# Glossary-Quick Review of Statistics for Interpreting Course Feedback Results

**Instructor Quick Reports**: Reports from WSU's online system provide these kinds of results

- o Overall response rates; and response counts for each question
- o Frequency distributions of student responses to individual questions
- o Statistical tables with mean and median values of student responses
- o Student comments to open box questions

### Glossary

- o Response rate = the percentage of students that responded to the feedback form
- o Frequency distribution = tally/count of how often each choice/score occurred
- o Mean = mathematical average of all responses for that question
- o Median = middle value (or midpoint) of all responses for that question

> Please see ATL's ***Making Sense of Course Evaluations and Midterm Feedback from Students: A Quick Guide for Instructors*** for information on understanding and using the feedback from your students.

### Why use frequency charts?

Frequency distribution charts categorize results so they can be interpreted quickly in a visual way, and reveal patterns. Seeing the distributions of choices generally gives a more accurate understanding of the range of responses, rather than just calculating a single number. Frequency distributions are a good way to display results from categories (e.g., freshman, sophomore, junior, senior).

### Why use the mean and median for calculating scores?

Because the *mean* is sensitive to extreme scores – so that a small number of extreme responses can skew the mean – it's important to consider both the *mean* and the *median* values. The median is less sensitive to extreme scores and remains in the middle.

### Example

| To what extent are the following true about the instructor: | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Always** (5) | **Usually** (4) | **Sometimes** (3) | **Rarely** (2) | **Never** (1) | **Mean** | **Median** |
| **Provided clear and useful feedback** | 63% (41) | 9% (6) | 5% (3) | 5% (3) | 18% (12) | 3.9 | 5.0 |

**Interpreting frequency distributions, means, and medians:**

Frequency distributions, means, and medians can tell very different stories, especially in the presence of extreme scores. Looking at the <u>frequency distribution above</u>, the majority of students (72%) said that the instructor *always* or *usually* provided clear and useful feedback. Additionally, you can see that 23% of students said that the instructor *rarely* or *never* provided clear and useful feedback. While more than half of students said the instructor *always* provided clear and useful feedback, you might conclude that students typically answered *sometimes* or *usually* by looking at the <u>mean</u> alone. The 12 students who answered *never* severely affected the mean in this example.

Looking at the median, however, you will get another picture. In this case, the <u>median</u> tells you that students typically answered *always*; however, the median does not give you any indication of the variation in scores.

Therefore, it is helpful to consider the means, medians, and frequency distributions in your summary reports. You'll want to know that for most students, the feedback was generally clear and useful. But, you also want to know that 12 students said the instructor never provided clear and useful feedback, so you can think of ways to address that.

**Additional Notes** on interpreting the statistical analyses in your course feedback form results

- N/A responses appear in the frequency distributions, but are not included in mean or median calculations.

- Course evaluation scales use whole numbers for response choices or for values assigned behind the Likert categories, and so the statistics are not calculated beyond one decimal point.

- While student input is valuable to consider, fine degrees of difference (e.g., 3.5 vs 3.6) should not result in major conclusions.

- Course feedback results provide student perception about their experience, which implies that the validity increases proportionally with the number of occurrences.

- When numerical values are assigned to Likert categories, such as the common scales below, be aware that means, variances, or standard deviations may be statistically inappropriate and can create misleading analyses of student rating results. While numbers assigned to Likert categories convey "greater than" or "less than" relationships, the differences between values are not necessarily constant. The difference in value between Strongly Agree and Mildly Agree and between Mildly Agree and Mildly Disagree, for example, are not clear, nor is there a shared understanding of these values among students or instructors.

  Common Likert scales

  | Always | Usually | Sometimes | Rarely | Never | NA / Cannot Rate |
  |--------|---------|-----------|--------|-------|------------------|

  | Excellent | Good | Adequate | Poor | NA / Cannot Rate |
  |-----------|------|----------|------|------------------|

  | Strongly agree | Mildly agree | Mildly disagree | Strongly disagree | NA/ Cannot Rate |
  |----------------|--------------|-----------------|-------------------|-----------------|

**Other**

- Individual colleges may provide other analyses.

- ATL's *Making Sense of Course Evaluations and Midterm Feedback from Students: A Quick Guide for Instructors* also provides guidelines for interpreting student comments that are not part of the statistical analysis.