PSYCHOMETRICS 101

by ExamSoft

ITEM QUALITY

Point Biserial	Discrimination Index	Difficulty Index
(-1.00 to 1.00) – Correlation between an Exam Taker's responses on an Item and how the exam Taker performed on the overall exam.	(-1.00 to 1.00) – Difference in performance between the upper 27% and lower 27% of Exam Takers	(0.00 to 1.00) – Proportion of Exam Takers who answered the question correctly.

Point Biserial

-1.00: Negative correlation
0: No correlation
1.00: Positive correlation

Discrimination Index

-1.00: More Lower performers got this question correct.
0: Upper and lower exam takers performed similarly.
1.00: More upper performers got this question correct.

Difficulty Index

$$\frac{\text{\# of correct answers}}{\text{\# of answers}} = \frac{\text{scaled}}{\text{value}}$$

EXAM QUALITY

KR-20	(0.00 to 1.00 – Measures Internal consistency reliability. Dependent on # of Exam Items and Exam Takers. As the value increases, the exam is considered more reliable and consistent.

Mastery vs Discrimination
Exam Item Intention is another consideration in the Interpretation of psychometrics data.
Difficulty Index values of 1.00 may be acceptable if the item is meant to measure mastery.
A Difficulty Index of 1.00 may not be appropriate for Items meant for knowledge discrimination.
The same applies for a point biserial or discrimination Index value of zero.

For School of Medicine Statistics Questions: Please see the Lori Ezzell or Joel Purkiss in the Department of Evaluation, Assessment, & Education Research.