



E-learning Management System Program (Blackboard)

Quality Evaluation of Test Questions





Themes of the training course

- *How to detect the effectiveness of individual test questions*
- *How to Improve and develop the quality of test questions*





Item Analysis

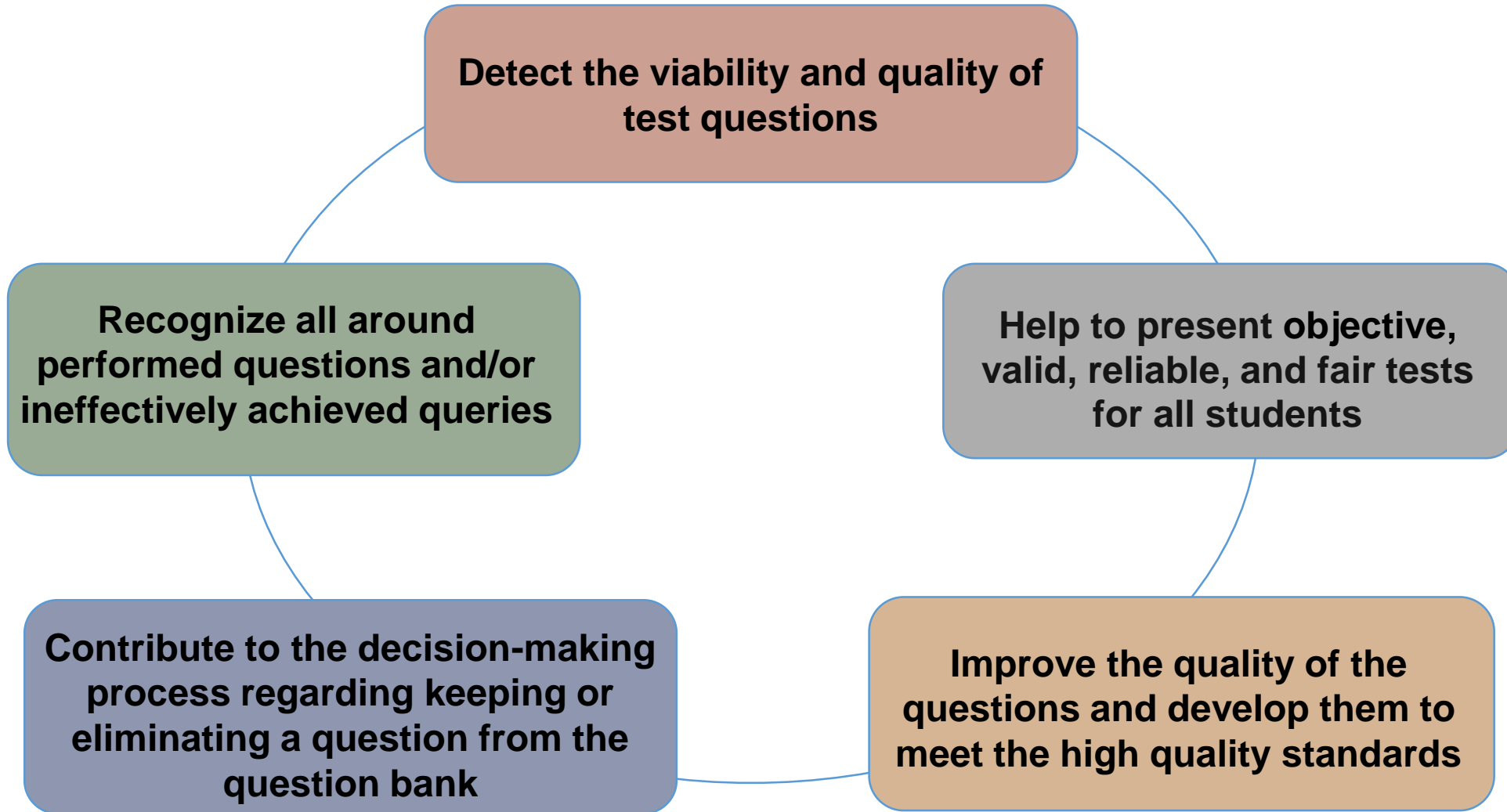
It is a logical procedure that evaluate the quality and viability of examining understudies' reactions to these inquiries. encourages us to see whether a question needs to be amended.

The E-learning management system [Blackboard](#) evaluates each question in a deployed test through the [Item Analysis](#) report.





The Benefits of Analyzing Test Questions





Characteristics of Good Tests



A belief of the first half of the twentieth century

A good test should be a combination of easy, medium, and difficult questions



Several researches after 1952 show that

Questions that have high discrimination contribute better to create tests that precisely speak to the level of understudies' accomplishment





What to look for in an Item Analysis Report

**Item
Difficulty**

**Item
Discrimination**

**Number of
Students**

**Distractors
Incorrect
Alternatives**





Item Analysis Report

The difficulty of the question is basically the extent of understudies who addressed the inquiry accurately.

Item
Difficulty

Item
Discrimination

How well does the question distinguish between high scoring who did well in the test and low marking understudies who did not do well in the test





Characteristics of Good Questions

Students in the Bottom Group (Low Scoring Students)

Lower percentages of students in this group choose the correct answer.

Students in the Top Group (High Scoring Students)

Higher percentages of students in this group chose the correct answer.





Item Difficulty

It is the percentage of students who chose the correct answer in the question, whose value ranges from 0% to 100%.

$$p = \frac{n_1}{n_1 + n_0}$$

n_1 The number of students who answered the question correctly

n_0 The number of students who answered the question incorrectly

$n = n_1 + n_0$ The number of students who answered the question



Difficulty Levels

Easy Questions

**Difficulty coefficient
is greater than
(80%)**

Medium difficulty Questions

**Difficulty coefficient
takes values from
30%-80%**

Hard Questions

**Difficulty
coefficient is less
than 30%**





Factors Affecting the Level of Difficulty

- The wording of the question is ambiguous (unclear) or confusing;
- The content of the question was not covered well;
- The test time is not appropriate;
- The correct answer is miskeyed;
- Overlapping between the correct answer and the distractors.

**Very
Difficult
Items**

- The content of the question is well known to everyone;
- The distractors are not effective;
- Identifiable correct key patterns (for example, the correct answer is always the first choice);
- The students have mastered the question content.

**Very
Easy
Items**





What do we mean by Item Discrimination?

An item has a proper discrimination if the share of right answers from understudies of from students who performed well in the test is greater than the proportion of correct solutions from students who performed ineffectively.

In the event that the level of right answers from the upper group understudies is equivalent to the level of right answers from the lower unit students, then this element has no capacity to recognize and quantify singular contrasts between undergraduates.

A ideal discrimination of an item is the place all the students in the upper group answer the item correctly and all upper group students provided correct answers, whereas all the understudies in the lower group did not answer accurately.





Item Discrimination

The discrimination of any question is measured by calculating the correlation coefficient between the student's score in the question and his overall score in the test, which ranges between (1, -1).

$$r_{XY} = \frac{1}{n-1} \sum_{i=1}^n \left(\frac{X_i - \bar{X}}{S_X} \right) \left(\frac{Y_i - \bar{Y}}{S_Y} \right)$$

n The number of students who answered the question

\bar{X} The average score in the question

S_X The standard deviation of the scores in question

\bar{Y} The average score in the test as a whole

S_Y The standard deviation of the scores in question





Discrimination Levels

Good Questions

Coefficient of discrimination is greater than (0.3)

Fair Questions

The coefficient of discrimination takes the values between (0.1) to (0.3).

Poor Questions

Coefficient of discrimination is less than (0.1)





Factors Affecting the Level of Discrimination

1

Overlapping
between the
correct answer
and the
distractors

2

The correct
answer is
miskeyed

3

The distractors
are not
effective.

4

The wording of
the question is
ambiguous

5

Very easy or
very difficult
questions





The Relationship between the Difficulty and Discrimination of an Item

If the question is so effortless that the equal percentages of students from the upper and lower groups answered it correctly, then the value of the coefficient of discrimination for this question is close to zero.

In the event that the question is hard to such an extent that the equivalent proportions of understudies from the upper and lower groups addressed it inaccurately; the estimation of the coefficient of discrimination for this inquiry is near zero.

The ideal and most effective inquiries are the issues that have good discrimination and medium difficulty,





The Relationship between the Difficulty and Discrimination of an Item

		Item Discrimination معامل التمييز																	
		N/A	0.8	0.62	0.77	0.55	NA	0.79	0.62	0.05	0.58	-0.4	0.64	توزيع الدرجات Distribution of the Scores					
Students	Score	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12						
Student 1	10	1	1	1	1	1	0	1	1	1	1	0	1	Top 25%	10-12	Top 50%			
Student 2	8	1	1	1	1	1	0	1	1	1	0	0	0	2nd 25%	7-9				
Student 3	7	1	1	1	1	1	0	1	0	0	1	0	0						
Student 4	6	1	1	1	0	1	0	1	1	0	0	0	0	3rd 25%	4-6	Bottom 50%			
Student 5	6	1	1	0	0	1	0	1	1	0	1	0	0						
Student 6	6	1	1	1	0	1	0	1	1	0	0	0	0						
Student 7	5	1	0	0	0	1	0	1	1	1	0	0	0						
Student 8	4	1	0	1	0	1	0	0	0	1	0	0	0	Bottom 25%	1-3				
Student 9	3	1	0	0	0	1	0	0	0	0	0	1	0						
Student 10	2	1	0	0	0	0	0	0	0	1	0	0	0						
		100%	60%	60%	30%	90%	0%	70%	60%	50%	30%	10%	10%						
		Item Difficulty معامل الصعوبة																	





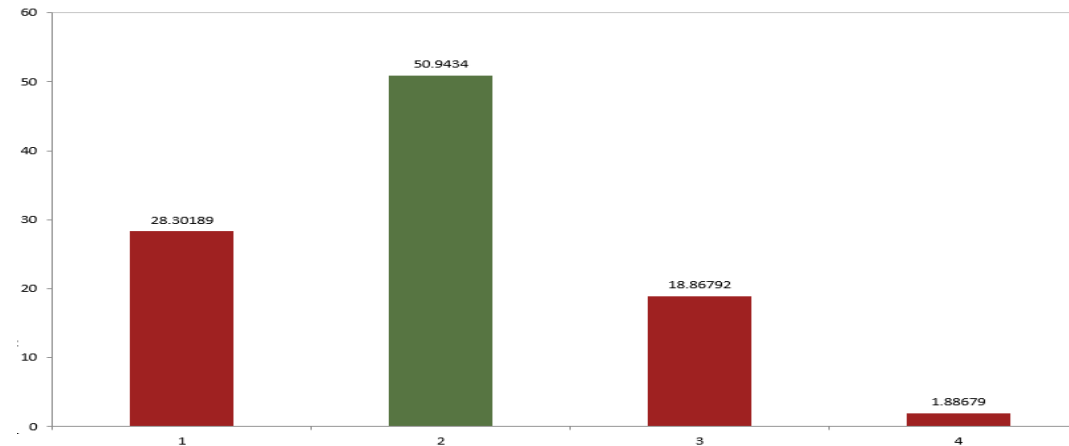
The Relationship between the Difficulty and Discrimination of an Item





Distractors (Alternatives)

Wrong answers are given as choices with the correct answer in multiple choice questions. All distractors must be plausible (logical) and confusing so that students do not reach the correct answer simply by guessing.



The expected number of answers in a functional distractor $= \frac{N_w}{N_d}$

N_w Number of incorrect answers

N_d Number of distractors





The Distractors Analysis

Functional distractors are those chosen by lower group students and are ignored by upper group students.

Unrealistic or implausible distractors are non-functional and they increase the chances of guessing correctly. Thus, they reduce the value of the discrimination coefficient.



On the off chance that the level of the top group understudies who picked these distractors is higher the level of the lower group students, then the question should be checked on cautiously for a chance of wrong key answer.

Unrealistic or implausible distractors are non functional and increase the chances of guessing correctly and thus increase the value of the difficulty coefficient.





The Effect of the Sample Size

The sample size or the quantity of scholars, who responded to the inquiry, majorly affects the stability of the calculated statistics. For the most part, the more students answer a question, the more steady the figures are.

1

2

In order to insure accurate and steady results, do not consider when only thirty answers are available.





Accesses to the Item Analysis Report in the Blackboard

Go to **Control panel**
then **Course tools**.
From **Tests,**
Surveys and Pools,
choose **tests**.

1

Go to **Control panel**
then the **Evaluation**.
From **Grade Center,**
choose **Full Grade**
Center.

2

Click on the **Left**
side Menu, and then
choose the **tests**
link

3





Steps to Access the Item Analysis Report

Control panel >> Course tools >> Tests, surveys, and Pools>>Tests
>>(DEPLOYED)

Course Management

- ▼ **Control Panel** ← Tests, Surveys, and Pools
- Content Collection
- ▼ **Course Tools** ←
- Accessibility Report
- Achievements
- Announcements
- Blackboard Collaborate
- Blackboard Collaborate Ultra
- Blogs
- Contacts
- Course Calendar
- Course Messages
- Course Portfolios
- Date Management
- Discussion Board
- Glossary
- Goal Performance
- Goals
- Journals
- McGraw-Hill Higher Education
- Pearson's MyLab & Mastering
- Rubrics
- SafeAssign
- Self and Peer Assessment
- Send Email
- Tasks
- Tests, Surveys, and Pools ←
- Wikis

Tests

Tests are a means of assessing student performance. You have the option to build a test or import a test. [More Help](#)

Build Test Import Test

NAME	DEPLOYED	DATE LAST EDITED
Quiz 1	Quizzes/Tests	February 3, 2020 9:09 AM
	Quizzes/Tests	March 24, 2020 10:56 AM
	Quizzes/Tests	March 20, 2020 5:13 PM
	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM



Steps to Access the Item Analysis Report

Select the desired test >> Click the down arrow next to the test name
>> **Item Analysis**

Tests
Tests are a means of assessing student performance. You have the option to build a test or import a test. [More Help](#)

Build Test **Import Test**

NAME	DEPLOYED ▼	DATE LAST EDITED
Quiz 1 ▼	Quizzes/Tests	February 3, 2020 9:09 AM
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	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM
	No	January 26, 2020 9:43 AM

Edit

Export to Local Computer

Export to Content Collection

Copy

Item Analysis





Steps to Access the Item Analysis Report

Control Panel >> Grade Center >> Full Grade Center >>
Locate the grade column for the required test

- Course Management
 - Control Panel ←
 - Content Collection →
 - Course Tools
 - Evaluation →
 - Grade Center ←
 - Needs Grading
 - Full Grade Center ←
 - Assignments
 - Tests
 - Users and Groups
 - Customization →
 - Packages and Utilities →
 - Help

Grade Center : Full Grade Center

The Full Grade Center displays all columns and rows in the Grade Center and is the default view of the Grade Center. [More Help](#)

Create Column Create Calculated Column Manage Reports Filter Work Offline

Move To Top Email

Sort Columns By: Layout Position Order: Descending

Grade Information Bar

	LAST NAME	FIRST NAME	WEIGHTED TOTAL	TOTAL	TOTAL	QUIZ 1	ASSIGNMENT # PAPER PART 1
<input type="checkbox"/>			--	119.42857	119.42857	8.00	1.00
<input type="checkbox"/>			--	0.00	0.00	--	--
<input type="checkbox"/>			--	84.42857	84.42857	12.00	1.00
<input type="checkbox"/>			--	109.42857	109.42857	12.00	1.00

Last Saved: April 1, 2020 10:49 AM



Steps to Access the Item Analysis Report

Select column of the desired test >>
click the arrow in the column header>> **Item Analysis**

Grade Center : Full Grade Center ▾

The Full Grade Center displays all columns and rows in the Grade Center and is the default view of the Grade Center. [More Help](#)

Create Column Create Calculated Column ▾ Manage ▾ Reports ▾ Filter

Grade Information Bar

Move To Top Email ▾ Sort Columns By: Layout Position ▾ Order

<input type="checkbox"/>	LAST NAME ▾	FIRST NAME ▾	WEIGHTED TOTAL ▾	TOTAL ▾	TOTAL ▾	QUIZ 1 ▾
<input type="checkbox"/>			--	119.42857	119.42857	8.00
<input type="checkbox"/>			--	0.00	0.00	--
<input type="checkbox"/>			--	84.42857	84.42857	12.00
<input type="checkbox"/>			--	109.42857	109.42857	12.00

Quick Column Information
Send Reminder
Edit Test
Change Due Date
View and Add Alignments
Grade Attempts
Grade with User Names Hidden
Attempts Statistics
Download Results
View All Attempts
Grade Questions
Item Analysis
View Grade History
Edit Column Information
Column Statistics
Set as External Grade
Hide from students (on/off)
Clear Attempts for All Users
Sort Ascending
Sort Descending
Hide from Instructor View



Steps to Access the Item Analysis Report

Left side Menu>> Quizzes/Test link **Select the desired test >>**

Click the down arrow next to the test name >> **Item Analysis**

The screenshot displays the LMS interface. On the left, the 'Quizzes/Tests' link in the left side menu is highlighted with a purple arrow. The main content area shows a list of quizzes, with 'Quiz 1' selected and its details displayed. A dropdown menu is open for 'Quiz 1', and the 'Item Analysis' option is highlighted with a purple box. The dropdown menu includes options such as 'Edit the Test', 'Edit the Test Options', 'Make Unavailable', 'Adaptive Release', 'Adaptive Release: Advanced', 'Add Alignments', 'Set Review Status(Disabled)', 'Metadata', 'Statistics Tracking (On/Off)', 'User Progress', 'Move', 'Item Analysis', 'Change Due Date', and 'Delete'. The 'Item Analysis' option is the one to be selected according to the instructions.



Running Item analysis Report

Item Analysis >> Select the desired test name from the >> drop down menu **Run**

Item Analysis: Quiz 1

The Item Analysis tool provides statistics on overall test performance and individual test questions to help you recognize questions that might be poor discriminators of student performance. You can use this information to improve questions for future test administrations or to adjust credit on current attempts. You can run item analyses on deployed tests, but not on surveys. Access previously run item analyses under the **Available Analysis** heading or select a deployed test from the drop-down list and click **Run** to generate a new report. [More Help](#)

Select Test: **Run**

Available Analysis

Quiz 1 - March 24, 2020 5:01 PM

Loading Item Analysis...

Item Analysis of Quiz ran successfully

donotreply@kau.edu.sa ... 3:56 AM (5 minutes ago) to AALANGARI

Course ID: 202002_PAD333_GBR_14048_EL Item Analysis of Quiz successfully ran on March 28, 2020 3:56 AM. To view it, access your Blackboard Learn course and navigate to Item Analysis. Note: This Item Analysis is based on graded submissions as of March 28, 2020 3:56 AM. Run the Item Analysis again to view the latest data.



Viewing the item analysis report

Status: Complete. Item Analysis of Quiz 1 successfully ran on April 1, 2020 6:31 PM. [View Analysis](#)

Item Analysis: Quiz 1

The Item Analysis tool provides statistics on overall test performance and individual test questions to help you recognize questions that might be poor discriminators of student performance. You can use this information to improve questions for future test administrations or to adjust credit on current attempts. You can run item analyses on deployed tests, but not on surveys. Access previously run item analyses under the **Available Analysis** heading or select a deployed test from the drop-down list and click **Run** to generate a new report. [More Help](#)

Select Test: **A**

Available Analysis
Quiz 1 - March 24, 2020 5:01 PM **B**

Under “Available Analysis”
It will display the name of the test and the date the analysis was performed.
Clicking on the name of the required test to view the report.



Item analysis report

Quiz 1

Analysis Last Run April 1, 2020 6:31 PM. Run Item Analysis again to display the latest question data

A The top of the report

Edit Test

Test Summary

16	7	0	12	11.17	00 hr 01 min
Possible Points	Possible Questions	In Progress Attempts	Completed Attempts	Average Score	Average Time

Discrimination

4	Good Questions	
0	Fair Questions	
1	Poor Questions	
2	Cannot Calculate	

Difficulty

3	Easy Questions	
4	Medium Questions	
0	Hard Questions	

Filter Questions

Select Question Type:
All Question Types

Select Discrimination:
All Discrimination

Select Difficulty:
All Difficulty

Go

Reset Filter

B The bottom of the report

QUESTION	QUESTION TYPE	DISCRIMINATION 	DIFFICULTY	GRADED ATTEMPTS	AVERAGE SCORE	STD DEV	STD ERROR
	Multiple Choice	-99.00	100.00%	12	2.00	0.00	0.00
	Multiple Choice	-99.00	100.00%	12	2.00	0.00	0.00
	Multiple Choice	0.07	50.00%	12	1.00	1.05	0.31
	Multiple Choice	0.52	75.00%	12	1.50	0.91	0.27



Item Analysis Report

A

The top of the report

Quiz 1

Analysis Last Run April 1, 2020 6:31 PM. Run Item Analysis again to display the latest question data

4

Edit Test

1

Test Summary

16	7	0	12	11.17	00 hr 01 min
Possible Points	Possible Questions	In Progress Attempts	Completed Attempts	Average Score	Average Time

2

Discrimination

4	Good Questions	
0	Fair Questions	
1	Poor Questions	
2	Cannot Calculate	

3

Difficulty

3	Easy Questions	
4	Medium Questions	
0	Hard Questions	

(Test Summary): Provides data about the test as a whole

Discrimination: shows the number of questions that fall into the categories of discrimination factor (Good questions - Fair questions - poor questions)

In addition to those questions with discrimination values can't be calculated

(Difficulty): The number of questions that fall into the categories shows the difficulty level (easy questions - medium difficulty questions - difficult questions)

(Edit Test): Access the test page to make changes to the test if needed

1

2

3







4



Item Analysis Report

Test Summary Provides data for all completed test attempts

1

Test Summary					
16	7	0	12	11.17	00 hr 01 min
Possible Points 	Possible Questions 	In Progress Attempts 	Completed Attempts 	Average Score 	Average Time 

(Possible Point): : The total number of points for the test.

(Possible Questions): : The total number of questions in the test.

In Progress Attempts : he number of students currently taking the test and haven't submitted it yet.

(Completed Attempts): The number of submitted tests.

(Average Score): The score shown is the average score reported for testing in the Grade Center.

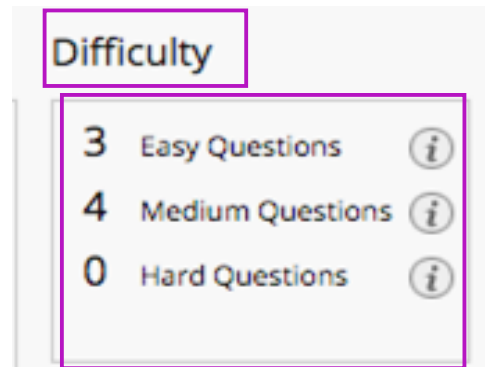
Average Time: The average completion time for all submitted attempts..



Item Analysis Report

Difficulty :The percentage of students who answered the question correctly Difficulty level values range from 0% to 100%

3



Easy Questions: Difficulty coefficient value (greater than 80%)

Medium Questions : Difficulty coefficient value (30% to 80%)

Hard Questions : Difficulty coefficient value (less than 30%)

If the value of the difficulty coefficient (100%), this means that all students answered the question correctly





If the value of the difficulty coefficient (0%), this means that all students answered the question incorrectly



Item Analysis Report

2

Discrimination: Refers to the question's ability to differentiate between students in terms of knowledge of the content of the subject and its value ranges from -1.0 to +1.0

Discrimination		
4	Good Questions	
0	Fair Questions	
1	Poor Questions	
2	Cannot Calculate	

(Good Questions) : Coefficient of discrimination is greater than 0.3

(Fair Questions) : Coefficient of distinction between 0.1 and 0.3

(Poor Questions) : Coefficient of discrimination is less than 0.1

(Cannot Calculate) : Level discrimination values cannot be calculated when all students have the same grade assigned to the question, that is, when the degree of difficulty of the question is 100% or 0%.



Item Analysis Report

Why it is impossible to calculate the values of the discrimination coefficient.

$$r_{XY} = \frac{1}{n-1} \sum_{i=1}^n \left(\frac{X_i - \bar{X}}{S_X} \right) \left(\frac{Y_i - \bar{Y}}{S_Y} \right)$$

$$S_X = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}}$$

The standard deviation of the question

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}$$

Average score for the question

When all students have the same grade assigned to the question, i.e. when the degree of difficulty of the question is 100% or 0%, the value of the standard deviation of the degree of the question is equal to zero and thus the value of the denominator in the discrimination coefficient will be zero and thus this results in the failure to calculate the values of the discrimination coefficient.

In this case (the system gives a value (-99.0) as the value of the discrimination factor in this case)



Item Analysis Report

B

The bottom of the report

It allows filtering questions using drop-down menus to display questions with required discrimination and difficulty levels

Filter Questions

Select Question Type: All Question Types ▾

Select Discrimination: All Discrimination ▾

Select Difficulty: All Difficulty ▾

Go Reset Filter

	QUESTION TYPE	DISCRIMINATION ▲	DIFFICULTY	GRADED ATTEMPTS	AVERAGE SCORE	STD DEV	STD ERROR
●	Multiple Choice	-99.00	100.00%	12	2.00	0.00	0.00
●	Multiple Choice	-99.00	100.00%	12	2.00	0.00	0.00
●	Multiple Choice	0.07	50.00%	12	1.00	1.05	0.31
	Multiple Choice	0.52	75.00%	12	1.50	0.91	0.27
●	Multiple Choice	0.58	83.34%	12	1.67	0.78	0.23
	Essay	0.76	37.50%	12	1.50	1.09	0.32

The system lists the questions that need to be reviewed and these questions are indicated using red circles ●

You can click on a specific question to view more details related to this question



Item Analysis Report

The bottom of the report

QUESTION	QUESTION TYPE	DISCRIMINATION ▲	DIFFICULTY	GRADED ATTEMPTS	AVERAGE SCORE	STD DEV	STD ERROR
	Multiple Choice	0.83	75.00%	12	1.50	0.91	0.27

Displaying 1 to 7 of 7 items

Show All Edit Paging...

Statistics for each question appear

(Question Type) - ((DISCRIMINATION- (DIFFICULTY-(GRADED ATTEMPTS)

AVERAGE SCORE Average student score in this question

STD DEV It measures the deviation of students score in the question from its average score

STD ERROR an estimate of the amount of variability in student's mean score due to chance. The smaller the standard error of measurement, the more accurate the measurement provided by the test question.



Item Analysis Report - Question Details

The question text and answer options appear.

Question:

•

Answers		Total <small>i</small>	Top 25% <small>i</small>	2nd 25% <small>i</small>	3rd 25% <small>i</small>	Bottom 25% <small>i</small>
A		(5.66%)3	2	1	0	0
B		(7.55%)4	2	1	1	0
C		(7.55%)4	2	0	0	2
D	<input checked="" type="checkbox"/>	(79.25%)42	37	5	0	0

Good distractors

The number of students who have chosen the correct answer from the Top 25% group is greater than the Bottom 25% group

The details of the specific question appear in the overall statistics, and how each quarter performs in each of the choices in this question





Item Analysis Report

Symbol legend

QUESTION	QUESTION TYPE	DISCRIMINATION ▼	DIFFICULTY	GRADED ATTEMPTS	AVERAGE SCORE	STD DEV	STD ERROR
●	Multiple Choice	1.00	95.00%	20	0.08	0.02	0.01

Review recommended:

Questions that the system recommends to review under these categories

Difficulty level, easy ($> 80\%$) or difficult - ($<30\%$) Low level discrimination values (<0.1)

These may be of low quality or correctly recorded. Difficulty Level, Easy

Good questions in these categories average difficulty level (from 30% to 80%) Good or average level distinction values (greater than 0.1)





Legend

● Review recommended ▲ Questions might have changed after deployment * Not all submissions have been graded (QS) Question Set (RB) Random Block



Item Analysis Report

Symbol legend

QUESTION	QUESTION TYPE	DISCRIMINATION 	DIFFICULTY	GRADED ATTEMPTS	AVERAGE SCORE	STD DEV	STD ERROR
  	File Response	-99.00	0.00%	0	0.00		


Question may have changed after deployment: Indicates that part of the question changed after the test was published. The change may mean that the data for this question may not be reliable. Attempts made after changing the question may have benefited from the change.


Not all submissions have been graded: It appears for a test that contains questions requiring manual grading, such as essay questions, and this indicator remains until you estimate all attempts. The analysis only uses the attempts you estimated at report run time.

QS)) - indicates that the question came from a group of questions - **RB)**: indicates that the question came from a random block. Due to random delivery of questions, some questions may contain more attempts.

Legend

 Review recommended

 Questions might have changed after deployment

 Not all submissions have been graded

(QS) Question Set

(RB) Random Block



[View the item analysis report](#)

The display of information in the question details varies depending on its type:

Question Type	Type of Information Provided
Multiple Choice Multiple Answer True/False Either/Or Opinion Scale/Likert	Number of students who selected each answer choice -AND- Distribution of those answers among the class quartiles
Matching Ordering Fill in Multiple Blanks	Number of students who selected each answer choice
Calculated Formula Calculated Numeric Fill in the Blank Hot Spot Quiz Bowl	Number of students who got the question correct, incorrect, or skipped it
Assay File Response Short Answer Jumbled Sentence—also includes the answers students chose from	Question text only





What after analyzing the Questions?



Identify questions on your exam that have poor discrimination. Those that do not distinguish between students who know the content of the subject and those who do not have the slightest idea.

1



Rewrite and modify "insignificant" questions for further use in the future.

2



In the event that most understudies performed ineffectively in a very much planned inquiry that is identified with one of the significant learning goal of the course, then you may need to discover another approach to help learning procedure of this substance.

3



Unclear or confusing questions can be fixed in the current test by giving students some additional points in the current test attempt.

4

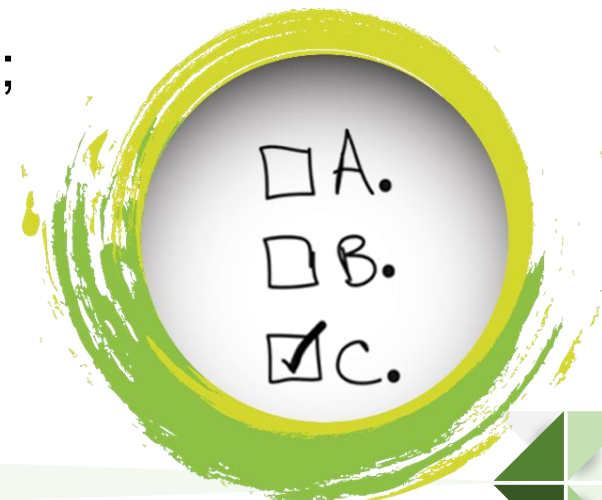




How to Improve the Quality of Test Questions (MCQ)

To improve multiple choice questions for future use, and to fix the problem for the current test in the following cases:

- Ambiguous answer;
- There's an overlap between the correct answer and the distractor;
- Unclear and confusing (ambiguous) wording;
- Implausible distractors.





Case 1: The Correct Answer is Miskeyed

In the "Multiple Choice" question, the value of the coefficient of discrimination was negative, that means that the percentage of students who chose the correct, but did not perform well in the test as a whole is higher than the percentage of those who answered the question correctly but performed well in the test all together. could be an indication of a mistake in selecting the key to correct answer when creating the question.

We can solve this problem by editing the test using **Edit Test**. Go to the question, click on the arrow next to it, choose **Edit**, and change the correct answer. Subsequently, the scores are automatically corrected for all students.





Case 2: Overlap between the Correct Answer and a Distractor



In case an equivalent number of understudies choose both “A” and “B” in a “Multiple Choice” question when the right answer is “A”; it is necessary to check whether there is an overlap between the correct answer and this distractor. Whenever demonstrated, this distractor ought to be replaced with a more effective one. Therefore, the problem can be fixed for the current test by permitting a full score for the students who have picked “B” using the **Allow Partial Credit** feature. This way, those students would be awarded a 100% score.



Case 3: Unclear or Confusing Question Wording

In case an equivalent number of understudies choose “A,” “B,” and “C” in a “Multiple Choice” question, it is better to check whether the question is ambiguous, or the answer options (distractors) are confusing.

Once confirmed, the question can be adjusted and modified for the future use. As for the current test, keeping the inquiry and giving every student a credit point in this question can fix the problem by allowing Partial Credit feature and granting all question choices 100%.



Case 4 : Implausible Distractors

If no student chooses a distractor (for example “A”) in a question, this means that it is ineffective. Therefore, it is recommended to replace with a more effective one for use in future tests.





Viewing the Test Results

Control Panel >> Grade Center >> Full Grade Center >>

Locate the grade column for the required test >>

Click the arrow in the column header>> **Column Statistics**

Grade Center : Full Grade Center

The Full Grade Center displays all columns and rows in the Grade Center and is the default view of the Grade Center. [More Help](#)

Create Column Create Calculated Column Manage Reports Filter

Grade Information Bar Last Saved

Move To Top Email

Sort Columns By: Layout Position Order:

<input type="checkbox"/>	LAST NAME	FIRST NAME	WEIGHTED TOTAL	TOTAL	TOTAL	QUIZ 1
<input type="checkbox"/>			--	119.42857	119.42857	8.00
<input type="checkbox"/>			--	0.00	0.00	--
<input type="checkbox"/>			--	84.42857	84.42857	12.00
<input type="checkbox"/>			--	109.42857	109.42857	12.00

- Quick Column Information
- Send Reminder
- Edit Test
- Change Due Date
- View and Add Alignments
- Grade Attempts
- Grade with User Names Hidden
- Attempts Statistics
- Download Results
- View All Attempts
- Grade Questions
- Item Analysis
- View Grade History
- Edit Column Information
- Column Statistics**
- Set as External Grade
- Hide from students (on/off)
- Clear Attempts for All Users
- Sort Ascending
- Sort Descending
- Hide from Instructor View



Column Statistics

The Column Statistics page displays statistics for overall performance in this test. These statistics are as follows:

Count: The number of students who completed the test.

Minimum Value: :Lowest test score

Maximum Value: : Highest test score

Range :The difference between the lowest and highest test scores. provides a basic measure of variability of test scores.

Average: :The sum of all scores divided by the number of scores.

Median : The midpoint score where equal numbers of scores fall above or below this score

Standard Deviation : The measure of how far the scores deviate from the average score.

Variance The measure of score dispersion—the square root of the variance is the standard deviation.

STATISTICS

Count	55
Minimum Value	10.00
Maximum Value	15.00
Range	5.00
Average	14.21818
Median	15.00
Standard Deviation	1.05642
Variance	1.11603





Column Statistics

STATUS DISTRIBUTION

Null	0
In Progress	0
Needs Grading	0
Exempt	0

Status Distribution : provides information about :

Null: The number of student in the course who did not attend the test

In Progress The number of student who did not complete the test yet

Needs Grading: The number of students who their score is not assigned yet and require grading

Exempt The number of student students been exempted in the test



Column Statistics

GRADE DISTRIBUTION

Greater than 100	0
90 - 100	45
80 - 89	8
70 - 79	1
60 - 69	1
50 - 59	0
40 - 49	0
30 - 39	0
20 - 29	0
10 - 19	0
0 - 9	0
Less than 0	0

Grade distribution displays information about the distribution of students grades in the test





Saving or Printing a Report

اختبار تجريبي لدورة تقييم جودة الاختبارات
Analysis Last Run April 27, 2020 2:30 AM. Run Item Analysis again to display the latest question data [Edit Test](#)

Test Summary

15	15	0	31	11.33	00 hr 06 min
Possible Points	Possible Questions	In Progress Attempts	Completed Attempts	Average Score	Average Time

Discrimination

8 Good Questions
2 Fair Questions
3 Poor Questions
2 Cannot Calculate

Difficulty

6 Easy Questions
9 Medium Questions
0 Hard Questions

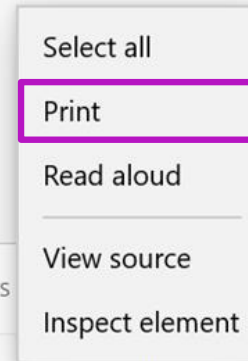
Filter Questions

Select Question Type: All Question Types

Select Discrimination: All Discrimination

Select Difficulty: All Difficulty

QUESTION	QUESTION TYPE	DISCRIMINATION	DIFFICULTY	GRADED ATTEMPTS	STD DEV	STD ERROR
Which is the most important city in Saudi Arabia?	Multiple Choice	-99.00	100.00%	31	1.00	0.00
Find the square of 2?	Multiple Choice	-99.00	100.00%	31	1.00	0.00
What vitamin comes from the sun?	Multiple Choice	-0.05	96.78%	31	0.97	0.18



To save or print a report (Item report ,Column Statistics)

- Choose the desired location (report's page)
- Use your browser's **Print** function (using the right click in your mouse






Saving or Printing a Report

To save or print a report (Item report ,Column Statistics)

- Select the appropriate options and the report will be saved as PDF file.
- See your browser's online help for more information about printing.


Printer

 Microsoft Print to PDF


Let the app change my printing preferences

☒ On

Orientation

 Portrait

Pages

 All pages
The whole document

Scale


Shrink to fit

Margins

Normal

Print Cancel

1 / 4

Home Page Courses Tutorials Library  89

Edit Mode: **ON** ?

Human Resource Training Courses **التقنيات الحديثة لتطوير الموارد البشرية**

Tests, Surveys, and Pools Tests Item Analysis : **التحليل الإحصائي لدرجة تقييم جودة الاختبارات**

اختبار تجريبي لدرجة تقييم جودة الاختبارات

Item Analysis: **التحليل الإحصائي لدرجة تقييم جودة الاختبارات**

The Item Analysis tool provides statistics on overall test performance and individual test questions to help you recognize questions that might be poor discriminators of student performance. You can use this information to improve questions for future test administrations or to adjust credit on current attempts. You can run item analyses on deployed tests, but not on surveys. Access previously run item analyses under the **Available Analysis** heading or select a deployed test from the drop-down list and click **Run** to generate a new report. [More Help](#)

Select Test: **اختبار تجريبي لدرجة تقييم جودة الاختبارات**

Available Analysis

اختبار تجريبي لدرجة تقييم جودة الاختبارات - April 27, 2020 2:30 AM

اختبار تجريبي لدرجة تقييم جودة الاختبارات

Analysis Last Run April 27, 2020 2:30 AM. Run Item Analysis again to display the latest question data [Edit Test](#)

Test Summary

15	15	0	31	11.33	00 hr 06 min
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Discrimination

8 Good Questions
2 Fair Questions
3 Poor Questions
2 Cannot Calculate

Difficulty

6 Easy Questions
9 Medium Questions
0 Hard Questions

Filter Questions





References

Lord, F.M. (1952). A theory of test scores. Psychometric Monograph. No 7

Suen, H. K. (1990). Principles of test theories. Hillsdale, NJ: Lawrence Erlbaum Associates.

Oosterhof, A. (1990). Classroom Applications of Educational Measurements. Merrill, Columbus, OH.

Haladyna. T. M. (2004). Developing and validating multiple-choice test items (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Crocker L, Algina J. (2008) Introduction to classical and modern test theory. 4th ed, USA: Cengage learning,





Thank you for your good listening

