Quiz Statistics

You can access the reports by opening the quiz on your LATTE page and then accessing Administration > Quiz administration > Results > Statistics

The Statistics report gives a psychometric analysis of the quiz and the questions within. The report is split into three sections. The first gives a summary of the quiz, while the second section gives an analysis of all questions in a table format with the ability to go deeper into each question. The third is a bar graph of the Facility index and the Discriminative efficiency index.

Quiz Information

This section gives some basic information about the quiz as a whole. You will see:

- Quiz name
- Course name
- Open and close dates (if applicable)
- Total number of first/graded attempts
- Average grade for first/all attempts
- Median grade
- Standard deviation of grades
- Skewness and Kurtosis of the grade distribution
- Coefficient of internal consistency (sometimes called Cronbach Alpha) - This is a measure of whether all the items in the quiz are testing basically the same thing. Thus it measures the consistency of the text, which is a lower bound for the validity. Higher numbers here are better.
- Error ratio - the variation in the grades comes from two sources. First some students are better than others at what is being tested, and second there is some random variation. We hope that the quiz grades will largely be determined by the student's ability, and that random variation will be minimized. The error ratio estimates how much of the variation is random, and so lower is better.
- Standard error - this is derived from the error ratio, and is a measure of how much random variation there is in each test grade. So, if the Standard error is 10%, and a student scored 60%, then their real ability probably lies somewhere between 50% and 70%.

Quiz Structural Analysis

In the structural analysis section, the chart lists all the questions in the quiz with various statistics in a table format:

- Q# - shows the question number (position), question type icon, and preview and edit icons
- Question name - the name is also a link to the detailed analysis of this question (See Quiz Question Statistics below).
- Attempts - how many students attempted this question.
- Facility Index - the percentage of students that answered the question correctly.
- Standard Deviation - how much variation there was in the scores for this question.
- Random guess score - the score the student would get by guessing randomly
- Intended/Effective weight - Intended weight is simply what you set up when editing the quiz. If question 1 is worth 3 marks out of a total of 10 for the quiz, the intended weight is 30%. The effective weight is an attempt to estimate, from the results, how much of the actual variation was due to this question. So, ideally the effective weights should be close to the intended weights.
- Discrimination index - this is the correlation between the score for this question and the score for the whole quiz. That is, for a good question, you hope that the students who score highly on this question are the same students who score highly on the whole quiz. Higher
numbers are better.
- Discriminative efficiency - another measure that is similar to Discrimination index.

Quiz Question Statistics

From the Quiz Structural Analysis chart, you can click on any quiz question and see the statistics for that particular question.

- Question information - The basic information about the question, the name of the quiz, the question, the question type, the position in the quiz and the question itself. There are preview and edit icons in this page.
- Question statistics - This repeats the information from the table row from the Quiz structure analysis that relates to this question.
- Report options - You can choose whether to run the report on all attempts, or just the first attempt by each student. Some of the calculations used in the report are based on assumptions that may not apply to quizzes that allow more than one attempt.

Quiz Results Statistics Chart

- Facility Index - the percentage of students that answered the question correctly.
- Discriminative efficiency - is the correlation between the score for this question and the score for the whole quiz. That is, for a good question, you hope that the students who score highly on this question are the same students who score highly on the whole quiz. Higher numbers are better.

Analysis of individual question responses

This gives a frequency analysis of the different responses that were given to each part of the question. The details of the analysis depends on the question type, and not all question types support this. For example, essay question responses cannot be analyzed.

You can also watch a Lynda video on analyzing the Grades report.

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