

correlated with the quality of certain crucial inputs, one of which is the number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance. Also, superior school districts not only hire more specialists than do inferior ones, but they also hire better ones and, in general, they are rational and approximate a marginal calculus by using high-quality ingredients all around, i.e., the quality of none of the ingredients making for good education is far out of line.²³

As can be seen from table 14, the number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance has about doubled since the turn of the century.

TABLE 14.—*Total number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance in public primary and secondary schools, selected years, 1900-1958*

Number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance		Number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance		Number of principals, superintendents, and consultants per 1,000 pupils in average daily attendance	
Year:		Year—Con.		Year—Con.	
1900-----	¹ 1. 31	1930-----	1. 78	1950-----	2. 18
1902-----	¹ 1. 31	1932-----	¹ 1. 33	1952-----	¹ 2. 13
1910-----	¹ 1. 33	1940-----	1. 65	1954-----	2. 18
1913-----	¹ 1. 32	1942-----	¹ 1. 86	1956-----	2. 32
1920-----	1. 25	1946-----	¹ 1. 82	1958-----	2. 70
1922-----	¹ 1. 44	1948-----	¹ 2. 22		

¹ Estimate.

NOTE.—The estimates were made by extending the biennial survey data backward based on Stigler's study. Estimates for certain years was based on simple linear extrapolation. The number of consultants, superintendents, and principals was derived as a "residual" where data on total instruction staff and the number of teachers, librarians, and other nonsupervisory instruction staff were available.

Sources: U.S. Department of Health, Education, and Welfare, "Biennial Survey of Education in the U.S., 1954-56," ch. 2, table 1; George J. Stigler, "Employment and Compensation in Education," Occasional Paper 33, NBER, Inc. (1950).

At least in theory, there is a much superior approach to measuring scope and quality changes of public education. It involves comparing the students' achievement with their native ability. Specifically, a pupil's achievement test results obtained in high school could be compared with results of his IQ test taken early in his primary grade school days. One complicating element in this approach is that school districts do not have identical educational objectives. Furthermore, some schools consider it their task to prepare youngsters for college, while other schools, particularly those in rural America and to some extent in the core cities, have as their main objective the provision of vocational training. There can be no doubt that students will score differently on an achievement test depending upon the school's objective.

Implementation of this approach would require that all schools in the United States use the very same achievement and IQ tests and that they have done so for a long period of time. Since these requirements are not met, this method does not lend itself to practical application at the moment.

²³ The author is obliged to Prof. William Fellner, who pointed out these explicit assumptions.