

Rasch At Work

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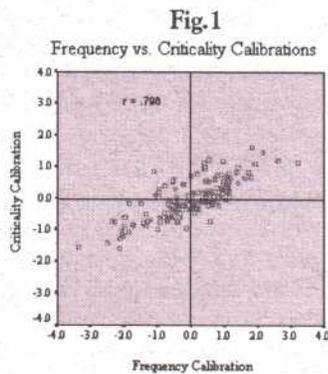


Job task analysis (often referred to as practice analysis, audit of practice, task analysis, or role delineation study) is used to validate examinations by providing a link between performance on the job and examination content. Performing a job task analysis (JTA) helps ensure that examination content specifications are current and relevant.

A nursing subspecialty group undertook a job task analysis, with the ultimate goal of updating their certification examination. The data consisted of responses from 427 individuals who participated in a task analysis survey. The respondents were asked to rate a variety of tasks based on how frequently they were performed and how critical they were to professional practice.

The data were analyzed with the Rasch model, which positioned the tasks on two linear scales. Tasks were ordered based on their relative frequency or criticality.

Figure 1 shows the frequency scale plotted against the criticality scale. Those tasks in the upper right quadrant are frequently seen and considered critical to practice by the respondents. Those tasks in the lower left quadrant are infrequently seen and not deemed critical to practice.



The frequency variable spanned a range of approximately 4 logits, with negative calibrations representing interventions rarely practiced and positive calibrations representing tasks frequently practiced. The criticality variable spans approximately 4 logits, with negative calibrations representing unimportant tasks and positive calibrations representing very important tasks.

Subject-matter experts reviewed these results. On the frequency and criticality scales, tasks having calibrations that fall below $-.50$ on either or both scales are potential choices for elimination from the examination content. These are tasks that are infrequently encountered, unimportant, or both. Subject-matter experts also reviewed items identified as misfitting.

Calibrations were transformed to relative percentage of questions on the examination using a procedure developed

by Lunz, Stahl, and James (1989). This ensures that the tasks with the highest calibrations on the variable receive the highest relative percentage of items on the test and the tasks with the lowest calibrations receive the lowest percentage of items on the test.

By performing a job task analysis, an organization is able to determine the tasks and procedures most relevant to professional practice, and construct certification and licensure examinations that reflect these responsibilities. Using the Rasch model for calibration ensures that the tasks are on an equal interval scale. Plotting the criticality scale against the frequency scale allows subject matter experts to determine what tasks are both critical and frequently seen, thus enabling them to make informed decisions about content specifications. Test content can be balanced to ensure that tasks having the highest calibration on the latent variable receive the highest relative percentage of items on the test and the tasks having the lowest calibration receive the lowest percentage of items on the test.

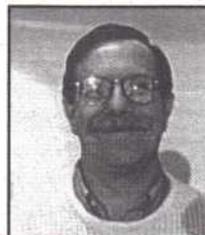
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Bibliography

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