

Design Considerations

Article 2

CTB/McGraw-Hill, April 11, 2003, The Computer-Based or Online Administration of paper-Pencil Tests, *Journal of Technology, Learning, and Assessment*, 2(1).

The purpose of the document is to describe what is necessary for test scores to be considered interchangeable between paper-and-pencil (p&p) and online modes of test administration. The requirements for interchangeability refer to scores, pertain to performance standards, pools of IRT item parameter estimates, and the scale on which they are placed. Interchangeability does not indicate that all test items perform the same in both test modes. Some items may be easier or more difficult when tested online, the positive and negative effects of each mode counteract one another and equal out to a negligible effect on the total score. The mode effects must be controlled by the test blueprint so that a significant effect does not impact scores. Interchangeability criteria is outlined in the *Guidelines for Computer-Based Tests and Interpretations*. Three factors are listed and discussed that could adversely affect p&p and computer-based score comparability: 1) extent of computer experience by the student; 2) scrolling to read long passages; and 3) speed to answer questions. To assess score equivalency across modes of testing research studies used two designs: randomized equivalent design and single group repeated measure design to determine comparability of modes.