza obligatoria), los diferenciales son pequeños, pues la matrícula es alta en todos los grupos. Los factores socio-económicos (ingreso, ocupación y educación de los padres) predominan a esta edad, correspondiéndoles la mayor parte de la variación según la residencia y la raza. La mayor baja en la asistencia ocurre al comienzo de la escuela. La aptitud y el status socio-económico son factores determinantes importantes de la asistencia a la escuela, como lo eran antes la planificación y la matrícula en el programa de la escuela superior.

El sexo, el color y la residencia tienen únicamente una influencia modesta en la asistencia a la escuela, independiente de su asociación con la aptitud y el status socio-económico. Existen diferenciales substanciales entre los estudiantes que asisten a los colegios de adolescentes y a los otros colegios en cuanto a aptitud y posición socio-económica. Los cambios de los diferenciales en el tiempo son importantes, pero no pueden medirse con los datos censales disponibles.

The ability of a nation to increase its scientific and technological capacity, raise its standard of living, and provide the basis for participation of the population in the affairs of the country and its communities is closely related to the development of its educational system and to the opportunity for individuals to continue their schooling to levels adequate for their needs and desires. In the United States, the educational system has developed to the point at which these abilities are essentially met; but not all young persons persist in their schooling to the same educational level, and school retention rates are found to vary for different segments of the population.

The purpose of the present paper is to examine some of the demographic and social factors related to the school retention of children and youth in the United States to older ages and higher educational levels. We shall direct our analysis to answering the questions, "What are some of the factors which are significantly associated with school retention?" and "Is the relative importance of these factors constant with progression through the school system?"

Data on which the analysis is based come principally from the decennial censuses and sample surveys of the Bureau of the Census.[1] These sources provide much of the information needed to answer the questions raised. In order to complete the picture, however, information has been drawn from a few other sources as well. The comparability of these several sets of data is sufficiently close to warrant treatment of them as a unified set of statistics. However, because of some qualifications, the results are offered as indications of general tendencies rather than as definitive patterns of selective retention.

Table 1 illustrates the pattern of school retention for a cohort of youths of high school graduation age in 1960, that is, a cohort born in the early years of World War II whose members, if they were to progress in school according to the ideal timetable, would have graduated from college in the summer of 1964. The enroll-

* This article is a condensed version of a chapter in the authors' 1960 Census monograph, *Education of the American Population.*

[1] The Census Bureau data used in this article come from the following sources: 1960 Census of Population, PC(2)-5A, *School Enrollment;* Series Census-ERS (P-27), Nos. 30 and 32; and unpublished tabulations from the 1960 special study of factors related to college attendance.

ment data refer to the fall of the year; figures as of the spring would tend to be lower because of school-year attrition. Also, the data are for the noninstitutional population. Nearly all of this cohort were in school at compulsory ages. About 70 percent finished high school; 29 percent started college immediately; and 12–16 percent is expected to finish college.

In analyzing the factors related to school retention, we shall restrict our discussion to just a few critical points along the education continuum, and we shall deal with cross-sectional rather than cohort data, since that is all that is available. The critical points examined include the beginning of school, the years of compulsory attendance, high school graduation, college entrance, and college graduation.

BEGINNING SCHOOL AGES

If one regards kindergarten as an integral part of the school system, which both the U.S. Office of Education and Census Bureau do, then entrance into school in 1960 was first sizable at age 5, a precompulsory school age. About two-thirds of this age group was attending in the fall of 1960. Despite the improvement over the cohort born thirteen years earlier, as shown in Table 1, a large percentage was not enrolled. Furthermore, there was considerable variability among population groups in the percent of five-year-olds enrolled. For example, looking at census data which are as of the spring, only 17 percent of farm Negroes at age 5 was in school, yet 73 percent of 5-year-old Oriental children in large cities was enrolled. Type of residence, socio-economic status, and ethnic status each seemed to exert an independent effect on beginning enrollments; that is, variations in enrollment at age 5 could be observed for each variable when the effects of the other variables were controlled.

Residential variations in school organizations are considerable, and the relative availability of kindergartens is a case in point. Although the kindergarten movement has spread from urban to rural areas, in 1960 about one-half of the five-year-olds in suburban areas but only one-sixth on farms went to kindergartens. At the same time, enrollment of children age 5 in elementary schools, though accounting for only a small part of enrollment at this age, was higher in farm than in urban areas, presumably because the parents of farm children did not have the option available to parents of urban children of first enrolling them in a kindergarten. Residential differences in enrollment rates of five year-olds were found not only for

Table 1.—ESTIMATED SCHOOL RETENTION RATES OF A COHORT OF YOUTHS OF HIGH SCHOOL GRADUATION AGE IN 1960

Out of a group of 100 youths of high school graduation age in 1960--about

53 were enrolled at age 5
96 were enrolled at age 6
99 were enrolled at ages 7 to 13
97 were enrolled at ages 14 and 15
80 became high school seniors
70 graduated from high school
29 started college after graduation
39 will have eventually started college
12-16 will graduate from college
4-8 will attend graduate or professional school

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 110; U.S. Bureau of the Census and Economic Research Service, Department of Agriculture, Farm Population, Series Census ERS- (P-27), No. 32; U.S. Bureau of the Census, 1960 Census of Population, Supplementary Reports, PC (S1)-37; and estimates.

the population as a whole but for ethnic groups and within socio-economic classes as well.

Examination of the same type of data for socio-economic categories of the population likewise shows differences, and these differences were maintained in each residence category. Among children at age 5 whose parents lacked an eighth-grade education and whose families had less than $3,000 annual income, about 23 percent was in school, as compared with 57 percent of those where the parent was a high-school graduate and the family income was at least $7,000. Both parental education and family income independently affected enrollment; that is, when either the education or income factor was held constant, variations in the enrollment rate by the other factor could still be observed.

Given the census data, one can only speculate about the way in which socio-economic factors operate to affect the enrollment rate at age five. Better-educated parents presumably are more likely to place a high value on education and to want their children to start school as early as possible. Parents from the higher economic strata are in a better position than those from the lower strata to carry out intentions of placing their children in school early, since some want to send their children to costly private schools and even those content to send their children to public schools must face certain costs, if nothing more than those related to having the children reasonably well-dressed and well-groomed when they go to school.

Ethnic background also appears to be an important correlate of enrollment rates at age five, seemingly an indication of the importance of cultural factors in accounting for unequal school-beginning rates. Differential enrollment rates by ethnic status were not, however, as great in large urban areas as in other parts of the country, and what meager data are available suggest that socio-economic factors explain a great part of the ethnic variations in enrollment of five-year-olds.

In view of the evidence that kindergarten experience can be a valuable preparation for school among children from culturally deprived backgrounds,[2] it appears that differential enrollment of youths in kindergarten penalizes those who need it most. If kindergarten can be important in determining future success in school for children from culturally deprived backgrounds, then the large differentials at these early ages cannot be considered as simply as a question of when youth with various backgrounds start to school.

COMPULSORY SCHOOL AGES

As children reach the ages at which school attendance is compulsory in nearly all states (most commonly ages 7 to 16), enrollment rates rise, and, while the traditional enrollment differentials persist, they are narrowed considerably. At the younger compulsory ages, for the most part, only the mentally and physically handicapped are not found in school. At age 8 in 1960, for example (and here again the data refer to the spring of the year), 98 percent of native white children and 93 percent of American Indian children were enrolled in school. Likewise, of those in the 7-to-9-year age range, 99 percent in the highest socio-economic category and 95 percent in the lowest category (that is, where parents lacked an eighth-grade education and family income was under $3,000) were attending school. At the older compulsory ages, some of the enrollment differentials were wider but were still not great. Among different ethnic groups at ages 14 and 15 in 1960, for instance, 95 percent of native white children (the highest rate) and 90 percent of Indian children (the lowest rate) were attending school, similar to the differential at younger ages. But among socio-economic

[2] B. L. Wellman, "IQ Changes of Preschool and Nonpreschool Groups during the Preschool Years: A Summary of the Literature," *Journal of Psychology*, XX 1945, pp. 347–68.

classes, the differential was definitely wider. About 98 percent in the highest category was still enrolled, as compared with 87 percent in the lowest category. Socio-economic factors predominated at these ages, accounting for most of the variation by residence and ethnic status. Perhaps the more important fact, however, was that, despite the differentials at these ages, the enrollment rate was generally high for even the most deprived classes of the population. This situation is not found in many developed nations of western Europe, much less in other parts of the world.

HIGH SCHOOL GRADUATION

Although exceedingly high proportions of youths continue in school beyond the ages of compulsory attendance, it is at these ages that young persons first drop out of school in large numbers. As a consequence, two out of every ten youths of an eligible age do not reach the senior year of high school, and another of the ten, who does become a senior, fails to graduate. From the point of view of educational requirements for job placement, to what age a youngster continues in school is not nearly so important as how far he advances in the school system and, particularly, whether or not he finishes high school.

Continuation in school to completion of the secondary level varies very little among the sexes and residence groups, although it tends slightly to favor girls and youths in urban areas. Significant differences are found, however, among color, socio-economic, and ability groups. Nearly three-fourths of white youths, but only one-half of nonwhite youths, of high school graduation age in 1960 had completed their secondary schooling. Almost four-fifths of those from families in the $5,000 and over income bracket, but only half from families with less than $3,000 annual income, were high school graduates. And over 90 percent of the young persons with above-average IQ's, but only half with below-average measured intelligence levels, had continued in school to graduation.

Data are not available which would indicate the relative contribution of these factors to retention from the end of the compulsory age range to high school graduation, but such sparse data as are available from the Bureau's survey on retention from the beginning of the senior year of high school to graduation show that variations in ability, as measured by IQ tests, explain most of the variability in completion of high school by seniors and that differentials by social status and color can be accounted for, in large part, by measured differences in ability.[3] This finding may not be too surprising when one considers, first, that a high proportion of high school seniors who do not graduate is persons who continue through the last school year only to fail final examinations and, second, that nonwhites who do not finish high school tend to leave school at earlier ages and grades than do whites, resulting in a select group of nonwhites who reach the senior year of high school. Nevertheless, since dropping out or failing school occurs principally in the last few years of high school, and primarily in the senior year, the relative importance of factors mentioned before must indicate, to a large extent, the relative importance of factors affecting continuation through the last few years in high school.

COLLEGE ENTRANCE

While high school graduation has for some time been the national standard for adequate education and an increasing majority meets this standard, going on to college is still the practice of a minority, although it is a growing minority. College enrollment, involving as it does the payment of tuition even at public institutions and a quite different orientation to education than found at the lower school levels, represents a unique step up the educational ladder, and it might be expected to

[3] Series Census-ERS(P-27), No. 32.

be associated with a different set of individual characteristics than describes the high school graduate.

In fact, detailed analysis of the Census Bureau's 1960 survey indicates that basic demographic variables, such as sex, color, and residence, had only a modest relationship to college enrollment except as they were related to other variables, that ability and socio-economic background were associated at significant levels with enrolling in college, but that a more important factor was early preparation for college. Even among low-ability youths from working-class families, a high percentage of those who had adopted a college-preparatory curriculum in high school went to college, as compared to a low percentage of those whose high school programs were not college-oriented.[4]

It would seem, therefore, that one's chances of going to college are greatly enhanced by, if indeed they do not require, early preparation. The admissions practices of most institutions of higher education call for certain courses in high school, and unless a student plans in the beginning high school years to take such courses he will find himself handicapped in trying to modify his program in the later years and will lack the requirements for college entrance. This fact helps explain the importance of the "social milieu" in which a child is reared, apart from the family's socio-economic status—that is, parental attitudes toward further education and occupational achievement, the influence of teachers and the school environment, and the motivations of the child himself as they are conditioned by his social contacts, relative success in school, and the media of mass communication.

One relatively new and increasingly important source of variation in college attendance is the rapid development of systems of two-year colleges (generally called junior or community colleges) throughout the country. These schools tend to attract a student body which is characteristically different from that enrolling in four-year colleges. For example, data from the Bureau's survey prepared for a study by Jaffe show that, as compared with four-year college enrollees, two-year college enrollees are less likely to have had early plans for college attendance, are most likely to be from cities (where most two-year colleges are located), rank generally lower on measures of ability, and are more likely to be from working-class households.

These and other data suggest that the expansion of junior colleges may reduce ability and socio-economic differentials in college attendance by opening up college attendance opportunities to persons with more limited ability and economic status. They also indicate the advisability of separating two-year and four-year colleges in statistical analysis of college attendance and of dealing with junior college as a unique step in the education continuum.

COLLEGE GRADUATION

A great deal of selection continues to take place as college students move toward the goal of graduation. A study by Wolfle provided some evidence that the influence of socio-economic status on persistence in school almost vanishes in the pursuit of a degree by college entrants but that ability is a sharp differentiator of which students who began college com-

[4] A number of sample studies in individual states among selected groups tends to confirm the importance of academic ability (either class standing or I.Q. test results) and socio-economic status as important determinants of college attendance. Each of the studies found a moderate to strong association between ability and college attendance.

Not all studies confirm the central importance of high school curriculum in determining college attendance, but those which do explore this variable indicate that it is of some importance. These studies indicate that choice of curriculum is also associated significantly with student ability. See Robert H. Beezer and Howard F. Hjelm, *Factors Related to College Attendance* ("U.S. Office of Education Cooperative Research Monograph No. 8," 1961).

plete it.[5] A Census Bureau survey found additionally that many boys who dropped out of college left for financial reasons, that others left because of poor grades or loss of interest, and that some left for military service. Most girls who dropped out left to get married and work or raise a family, and some left because of financial considerations, scholastic deficiencies, or loss of interest in a college education.[6] The independence of some of these factors was not clearly determined, however.

SUMMARY

The foregoing analysis leads to several important generalizations about factors related to school retention.

1. As summarized in Table 2, the relative importance of factors associated with entrance into, and continuation in, school varies along points of the education continuum. The independent effects on school retention of sex and ethnic status tend to be small at all school levels, even though males are more likely to attend college and graduate from it than are women, and ethnic differences in retention are substantial at the lower points of the continuum. The independent effects of urban-rural residence stand out at the beginning school ages, but such differences by residence as appear at more advanced educational levels can be explained by other factors. Socio-economic status has a small to moderate independent effect at all points along the continuum, but its strongest effect is probably at college entrance. Ability is an exceedingly important factor after compulsory school ages and is the principal factor related to graduation from high school and from college. Advance planning is an especially important determinant of who goes to college. Numerous other factors, such as motivations, financial means, and the "social milieu" in which a person is reared, would seem to affect independently entrance into and completion of college. At any rate, the relative importance of the several vari-

[5] Dael Wolfle, *America's Resources of Specialized Talent* (New York: Harper & Bros., 1954).

[6] Series Census-ERS(P-27), No. 30.

Table 2.—INDEPENDENT EFFECTS OF SEVERAL VARIABLES ON RETENTION IN SCHOOL, ABOUT 1960

Factor	Enrollment at age 5	Enrollment at compulsory ages	High school graduation	College entrance	College graduation
Sex.....	S	S	S	S	S
Color.....	S	S	S	S	S
Ethnic status.....	S	S	x	x	x
Residence.....	M	S	S	S	S
Ability.....	x	x	L	M	L
Socioeconomic status	M	M	S	M	S
Financial factors..	x	x	x	M	M
Advance planning....	x	x	x	L	x
Other factors.....	x	x	x	M	M

Note: Assignments of relative importance of factors refer to their measured independent effects and are approximate. Despite the measurement of independent effects, however, some factors still reflect the influence of other factors (e.g., measurement of ability in terms of IQ has been found to have a socioeconomic bias, and advance planning is affected by various personal and social factors).

ables does indeed change with progression through the school system.

2. However large or small the effects of different factors, these effects are additive in the sense that each increments the probability of persistence in school. For example, persons whose characteristics are all favorable with regard to continuation in school stand a better chance of moving on to a higher educational level than do persons who lack any of the favorable characteristics. Thus, at no point along the continuum can one or even a few factors account for all of the variability.

3. It is not possible to ascertain which factors are becoming more important and which are decreasing in importance as determinants of school attendance due to the absence of trend data. Periodic studies, such as those undertaken by the Census Bureau in 1959 and 1960, will be needed in order to trace these trends. Moreover, there have been sufficient sample surveys by the Census Bureau and others to establish the importance of a measure of ability as a determinant of persistence in school, particularly at the post-compulsory school ages. Future studies of persistence in school which do not use an ability measure as one of the important variables will be of limited value.

4. More than any other nation in the world, the United States offers unrestricted educational opportunities to all classes of the population. Further democratization of education in the future will necessarily occur primarily at the college level, since most people now remain through the precollege levels. This raises several questions. Will the increase in attendance at the college level be accompanied by a decline in the importance of socio-economic differentials? Will ability differentials become more or less important in determining future college attendance? Will differentials between types of colleges attended become greater than differentials in the personal characteristics of college and noncollege youth? What will be the joint effects of governmental assistance programs, modified institutional practices, new kinds of institutions, and changing public attitudes toward higher education on the strength of the variables affecting college attendance? We have sufficient information now from demographic studies to identify the variables and to construct predictive models of future attendance patterns. Because of the strong association of educational level with components of population change, demographers would do well to examine the trend and determinants of educational development for clues of demographic change.