



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1986 Volume V: The Measurement of Adolescents, II

Introduction

American education practice has recently been assailed from all sides—even from the center of the profession. Among the most persistent cries of woe have been claims of poor preparation in mathematics. Now, one may validly argue that *skill* in mathematical manipulation is more highly developed in other educational institutions but that the price paid in loss of imagination and independence may be too high for American schools to pay. Nonetheless, there are aspects of mathematical reasoning which are very nearly essential for an informed life in modern technological societies.

Close behind elementary arithmetic in the *Essential Category* of mathematical understanding lies Statistics. Or, to put the case more generally, the ability to evaluate evidence (particularly evidence cast in numerical form) and to draw sensible conclusions from the evidence is among the most valuable gifts the schools can offer young citizens. The seminar on adolescents and statistics, in both the Institute of 1985 and the Institute of 1986, was designed to move an inch or at least 2.539 mm toward preparing the gift.

The 1986 seminar of statistics and adolescents brought together five veterans of the preparatory course offered in the Institute of 1985 and a single newcomer. As a pedagogical procedure, a way of making a seminar comfortable for everyone and for creating a setting in which active exchange was common, the follow-up seminar passed with flying colors.

As in 1985, the seminar was dominated by two intentions—(1) to root each encounter with statistics in a problem of immediate interest or utility to the school student who was our ultimate audience and (2) to work very hard to keep the technical mathematics required at a minimum (in general, we made do with elementary arithmetic operations). It is interesting to note that we were able, across the two seminars, to study closely all the core ideas of descriptive statistics—probability, sampling, central tendency, dispersion measures, correlation, an introduction to regression, major graphing procedures—and the first level of inferential statistics—chi-squared, t-test, and an introduction to analysis of variance. A glance through the units prepared during both years will indicate that, for all our avoidance of technical hifalutin abstract examples, the *understanding* of significant statistical ideas is at a very high level indeed.

As always, each seminarist took a personal and particular attitude toward the preparation of a teaching unit. The units range from a strong emphasis on content about the problems of adolescents to almost solidly statistical units. We recommend them all to you.:

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