

# The A★Star® Audit



## An audit of the test and its administration

The A\*Star<sup>SM</sup> Audit is a comprehensive review of test score results to assure their suitability for their intended purpose. The review examines the psychometric characteristics of the test and the standardization of the test administration and scoring. Where the review finds limitations or problems, the source, nature, and significance are identified. The review may also be used to identify areas of exemplary performance, measures of achievement gain, correlates of performance and other characteristics.

### Expected and observed test results

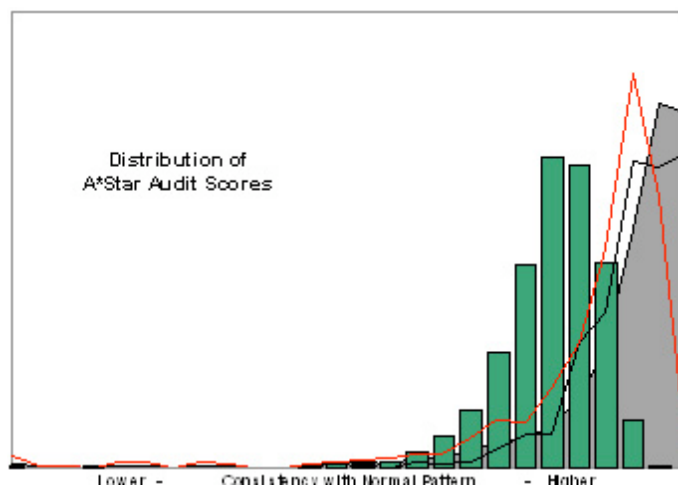
Test results are often influenced by the environment in which they are administered. Flaws in test design or misapplication of tests may become apparent only when administered under operational conditions. Further, errors or omissions in testing procedures and inattention to proctor training may significantly skew the results from the very best tests. These 'environmental' effects may be more pronounced among lower performing test takers, misdirecting the interpretation of test scores and the decisions based on them.

### A tested, sophisticated program

The A\*Star Audit is conducted by entering the detailed test results into a sophisticated software program, a program developed after years of on-site reviews, methodological development, and applications in school and industry settings. The passage of the data through the analysis is monitored by application specialists and interpreted by psychometricians.

Audit results available in a user friendly software program

### Timely, confidential, non-intrusive



The A\*Star Audit provides an offsite, confidential, timely review without intruding into classroom, test center, or office operations.

The review results provide support for high quality assessment, direction for areas where improvement may be indicated, and, where necessary, identification of instances of improper influence on the test administration.

## Review of the test

The audit review evaluates the test, not for what it measures, but for how well it makes the measurement. In this regard, the review examines the internal consistency and range of measurement, the suitability of the measurement for critical decisions (pass/fail, certification, program assignment, etc.), and the capability of the measurement to support an analysis of the standardization of the test administration.

## Review of the test administration

(U.S. Patent 6,960,088)

The audit review applies an innovative, patented method of group test item response pattern analysis to evaluate the consistency of the test administration with the standardized procedures established by the test publisher.

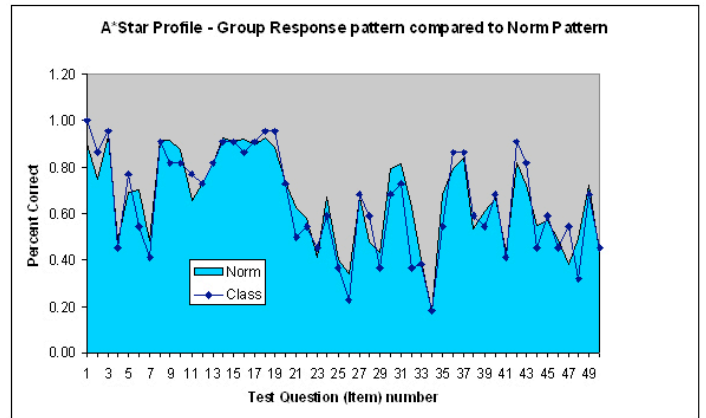


The review determines normative group response patterns and normal pattern variation. Response patterns of all individual test taker groups are evaluated against the appropriate norm and measured in terms of the normal variation. Exceptional groups are further evaluated for the cause of their deviation from the norm.



## Review of Irregular Groups

Classroom group with close agreement to the norm

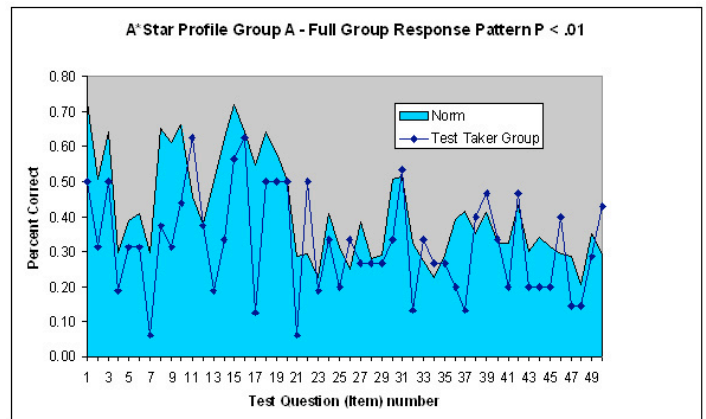


Test taker groups (by classroom, school, test center, etc.) with unusual test item response patterns are evaluated for the likelihood of inadvertent errors in test administration and potentially improper influence on test taker responses

**Classroom group with irregular pattern – likely due to confusion and misdirection from the proctor.**

### Example Irregular Group

Pattern probability:  $P < .01$

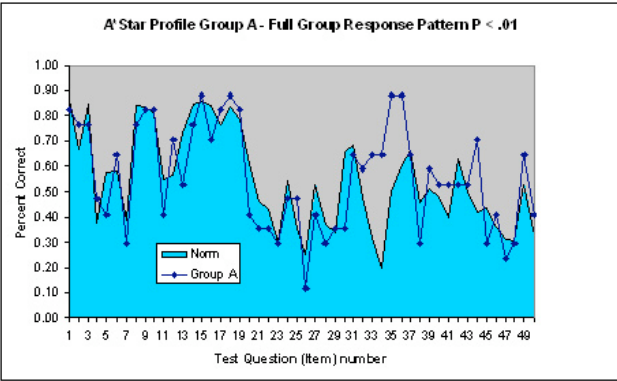


## Irregular Groups & Subject Groups

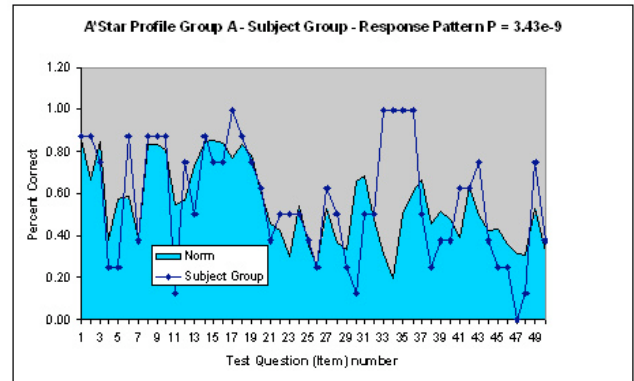
The response patterns of irregular groups are highly unlikely to occur in a normal test administration. Most have subset, 'subject groups' that indicate the cause of the irregularity.

Likely assistance with a difficult, confusing section of the test.

**Example Group A: n = 17**  
Pattern probability:  $P < .01$

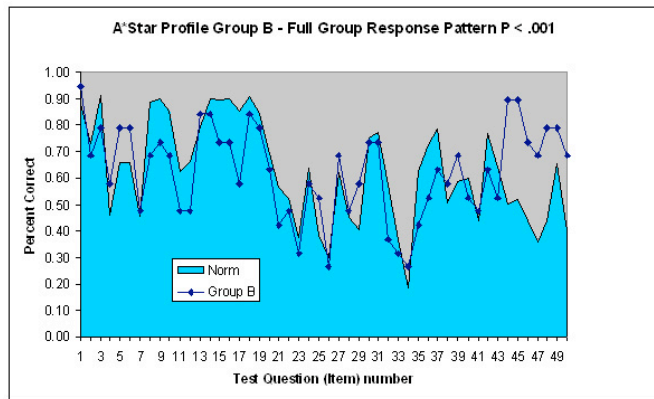


**Group A - Subject Group: n = 8**  
Pattern probability:  $P = 3.43e-9$

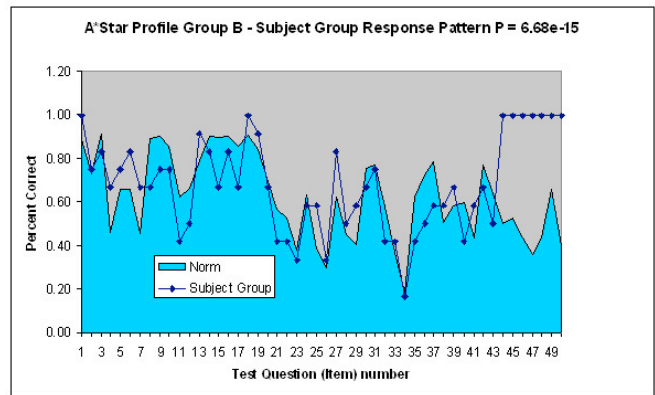


Likely additions or changes of answers following the administration.

**Example Group B: n = 19**  
Pattern probability:  $P < .001$

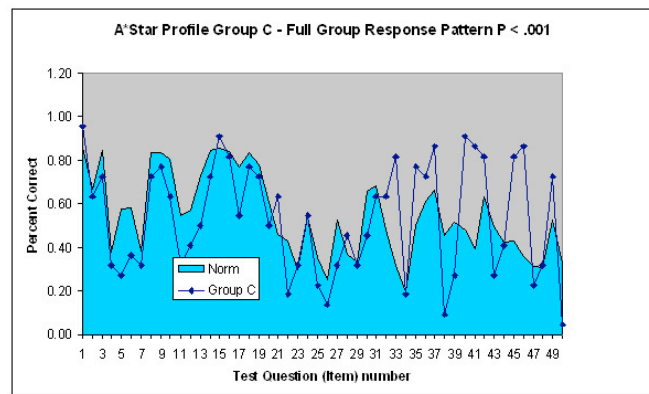


**Group B - Subject Group: n = 12**  
Pattern probability:  $P = 6.68e-15$

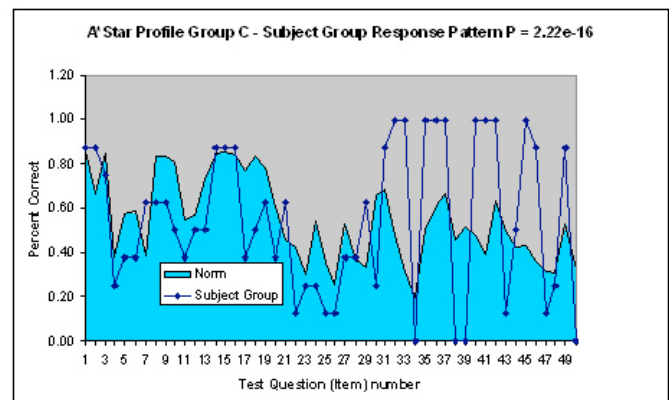


Likely copying one test taker's answers, both correct and incorrect, to selected, low scoring test taker's answer documents.

**Example Group C: n = 19**  
Pattern probability:  $P < .001$



**Group C - Subject Group: n = 8**  
Pattern probability:  $P = 2.22e-16$



# A\*Star Audit Report

The A\*Star Audit Report is provided as both a written document and as an electronic file with user friendly software to support further search and analysis.

**The written report** provides the psychometricians' analysis of the test, the test administration, and the significance of any problems found by the review. Individual client options determine the areas of analysis and the depth of the written review.

**The electronic file** provides a versatile resource for the client to access the audit information for organizational use. The file includes a comprehensive listing of all test administrations and test taker groups along with A\*Star measures of reliability and, where warranted, estimation of assessment problems. The client may initiate a review of client selected test taker groups by group identification, by group characteristics or by group test results. Individual test takers may be identified whose scores are likely to not support critical (i.e. pass/fail) decisions. The client may merge other client file information to permit, for example, a review of new proctors, or by other organizational information. With multiple reviews conducted over time, the Report file may provide evaluation of test taker gains, or changes in instruction, recruitment, selection or other organizational programs.

## Support for A\*Star interpretations

### Monitor test administrations

A\*Star personnel have monitored a wide range of test administrations, including those in elementary and middle school, at occupational training schools, and at employer hiring locations. This experience supports the interpretation of many different forms of misadministration, including testing site problems, inadvertent proctor errors, and deliberate manipulation.

### On site audits

On site audits of assessment programs where irregular response patterns have been found support conclusions of misadministration as the cause. Specific misadministration practices are found to result in characteristic irregularities.

### Review of answer documents

Many forms of improper influence involve changing or adding to answers recorded on answer documents. Reviews of answer documents find that patterns of 'bubbling in' or erasing answers may confirm certain forms of response pattern irregularity and yet are unaffected by other forms of pattern irregularity. As examples, an exceptionally high volume of erasures has been found with the pattern of Group C and yet no unusual erasures or answer marks with the pattern of Group B.

### Study of sequential test administrations

Analysis of multiple test administrations by a large number of teacher/proctors allows an analysis of the frequency of irregularities by test administrator. The analysis finds that proctors who are found with irregular response patterns are more than 20 times more likely to have irregular response patterns on subsequent test administrations.

### Study of response pattern irregularities across institutions and test taker groups

A\*Star has conducted response pattern reviews in multiple school districts and across several hundred occupational training schools. The nature of response pattern irregularities are found to be highly similar, reflecting method of misadministration rather than test taker group or institution where the testing is conducted.

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