

**INTERPRETING RESULTS OF
SURVEYS OF STUDENTS' OPINIONS OF TEACHING**
(rev. January 1986)

This document is for people receiving results from computer processed surveys of students' opinions of teaching. After making some disclaimers, it describes the computer print-outs and explains how the computer program produces the information.

Disclaimers

The quality of the information found on the print-outs depends most importantly on the survey procedures employed to gather the data. The computer program will accept and process data from various forms of survey questionnaires, leaving the reliability and validity of survey techniques entirely at the discretion of users. Experience with surveys about teaching reveals that they are subject to risks of superficiality, bias, and error. Adherence to good survey procedures can minimize these risks. Otherwise, statistics coming from the computer are misleading. With regard to these matters, it would be informative to read "Administering Surveys of Students' Opinions of Teaching," by Donald R. South.

Many factors (e.g., types of courses, social characteristics of teachers and learners, rigorousness, and what not) partly determine the outcomes of any learning process and influence students' perceptions. The computer program is not designed to take such factors into account. Therefore, comparisons must be made with awareness that influences of extraneous factors may be anything but equal. It is unrealistic to expect that one can program controls in advance to achieve true comparability. Extraneous factors are difficult to anticipate and likely to be uniquely combined in various teaching situations. Hence, differences revealed by the computer program require interpretation by persons with knowledge of teaching situations. These statements warn against hasty and uninformed comparisons. On the other hand, experience demonstrates that surveys can yield valid results. In particular, teaching surveys can be repeated, permitting greater confidence about findings which persist even when teaching situations change.

Print-Outs for Teachers

Teachers receive three kinds of tables. The first kind is for individual classes. There will be one for each class in which a survey was administered. The title line of the table contains the title, "SURVEY OF STUDENTS' OPINIONS OF TEACHING," the form number assigned to the questionnaire, the year and quarter when the survey occurred, the course identification, and the name of the teacher. The name of the monitor, the person who administered the survey, appears just below the title. Results are displayed in columns. A column head tells what is found in each column. The numbers and labels for questionnaire items are listed to the far left of the table under "ASPECT OF TEACHING." Since there are only forty-four print positions available for printing item labels, longer items will have considerably abbreviated labels. Remember this when interpreting results. If there are no labels, it is probably because a copy of the questionnaire was not sent to the computing center to be entered into a file needed by the program to print labels. Some items toward the bottom of the table may lack labels for a different reason. These might be items added after the standard form of the questionnaire was sent to the computer center. This will always occur when individual teachers supply special items. It will be necessary to write in labels for these items.

By looking across a row of figures and letters to the right of an item label, one can see results for that item. These results include the number of raters, a percentaged frequency distribution, mean rating, proximate ratings, and relative concentrations.

NUMBER OF RATERS. This column shows (enclosed in parentheses) the number of students actually giving responses for the item.

RESPONSE DISTRIBUTION. These five columns present the percentaged frequency distribution. This shows the percentage of all raters giving each of the five possible responses (A, B, C, D, or E).

MEAN. The mean is the average for the distribution of responses, where A=100, B=75, C=50, D=25, and E=0.

PROXIMATE RATINGS. The five symbols, A, B, C, D, and E, are used to express "proximate ratings" for the mean (arithmetic average), the median (the value which divides the distribution between low and high halves), and the mode (the value(s) which occur(s) most often in the distribution). The symbols which appear indicate which of the five discrete points on the rating scale the measures of central tendency are nearest. They are called "proximate ratings," because they are only approximate. This permits rapid scanning of results to reveal relative strengths and weaknesses, and obviates poring over precise figures in search of notable differences.

RELATIVE CONCENTRATIONS. These three columns provide indications of how responses from this class compare with responses from other classes taught in your department, your college or division, and by all other users of the questionnaire throughout the University. This additional information can be useful, because students' responses to teaching questionnaires are usually skewed, with the bulk of the ratings occurring at the positive end of the evaluative scale. The first of the three columns refers to the department in which the class is taught. The second of the three columns refers to the college or division in which the course is taught. The third of the three columns refers to all users. The columns of "relative concentrations" show how each individual distribution compares with distributions of ratings given for a larger aggregate of data. Relative concentration means that the individual teacher's distribution of ratings shows a greater percentage of ratings at some value than occurs in the distribution to which it is being compared. Any relative concentration is indicated by the appearance of a corresponding symbol. For example, the appearance of the symbols, AB, under the column headed DEPARTMENT would indicate that the teacher received relatively more A's and B's and relatively fewer C's, D's, and E's than occur in the aggregated data for his/her department. Relative concentrations are omitted for extra items not on the list of labeled items.

After tables have been printed for all of a teacher's classes in a department, a summary table is printed for the teacher. This summary is based on the aggregate of data for all of the classes taught in the department by the teacher. This summary table is similar to the tables printed for individual classes. The title line for the summary table contains the title, "SURVEY OF STUDENTS' OPINIONS OF TEACHING, SUMMARY," the form number, the year and quarter, and the name of the teacher. The body of the table presents results for each questionnaire item. As with individual classes, the results include the number of raters, a percentaged frequency distribution, mean rating, proximate ratings, and relative concentrations.

More summary information concerning the teacher is presented in an additional table. The title line is identical with the one just described. The body of the table is devoted entirely to mean ratings and other statistics computed from mean ratings. As with relative concentrations, the purpose of the tabled information is to show comparisons between results for the teacher and results for aggregates of teachers. For each questionnaire item, a converted z-score for the teacher's mean rating, a percentile for the teacher's mean rating, the teacher's mean rating, the mean rating for the teacher's department, the mean rating for the teacher's college or division, and the mean rating for all users are given. The converted z-score is based on the distribution of mean ratings of all teachers. It expresses the individual teacher's mean rating as a value in a distribution with a mean of 50 and a standard deviation of 10. This equalizes the standard deviations for the items and shows where the individual teacher's mean is relative to the mean of the distribution of means of all teachers. The percentile for the teacher's mean rating is also based on the distribution of mean ratings of all teachers. This tells the percentage of mean ratings of teachers which are less than or equal to the mean rating of the individual teacher. The remaining columns of the table facilitate direct comparison of the mean ratings of the individual teacher with mean ratings of data aggregated for department, college or division, and all users.

If the number of responses for a questionnaire item is not greater than four, some output is suppressed. If the number of responses for a questionnaire item is less than three, all results for the item are suppressed. Suppression protects the anonymity of respondents.

Print-Outs for Organizational Units

During early stages of data analysis, the computer program generates listings and tables which are not provided individual teachers. These print-outs are for the computer center and other organizational units. Although copies of these print-outs are available for perusal, it is not reasonable to print numerous copies for individuals.

Listings of item labels and organizational units are printed. A partial listing of records in the data file is printed. These are useful to assure that processing is occurring normally. At the end of the listing of the data file, tallies are given for the total number of packages, total number of flawed "student records," total number of good "student records," total number of "student records," and total number of teachers. A listing of organizational units is printed.

Arrays of cumulative percentiles are listed by item number. These cumulative percentiles are for distributions of mean ratings achieved by all teachers. In addition, standard deviations for the distributions of teacher mean ratings are listed by item number.

Tables like those printed for classes are printed for organizations. The first table printed is for all of the data. The title line for this table contains the title, "SURVEY OF STUDENTS' OPINIONS OF TEACHING, ALL USERS," the form number, the year and quarter, and the name of the organization, "USA."

A table is printed showing the number of packages for each college or division, as well as the total number of packages in the data file.

If data are present in the file for one or more teachers in a college or division, a table is printed for the college or division. This table contains the same kind of information given for all users, but it includes data only for classes given under the auspices of the college or division. Likewise, tables are printed for departments within each college or division, if appropriate data are present.

Method

Frequency distributions are tallied for all items by class, by teacher, by department, by college or division, and for all users. Measures of central tendency (mean, median, and mode) are computed for each distribution. The means of distributions of mean ratings for teachers are computed for all items. Z-scores are computed for individual teacher mean ratings and then converted to values for a distribution with a mean of 50 and a standard deviation of 10. Mean ratings for teachers are used to prepare cumulative percentile distributions of mean ratings for all items. Frequency distributions and measures of central tendency for individual classes and teachers are compared with frequency distributions and measures of central tendency for organizational units and all users. Results are displayed in tables for all users, colleges and divisions, departments, individual teachers, and individual classes.

The formulas for the mean and the converted z-score are:

mean = $\text{sum}(fw)/n$ where

sum indicates summation for all response values

f = frequency for each response value

w = 100 for A, 75 for B, 50 for C, 25 for D, and 0 for E

n = total number of responses

converted z-score = $50 + 10z$ where

z is the z-score of the mean rating for an individual

teacher in the distribution of all teacher mean ratings

Source

The procedures described by this document were devised and programmed by Marc Matre. Questions or comments are welcome. Address these to:

Marc Matre
Department of Sociology and Anthropology
HUMB 14
University of South Alabama
Mobile, Alabama, 36688

Voice: 460-6347

E-mail: mmatre@jaguar1.usouthal.edu