

Getting Started

Item Analysis

Item analysis provides statistics on overall test performance and individual test questions. This data helps you recognize questions that might be poor discriminators of student performance. You can use this information to improve questions for future tests or to adjust credit on current attempts.

How to Run an Item Analysis on a Test

Item analyses can be run on tests that include single or multiple attempts, question sets, random blocks, auto-graded question types, and questions that need manual grading.

1. Go to one of the following locations to access item analysis:
 - a. A test deployed in a content area.
 - b. A deployed test listed on the **Tests** page.
 - c. A **Grade Center** column for a test.
2. Access the test's contextual menu.
3. Select **Item Analysis**.
4. In the **Select Test** drop-down list, select a test. Only deployed tests are listed.
5. Click **Run**.
6. View the item analysis by clicking the new report's link under the **Available Analysis** heading or by clicking **View Analysis** in the status receipt at the top of the page.

The screenshot shows the 'Tests' page in Blackboard. A table lists tests: Chapter 1 Test, Chapter 2 Test, Chapter 3 Test, Chapter 4 Test, and Pre-Test. The 'Chapter 1 Test' row is highlighted. A contextual menu is open over it, with 'Item Analysis' selected. A status receipt at the top right says 'Status: Complete. Item Analysis of Chapter 1 Test successfully ran on September 4, 2012 2:06 PM. View Analysis'. Below it, the 'Item Analysis : Chapter 1 Test' page is shown with a 'Select Test' dropdown set to 'Chapter 1 Test' and a 'Run' button.

For best results, run item analyses on single-attempt tests after all attempts have been submitted and all manually graded questions are scored.

Test Summary

The Test Summary is located at the top of the **Item Analysis** page and provides data on the test as a whole.

- A. **Edit Test** provides access to the **Test Canvas**.
- B. The **Test Summary** provides statistics on the test, including:

The screenshot shows the 'Item Analysis : Chapter 3 Test' page. At the top, it says 'Select Test: Chapter 3 Test' and 'Run'. Below that, it says 'Available Analysis' and lists 'Chapter 3 Test - September 4, 2012 4:48 PM' and 'Chapter 1 Test - September 4, 2012 2:06 PM'. The 'Test Summary' section shows a grade of 'B' and a table of statistics:

Test Summary						Discrimination		Difficulty	
240.0	39	1	8	248.63	00 hr 54 min	10 Good Questions	18 Easy Questions		
Possible Points	Possible Questions	In Progress Attempts	Completed Attempts	Average Score	Average Time	4 Fair Questions	11 Medium Questions		
						5 Poor Questions	10 Hard Questions		
						20 Cannot Calculate			

- **Possible Points:** Total number of points for the test.
- **Possible Questions:** Total number of questions in the test.
- **In Progress Attempts:** Number of students currently that have not yet submitted it.
- **Completed Attempts:** Number of submitted tests.
- **Average Score:** Scores denoted with an * indicate that some attempts are not graded and that the average score might change after all attempts are graded. The score displayed here is the average score reported for the test in the Grade Center.
- **Average Time:** Average completion time for all submitted attempts.
- **Discrimination:** Number of questions that fall into the Good (greater than 0.3), Fair (between 0.1 and 0.3), and Poor (less than 0.1) categories. Questions with discrimination values in the Good and Fair categories are better at differentiating between students with higher and lower levels of knowledge. Questions in the Poor category are recommended for review.
- **Difficulty:** Number of questions that fall into the Easy (greater than 80%), Medium (between 30% and 80%) and Hard (less than 30%) categories. Difficulty is the percentage of students who answered the question correctly. Questions in the Easy or Hard categories are recommended for review and are indicated with a red circle.

Question Statistics Table

The question statistics table provides item analysis statistics for each question in the test. Questions that are recommended for your review are indicated with red circles so that you can quickly scan for questions that might need revision.

- Filter the question table by question type, discrimination category, and difficulty category.
- Investigate a specific question by clicking its title and reviewing its **Question Details** page.
- Statistics for each question are displayed including:

- **Discrimination:** Indicates how well a question differentiates between students who know the subject matter those who do not. Values can range from -1.0 to +1.0.

Questions are flagged for review if their discrimination value is less than 0.1 or is negative.

Discrimination values cannot be calculated when the question's difficulty score is 100% or when all students receive the same score on a question.

- **Difficulty:** The percentage of students who answered the question correctly. Difficulty values can range from 0% to 100%, with a high percentage indicating that the question was easy. Questions in the Easy (greater than 80%) or Hard (less than 30%) categories are flagged for review.
- **Graded Attempts:** Number of question attempts where grading is complete. Higher numbers of graded attempt produce more reliable calculated statistics.
- **Average Score:** Scores denoted with an * indicate that some attempts are not graded and that the average score might change after all attempts are graded. The score displayed here is the average score reported for the test in the Grade Center.
- **Standard Deviation:** Measure of how far the scores deviate from the average score.
- **Standard Error:** An estimate of the amount of variability in a student's score due to chance. The smaller the standard error of measurement, the more accurate the measurement provided by the test question.

Filter Questions A							
Select Question Type:		Select Discrimination:		Select Difficulty:		Go Reset Filter	
All Question Types		All Discrimination		All Difficulty			
Question	Question Type	Discrimination C	Difficulty	Graded Attempts	Average Score	Std Dev	Std Error
* S1: Something you should never put on a bum...	Short Answer (RB)	Cannot Calculate	0.0%	0	0.0	0.0	0.0
MC2: Which of these has the most medical training...	Multiple Choice (RB)	0.82	50.0%	4	5.0	5.78	2.89
O1: Put the following emergency tasks in order...	Ordering	0.83	87.5%	4	8.75	2.5	1.25