



Wonderlic Basic Skills Test



User's Manual for Ability-to-Benefit Testing

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TABLE OF CONTENTS

Introduction	2
The WBST Quick Reference Guide	3
Part I: Overview of the WBST	5
Test Forms	6
Administration Time	6
Overview of Test Content	6
Part II: The Wonderlic ATB Program	11
Compliance	12
Overview of the Wonderlic ATB Program	13
Definition of an Independent Test Administrator (ITA)	14
Definition of an Assessment Center	15
Independent Test Administrator Certification	16
Summary of ITA Responsibilities	17
School Guidelines for Maintaining Test Administrator Independence.....	17
ITA Review and Decertification	18
ATB Scoring and Reporting	18
Part III: ITA Proctor's Guide	19
Standardized Testing	20
Test Security	20
Preparation for the Testing Session	21
The ATB Answer Sheet	22
Timed Test Administration	24
Test Administrator's Dialogue.....	24
Untimed Test Administration	32
Test Administrator's Dialogue (untimed).....	33
Testing Individuals with Special Needs	35
Identifying Reasonable Accommodations.....	35
Official Test Scoring for ATB Determination	36
Unofficial Test Scoring	37
Retesting	38
Choosing the Correct Form for Retesting	39
Part IV: ATB Test Score Interpretation	41
Minimum ATB Passing Scores	42
Individual ATB Score Report Interpretation Guide	42
Grade Level Equivalency	44
Reporting	48
Part V: Technical Information	49
ATB Minimum Score Determination	51
Untimed Test Score Adjustment	54
Test Validity	56
Test Reliability and Errors of Measurement	57
Item Response Theory	61
Test Development	67
Acknowledgements	76
References	77
Appendices	78
Wonderlic ATB Program Codes and Program Titles	80
School Sponsorship Form for Independent Test Administrators	83
Independent Test Administrator Registration Form	85

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INTRODUCTION

The Wonderlic Basic Skills Test (WBST) is a short form measure of adult language and math skills which are generally learned in high school. The content of the WBST measures levels of General Educational Development (GED) as defined by the U.S. Department of Labor in the *Dictionary of Occupational Titles*. As a measure of basic language and math skills, the WBST can serve many purposes. The WBST is commonly used to help identify students and job applicants who have the skills to successfully handle the written and computational requirements of any career training program or entry level job. The WBST is used by schools, government agencies, industry, and private businesses in selecting applicants who are likely to succeed. The WBST is also used to place individuals into educational functioning levels and to evaluate improvement in skills as a result of educational training and relevant experiences.

On October 25, 1996, the WBST was approved by the U.S. Department of Education for use in qualifying non-high school graduates to receive Federal financial assistance for postsecondary training under Title IV of the Higher Education Act of 1965. As recommended, these students must be tested to determine whether they have the ability to benefit from postsecondary school training programs. This testing has become known as "Ability-to-Benefit" or ATB testing.

The Wonderlic ATB Program was developed to serve postsecondary schools that purchase the WBST for use in ATB testing. The program institutes testing procedures that fulfill all requirements of the U.S. Department of Education for the approved use of the WBST. These procedures begin with the certification of Independent Test Administrators (ITAs) and govern all aspects of test administration, scoring, and reporting. This manual provides complete instructions for proper use of the WBST as it pertains to the program. Therefore, the information provided in this manual is critical for appropriate use of the WBST in ATB testing.

Test administrators can quickly learn the fundamental requirements for administering the WBST for ATB purposes by reading the "ITA Proctor's Guide," pages 19 - 40 of this manual. In addition, test administrators should take the WBST to gain experience with the test instructions and content. Individuals who wish to become certified to conduct ATB testing with the WBST will need to complete all steps detailed in the "Independent Test Administrator Certification" section of this manual.

Thank you for selecting the WBST and the Wonderlic ATB Program. Your participation in this program provides a valuable service to students. Since 1937, over 100 million individuals have taken Wonderlic assessments in seeking new careers, training, and school admissions. We look forward to working with you as a valued partner in the Wonderlic ATB Program.

If you have any questions or concerns, please do not hesitate to call Wonderlic Education Solutions at (877) 605-9494.

Independent Test Administrator Certification

Only certified Wonderlic Independent Test Administrators (ITAs) may administer the WBST for the purpose of qualifying applicants for Title IV Federal financial assistance. The online Wonderlic ITA certification process is described in detail on page 16.

Test Instructions

Step-by-step instructions for completing the applicant and school information sections of the Wonderlic Basic Skills Test ATB Answer Sheet are provided on pages 22-27. For a listing of program codes see pages 80-81. Instructions for conducting the testing session are provided on pages 24-34.

Administration Time

The verbal and quantitative sections of the WBST have a testing time limit of 20 minutes each. An additional 10 minutes is required to complete the demographic information on the answer sheet. Practice items can be completed in 3-5 minutes.

Test Scoring

All ATB answer sheets must be returned to Wonderlic Education Solutions for official ATB scoring as described on page 36. An ITA or school official may generate an unofficial Individual ATB Score Report using the WBST online scoring template as described on page 37.

Note: School employees and officials must never be in possession of completed original test answer sheets; however, they may generate unofficial ATB test scores by using copies of original test answer sheets.

Test Score Interpretation

The U.S. Department of Education has mandated that all ATB applicants taking the WBST to qualify for Title IV Federal financial assistance must achieve a verbal score no less than 200 and a quantitative score no less than 210 in the same test administration. Only test scores appearing on the official WBST Individual ATB Score Report provided by Wonderlic Education Solutions may be used for ATB determinations. An interpretation guide for this report is provided on pages 41-48.

Detailed and Summary Reporting

Wonderlic provides each school participating in the Wonderlic ATB Program the ability to generate detailed and summary reports in addition to the individual student reports. These reports present local testing norms and are designed to help schools monitor their testing programs for accuracy, fairness, and compliance with Wonderlic procedures and U.S. Department of Education regulations.

Need Help?

Call us at (877) 605-9494

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PART I:

Overview of the WBST

OVERVIEW OF THE WBST

Test Forms

The WBST consists of two separate sections - the Test of Verbal Skills and the Test of Quantitative Skills. All verbal and quantitative forms of the WBST are equivalent and can be used interchangeably. Currently, the following forms of the test are approved by the U.S. Department of Education for use in ATB testing:

- Verbal - Forms VS-1 and VS-2
- Quantitative - Forms QS-1 and QS-2

For ATB determination, the Test of Verbal Skills and the Test of Quantitative Skills must be administered in sequence. When conducting a WBST administration, the verbal test section should be administered before the quantitative section. Applicants use verbal skills on a daily basis; therefore, beginning with the verbal section should ease general test anxiety.

A passing test score on both the verbal and quantitative sections in the same administration is required for ATB determination.

Administration Time

Prior to testing, approximately 10 minutes will be required to complete the demographic sections of the machine readable ATB answer sheet. Each test section includes practice items which can be completed in about 3-5 minutes, followed by a 20 minute timed testing period. Under certain circumstances it may be appropriate to administer the test untimed. See page 32 for details.

Overview of Test Content

The WBST is a short form measure of adult language and math skills which are generally taught in high school. The WBST is used to identify students and job applicants who can successfully handle the fundamental written and computational requirements of any career training program or entry level job.

According to *The Condition of Education, 1992*, published by the U.S. Department of Education, National Center for Education Statistics, nearly half of all 17-year-old high school students are not enrolled in math courses beyond introductory algebra and geometry. In addition, verbal test scores from the National Assessment of Educational Progress (NAEP, 1996) indicate that 93% of 17-year-old high school students do not demonstrate the reading proficiency necessary to synthesize and learn from specialized reading materials.

These findings are consistent with Wonderlic normative research which indicates that students are still learning and improving their proficiency with basic verbal and quantitative skills throughout high school and college. Their proficiency with the academic subject matter measured by each WBST item is indicated by the observed percentage of students who answer the test item correctly (p-value). Figures 1 and 2 illustrate these item level percentages for high school students who have taken forms VS-1 and QS-1. These figures reveal that on the majority of WBST items, high school students demonstrate item level proficiencies ranging from 24% to 89% for verbal skills and 10% to 88% for quantitative skills.

Figure 1

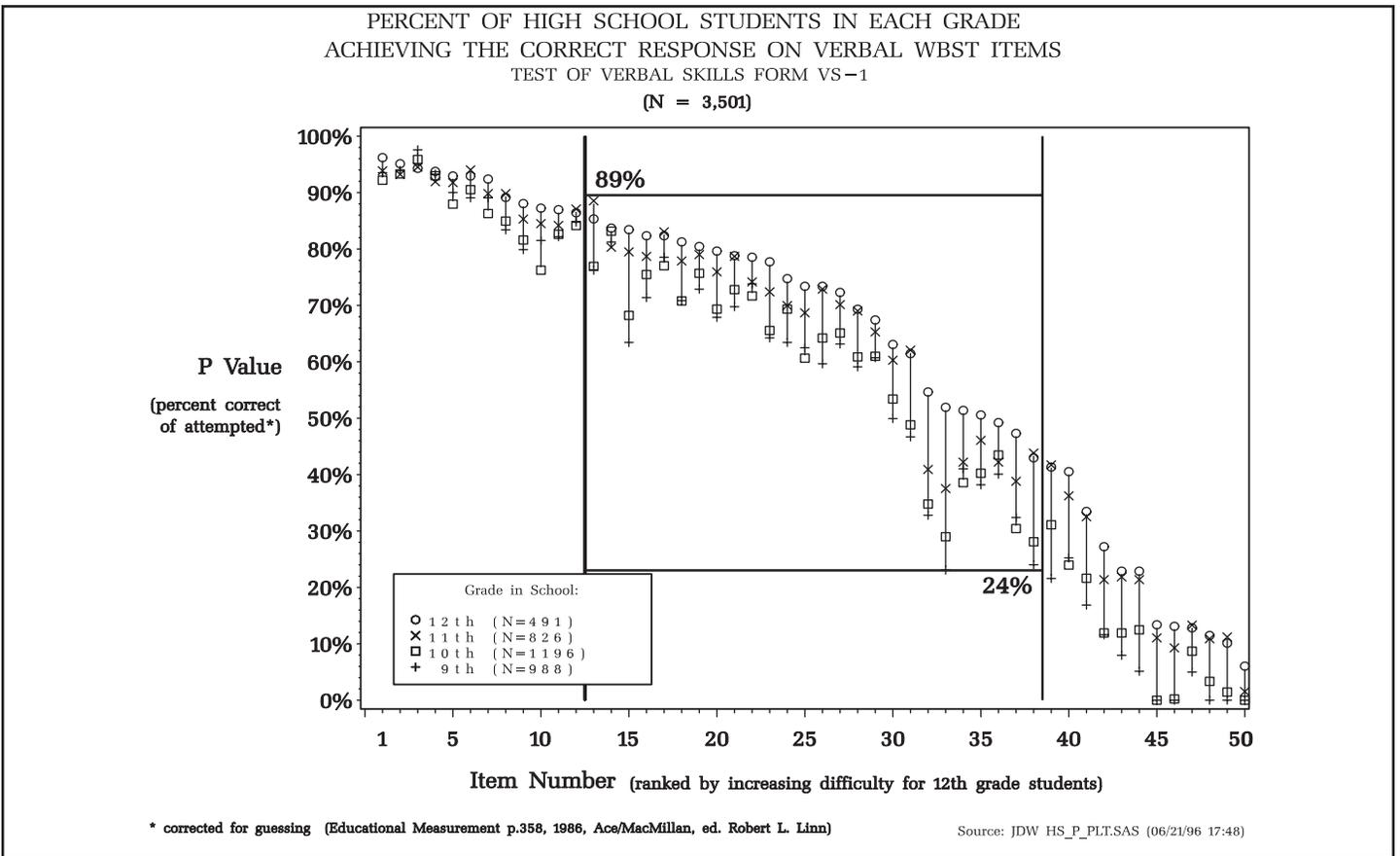
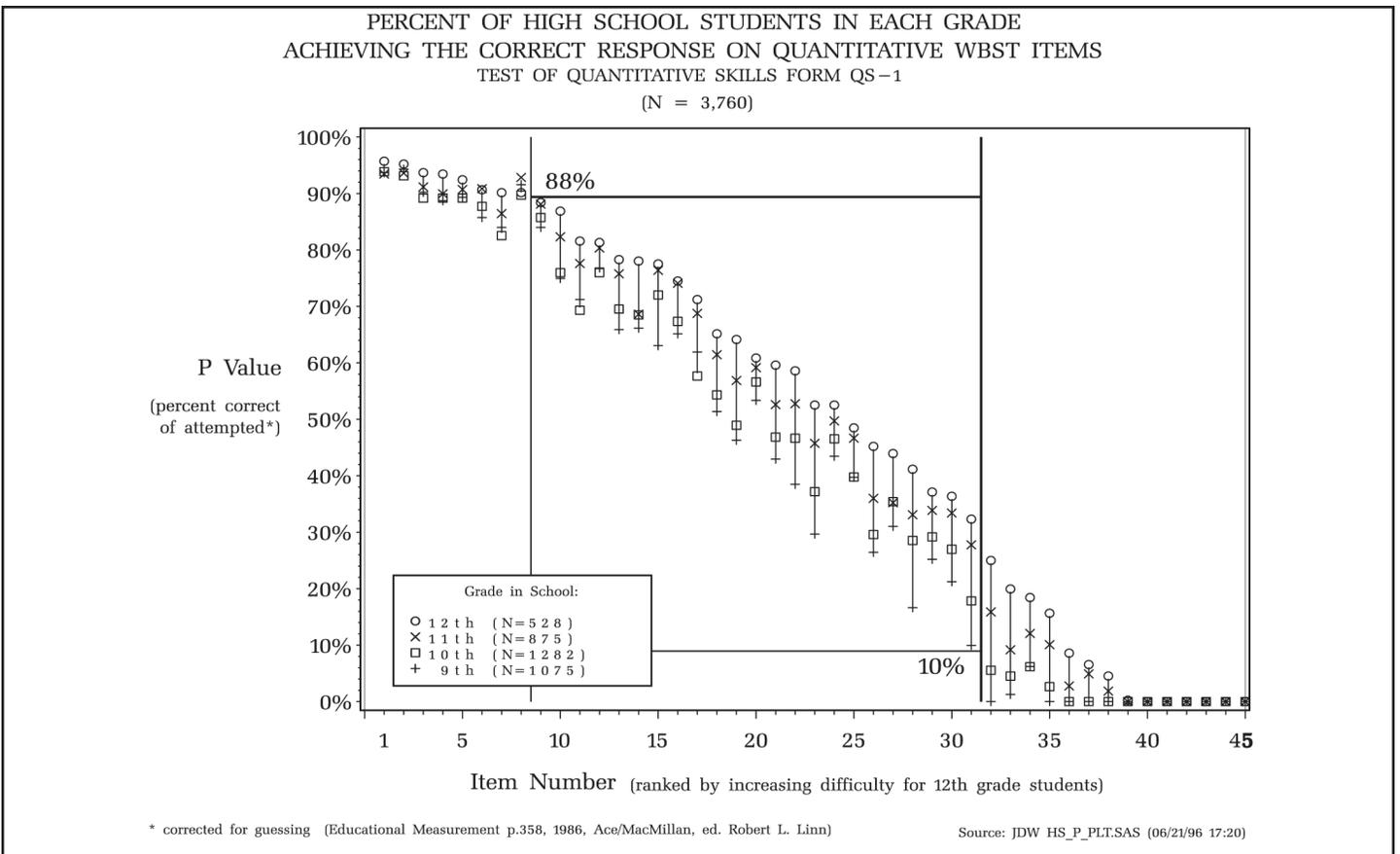


Figure 2



Test of Verbal Skills

Questions on the WBST Test of Verbal Skills are presented in three different formats - explicit, applied, and interpretive. Explicit questions require knowledge of word meanings, grammar, and sentence construction. Applied questions involve general reading comprehension and knowledge of word meanings, grammar, and sentence construction in the context of passages involving practical applications. Interpretive questions require the understanding and use of information in diagrams, charts, tables, and graphs. The WBST Verbal Form contains 50 questions which help measure a broad range of language skills across the three primary content domains shown in the table below.

Test of Verbal Skills

Verbal Skills Domain	Skills
Locate, Understand, and Use Information in Multiple Formats	<ul style="list-style-type: none">• Locate specific information in various formats• Understand and use "how to" instructions• Use literature and other written information
Recognize Word Meanings by Definition or Context	<ul style="list-style-type: none">• Complete a sentence with an appropriate word in context• Recognize word meanings• Recognize multiple meanings of words used in context• Recognize meanings of unfamiliar words used in context
Recognize and Identify Proper Grammar and Sentence Construction	<ul style="list-style-type: none">• Identify a complete sentence• Identify agreement of subject and verb• Recognize standard sentence structure• Complete compound and complex sentences• Recognize grammatical errors in compound and complex sentences

Test of Quantitative Skills

Questions on the WBST Test of Quantitative Skills are also presented in three different formats - explicit, applied, and interpretive. Explicit problems require direct math computation, quantitative evaluation, and algebra. Applied problems involve identifying and performing appropriate math operations in the context of practical applications. Interpretive problems require the evaluation and use of quantities presented in diagrams, charts, tables, and graphs. The WBST Quantitative Form contains 45 questions which help measure a broad range of mathematic skills across the three primary content domains shown in the table below.

Test of Quantitative Skills

Quantitative Skills Domain	Skills
Basic Math Computation	<ul style="list-style-type: none">• Addition, subtraction, and division<ul style="list-style-type: none">- Whole numbers- Whole monetary units- Whole units of measure including English and metric units of time, length, weight, and distance
Basic Math Computation and Quantitative Evaluation	<ul style="list-style-type: none">• Addition, subtraction, multiplication, and division<ul style="list-style-type: none">- Proper and improper fractions and mixed numbers- Fractional monetary units- Fractional units of measure including units of time and English and metric units of length, weight, and distance• Computation of rates, proportions, and percentages• Evaluation and interpretation of line, bar or pie graphs• Comparisons of fractional magnitudes
Algebra and Geometry	<ul style="list-style-type: none">• Computation of rates, proportions, and percentages• Evaluation, simplification, and solving of variable expressions and equations• Computation of length, angle, area or volume involving plane and solid geometric figures• Understanding and use of the Pythagorean Theorem

Significant Digits and Rounding

Precision of measurement and significant digit rules are not a basic skill that is assessed by the Test of Quantitative Skills. Therefore, all decimal fractions or measurements expressed as decimal fractions are assumed to be exact and infinitely precise. Some questions that involve the computation of percentages on units which must be expressed in whole numbers, such as people, toys, cents, plants, cats, etc., may require rounding to arrive at the correct response.



PART II:

The Wonderlic ATB Program

THE WONDERLIC ATB PROGRAM

Compliance

Effective July 1, 1991, the Higher Education Technical Amendments of 1991 (P.L. 102-26) amended the Higher Education Act of 1965 to require postsecondary students who do not have a high school diploma, or its equivalent, to pass an independently administered examination that has been approved by the Secretary of Education before receiving Title IV Federal financial assistance. Such examinations are intended to establish that students have the ability to benefit from postsecondary school training programs. This testing has become known as Ability-to-Benefit or ATB testing.

Effective October 25, 1996, the U.S. Department of Education's "Student Assistance General Provisions; Final Rule" states specific procedures and requirements for ATB testing which affect test publishers, schools, and Independent Test Administrators (U.S. DOE, Dec. 1, 1995). Strict compliance with these regulations is mandatory in qualifying students for Title IV Federal financial assistance.

All ATB tests must be approved by the U.S. Department of Education. The Department has published regulations specifying the requirements which must be met by all approved tests. The initial list of approved tests under these regulations was published in the *Federal Register* on October 25, 1996. WBST forms VS-1, VS-2, QS-1 and QS-2 received approval and appear on this list (U.S. DOE, Oct. 25, 1996).

The Wonderlic ATB Program was developed to serve postsecondary schools that purchase the WBST for use in ATB testing. The program institutes testing procedures that fulfill all requirements of the U.S. Department of Education for the approved use of the WBST.

This *WBST User's Manual for ATB Testing* provides complete information on the Wonderlic ATB Program and the proper use of the WBST for ATB testing.

Overview of the Wonderlic ATB Program

The Wonderlic ATB Program is a service designed to fully support schools using the WBST to meet U.S. Department of Education requirements for ATB testing. The program institutes specialized procedures for WBST administration, scoring, and reporting.

As part of the program, participating schools must register Independent Test Administrators (ITAs) with Wonderlic. Wonderlic trains and certifies ITAs in all aspects of proper ATB test administration. The Wonderlic ATB Program is a dynamic system in which school administrators, ITAs, and Wonderlic staff communicate frequently. This interaction identifies and resolves issues quickly and builds expertise among all participants. The ITA certification process helps ensure that Wonderlic ITAs are among the best qualified test administrators in the country.

WBST scores used to qualify students for Title IV Federal financial assistance must be provided by Wonderlic Education Solutions on the official *WBST Individual ATB Score Report*. The fees associated with this service are billed directly to the school.

ITAs conduct testing and submit applicant test answer sheets to Wonderlic for official scoring and reporting. Wonderlic provides schools with administrative reports reflecting their ATB testing activity and providing statistical analyses of normative test data. These reports are intended to review and document the integrity of school testing programs.

All schools participating in the Wonderlic ATB Program receive dedicated technical and administrative support from Wonderlic Education Solutions, as well as:

- ITA Training and Certification
- Individual ATB Score Reports
- Online Access to Test Score Summary Listings and Administrative Reports
- Resources on ATB Testing Regulations
- Documentation of Compliance

Definition of an Independent Test Administrator (ITA)

The position of Independent Test Administrator was created by Congress as a provision of the Student Loan Default Prevention Initiative Act of 1990. This law was later revised by the Higher Education Technical Amendments of 1991. The final regulations which govern independent test administration were published in the *Federal Register* on December 1, 1995. ITAs have been given the responsibility to conduct proper and impartial ATB testing.

The law requires that all non-high school graduates who apply for Federal financial assistance shall pass an independently administered examination approved by the Secretary of Education. This means that ATB testing can be conducted only by test administrators who are not affiliated in any way with the school or its staff. The U.S. Department of Education has published regulations which provide the legal definition of test administrator independence. These regulations state, in part, that tests must be administered by a test administrator who:

"Has no current or prior financial or ownership interest in the institution, its affiliates, or its parent corporation, other than the interest obtained through its agreement to administer the test, and has no controlling interest in any other educational institution;

Is not a current or former employee of or consultant to the institution, its affiliates, or its parent corporation, a person in control of another institution, or a member of the family of any of these individuals;

Is not a current or former member of the board of directors, a current or former employee of or a consultant to a member of the board of directors, chief executive officer, chief financial officer of the institution or its parent corporation or at any other institution, or a member of the family of any of the above individuals and

Is not a current or former student of the institution." (U.S. DOE, Dec. 1, 1995, *Fed. Reg.*, §668.151)

ITAs may not administer the WBST for ATB determination without first being issued a *Wonderlic Independent Test Administrator Certificate of Registration*. All requirements necessary to receive this certification are described in the "Independent Test Administrator Certification" section of this manual.

Definition of an Assessment Center

The U.S. Department of Education recognizes that some schools have established assessment centers to conduct testing for admissions and counseling purposes. Title IV funding regulations define an assessment center as a testing center which:

1. Is located at an eligible institution that provides two-year or four-year degrees, or qualifies as an eligible public vocational institution;
2. Is responsible for gathering and evaluating information about individual students for multiple purposes, including appropriate course placement;
3. Is independent of the admissions and financial aid processes at the institution at which it is located;
4. Is staffed by professionally trained personnel; and
5. Does not have as its primary purpose the administration of Ability-to-Benefit tests.

Assessment center test administrators may not administer the WBST for ATB determination without first being issued a *Wonderlic Independent Test Administrator Certificate of Registration*. All requirements necessary to receive this certification are described in the "Independent Test Administrator Certification" section of this manual.

Wonderlic does not permit assessment center test administrators to officially score the WBST for ATB determination.

Independent Test Administrator Certification

Wonderlic requires all assessment center test administrators and Independent Test Administrators (ITAs) to successfully complete the online Wonderlic ITA certification process. Prior professional experience or training in test administration is not a prerequisite to becoming a certified Wonderlic ITA. All ITAs, regardless of prior experience, are required to learn and comply with specific procedures which are unique to the WBST and the Wonderlic ATB Program. Certified ITAs will be held accountable by Wonderlic and the U.S. Department of Education to fully comply with all procedures defined in this manual.

Before a test administrator can become certified, Wonderlic must receive the following completed documents or information from the school and/or the test administrator:

1. *Independent Test Administrator Registration*

Wonderlic collects personal information, such as name and address, at the outset of the online certification process. We also verify that the ITA candidate meets all U.S. Department of Education requirements for test administrator independence and agrees to comply with all procedures of the Wonderlic ATB Program.

2. *School Sponsorship Form for Independent Test Administrators*

This document is completed by the school and establishes the school's commitment to the test administrator and to the Wonderlic ATB Program. It must be completed by a school official.

Note: ITAs may test for more than one school, but each location is required to file a school sponsorship form. Wonderlic must have this completed form on file for a given location before answer sheets are scored or the tests will be marked Invalid.

3. *A successfully completed WBST Administrator's Examination*

This online examination verifies that the test administrator has the necessary training, knowledge, and skills to test applicants in accordance with the requirements of the Wonderlic ATB Program and the U.S. Department of Education.

If applicable, Wonderlic will provide ITA candidates with Test Instruction Pages (TIPs) after the examination is scored. These documents provide additional instruction on questions the test taker did not correctly answer on the examination. The ITA candidate should review this material before logging into the examination again to try to answer the questions correctly.

4. *The test administrator's signed acceptance of the Wonderlic Independent Test Administrator Code of Conduct*

This document indicates their commitment to conducting themselves in a professional manner and adhering to all of the rules of proper ATB test administration. Wonderlic will provide it to the ITA for signature upon successful completion of the WBST Test Administrator's Examination.

5. *A signed Wonderlic Independent Test Administrator Participation Agreement Form*

This document allows Wonderlic to set up the test administrator with limited access to the official Wonderlic Online ATB Reporting website that they can use to look up a student's prior testing history.

6. *A photocopy of a current, valid photo ID, e.g., Driver's License, State-issued ID, etc.*

The ITA certification process must be initiated by a school. Schools can contact Wonderlic Education Solutions to complete a School Sponsorship Form for Independent Test Administrators. Wonderlic will then send the ITA candidate an email invitation to start the ITA certification process. When the prospective ITA successfully completes the WBST Administrator's Exam and provides all the necessary information and documentation, Wonderlic will immediately issue a Wonderlic Independent Test Administrator Certificate of Registration.

ITAs must be issued their certificate before administering tests and submitting ATB answer sheets to Wonderlic for official ATB scoring. This certificate expires annually and must be renewed through an abbreviated recertification process. Certified ITAs should provide a photocopy of their certificate to each school location for which they conduct testing.

Summary of ITA Responsibilities

The Wonderlic ATB Program is designed to meet the highest professional standards for test administration, as well as all U.S. Department of Education regulations. The program requires ITAs to personally conduct each step of the ATB testing process including:

1. Distributing test materials
2. Reading test instructions to applicants
3. Timing the test administration
4. Monitoring the entire testing session
5. Collecting test materials
6. Providing unofficial test results to schools upon request
7. Submitting answer sheets to Wonderlic for official scoring within two business days of testing

The specific procedures for conducting each of these steps are detailed in the "ITA Proctor's Guide" section of this manual.

School Guidelines for Maintaining Test Administrator Independence

The U.S. Department of Education regulations provide the following guidelines which schools must follow to maintain the independence of their ATB test administrator:

"The Secretary considers that a test is not independently administered if an institution:

- 1. Compromises test security or testing procedures;*
- 2. Pays a test administrator a bonus, commission or any other incentive based upon the test scores or pass rates of its students who take the test;*
- 3. Otherwise interferes with the test administrator's independence or test administration."* (U.S. DOE, Dec. 1, 1995, *Fed. Reg.*, §668.151)

Under no circumstances should a school allow a test administrator to conduct ATB testing using the WBST without first receiving verification from Wonderlic that the administrator is a certified Wonderlic ITA. Wonderlic Education Solutions can be contacted at (877) 605-9494 for confirmation.

ITA Review and Decertification

U.S. Department of Education regulations require Wonderlic to monitor and review the testing practices of each certified Wonderlic ITA and to decertify any ITA who violates or compromises approved ATB testing procedures. As specified in these regulations, grounds for decertification include:

- Failure to maintain test security.
- Failure to maintain the integrity of the testing process.
- Failure to administer the WBST in exact accordance with Wonderlic procedures.
- Failure to personally submit ATB answer sheets to Wonderlic for scoring within two business days of testing.
- Failure to remain independent from a school as defined in the regulations — for example, by accepting a bonus, commission, incentive or any other compensation based on the test scores or pass rates of applicants.

On a regular basis, Wonderlic will review the WBST scores of all applicants tested by each certified Wonderlic ITA. This review process has been mandated by the U.S. Department of Education and is intended to protect ATB applicants from the improper use of testing materials. An accurate evaluation of an ITA's testing practices must be based on a review of each answer sheet from every ATB test administration conducted. Therefore, the ITA is required to send all completed answer sheets to Wonderlic Education Solutions for official scoring – even if unofficial scoring indicates that the applicant will not meet ATB minimum scores or the administration of the test was incomplete. Wonderlic provides ITAs and schools access to ATB online reporting which can be used to verify that all reported information is complete and accurate.

ATB Scoring and Reporting

U.S. Department of Education regulations require that test scores used for ATB determination be provided by the test publisher. These regulations require the certified ITA to personally submit all WBST test answer sheets within two business days after test administration to Wonderlic Education Solutions for scoring. Wonderlic provides each ITA with postage-paid envelopes for this purpose. Answer sheets will be processed within three business days after they are received by Wonderlic. In accordance with the regulations, Wonderlic will provide the official *WBST Individual ATB Score Report* to both the school and the applicant. This report must be received by the school before Title IV funding paperwork can be processed.

In addition, Wonderlic provides access to an online WBST scoring template which can be used to generate an unofficial score report. This report is provided to help schools make timely and informed decisions regarding the likelihood that an ATB applicant will qualify for Title IV Federal financial assistance. Under NO circumstances can the unofficial score report be used to qualify applicants for Title IV Federal financial assistance. In accordance with approved Wonderlic procedures, the scores presented on the unofficial score report will be based on the applicant's test responses as entered into the WBST scoring template by a certified Wonderlic ITA or school representative. Note: under no circumstances can a school representative be in possession of an original completed test answer sheet; however, they may use a copy of an answer sheet to generate an unofficial score report. General instructions for using the WBST scoring template are presented in the "Unofficial Test Scoring" section on page 37 of this manual and in the "ATB Program Administrators Guide".

The Wonderlic ATB Program also provides online access to reporting which reflects all ATB testing activity for a particular school or ITA and provides statistical analyses of test score norms for all school programs and locations. This report is intended to review and document the integrity of school testing programs. Detailed descriptions of the ATB reports are presented in the "Reporting" section on page 48 of this manual.



PART III:

ITA Proctor's Guide

Standardized Testing

The WBST is a standardized test. Standardized tests are administered the same way every time - the exact same test instructions, testing time, and scoring procedures are applied to each and every administration. This type of test should be professionally developed and administered to a representative sample of the population for whom the test is intended.

Wonderlic has very carefully developed a list of procedures and rules for administering and scoring the WBST. The minimum ATB passing score for the WBST has been prescribed by the U.S. Department of Education based upon thousands of WBST administrations which were conducted in accordance with these standardized procedures. Although there may be times when it appears that a particular situation justifies a modification of Wonderlic ATB procedures — such as giving additional instruction, a few extra minutes during timed testing or credit for answers written in the test booklet but not on the answer sheet — except in the case of certain disabilities, it is inappropriate to make such modifications.

There is only one correct procedure for each step of the Wonderlic ATB testing process. WBST scores resulting from administrations which were not conducted in exact accordance with all Wonderlic ATB procedures may not be used to qualify applicants for Title IV Federal financial assistance.

Test Security

As an ITA, your two primary concerns regarding test security are: (1) how to prevent unauthorized access to test materials, and (2) what to do when you believe the answers to a particular test form, or the test forms themselves, have been obtained by an applicant prior to testing.

According to U.S. Department of Education regulations, a certified ITA must have "the ability and facilities to keep the test secure against disclosure or release." (U.S. DOE, Dec. 1, 1995, Fed Reg., 668.150) You are required to prevent unauthorized access to testing materials by maintaining control over all test forms and keeping a count of those forms in your possession. Therefore, during testing you must personally distribute and collect each test form and be present at all times in the testing room. After testing, you must personally mail all completed answer sheets to Wonderlic for scoring within two days of the test administration. Unused test materials must be kept in a secure place where they can be accessed only by you or a responsible school administrator.

Important: Students and school personnel must never have access to original completed ATB test answer sheets, but you may provide copies to school personnel upon request for Unofficial Scoring.

If you believe that an applicant has obtained a copy of, or the answers to, a particular WBST form prior to testing, then any administration of that test form to that applicant is invalid for in ATB use. In such cases, the applicant must be tested on an alternate form of the WBST. In addition, you must determine whether any other applicants obtained copies of test questions or answers. You are required to report such an incident to the school to which the applicant is applying. In addition, you must submit to Wonderlic all answer sheets from invalid test administrations with the words "INVALID – Potential security violation" clearly printed in the "Problems/Limitations" box on the reverse side of the WBST answer sheet. Conducting ATB testing with forms that were available to applicants prior to testing, and then knowingly submitting answer sheets from such testing without marking them as "INVALID" is against the law and could subject you to criminal prosecution.

Under no circumstances are you permitted to review or discuss any WBST questions or answers with ATB applicants, before or after testing.

It is unlawful for any school or ITA to develop, publish, write or teach any study materials designed specifically to instruct or coach ATB applicants or school personnel on how to answer WBST questions. Wonderlic does, however, provide our clients with sample question booklets as part of their license. Students may use these to familiarize themselves with the format and types of questions that appear on the

actual test. Additionally, schools may develop and use tutoring/mentoring materials that focus on the topic areas assessed by the WBST. However, such materials may not contain any content derived from or contained within the WBST.

If you learn that test security has been compromised or that any other problem has jeopardized the integrity of a school's testing program, it is your responsibility to immediately inform Wonderlic Education Solutions at (877) 605-9494.

Preparation for the Testing Session

The Testing Room

Classroom space is limited at many schools. As an ITA, you must not allow this to lead to inadequate testing conditions, but you must also balance ideal testing conditions with the reasonable needs of daily school operations. Additionally, it is important for the test takers and a condition of your continuing certification that you are on time and prepared for your scheduled testing sessions.

The testing environment can have a significant effect on applicant test scores. ATB testing sessions may be conducted at the school or any other appropriate location, such as a library. At a minimum, make sure to observe the following testing conditions:

- The room must be quiet and isolated from any distractions, with good lighting, comfortable seating, and adequate work space for each applicant.
- You must personally be present at all times during the testing session, even if there is only one test taker. Locate a place to sit in the testing room where you can easily and quietly monitor the testing session. Your presence will encourage applicants to concentrate on the test questions and do their best work.
- Visible movement can break the concentration of applicants and impact their test performance; under no circumstances should you walk about the room after the test session has begun.
- Never make announcements about remaining test time because this can break the concentration of applicants and impact their performance.
- Only test takers and the ITA should be in the room during testing.
- If you are conducting group testing, applicants must not be given any opportunity to copy test answers from one another; applicants must be seated at least three feet or one desk apart and should not be facing one another.
- Interruptions during the testing session cannot be tolerated; once the timed testing period begins, you cannot allow any additional applicants to join the testing session. It would be helpful to display a large sign in bold print that says, "QUIET – TESTING SESSION IN PROGRESS - DO NOT DISTURB."
- Some applicants may require some form of reasonable accommodations. Be sure to plan for this when scheduling test administrations.
- Most importantly, all applicants must have the opportunity to use the entire testing session to concentrate on WBST questions.

Test Order

For ATB determination, both the verbal and quantitative sections of the test must be administered in the same testing session. The verbal section should be administered before the quantitative section. Applicants use their verbal skills on a daily basis; therefore, the verbal test should ease general test anxiety.

When you distribute test booklets to conduct group testing, it is recommended that different forms of the same test section be alternated so that applicants sitting near each other are not working on the same form.

Testing Materials

Before testing begins, you must have the following materials on hand:

- **Timer** An accurate timer or clock. A wall clock or wristwatch with a second hand may be used; however, it is much easier to use a timer that can be set to ring after exactly 20 minutes.
- **Pencils** Two No. 2 pencils per applicant.
- **Tests** An adequate number of WBST verbal and quantitative test booklets.
- **Answer Sheets** One ATB answer sheet for each applicant.

The ATB Answer Sheet

The *Wonderlic Basic Skills Test ATB Answer Sheet* is a machine-readable bubble form which is used to record necessary applicant, program, ITA, and school information, as well as test responses. It must be completed using a No. 2 pencil. The process of completing the applicant demographic sections of the answer sheet provides applicants with valuable practice for properly marking their test responses.

A description of each field on the answer sheet is provided in Table 1. Many of these fields request information which is mandatory for compliance with U.S. Department of Education regulations and participation in the Wonderlic ATB Program. Other fields are not mandatory but are equally important.

Mandatory Fields

Mandatory fields provide the basic information needed to score an ATB answer sheet. Answer sheets submitted to Wonderlic without this information cannot be scored. In such cases, Wonderlic will create a record of the administration, but it will be marked INVALID until the missing information is obtained.

Optional/Requested Fields

These fields are optional. However, applicants should be invited to provide this information.

Table 1: WBST ATB Answer Sheet Field Descriptions

FIELD NAME	TYPE	COMMENTS
Last Name First Name	MANDATORY	Required applicant identification to link test results to the correct individual.
MI	Requested	Improves applicant identification in linking test results to the correct individual.
Test Date	MANDATORY	Required for correct applicant record keeping. Test results are valid for ATB determinations indefinitely.
Years of Education Completed	Requested	Provides valuable normative information to evaluate the appropriateness of minimum test scores.
Do You Have a GED?	Requested	Provides valuable normative information to evaluate the appropriateness of minimum test scores. Note: students who have a GED may not need to take an ATB test.
Social Security Number	MANDATORY	Required applicant identification to link test results to the correct individual and to file for Federal financial assistance. Test administration may be conducted if this number is not available at the time of testing; however, it must be marked in before the answer sheet is submitted for scoring.
Street Address City, State, Zip Code	MANDATORY	Required to mail test results to each applicant as prescribed by U.S. Department of Education regulations.
Which VS(QS) form of this test are you taking?	MANDATORY	Required for accurate test scoring. The appropriate test form code is located on the front cover of each test booklet.
Have you taken a VS(QS) form of this test before?	MANDATORY	Required to accurately identify retest administrations.
Program Name	MANDATORY	Required to identify the specific training program to which the applicant is applying. Program identification is linked to occupational descriptions in the Dictionary of Occupational Titles (DOT).
Program Code	MANDATORY	A partial listing of program names and codes is presented on page 80 of this manual. Additional codes can be obtained by contacting the Wonderlic Education Solutions Department.
How did you hear about this school?	Requested	Provides valuable tracking information which can be used to evaluate the average skill levels of applicants by recruiting source.
Practice Items	MANDATORY	Required to ensure that applicants understand how to properly mark their WBST test responses.
Age	Optional	Provides valuable information which is used to ensure that the test is fair to everyone. This information will not be used to evaluate applicants individually.
Ethnic Background, Language		
Gender		
Applicant Agreement	MANDATORY	Required for official ATB test scoring and reporting and to establish the confidentiality of test results.
Test Items	MANDATORY	Required to record and score test responses from the timed testing period.
Reserved Area	MANDATORY (if applicable)	Required to record and score test responses from the untimed testing period. Test responses made during the untimed testing period may NOT be marked in the "Test Items" column.
School Number	MANDATORY	Required to identify the school to which the applicant is applying. Typically this number matches the "Customer Number" on the Wonderlic invoice. Call the Wonderlic Education Solutions Department for help.
School Name City, State, Telephone	MANDATORY	Required to verify the school location where the test was administered.
ITA Number	MANDATORY	Required to identify the ITA responsible for the test administration. This number is located on the front side of the Independent Test Administrator's Certificate of Registration on the line marked "Registration Number."
ITA Name	MANDATORY	Required to identify the ITA responsible for the test administration.
City, State Telephone	MANDATORY	Verifies the ITA responsible for the test administration.
Problems/Limitations?	MANDATORY (when applicable)	Required when problems arise during testing. The oval labeled "Yes" must be marked when any information is written in this box. The word "INVALID" must be printed in this box when a test administration has been invalidated.
ITA Certification	MANDATORY	Required to verify that the ITA personally conducted the test administration in accordance with the requirements of the Wonderlic ATB Program and applicable state and federal regulations.

Timed Test Administration

Before beginning an ATB testing session, you will need to make a note of the appropriate school number and program codes which Wonderlic has assigned for the school and for each training program offered by the school. These codes must be filled in on each ATB answer sheet to identify the school and program to which each applicant is applying. You should refer to page 80 of this *User's Manual* or call the Wonderlic Education Solutions Department at (877) 605-9494 for assistance in identifying these numbers.

Research shows that applicants achieve higher test scores when the ITA sets a serious tone during the testing session. Therefore, you must establish authority immediately by instructing applicants to be seated and remain quiet. However, you should also be courteous to help reduce their natural test anxiety. Before distributing any test materials you should first:

- (1) Inform all applicants that the purpose of the testing session is to determine their qualifications for academic training. Anyone who is in the testing room by mistake should be asked to leave.
- (2) Instruct all applicants to sit at least three feet or one desk apart.
- (3) Ask all applicants to turn off any electronic devices, such as cell phones, laptop computers, etc, to place their books underneath their chairs, and to remain quiet.
- (4) Make sure applicants have at least two sharpened #2 pencils.

Next, you must conduct the timed test administration in exact accordance with the instructions provided below. You must read all of the following dialogue aloud to the applicants being tested.

Test Administrator's Dialogue - Completing the Demographic Sections of the Answer Sheet

Standard Applicant Information

Step 1	When all applicants are ready, distribute one ATB answer sheet and at least two No. 2 pencils to each applicant while saying:
Overview to Applicants	<i>"Before we begin the test, you will need to complete a few sections on the answer sheet which request information needed to identify you and process your test results. Please do not make any marks on your answer sheet until I tell you what to do."</i>
Step 2	When each applicant has an answer sheet, begin with the 'Standard Applicant Information' section on the front side of the answer sheet by saying:
Name	<i>"When completing most sections of your answer sheet, you will be required to print information in the squares provided, and fill in the oval below each square that corresponds to the letter or number that you have printed. You must fill in each selected oval completely without going outside of it. I will lead you through each section, so do not race ahead."</i> <i>"Locate the 'Standard Applicant Information' section on the front side of your answer sheet."</i>

Name
(continued)

"Now, locate the boxes labeled 'Last Name,' 'First Name,' and 'MI.' Please print your last name, first name, and middle initial in the squares provided and fill in the corresponding oval under each letter that you print. If your name is longer than the number of spaces provided, fill in as many letters as will fit. If there are two parts to your last name or your first name, leave a blank space between the two parts and fill in the blank oval directly below the blank space. Be certain to distinguish between the 'O' and 'Q' ovals on the form."

Step 3

When all applicants have completed filling in their name, continue with:

Test Date

"Now, locate the box labeled 'Test Date' at the upper right hand corner of the answer sheet. Today's date is [today's date]. Please fill in today's date."

Step 4

When all applicants have completed filling in today's date, continue with:

Years of Education Completed and GED

"Now, locate the box at the right labeled 'Years of Education Completed.' Please fill in the number of years of education that you have completed. For example, if you successfully finished the 9th grade, but did not complete the 10th grade, fill in a '9' to indicate that you have completed 9 full years of education.

"Also, if you have a GED certificate, locate the box labeled 'Do you have a GED?,' and fill in the oval next to the word 'Yes.'"

Step 5

When all applicants have completed filling in their years of education, continue with:

Social Security Number

"Now, locate the box labeled 'Social Security Number.' Please fill in your Social Security Number. If you do not have your Social Security Number available at this time, please raise your hand now so that we can be sure to locate this information after the testing session."

Write down the name of each applicant for whom you will need to obtain a Social Security Number before submitting answer sheets to Wonderlic for official scoring.

Step 6

Sending Address

When all applicants have completed filling in their Social Security Number, continue with:

"You will need to provide an address where your official test results can be sent to you."

"Now, locate the boxes labeled 'Zip Code,' 'Street Address,' 'City' and 'State.' Please fill in the appropriate address information to indicate where your official test results should be sent. When filling in your street address, it is important that you leave a blank space between the street number, street name, and any apartment number that you indicate. Remember to fill in the blank ovals directly below each space that you leave blank. Also, be sure to fill in the correct two-letter abbreviation for the state indicated in your address. The two-letter abbreviation for [state name] is [state abbreviation]*."*

Program Information

Step 7

Program Information

When all applicants have completed filling in all information on the front side of the answer sheet, continue with:

"Please turn over your answer sheet and locate the 'Program Information' section at the top of the page in the center column."

"Now, locate the line labeled 'Program Name.' As I read the following list of program titles, please print the title which corresponds to the program to which you are applying."

At this point, you may read a list of all program names that the school offers.*

Step 8

Program Code

When all applicants have completed filling in their program information, continue with:

"Now, locate the box labeled 'Program Code.' As I read the following list of program codes, please fill in the code which corresponds to the program name which you have already written on the line."

At this point, you may read the same list of program names along with the corresponding program codes.*

Step 9

Recruiting Source

When all applicants have completed filling in their program code information, continue with:

"Now, locate the box labeled 'How did you hear about this school?' Please try to remember how you first heard about this school, then fill in the appropriate oval."



***Helpful Hint**

You may want to write this information on a blackboard before starting the test session.

Fair Testing Information

Step 10

Statement of Purpose

When all applicants have completed filling in their recruiting source information, continue with:

"Now, locate the 'Fair Testing Information' section toward the center of the page. Filling in any information in this section is voluntary - it will not be used in any way to evaluate applicants individually. However, you are encouraged to fill in the requested information because it is used to ensure that the test is fair to everyone."

Step 11

Age, Ethnic Background, Language and Gender

"Locate the boxes labeled 'Age,' 'Ethnic background,' 'Language,' and 'Gender.' Please fill in any fair testing information that you would like to provide."

Applicant Agreement

Step 12

Applicant Agreement

When all applicants have completed filling in the fair testing information, continue with:

"Now, locate the 'Applicant Agreement' section in the center of the page. Please carefully read and sign the agreement."

If an applicant objects to signing the agreement, tell him or her that the test cannot be scored unless the applicant gives permission. Any applicant who continues to object must be excused from the testing session.

School Information

Step 13

School Information

In the 'School Information' section, the school number and location can be completed either by you or the applicant. Some ITAs prefer to write this information on a chalkboard and instruct applicants to copy it onto the answer sheet using the following dialogue:

"Now, locate the 'School Information' section toward the bottom center of the page."

"Locate the box labeled 'School Number' and the corresponding lines under this box labeled 'School Name,' 'City,' 'State,' and 'Telephone Number.' Please fill in the school number, name, city, state, and telephone number as indicated on the board. All other information in this section should be left blank."

ITA Information

ITA Information

Note: You must personally fill in all information in the box labeled 'ITA Number' and the corresponding lines under this box labeled 'ITA Name,' 'City,' 'State,' and 'Telephone Number.'

Additionally, ITAs must sign and date completed answer sheets in the appropriate places **on the day of the test administration.**

Test Administrator's Dialogue - Test Instructions

<p><i>Step 14</i></p> <p>Distributing Test Booklets</p>	<p>For ATB purposes, both sections of the test must be administered in one testing session. It is recommended that the verbal section be administered before the quantitative section.</p> <p>When all applicants have completed the demographic sections of the answer sheet, you may distribute the first test booklet, while saying:</p> <p><i>"When I give you your test booklet, please PRINT your name, today's date, and your Social Security Number on the front cover of the test booklet. DO NOT OPEN THE TEST BOOKLET UNTIL I TELL YOU TO DO SO."</i></p>
<p><i>Step 15</i></p> <p>Test Form Number</p>	<p>When each applicant has a test booklet, continue with:</p> <p><i>"Please locate the answer section box marked with a large 'VS' ('QS')¹ on the reverse side of the answer sheet. Be sure that you locate the box labeled 'Verbal (Quantitative) Skills Answer Section.' At the top of the answer section box you should find the following question: 'Which VS (QS) form of this test are you taking?' Now, locate the form number on the front cover of your test booklet and fill in the appropriate oval to indicate which form of the WBST you are taking. If you are having trouble finding this form number, please raise your hand."</i></p>
<p><i>Step 16</i></p> <p>Indication of Retest</p>	<p>When all applicants have completed filling in their form number, continue with:</p> <p><i>"Now, locate the question which reads, 'Have you taken a VS (QS) form of this test before?' Please fill in 'Y' for yes or 'N' for no to indicate whether you have ever taken a verbal (quantitative) form of the WBST, either earlier today or any time prior to today."</i></p>
<p><i>Step 17</i></p> <p>Opening the Test Booklet</p>	<p>When all applicants have completed filling in their response to indicate whether they are being retested, continue with:</p> <p><i>"In a moment, you will open your test booklet and turn to the first page where you will find practice test questions. DO NOT TURN PAST THE FIRST PAGE UNTIL I INSTRUCT YOU TO DO SO. To open the booklet, you may now slip the sharp end of your pencil under the front cover page of your test booklet and break the seal. After you have broken the seal, open the booklet to the first page, but do not go any further."</i></p>
<p><i>Step 18</i></p> <p>Practice Questions</p>	<p>When all applicants have opened their test booklets, continue with:</p> <p><i>"Now, read the instructions on the left hand page and complete the practice questions on the right hand page. You will be given as much time as you need to complete the practice questions. Mark your answers to the practice questions in the box labeled 'Practice Items' on your answer sheet. When you are finished, please put your pencils down. Remember, DO NOT TURN THE PAGE UNTIL I TELL YOU TO DO SO."</i></p>

¹ In the sections to follow, the instructions are written from the perspective that the Verbal form of the WBST is being administered. Instructions for administering the Quantitative form of the WBST are highly similar, with the relevant changes appearing in parentheses within each section. When administering the Quantitative form of the WBST, make sure to read the information appearing in parentheses as appropriate.

Step 19

**Review
Practice
Questions**

Most applicants will read the instructions and complete the practice problems in three or four minutes. When all applicants have finished the practice problems, or after approximately three minutes, continue with:

"Does everyone understand the instructions? Did you mark your answers for the practice problems in the appropriate section of the answer sheet? Does anyone want me to review the questions?"

It may be helpful to review the practice problems, reading each one aloud, then indicating the correct answer. Remember, you cannot answer questions once the timed testing period has begun.

Step 20

**Test
Instructions**

After the practice questions have been reviewed, continue with:

"Please look at the left hand page in front of you and follow along as I read the instructions to you aloud. I will begin with the second paragraph."

Then read:

"This is a test of basic verbal (math) skills. Your score will indicate how well you are able to complete everyday reading and writing requirements (use basic math skills to solve everyday problems). Your score may be used to indicate the grade level of your skills and also what kinds of jobs you are ready to learn or perform."

"There are 50 (45) questions on this test. You will be given 20 minutes to work on them. It is unlikely that you will finish all 50 (45) questions, but you should try to answer as many of them as you can. You should not go so fast that you make mistakes, but also, do not spend too much time on any one question."

"The questions become more difficult as you progress through the test; therefore, you should not skip around. You will get the best score if you start with the first question and then continue with each question in order."

"There are four possible answers for each question, but only one is correct. You need to choose the answer that you think best answers (solves) the question. In a test of this type, it is unlikely that pure guessing will help you. However, if you think you know the answer, but are not certain, mark that answer and move on."

This section should only be read for the quantitative form.

"In solving certain problems, it may be helpful to work through the problems on paper. Do all your figure work in this test booklet. You must do all of this work by yourself. Do not use a calculator or other problem-solving device."

"It is recommended that you mark your answers first on the test booklet and then on the answer sheet. However, ONLY THE ANSWERS MARKED ON THE ANSWER SHEET will count in your score."

"Be sure to completely erase any responses that you wish to change."

"Does anyone have any questions?"

Step 21

Answer Section

After all questions from the applicants regarding test instructions have been answered, continue with:

"Please look again at the 'Answer Section' of your answer sheet. Notice that there are two columns of ovals, one labeled 'Test Items' and the other column which is shaded and labeled 'Reserved Area.' Be sure to mark your test answers in the 'Test Items' column. DO NOT make any marks in the shaded 'Reserved Area.'"

"Are there any more questions? Remember: I cannot answer any questions after we start the test. There is to be no talking or gesturing once the test has begun. You must remain in your seat for the full 20-minute testing period."

Step 22

Starting the Test

After you have answered all final questions from the applicants, set your timer for exactly 20 minutes, or if the test is being timed with a wristwatch or clock, confirm that it is operating properly. Press the "start" button on the timer or record the exact time as you say:

"You may turn the page and begin now."

Once the timed testing period begins, there can be no conversation or communication of any kind. Any help given to applicants during this period will invalidate their test scores. If an applicant raises his or her hand or attempts to ask you a question, immediately respond by saying:

"No questions can be asked at this time."

If one applicant attempts to communicate with another, firmly say:

"Please stop talking (or gesturing) or I will have to ask you to leave."

Step 23

Stopping the Test

At the end of exactly 20 minutes say:

"Stop. Lay down your pencils. Turn your answer sheet over and leave it in front of you."

Option 1 - Administer the next test section on a timed basis

If the other section of the WBST will be administered to the applicants now, repeat Steps 14-23 of this Test Administrator's Dialogue after saying:

"Please place your test booklets on the floor, underneath your chair while I pass out the next test booklet."

Option 2 - Continue testing on an untimed basis

If you have determined that a particular applicant should be permitted to continue the test on an untimed basis as prescribed in the "Untimed Test Administration" section of this manual, then, after all timed testing has been completed, follow the "Conducting Untimed Test Administrations" test administrator dialogue on page 33.

**Stopping the
Test**

(continued)

Option 3 - Collect all test materials

If all testing is complete, say:

"Please remain seated until I have collected all testing materials."

If any applicant continues working, go to that applicant first to collect his or her testing materials. As you collect the testing materials, look for any incomplete demographic sections on the answer sheets or any other problems that you may need to resolve before the applicants leave the testing room. After all test booklets and answer sheets have been accounted for, you may dismiss the applicants.

Untimed Test Administration

In some situations, it may be appropriate to administer the WBST on an untimed basis. The untimed administration is designed to provide a more accurate skills assessment for applicants who may be inaccurately assessed on a timed basis.

The WBST can be administered on an untimed basis when a physical or mental condition prevents an applicant from fluidly responding to the test questions. For example, applicants with physical injuries or excessive test anxiety may be candidates for an untimed administration. In addition, when you are testing applicants for admittance into an "English as a Second Language" (ESL) program, you may want to consider an untimed administration as well. Please refer to Wonderlic's Accommodations Policy as needed when administering the WBST to a student with a disability, and/or when a student presents an Individual Education Plan (IEP) that lists an accommodation other than additional time to complete the test. DO NOT provide any other accommodation without prior approval from Wonderlic. The decision to administer an untimed test must be made prior to administering the test.

The WBST measures whether an applicant currently has the basic language and math skills necessary to succeed in the classroom. Therefore, administering the WBST on an untimed basis merely because an applicant has failed to demonstrate the necessary skills is inappropriate. Please contact Wonderlic if you have questions about when it is appropriate to administer the WBST as an untimed test. If you determine that an untimed administration is necessary to accurately measure the skills of a particular applicant, you must document the reason for the untimed administration in the applicant's permanent record folder and in the Problems/Limitations box on the reverse side of the ATB answer sheet.

The approved untimed WBST administration procedure combines a standard 20 minute timed period followed by an untimed period on the same test form. This provides separate scores on both a timed and untimed basis. The untimed score contains a statistical score adjustment, while the timed score does not. Therefore, it is possible that an applicant could achieve a passing score on one basis but not on the other.

When conducting an untimed administration, you MUST NOT indicate to the applicant that an untimed period will follow the timed period. Wonderlic research indicates that applicants perform better in the untimed testing period when they do not have advance knowledge that additional testing time will be given. A timed period may cause applicants to take the test more seriously and motivate them to perform better in the untimed period. Therefore, both the verbal and quantitative sections of the WBST must be given first on a timed basis before either section can be administered on an untimed basis. This administration format will not only improve untimed test performance but will also allow applicants who do not require the untimed period to complete their second test section without waiting. Under no circumstances should you score the timed test responses before the untimed period.

During the untimed testing period, all additional test responses must be marked in the shaded "Reserved Area" column on the answer sheet. During this period, applicants must not erase, change or add any marks to the "Test Items" column. If an applicant wishes to fill in a new response to a question already answered during the timed period, the new response must be marked in the "Reserved Area". Therefore, prior to informing applicants that they may continue the test on an untimed basis, all responses made during the timed period must be documented. To provide this documentation, you will distribute a red pen or colored pencil to each applicant whom you intend to test on an untimed basis. You will then instruct these applicants to carefully circle each test question oval which they have filled in during the timed testing period.

The approved steps for conducting untimed test administrations are detailed on the next page.

Test Administrator's Dialogue - Conducting Untimed Test Administrations

The Timed Testing Period

Steps 1 to 23

Timed Testing

Conduct testing on a timed basis by following Steps 1 through 23 in the "Timed Test Administration" section of the ITA Proctor's Guide.

Additional Instructions for the Untimed Testing Period

Step 24

Documentation of Timed Responses

To document all responses made during the timed period, you will now distribute a red pen (or colored pencil) to each applicant whom you intend to test on an untimed basis, while saying:

"Now, you will need to document your test responses for official scoring. After I give you a red pen (or colored pencil), please circle each oval which you have filled in during timed testing. Your test will not be scored without these red circles. After you have completed this task, please put your pen down. Are there any questions?"

Step 25

Untimed Test Instructions

After all questions from applicants have been answered and they have circled each timed test response, collect the red pens. After each red pen or pencil has been accounted for, continue with:

"You will now begin an untimed testing period during which you may answer as many additional questions as you would like from your test booklet(s). You are not required to answer all the test questions, but you should try to answer as many as you can."

"All test responses that you fill in during this untimed period MUST be marked on your answer sheet in the shaded 'Reserved Area' column located in the Answer Section which corresponds to the test booklet on which you are working. You must not erase, change or add ANY marks to the 'Test Items' column. If you would like to fill in a new response to a question that you have already answered during the timed period, you must mark your new response in the 'Reserved Area' column."

"When you have answered as many questions as you would like, you must quietly bring all of your testing materials to me before you will be permitted to leave the room. Are there any questions?"

Note: If you intend to administer both the verbal and the quantitative sections on an untimed basis, then the applicants may work on both test booklets during the untimed testing period.

Step 26

***Starting the
Untimed
Period***

After all questions from applicants have been answered, start the untimed testing period by saying:

"You may continue working on your test booklet(s) now."

Step 27

***Finishing the
Untimed
Period***

Most applicants will continue working during the untimed period for no more than 15-20 additional minutes per test section. If any applicant works beyond 20 additional minutes, you should remind him or her that it is not necessary to answer all questions on the test; he or she may stop working at any time.

As each applicant is finished working and brings his or her testing materials to you, look for any incomplete demographic sections on the answer sheet or any other problems that you may need to resolve before the applicant leaves the testing room. After all test booklets and answer sheets have been accounted for, you may dismiss the applicants.

Testing Individuals with Special Needs

Reasonable accommodation has long been recognized as an essential component of the testing process. Additionally, it is legally mandated under the Americans with Disabilities Act (ADA). While the ADA does not define reasonable accommodation, it provides a list of examples of what might constitute a reasonable accommodation. With respect to testing, the ADA requires that tests be given to people with impaired sensory or manual skills in a format and manner that minimizes the impact of any impaired skill on test results, unless the test is designed to measure that particular skill.

A reasonable accommodation should allow the test score to reflect the test taker's skills rather than reflect the test taker's impairment and should allow the test taker with a disability (or disabilities) to demonstrate his or her skills and abilities more accurately than if no accommodations were allowed. Additionally, a major focus of the ADA is that reasonable accommodation is not effectively addressed by a general policy; rather accommodations are best addressed only on a case-by-case basis.

Identifying Reasonable Accommodations

As a starting point, the test administrator should provide test takers with a description of the WBST and how it will be administered.

If a test taker requests reasonable accommodation in the testing process based on the information provided, the test administrator may require that the test taker document the fact that she or he has a disability as defined by the ADA and therefore is entitled to reasonable accommodation. The test administrator may also require current documentation concerning the functional limitations that are caused by the disability. Under the ADA, an impairment is only a disability if it reaches the level of substantially limiting a major life activity.

Once it has been determined that the test taker has a disability that is covered by the ADA, the test administrator should initiate discussions with the test taker and/or Wonderlic to help identify an appropriate reasonable accommodation. Wonderlic's psychologists are available to assist test administrators with the reasonable accommodation process.

Some specific examples of reasonable accommodations with respect to the WBST are:

- Providing extra time to complete the WBST.
- Providing rest breaks for test takers.
- Assuring that the test site is accessible to a person with a mobility issue.

Please refer to the Wonderlic Accommodations Policy for more detailed information about reasonable accommodations with respect to the WBST.

Official Test Scoring for ATB Determination

U.S. Department of Education regulations require that test scores used for ATB determination be provided by the test publisher. These regulations require that a certified ITA personally submits all ATB answer sheets within two business days after test administration to Wonderlic Education Solutions for scoring. All used ATB answer sheets - even those from incomplete test administrations or those for applicants who perform poorly on the WBST - MUST be sent to Wonderlic. Wonderlic provides each school with postage paid envelopes that the ITA can use for this purpose. ITAs may choose to expedite the return process by utilizing an overnight delivery type carrier instead. Answer sheets will be processed within three business days after they are received by Wonderlic. Used answer sheets may be photocopied and placed in each student's secured permanent record folder as a safeguard against forms being lost or destroyed. Note: original completed answer sheets must never be handled or returned to Wonderlic by anyone other than the ITA.

The Wonderlic Education Solutions Department will scan each answer sheet and run diagnostic analyses to identify any problems that may have occurred in the test administration. In accordance with regulations, Wonderlic will then make an official *WBST Individual ATB Score Report* available to both the school and the applicant. A description of this report is presented in the "ATB Test Score Interpretation" part of this manual. This report must be accessed online by the school before Title IV funding paperwork can be processed, and a copy must be filed in the applicant's permanent record folder. Only official test scores provided by Wonderlic may be used to qualify students for Title IV Federal financial assistance. In accordance with U.S. Department of Education regulations, all original ATB test answer sheets will be held by Wonderlic for a period of three years.

Per U.S. Department of Education regulations (Sections 668.32 and 668.51 amended November 1, 2002), ATB passing test scores are acceptable indefinitely. Clarifications have also been added to the regulations making it explicit that an institution may use only the results of an approved test that are received directly from the test publisher or an assessment center. In addition, a student who transfers to a different institution may use the original test results for the purpose of determining Title IV eligibility only when that institution obtains the results directly from the test publisher or assessment center; institutions may not use test results provided by the applicant.

Wonderlic restricts online access to individual score reports and other reporting to school officials, but schools may elect to share this access with their ITAs. In addition, the Wonderlic ATB Program provides access to an online scoring template that can be used to generate an unofficial score report. This report is provided to help schools make timely and informed decisions regarding the likelihood that an ATB applicant will qualify for Title IV Federal financial assistance. Under NO circumstances can the unofficial score report be used to qualify applicants for Title IV Federal financial assistance. In accordance with approved Wonderlic procedures, the scores presented on the unofficial score report will be based on the applicant's test responses as entered into the online WBST scoring template by a certified Wonderlic ITA or a school official. (Note: school employees are forbidden to handle completed ATB test answer sheets, but they can enter responses into the online scoring template from copies of the answer sheets provided by the ITA.)

Unofficial Test Scoring

As discussed in the previous section, the online WBST scoring template allows the ITA or a school official to generate unofficial score reports to support timely and informed decisions regarding the likelihood that an ATB applicant will qualify for Title IV Federal financial assistance. Under no circumstances can the unofficial score report be used to qualify applicants for Title IV Federal financial assistance. Instructions for using the unofficial online WBST scoring template are detailed in the "Wonderlic ATB Program Administrator Guide" that is provided to all registered Wonderlic ATB clients.

Access to the unofficial online WBST scoring template is provided to every Wonderlic ATB client as part of their license agreement. The template allows one to generate unofficial score reports by entering applicant responses into a scoring template exactly as they appear on the test answer sheet. Username and Password information that is required to use the online scoring template is provided to the school. It is up to the school to determine if they will share this information with their ITAs. If the school chooses to do their own unofficial scoring, then they **MUST** use copies of the answer sheets provided by the ITAs, because school employees are forbidden to handle completed original ATB test answer sheets. Remember that test answer sheets from all applicants, even those who perform poorly on the WBST and who are not likely to achieve the ATB minimum passing score, must be submitted to Wonderlic for official scoring.

According to U.S. Department of Education Regulations, Title IV ATB funding decisions must be based on official score reports only, but schools may make important counseling and retesting decisions based on a student's unofficial test score while they are waiting for the official score report. Therefore, to help ensure the accuracy of the unofficial score report, the online WBST scoring template has an option which allows verification of the input of applicant responses by entering them twice. The program will immediately identify any discrepancies and allow the necessary corrections.

The verbal and quantitative sections of the WBST can be scored individually. However, these sections must be entered together to generate a report for any particular applicant showing both the verbal and quantitative scores. Users can reprint additional copies of unofficial score reports at any time.

Retesting

In some circumstances an applicant may need to be retested due to an inaccurate or incomplete test administration. For example, a school announcement over the PA system may have disturbed the testing session or an applicant may have had to leave the testing session for medical reasons. If there is reason to doubt the accuracy of a test administration, the applicant should be retested. As discussed in the "Test Reliability and Errors of Measurement" section of this manual, retesting can be reliably conducted on the same day as the initial test administration or anytime thereafter.

In addition, when an applicant's test score falls within the ranges shown in the table below, the ATB minimum score is less than one *standard error of measurement* from the applicant's score. In such instances, you may want to consider retesting the applicant. For further discussion see the Test Reliability and Errors of Measurement section of this user's manual.

SUGGESTED SCORE RANGES FOR WBST RETESTING	
Verbal Skills	Quantitative Skills
170 - 195	180 -205

Alternate Form

Retests should be conducted on an alternate test form. For example, if an applicant was initially tested with the WBST forms VS-1 and QS-1, the retest must be conducted with forms VS-2 and QS-2. To qualify for Title IV Federal financial assistance, applicants who are retested with the WBST must achieve the minimum ATB passing score for *both* the verbal and quantitative test sections in the *same* retest administration.

Before retesting, the problem that caused the need for retesting should be fixed, if possible.

Retest administrations using an alternate WBST form which the applicant has not already taken may be conducted on the same day as the initial administration or any time thereafter. However, you may want to give the applicant a half-hour break before retesting.

Note: Be sure to find out if there are local requirements to provide more time between tests.

Same Form

When an applicant has already taken *both* verbal and quantitative forms 1 and 2 of the WBST, but you believe that he or she has not been accurately assessed, you may retest the applicant again on either form in accordance with the following rules:

1. The applicant must have already taken both forms of the WBST once.
2. The applicant may be retested on the same test form *once, and only once, within a 12 month period.*
3. The applicant must NOT have been told in advance that there would be an opportunity to take the same test form again.
4. The applicant may be retested on the same form only if at least 60 days have passed since he or she was initially tested on that form, and the student has taken the alternate test form within the past 12 months.

Figures 3 and 4 on page 40 show observed increases in the verbal and quantitative test scores of applicants who were retested with a WBST form they had already taken. The curves shown in these figures represent the gain in test scores which can be expected as time increases between the first and second administrations. These curves demonstrate that the observed impact of conducting a first and second test administration using the same form diminishes as the time between administrations increases. In addition, the expected gain in test scores when the second administration takes place at least 60 days after the first is well within the standard error of measurement of the ATB minimum passing scores for both the verbal and quantitative sections. Therefore, 60 days between the first and second test administrations provides a practical standard for retesting with the same form of the WBST.

You are responsible for conducting retests in accordance with these rules. Therefore, you must maintain a record of all test forms administered to an applicant and the specific dates on which they were administered. Note: the ITA access to Wonderlic's Official ATB Reporting website makes it easy for ITAs to review test takers' ATB testing history.

Wonderlic is required to review the appropriateness of individual retest administrations when answer sheets are submitted for official scoring. The Ability-to-Benefit Status Box on the Score Report will be marked "INVALID" when a student has been inappropriately retested according to information in Wonderlic's database at the exact time the official report is generated. The status indicated on the Score Report is subject to change if information received after the time of scoring invalidates the retest. Wonderlic will review all retesting activity regularly.

Choosing the Correct Form for Retesting

As a Wonderlic ITA, you are given access the Wonderlic Official ATB Reporting website where you can view an applicant's test history (dates of previous administrations and forms taken). If you have any reason to believe that an applicant has previously been administered a Wonderlic ATB test, you should look up that applicant's test history. When applicants are tested out of sequence, their Official Score Report will be marked Invalid, so it is important to strictly adhere to the retest sequence that was described earlier.

It may be helpful to review this sample WBST test sequence*:

First test (test #1)	QS1-VS1 on 01-05-07
First Retest (test #2)	QS2-VS2 on 01-15-07 (Requires only a 30-minute gap* and if necessary, correction of the test-affecting situation, and must be administered on an ALTERNATE FORM)
Second Retest (test #3)	QS1-VS1 on 03-07-07 (Requires at least 60 days from first test on this form* AND testing on an ALTERNATE FORM)
Third Retest (test #4)	QS2-VS2 on 03-16-07 (Requires at least 60 days from first test on this form* AND testing on an ALTERNATE FORM)
Fourth Retest (test #5 - Invalid)	QS1-VS1 on 11-10-07 This test will be marked INVALID because the student has tested >4 times in 12 months (the next available test date was 01-06-08). Please also note that INVALID tests count in the retest sequence.
Fifth Retest (test #6-Valid)	QS2-VS2 on 01-16-08 This test will be considered VALID because it meets Sequence, Time Between Tests, and Max # of Tests in 1 year criteria.

*Please note, these are minimum requirements. Local requirements may require more time between tests. A larger version of this chart can be found on page 82.

Figure 3

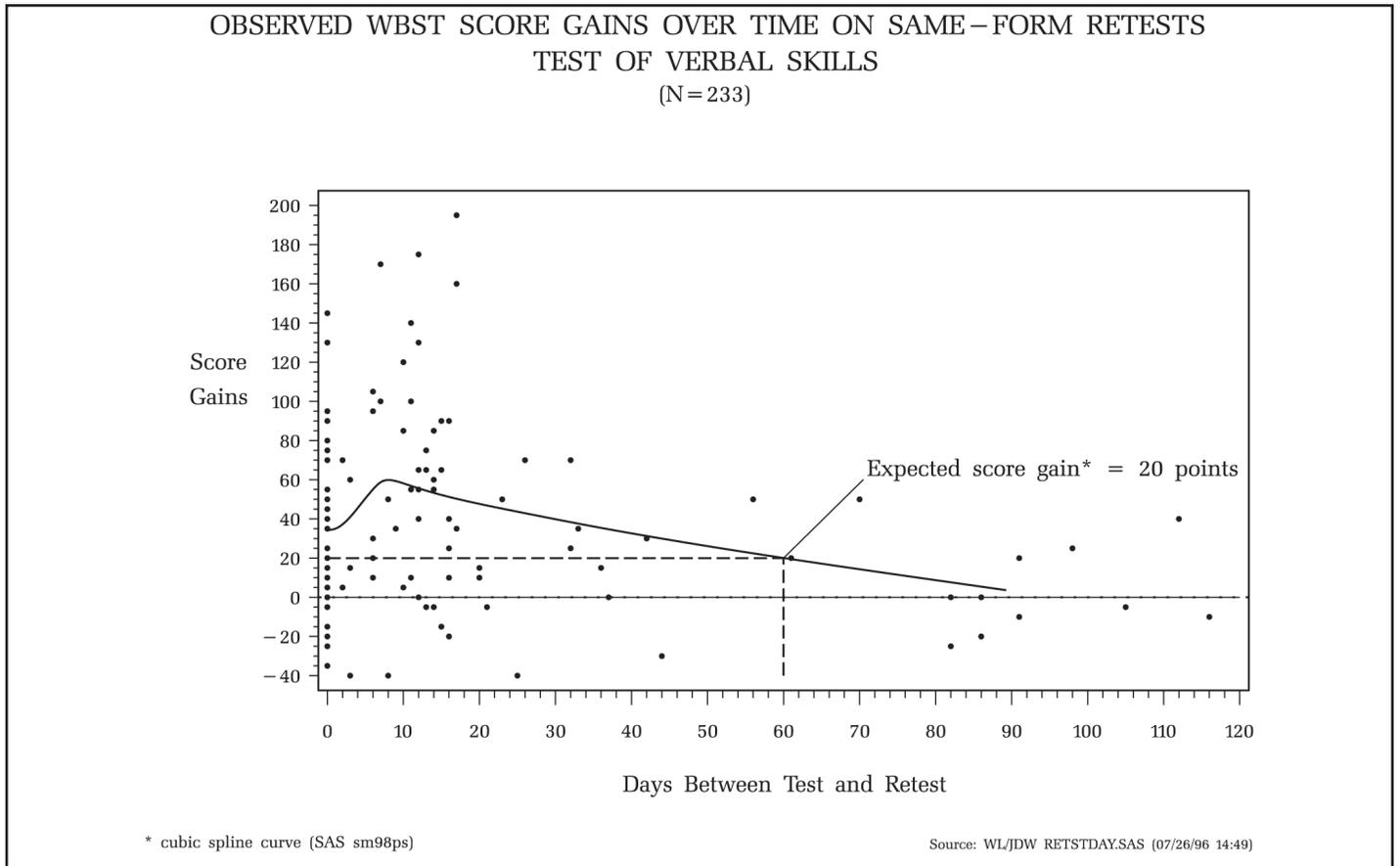
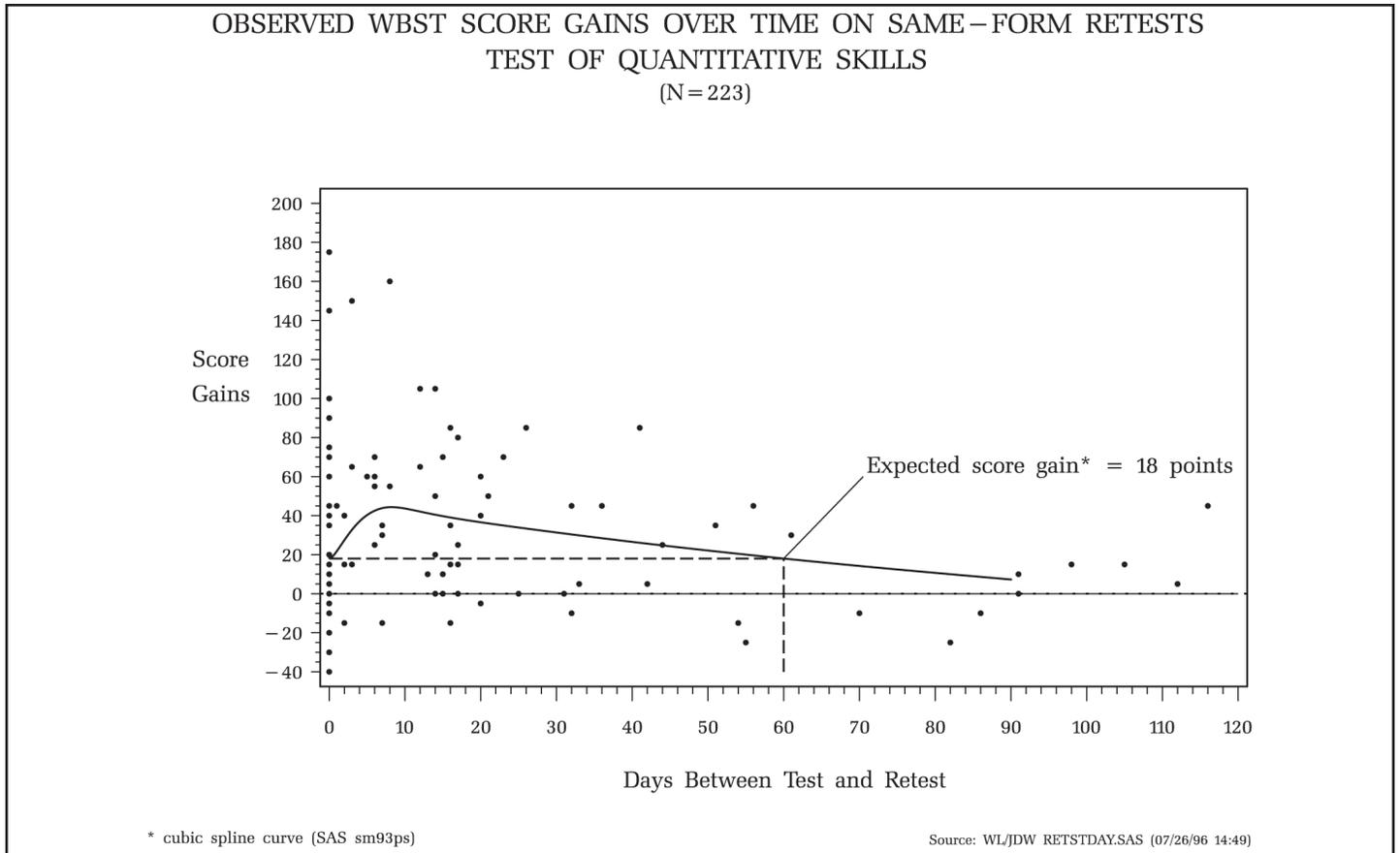


Figure 4





PART IV:

ATB Test Score Interpretation

ATB TEST SCORE INTERPRETATION

Minimum ATB Passing Scores

The ATB minimum scores for the WBST shown below have been prescribed by the U.S. Department of Education. These minimum scores apply to all ATB educational training programs.

ATB MINIMUM SCORES FOR THE WBST	
Verbal Skills	Quantitative Skills
200	210

ATB applicants who take the WBST must achieve a verbal score of no less than 200 and a quantitative score of no less than 210 in the *same* test administration to qualify for Title IV Federal financial assistance. If an applicant achieves the minimum ATB passing scores for both the verbal and quantitative sections of the WBST in the same test administration, the word "PASS" will appear in the "Ability-to-Benefit Status" box on the *WBST Individual ATB Score Report*. If the applicant does not achieve the minimum ATB passing scores for both test sections, or if the applicant was not administered both sections, the words "NO PASS" will appear in this box. Under no circumstances may an applicant qualify for Title IV Federal financial assistance on the basis of verbal and quantitative scores from separate administrations of the WBST. Only test scores appearing on the *WBST Individual ATB Score Report* provided by Wonderlic Education Solutions may be used for ATB qualification. All score reports must be filed in the applicant's permanent record folder. *NOTE: Wonderlic does not provide ITAs with access to generate individual reports using the official ATB Reporting website.*

Individual ATB Score Report Interpretation Guide

The *WBST Individual ATB Score Report* is divided into the four sections described below:

1. *Applicant Information Section* - This section of the report presents all relevant applicant information including the school and program to which the applicant is applying and the ITA who conducted the administration.
2. *Test Scores Graph* - This section reports an applicant's official WBST verbal and quantitative ATB scores on a scale of 0 to 500. These scores are presented at the base of each column in two different boxes labeled "Official Verbal Score" and "Official Quantitative Score." When either score is the result of a retest or untimed administration, the words "Retest" and/or "Untimed" will appear directly below the corresponding score. The bar graphs display the applicant's test scores in relation to the verbal and quantitative ATB minimum scores.
3. *Ability-to-Benefit Status Box* - This section of the report indicates whether an applicant has passed *both* the verbal and quantitative section of the WBST for ATB purposes. To pass the WBST for ATB purposes, an applicant must achieve a verbal score of no less than 200 and a quantitative score of no less than 210 in the same administration. If an applicant achieves the minimum ATB passing scores for *both* the verbal and quantitative test sections, the word "PASS" will appear in this box. If the applicant does not achieve the minimum ATB passing scores for *both* test sections, or if the applicant was not administered both sections, the words "NO PASS" will appear in this box.
4. *Grade Level Score Chart* - This section of the report provides a grade level equivalency score derived from a comparison of median student test scores from each grade as discussed in the "Grade Level Equivalency" section of this manual. The grade level score provides a more familiar measure of an applicant's overall level of basic skills, but may not be used for ATB purposes.



WONDERLIC BASIC SKILLS TEST
INDIVIDUAL ATB SCORE REPORT

MAILING ADDRESS:
 SAM SAMPLE
 123 SCHOOL ST
 SAMPLE, ST 12345

APPLICANT INFORMATION

Report Date: 12/18/07
School Name: SAMPLE ACADEMY
School Number: 1234567

Name: SAM SAMPLE
SSN: 123-45-6789
Test Date: 12/01/07
Test Forms: VS1, QS1

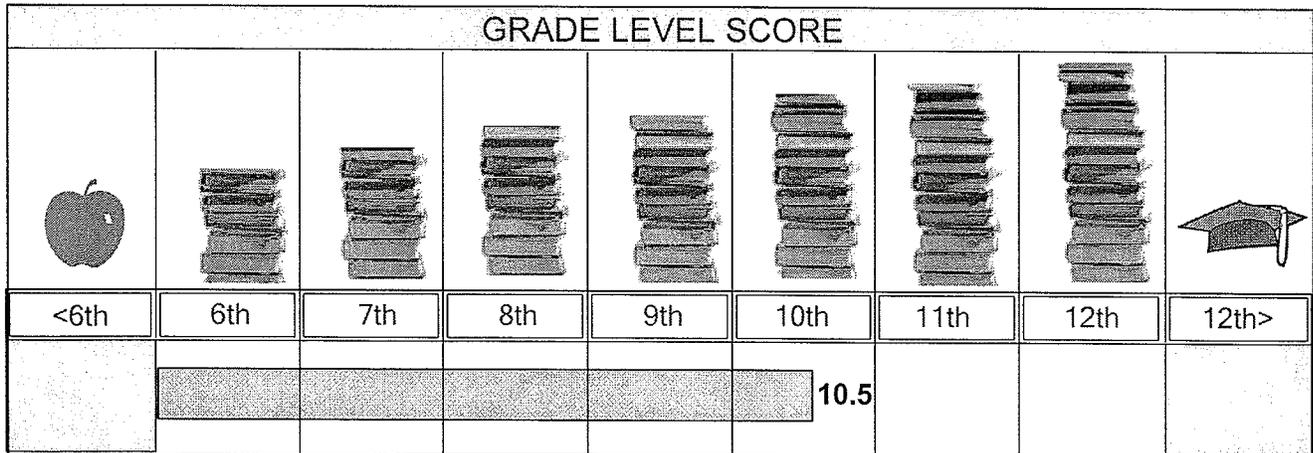
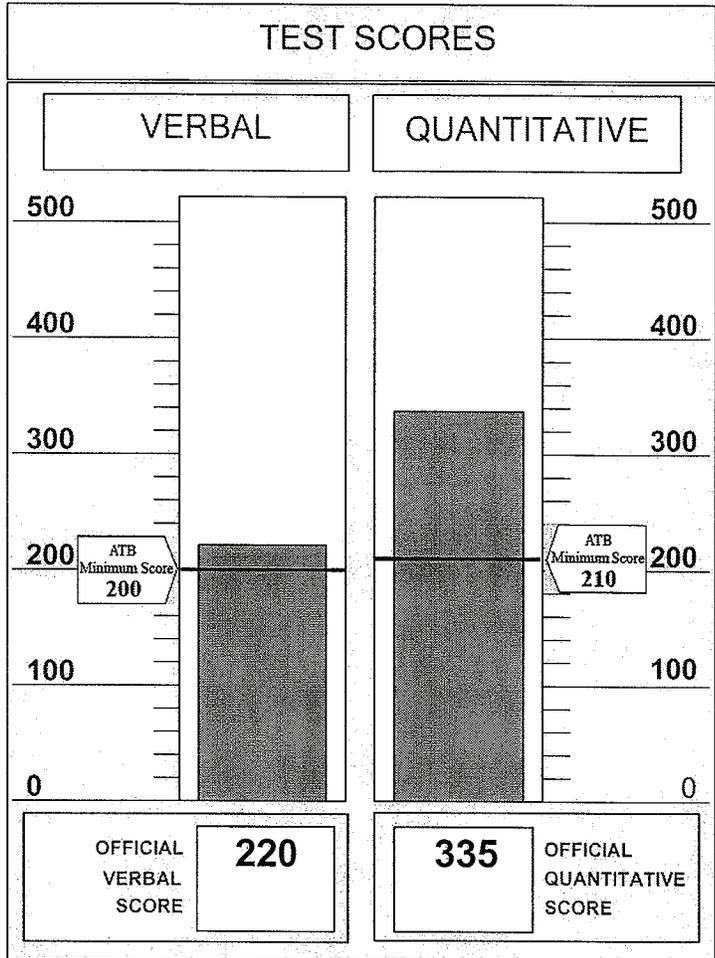
Program: Unknown
DOT Code:
Program Code: 99999

ITA Name: JANE SAMPLE
ITA Number: 05760 - 001

ABILITY-TO-BENEFIT STATUS

PASS *

ATB Status as of:
 9/2/2008 1:40:58 PM Please see the important notice below.



Notice: Students may not qualify for Title IV Federal financial assistance on the basis of scores appearing on separate WBST Individual ATB Score Reports.
 This score report may be used in making Title IV determinations if and only if the test was administered in full compliance with Wonderlic's published ATB testing procedures, including those governing retests.
 A preliminary scoring check suggests that one of the test forms indicated above may be incorrect. Please verify the accuracy of the forms listed, and call Wonderlic immediately with any corrections.

Grade Level Equivalency

WBST scores can be interpreted in terms of grade level equivalency to provide a more familiar and generalized scale for measuring an applicant's overall level of basic skills. The median or average test scores of students in school are commonly used to establish *grade-equivalent* or *grade level scores* (Peterson, Kolen, & Hoover, 1989). A grade level score indicates the school year in which students typically achieve a given test score. For example, if a student achieves a grade level score of 9.5 on the WBST, he or she has demonstrated a level of basic skills proficiency which is typical of students who are tested in the middle of 9th grade.

The grade level sample includes 14,531 test scores representing 7,688 students from 170 reporting organizations across 41 states. As shown in Table 2, this sample is comprised of an approximately equal proportion of males and females and represents a broad range of cultural backgrounds. Participating students had completed varying levels of education ranging from 6th grade through 4 years of college or postsecondary school at the time they were tested. These students were tested with the WBST as part of career and educational assessments, summer job training programs, and standard employment application processes. While this normative group is not a complete national sample, it provides a sound basis for establishing grade level equivalency.

For the purposes of establishing grade level scores, the normative group for each grade includes only those students who are of the appropriate age for that grade level and who have successfully completed the previous grade. For example, the 9th grade normative group is comprised of individuals who are 14 or 15 years of age and who have reported completing eight years of education.

When test scores are normally distributed, group median and average scores will be similar. However, average test scores are more influenced by extreme scoring individuals, whereas median test scores provide a more accurate representation of the skills which have been demonstrated by the majority of a particular group. Therefore, WBST grade level scores are based on a linear regression of the median test scores of students who have completed from six to 16 years of education.

Figures 5 and 6 report verbal and quantitative WBST normative information by grade level. These figures graphically present median and average test scores for each grade. While the WBST does not measure skills generally associated with college level curriculum, these figures demonstrate the successive score gains observed at every level of education from 6th grade through four years of postsecondary school. This provides empirical evidence that students continue to improve their proficiency with the basic skills measured by the WBST throughout both high school and college.

Figure 7 reports WBST skills composite information by grade level. An applicant's skills composite is the simple arithmetic average of his or her verbal and quantitative scores. The grade level score reported on the *WBST Individual ATB Score Report* is based on the skills composite. This grade level score provides the best estimate of an applicant's overall basic skills proficiency in terms of grade level equivalency.

Table 2: Demographic Frequencies of WBST Grade Level Normative Group

RACE	GENDER						ALL	
	MALE		FEMALE		UNKNOWN		N	%
	N	%	N	%	N	%		
White	2,735	68.0	2,324	64.9	28	34.6	5,087	66.2
Black/African American	541	13.4	561	15.7	5	6.2	1,107	14.4
Hispanic	338	8.4	373	10.4	6	7.4	717	9.3
Latino/Mexican	84	2.1	85	2.4	0	0.0	169	2.2
Native American	29	0.7	22	0.6	1	1.2	52	0.7
Indo-Chinese	8	0.2	0	0.0	0	0.0	8	0.1
Japanese, Korean	5	0.1	5	0.1	0	0.0	10	0.1
Southeast Asian	13	0.3	15	0.4	2	2.5	30	0.4
Pacific Islander	6	0.2	5	0.1	0	0.0	11	0.1
Other	56	1.4	52	1.5	1	1.2	109	1.4
Unknown	210	5.2	140	3.9	38	46.9	388	5.1
All	4,025	52.4	3,582	46.6	81	1.1	7,688	100.0

Table 3 presents the WBST verbal, quantitative, and composite grade-equivalent score ranges for 6th grade through college. However, WBST test content measures basic skills generally not associated with college level curriculum. Grade-equivalent scores beyond the 12th grade indicate that an applicant’s basic skills proficiency is comparable to that of students in college, but these scores do not necessarily indicate that the applicant is proficient with college level skills. For this reason, grade level scores beyond the 12th grade are not specified on the *WBST Individual ATB Score Report*.

Table 3: WBST Grade Equivalent Scores

YEAR IN SCHOOL		VERBAL	QUANTITATIVE	COMPOSITE
Middle School	6th Grade*	193-210	214-226	207-221
	7th Grade	211-229	227-240	222-237
	8th Grade	230-247	241-253	238-253
High School	9th Grade	248-266	254-266	254-268
	10th Grade	267-284	267-280	269-284
	11th Grade	285-302	281-293	285-300
	12th Grade	303-321	294-313	301-315
College/ Postsecondary School	1st Year	322-339	314-320	316-331
	2nd Year	340-358	321-333	332-347
	3rd Year	359-376	334-346	348-362
	4th Year	377-395	347-360	363-378

* Extrapolated from linear regression - 6th Grade test data is not yet available.

Figure 5

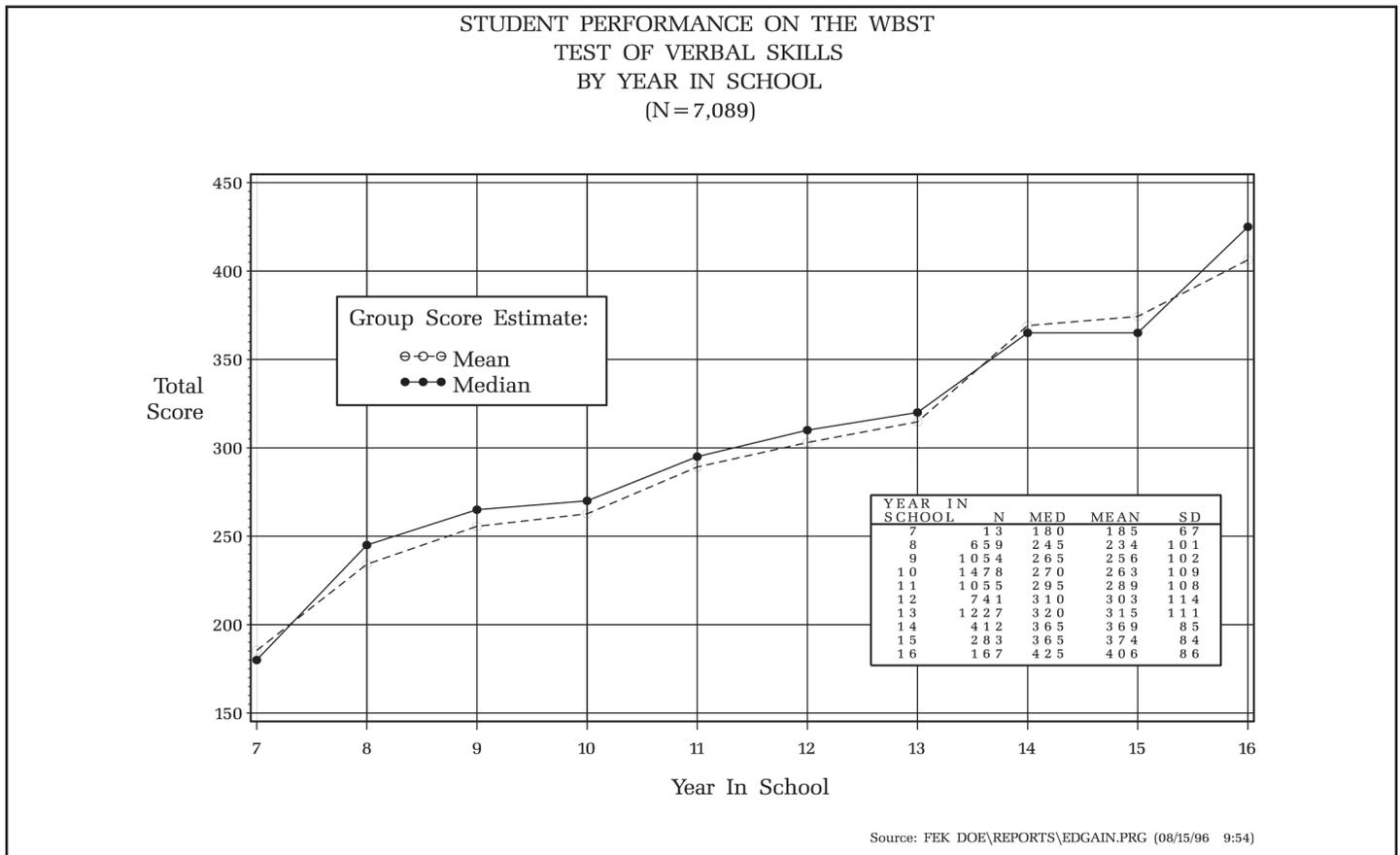


Figure 6

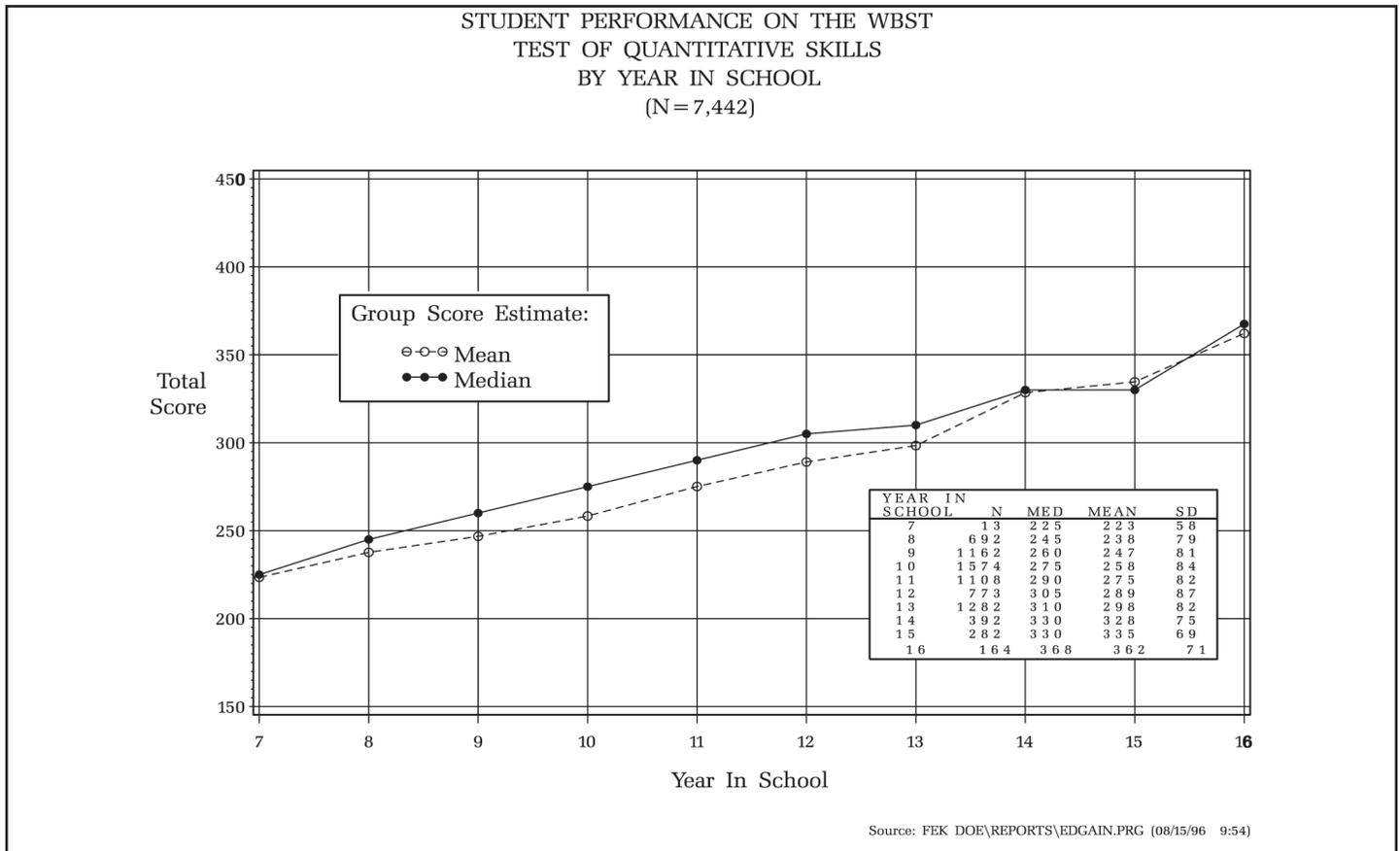
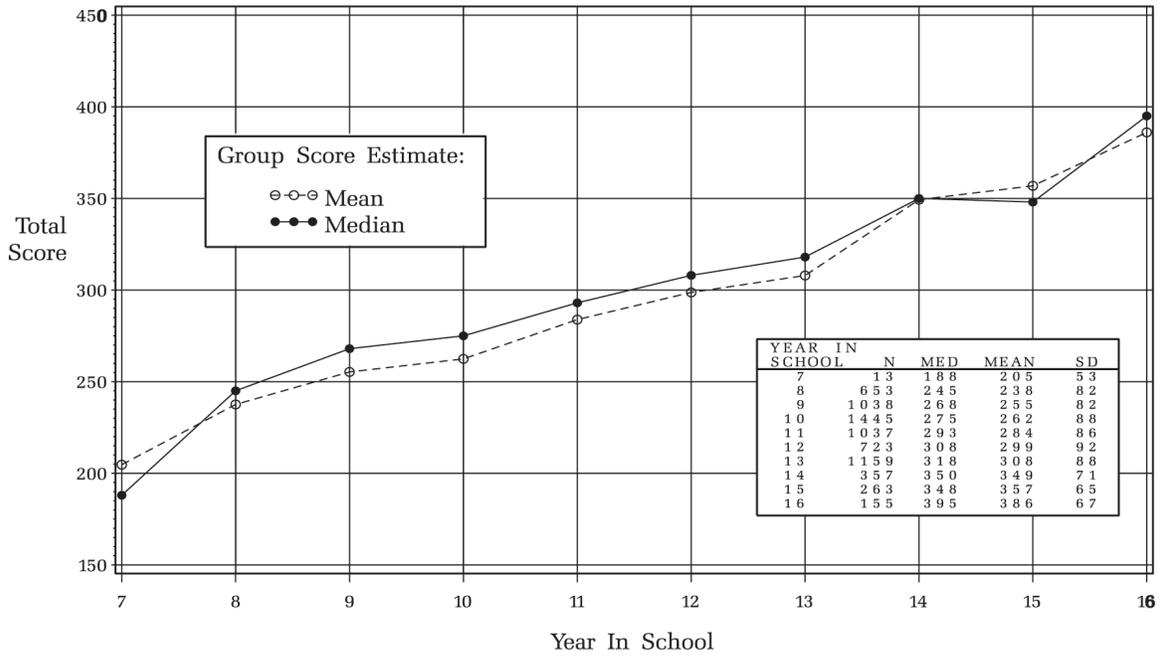


Figure 7

STUDENT PERFORMANCE ON THE WBST
 SKILLS COMPOSITE
 BY YEAR IN SCHOOL
 (N=6,843)



Source: FEK DOE\REPORTS\EDGAIN.PRG (08/15/96 9:54)

Reporting

Please refer to the "Wonderlic ATB Program Administrator Guide" for detailed information about accessing the Official ATB Reporting website for test administrations conducted at your school. Registered users can access the online system to generate individual student reports. Users can also generate summary and detailed group reports which provide a comprehensive record of all period and cumulative WBST testing activity at a particular school.

These reports are designed to improve the effectiveness of the school's recruiting and testing program, and they provide easy access to student ATB test records for auditing purposes. By examining these reports, schools can better understand the skills of their applicant pool and better manage their recruiting process, while ITAs can verify the accuracy of their test administrations. Comprehensive information is provided in the detailed report, or "Report Bundle". An overview of each section in this report is provided below.

Distribution of Test Scores

This section provides graphical representations of the verbal and quantitative test score distributions of applicants to the school, including related descriptive statistics. These distributions will not include scores resulting from retest or untimed administrations. Use this section to compare the skills of individuals to the skills of the cumulative applicant pool. Also, use this section to identify irregular test score distributions that may indicate problems or inconsistencies in the testing program.

Passing Rate Summary by Program Title

This section provides a graphical comparison of ATB minimum score passing rates by program title. Passing rates are based on the percentage of all applicants achieving the WBST minimum scores prescribed by the U.S. Department of Education for ATB determination. Use this section to evaluate the accuracy and acceptability of overall applicant passing rates at the school.

Education Summary

This section provides an applicant educational profile for the school. Use this section to evaluate the impact of recruiting on the education level of applicants by comparing quarterly and cumulative percentages.

Individual Summary

This section provides an alphabetical listing of applicants which presents an individual test information summary for each applicant tested during the quarter. Use this section to verify the completeness and accuracy of the school's ATB database. Note: this section is available as a stand-alone report when all that is desired is a listing of students who tested during a given date range, the forms they were administered, and the scores they achieved.



PART V:

Technical Information

TECHNICAL INFORMATION

ATB Minimum Score Determination

The ATB minimum scores for both the verbal and quantitative sections of the WBST have been prescribed by the U.S. Department of Education in accordance with the following regulations:

"...to demonstrate that a test taker has the ability to benefit from the education and training offered, the Secretary specifies that the passing score on each approved test is one standard deviation below the mean for students with high school diplomas who have taken the test within three years before the date on which the test is submitted to the Secretary for approval." (U.S. DOE, Dec. 1, 1995, Fed. Reg., §668.147)

In addition, the normative sample should be made up of:

"...a contemporary population representative of persons who are beyond the usual age of compulsory school attendance in the United States." (U.S. DOE, Dec. 1, 1995, Fed. Reg., §668.144)

In accordance with these regulations, Wonderlic has selected an ATB normative sample which includes students who have a high school diploma, who have completed exactly 12 years of education, and who are 16 to 29 years of age for the Secretary's use in prescribing the appropriate minimum scores. The appropriate age group selected for this sample has been identified based on the vast majority of a contemporary student population representing 350,896 test administrations in the Wonderlic historical ATB database for the Scholastic Level Exam (SLE). The ATB normative sample includes 4,790 test scores representing 3,706 students from 210 reporting organizations across 42 states. As shown in Table 4, this sample is comprised of an approximately equal proportion of males and females and represents a broad range of cultural backgrounds.

As described in the "Test Development" section of this manual, all forms of the same test section, either verbal or quantitative, have been developed on a common metric using item response theory. Therefore, scores achieved on different verbal or quantitative test forms are directly comparable. Tables 5 and 6 present score distributions for the ATB normative sample. As shown in the tables, distributions for the individual forms of the same section demonstrate no statistically significant differences in mean and standard deviation. Based on the combined score distributions in Tables 5 and 6, the Secretary has prescribed a minimum verbal score of 200 and a minimum quantitative score of 210 for ATB determination. These scores represent one standard deviation below the average score - or approximately the 16th percentile - of all students in the Wonderlic ATB normative sample.

Table 4: Demographic Frequencies of WBST ATB Normative Group - High School Graduates, 16-29 Years of Age

RACE	GENDER						ALL	
	MALE		FEMALE		UNKNOWN		N	%
	N	%	N	%	N	%		
White	1,128	58.1	897	51.8	8	24.2	2,033	66.2
Black/African American	345	17.8	393	22.7	3	9.1	741	14.4
Hispanic	239	12.3	252	14.5	2	6.1	493	9.3
Latino/Mexican	99	5.1	89	5.1	1	3.0	189	2.2
Native American	5	0.3	26	1.5	0	0.0	31	0.7
Indo-Chinese	2	0.1	0	0.0	0	0.0	2	0.1
Japanese/Korean	5	0.3	3	0.2	0	0.0	8	0.1
Southeast Asian	23	1.2	8	0.5	2	6.1	33	0.4
Pacific Islander	5	0.3	0	0.0	0	0.0	5	0.1
Other	33	1.7	22	1.3	0	0.0	55	1.4
Unknown	56	2.9	43	2.5	17	51.5	116	5.1
All	1,940	52.4	1,733	46.8	33	0.9	3,706	100.0

Table 5: Distribution of WBST Verbal Scores, ATB Normative Group - High School Graduates, 16-29 Years of Age

Test Score	FORM VS-1			FORM VS-2			COMBINED		
	N	%	Cum.%	N	%	Cum.%	N	%	Cum.%
0	25	1.3	1.3	22	1.5	1.5	47	1.4	1.4
10	3	0.2	1.4	1	0.1	1.5	4	0.1	1.5
20	2	0.1	1.5	2	0.1	1.7	4	0.1	1.6
30	3	0.2	1.7	4	0.3	2.0	7	0.2	1.8
40	2	0.1	1.8	2	0.1	2.1	4	0.1	1.9
50	5	0.3	2.0	5	0.3	2.4	10	0.3	2.2
60	8	0.4	2.4	5	0.3	2.8	13	0.4	2.6
70	6	0.3	2.8	2	0.1	2.9	8	0.2	2.8
80	13	0.7	3.4	4	0.3	3.2	17	0.5	3.3
90	12	0.6	4.0	8	0.5	3.7	20	0.6	3.9
100	13	0.7	4.7	3	0.2	3.9	16	0.5	4.4
110	15	0.8	5.5	9	0.6	4.5	24	0.7	5.0
120	15	0.8	6.2	17	1.1	5.7	32	0.9	6.0
130	13	0.7	6.9	15	1.0	6.7	28	0.8	6.8
140	22	1.1	8.0	13	0.9	7.5	35	1.0	7.8
150	25	1.3	9.3	15	1.0	8.5	40	1.2	9.0
160	24	1.2	10.5	19	1.3	9.8	43	1.2	10.2
170	32	1.6	12.1	19	1.3	11.1	51	1.5	11.7
180	29	1.5	13.6	31	2.1	13.2	60	1.7	13.4
190	29	1.5	15.1	35	2.4	15.5	64	1.9	15.3
200	48	2.4	17.5	21	1.4	17.0	69	2.0	17.3
210	28	1.4	19.0	32	2.2	19.1	60	1.7	19.0
220	30	1.5	20.5	37	2.5	21.6	67	1.9	21.0
230	41	2.1	22.6	30	2.0	23.6	71	2.1	23.0
240	45	2.3	24.9	39	2.6	26.2	84	2.4	25.5
250	45	2.3	27.2	37	2.5	28.7	82	2.4	27.9
260	55	2.8	30.0	36	2.4	31.2	91	2.6	30.5
270	56	2.9	32.8	45	3.0	34.2	101	2.9	33.4
280	60	3.1	35.9	52	3.5	37.7	112	3.2	36.7
290	66	3.4	39.3	59	4.0	41.7	125	3.6	40.3
300	86	4.4	43.7	62	4.2	45.8	148	4.3	44.6
310	67	3.4	47.1	57	3.8	49.7	124	3.6	48.2
320	90	4.6	51.7	47	3.2	52.8	137	4.0	52.2
330	75	3.8	55.5	47	3.2	56.0	122	3.5	55.7
340	78	4.0	59.5	47	3.2	59.2	125	3.6	59.3
350	84	4.3	63.7	50	3.4	62.5	134	3.9	63.2
360	61	3.1	66.9	47	3.2	65.7	108	3.1	66.3
370	69	3.5	70.4	52	3.5	69.2	121	3.5	69.9
380	53	2.7	73.1	42	2.8	72.0	95	2.8	72.6
390	59	3.0	76.1	47	3.2	75.2	106	3.1	75.7
400	52	2.7	78.7	41	2.8	77.9	93	2.7	78.4
410	49	2.5	81.2	37	2.5	80.4	86	2.5	80.9
420	68	3.5	84.7	36	2.4	82.8	104	3.0	83.9
430	48	2.4	87.1	32	2.2	85.0	80	2.3	86.2
440	47	2.4	89.5	32	2.2	87.1	79	2.3	88.5
450	35	1.8	91.3	36	2.4	89.6	71	2.1	90.6
460	28	1.4	92.8	18	1.2	90.8	46	1.3	91.9
470	24	1.2	94.0	16	1.1	91.9	40	1.2	93.1
480	8	0.4	94.4	21	1.4	93.3	29	0.8	93.9
490	22	1.1	95.5	12	0.8	94.1	34	1.0	94.9
500	88	4.5	100.0	88	5.9	100.0	176	5.1	100.0

ATB Minimum Score = 200

Medians in black bars	Total	1961	Total	1486	Total	3447
Quartiles in white bars	Average	310**	Average	310**	Average	310**
	St. Dev.	110*	St. Dev.	113*	St. Dev.	111*
	Median	320	Median	315	Median	320
	Interquartile Range	250-390	Interquartile Range	240-390	Interquartile Range	240-390

* Variance of VS-1 and VS-2 show no significant difference (H_0 : variance are equal, $F=1.04$, $DF=(1485, 1960)$, $Prob > F=.3832$)
 ** Means of VS-1 and VS-2 show no significant difference (H_0 : means are equal, $T=-.2302$, $DF=(1485, 1960)$, $Prob > |T|=.8179$)

Table 6: Distribution of WBST Quantitative Scores, ATB Normative Group - High School Graduates, 16-29 Years of Age

Test Score	FORM QS-1			FORM QS-2			COMBINED		
	N	%	Cum.%	N	%	Cum.%	N	%	Cum.%
0	2	0.2	0.2	1	0.2	0.2	3	0.2	0.2
10	.	.	0.2	.	.	0.2	.	.	0.2
20	.	.	0.2	.	.	0.2	.	.	0.2
30	1	0.1	0.4	.	.	0.2	1	0.1	0.3
40	1	0.1	0.5	.	.	0.2	1	0.1	0.4
50	.	.	0.5	.	.	0.2	.	.	0.4
60	2	0.2	0.7	1	0.2	0.4	3	0.2	0.6
70	2	0.2	1.0	.	.	0.4	2	0.1	0.7
80	3	0.4	1.4	1	0.2	0.6	4	0.3	1.0
90	.	.	1.4	.	.	0.6	.	3	1.0
100	3	0.4	1.7	1	0.2	0.8	4	0.3	1.3
110	2	0.2	2.0	1	0.2	0.9	3	0.2	1.6
120	6	0.7	2.7	1	0.2	1.1	7	0.5	2.1
130	10	1.2	3.9	6	1.1	2.3	16	1.2	3.3
140	8	1.0	4.9	6	1.1	3.4	14	1.0	4.3
150	4	0.5	5.4	4	0.8	4.1	8	0.6	4.9
160	12	1.5	6.9	7	1.3	5.5	19	1.4	6.3
170	14	1.7	8.6	3	0.6	6.0	17	1.3	7.6
180	15	1.8	10.5	10	1.9	7.9	25	1.9	9.5
190	9	1.1	11.6	15	2.8	10.7	24	1.8	11.2
200	18	2.2	13.8	19	3.6	14.3	37	2.8	14.0
210	17	2.1	15.9	15	2.8	17.1	32	2.4	16.4
220	20	2.5	18.4	19	3.6	20.7	39	2.9	19.3
230	20	2.5	20.8	17	3.2	23.9	37	2.8	22.0
240	22	2.7	23.6	21	3.9	27.8	43	3.2	25.2
250	35	4.3	27.9	18	3.4	31.2	53	3.9	29.2
260	28	3.5	31.3	37	7.0	38.2	65	4.8	34.0
270	33	4.1	35.4	35	6.6	44.7	68	5.1	39.1
280	48	5.9	41.3	33	6.2	50.9	81	6.0	45.1
290	57	7.0	48.3	35	6.6	57.5	92	6.9	52.0
300	60	7.4	55.7	29	5.5	63.0	89	6.2	58.6
310	60	7.4	63.1	23	4.3	67.3	83	6.2	64.8
320	43	5.3	68.4	17	3.2	70.5	60	4.5	69.2
330	47	5.8	74.2	18	3.4	73.9	65	4.8	74.1
340	32	3.9	78.2	20	3.8	77.6	52	3.9	78.0
350	36	4.4	82.6	13	2.4	80.1	49	3.6	81.6
360	32	3.9	86.6	11	2.1	82.1	43	3.2	84.8
370	20	2.5	89.0	17	3.2	85.3	37	2.8	87.6
380	15	1.8	90.9	10	1.9	87.2	25	1.9	89.4
390	15	1.8	92.7	11	2.1	89.3	26	1.9	91.4
400	4	0.5	93.2	8	1.5	90.8	12	0.9	92.3
410	13	1.6	94.8	10	1.9	92.7	23	1.7	94.0
420	10	1.2	96.1	10	1.9	94.5	20	1.5	95.5
430	6	0.7	96.8	9	1.7	96.2	15	1.1	96.6
440	10	1.2	98.0	5	0.9	97.2	15	1.1	97.7
450	5	0.6	98.6	5	0.9	98.1	10	0.7	98.4
460	5	0.6	99.3	3	0.6	98.7	8	0.6	99.0
470	1	0.1	99.4	4	0.8	99.4	5	0.4	99.4
480	2	0.2	99.6	.	.	99.4	2	0.1	99.6
490	.	.	99.6	.	.	99.4	.	.	99.6
500	3	0.4	100.0	3	0.6	100.0	6	0.4	100.0

ATB Minimum Score = 210

Medians in black bars	Total	811	Total	532	Total	1343
Quartiles in white bars	Average	288**	Average	286**	Average	287**
	St. Dev.	78*	St. Dev.	79*	St. Dev.	78*
	Median	300	Median	280	Median	290
	Interquartile Range	250-340	Interquartile Range	240-340	Interquartile Range	240-340

* Variance of QS-1 and QS-2 show no significant difference (H_0 : variance are equal, $F=1.02$, $DF=(531, 810)$, $Prob > F=.7922$)
 ** Means of QS-1 and QS-2 show no significant difference (H_0 : means are equal, $T=.3961$, $DF=(531, 810)$, $Prob > |T|=.6921$)

Untimed Test Score Adjustment

In certain situations, it may be appropriate to administer the WBST on an untimed basis. The untimed administration is designed to provide a more accurate skills assessment for applicants who are likely to be inaccurately assessed on a timed basis.

Wonderlic research shows that a timed period causes applicants to take the test more seriously and motivates them to perform better in the untimed period. Therefore, the approved untimed WBST administration procedure combines a standard 20 minute timed period followed by an untimed period on the same test form. This provides separate scores on both a timed and untimed basis.

The untimed score contains a statistical score adjustment*. This adjustment is based on a linear regression of observed timed and untimed test scores from individuals who were accurately assessed during the timed testing period. This relationship provides a sound method of estimating the appropriate test score for individuals who are not accurately assessed in the standard 20-minute timed testing period. Figures 8 and 9 demonstrate this relationship for both the verbal and quantitative sections of the WBST. As shown in these figures, the appropriate score for an untimed verbal test administration is expected to equal approximately 83% of the unadjusted untimed score. Similarly, the appropriate score for an untimed quantitative test administration is expected to equal approximately 91% of the unadjusted untimed score. These adjustments will automatically be made by Wonderlic Education Solutions as well as the online Unofficial ATB Scoring template prior to test score reporting.

*Please note: A score adjustment may not be appropriate when extended testing time is provided as a reasonable accommodation for an applicant with a disability. Please contact Wonderlic Education Solutions for more information.

Figure 8

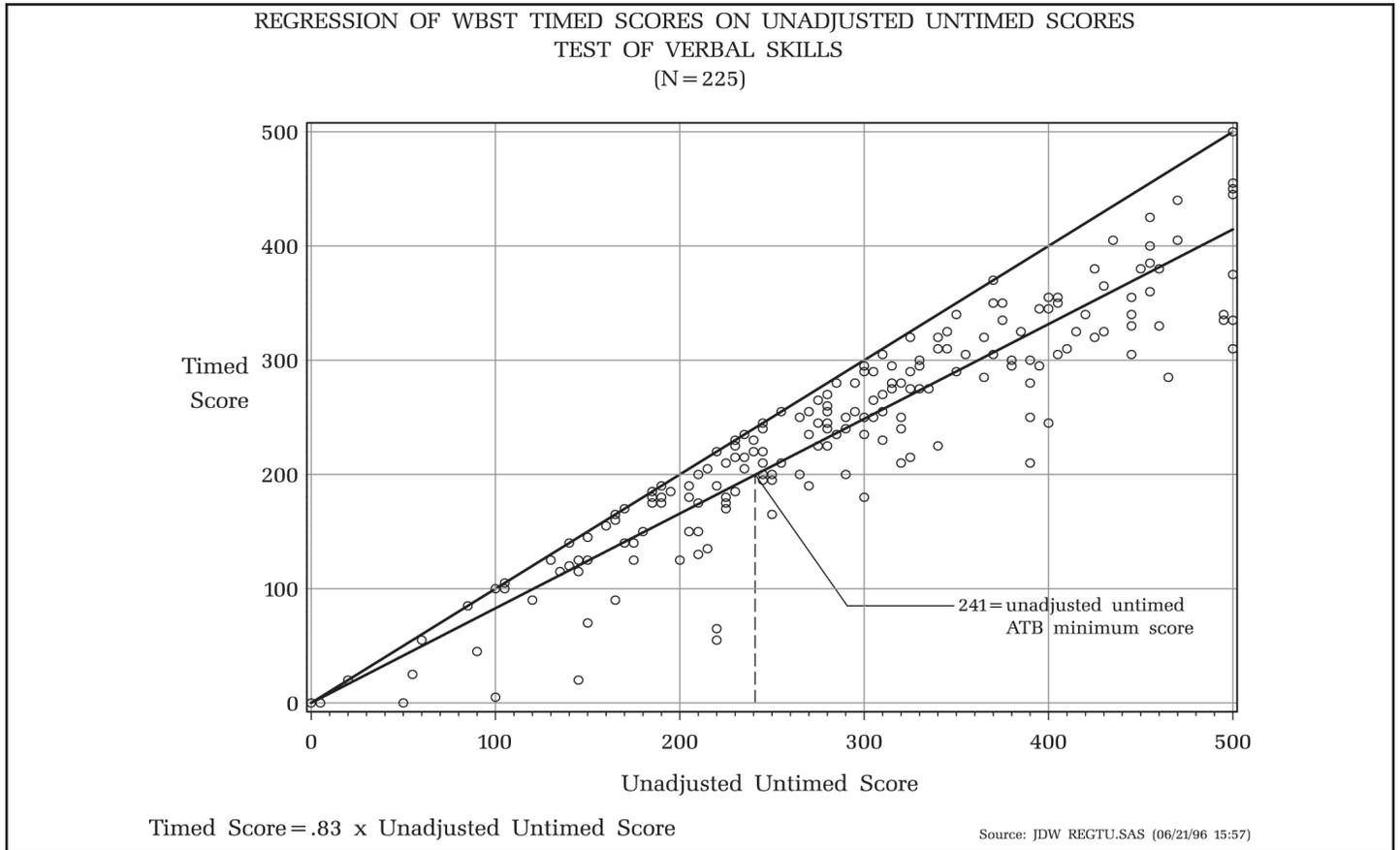
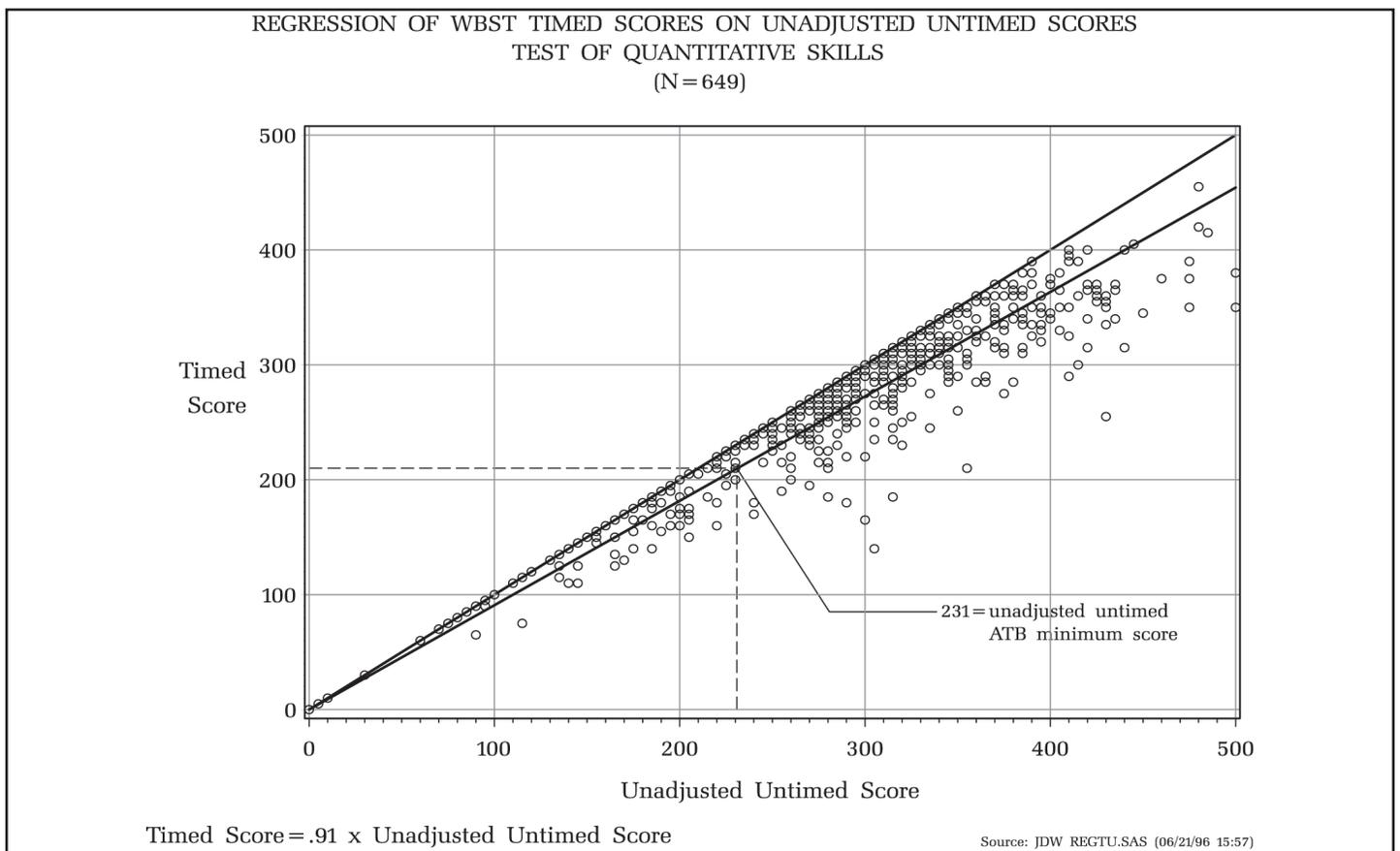


Figure 9



Test Validity

The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1985) specifies that test validity refers to the appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores. The appropriateness of inferences made from WBST scores for ATB purposes are supported on the basis of content validity. According to the *Standards*:

"Content-related evidence demonstrates the degree to which the sample of items, tasks, or questions on a test are representative of some defined universe or domain of content. The methods often rely on expert judgments to assess the relationship between parts of the test and the defined universe..."

The content domain measured by the WBST includes the fundamental verbal and quantitative skills which are required for successful performance in occupational training programs and in the workplace. All test content has been developed by subject-matter experts in accordance with the job-related language and math skills published by the U.S. Department of Labor, Employment and Training Administration in the *Dictionary of Occupational Titles* (U.S. Department of Labor, 1991). The test is also designed to take into account research conducted by the National Assessment of Educational Progress (NAEP), the Secretary's Commission on Achieving Necessary Skills (SCANS), and the National Educational Goals Panel.

In addition, normative test data from students in school demonstrate that proficiency with the academic subject matter measured by the WBST is strongly related to levels of academic achievement ranging from the 6th grade through four years of college or postsecondary education. After a comprehensive review of all test content, the U.S. Department of Education has approved the WBST as a valid measure of the necessary high school level language and math skills for successful performance in postsecondary occupational training programs.

All WBST items have been subjected to independent expert review for cultural sensitivity, as well as statistical analysis of Differential Item Functioning (DIF), to ensure that the test is culturally and gender equivalent and free of content bias.

Based on this evidence, the WBST is a content valid measure of basic skills, for use in applicant selection for any job or occupational training program which has been determined to require basic language and math skills. The content validity of the WBST is supported by a well-focused definition of purpose, expert development of test content, and independent expert review.

Test Reliability and Errors of Measurement

The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1985) specifies that test reliability refers to the degree to which test scores are free from errors of measurement. According to the *Standards*:

"A test taker may perform differently on one occasion than on another for reasons that may or may not be related to the purpose of measurement. A person may try harder, be more fatigued or anxious, have greater familiarity with the content of questions on one test form than on another, or simply guess correctly on more questions on one occasion than on another. For these and other reasons a person's score will not be perfectly consistent from one occasion to the next."

Standard Errors of Measurement

From the above statement, it is evident that a score from any particular test administration is only an estimate of an individual's actual level of knowledge, skills or ability ("true score"), and that this estimation is always subject to some error of measurement. The likely amount of error in an individual's test score is reflected in the *standard error of measurement* for the given score. An individual's true score is likely to fall within one standard error of measurement of his or her observed test score. Tests that have relatively lower standard errors of measurement have a higher degree of reliability. Table 7 provides a complete listing of standard errors for test scores on each form of the WBST.

Standard errors of measurement can be used to compare applicant test scores to the ATB minimum score or to the scores of other applicants. If an applicant's score falls below the ATB minimum score, but the minimum score falls within one standard error of his or her score, then it may be beneficial to retest the applicant. In addition, when the standard error range around one applicant's test score overlaps with that of another applicant, then their scores are not considered to be significantly different. For example, the standard error ranges for applicants scoring 170 and 190 on form VS-1 are 140-200 and 161-219 respectively. Because these ranges overlap, the applicants' scores are not considered to be significantly different.

Table 7: WBST Standard Errors of Measurement

Test Score	TEST FORM			
	VS-1	VS-2	QS-1	QS-2
0	62	54	72	68
5	60	52	70	65
10	58	51	67	62
15	56	49	65	59
20	54	48	63	56
25	52	46	61	54
30	50	45	59	52
35	49	44	58	50
40	48	43	56	48
45	46	42	54	46
50	45	41	53	45
55	44	40	52	43
60	43	39	50	42
65	42	38	49	41
70	41	37	48	40
75	40	37	46	39
80	39	36	45	38
85	38	35	44	37
90	37	35	43	37
95	37	34	42	36
100	36	34	41	36
105	35	33	40	35
110	35	33	39	35
115	34	33	39	34
120	34	32	38	34
125	33	32	37	34
130	33	32	36	34
135	32	31	36	33
140	32	31	35	33
145	31	31	35	33
150	31	31	34	33
155	31	30	34	32
160	30	30	34	32
165	30	30	33	32
170	30	30	33	32
175	30	29	33	31
180	29	29	33	31
185	29	29	32	31
190	29	29	32	31
195	29	28	32	31
200	28	28	32	31
205	28	28	32	31
210	28	28	32	30
215	28	28	32	30
220	28	28	32	30
225	28	28	32	30
230	28	28	32	30
235	27	28	32	30
240	27	28	31	30
245	27	28	31	30
250	continued in next column			

Test Score	TEST FORM			
	VS-1	VS-2	QS-1	QS-2
250	27	28	31	30
255	27	28	30	29
260	27	28	30	29
265	27	29	29	29
270	27	29	28	28
275	28	29	27	28
280	28	29	25	28
285	28	30	24	27
290	28	30	22	27
295	28	30	21	27
300	29	31	20	26
305	29	31	19	25
310	29	31	18	25
315	29	32	18	24
320	29	32	18	24
325	29	32	18	23
330	29	33	19	22
335	29	33	19	22
340	29	33	19	22
345	29	34	20	21
350	28	34	20	21
355	27	34	20	21
360	26	35	20	21
365	26	35	20	21
370	25	35	20	21
375	24	36	20	20
380	24	36	20	20
385	24	36	20	19
390	23	37	20	19
395	24	37	19	19
400	24	37	19	19
405	24	38	19	19
410	25	38	19	19
415	26	39	20	19
420	27	39	20	19
425	28	40	21	20
430	29	41	22	20
435	31	41	23	21
440	32	42	24	22
445	34	43	25	23
450	36	44	26	24
455	38	45	27	26
460	40	46	29	27
465	42	47	30	29
470	44	48	32	31
475	47	49	34	33
480	49	50	36	35
485	52	51	38	37
490	55	53	40	39
495	57	54	43	41
500	60	56	45	44

Test-Retest Reliability

The reliability evidence provided for a particular test should support the intended use and interpretation of test scores. This evidence is generally based on two fundamental methods of estimating test reliability - test-retest correlations and measures of internal consistency.

Retesting applicants for ATB purposes is generally conducted on the same day as the initial test administration. Within a 12-month period, and in accordance with approved Wonderlic ATB procedures, retesting may be conducted with an *alternate form* of the WBST on the same day as the initial administration or anytime thereafter. In addition, retesting may be conducted with the *same form* of the WBST if at least 60 days have passed since the applicant was initially administered that form *and the applicant has been administered the alternate form within the past twelve months*. The WBST retest sample includes 3,356 test scores representing 941 students from 34 reporting organizations across 23 states. As shown in Table 8, this sample is comprised of an approximately equal proportion of males and females and represents a broad range of cultural backgrounds. Table 9 presents the appropriate test-retest reliability estimates for both alternate and same-form retesting within three relevant time intervals.

In addition, Table 10 presents the test-retest reliability estimates for ATB status clarifications. These estimates indicate the level of consistency with which the WBST classifies applicants as either passing - or not passing - the ATB minimum verbal and quantitative WBST scores when they are retested.

Internal Consistency

Measures of internal consistency such as split-half correlations are generally regarded as inflated estimates of test reliability when applied to speeded tests such as the WBST. However, a comparative analysis of the Cronbach alphas shown in Table 11 for both timed and untimed WBST administrations reveals that the 20-minute timed period does not practically or significantly impact internal consistency estimates for either the verbal or quantitative section of the test. This not only confirms the appropriateness of the 20-minute time limit, but also establishes that the timed testing period is sufficient to measure all primary verbal and quantitative content domains assessed by the WBST with a high degree of reliability.

Table 8: Demographic Frequencies of WBST Test-Retest Sample

RACE	GENDER						ALL	
	MALE		FEMALE		UNKNOWN		N	%
	N	%	N	%	N	%		
White	260	56.6	185	45.5	5	6.7	450	47.8
Black/African American	119	25.9	173	42.5	1	1.3	293	31.1
Hispanic	31	6.8	20	4.9	1	1.3	52	5.5
Latino/Mexican	8	1.7	5	1.2	0	0.0	13	1.4
Native American	5	1.1	4	1.0	0	0.0	9	1.0
Japanese/Korean	0	0.0	2	0.5	0	0.0	2	0.2
Southeast Asian	6	1.3	1	0.3	1	1.3	8	0.9
Pacific Islander	1	0.2	0	0.0	0	0.0	1	0.1
Other	8	1.7	1	0.3	0	0.0	9	1.0
Unknown	21	4.6	16	3.9	67	89.3	104	11.1
All	459	48.8	407	43.3	75	8.0	941	100.0

Median education = 12 years, Average age = 33 years.

Table 9: WBST Test-Retest Reliabilities Estimates

TEST SECTION	TYPE	DAY OF RETEST ADMINISTRATION			OVERALL
		Same Day	Within 30 Days	After 30 Days	
Verbal Skills	Same Form	.90 (N=50)	.84 (N=54)	.90 (N=129)	.89 (N=233)
	Parallel Form	.93 (N=56)	.89 (N=103)	.92 (N=469)	.92 (N=628)
	Combined	.93 (N=106)	.87 (N=157)	.92 (N=598)	.91 (N=861)
Quantitative Skills	Same Form	.83 (N=45)	.85 (N=45)	.91 (N=133)	.88 (N=223)
	Parallel Form	.89 (N=48)	.88 (N=82)	.83 (N=465)	.84 (N=596)
	Combined	.89 (N=92)	.86 (N=127)	.86 (N=598)	.86 (N=817)

All reported reliabilities are significant at $p < .0001$.

Table 10: WBST Test-Retest Reliability Estimates for ATB Status Classification

TEST SECTION	TYPE	DAY OF RETEST ADMINISTRATION			OVERALL
		Same Day	Within 30 Days	After 30 Days	
Verbal Skills	Same Form	.88 (N=50)	.99 (N=54)	.87 (N=129)	.89 (N=233)
	Parallel Form	.99 (N=56)	.92 (N=103)	.89 (N=469)	.91 (N=628)
	Combined	.93 (N=106)	.99 (N=157)	.89 (N=598)	.91 (N=861)
Quantitative Skills	Same Form	.89 (N=45)	.90 (N=45)	.91 (N=133)	.90 (N=223)
	Parallel Form	.89 (N=48)	.78 (N=82)	.88 (N=465)	.87 (N=596)
	Combined	.89 (N=92)	.82 (N=127)	.89 (N=598)	.88 (N=817)

All reported reliabilities are significant at $p < .0001$ and are based on tetrachoric correlations and ATB minimum passing scores for the WBST.

Table 11: WBST Internal Consistency Estimates by Content Domain and Test Form (Cronbach Alphas)

CONTENT DOMAIN	VS-1		VS-2		QS-1		QS-2		CONTENT DOMAIN
	Timed (N=24,003)	Untimed (N=457)	Timed (N=11,281)	Untimed (N=396)	Timed (N=23,124)	Untimed (N=418)	Timed (N=11,355)	Untimed (N=354)	
Word Knowledge	.81	.83	.80	.87	.77	.89	.77	.90	Basic Computation
Sentence Construction	.89	.90	.90	.90	.83	.86	.88	.88	Quantitative Evaluation
Using Information	.83	.86	.87	.86	.82	.82	.89	.85	Algebra & Geometry
Combined	.94	.96	.95	.96	.93	.93	.93	.93	Combined

All reported reliabilities are significant at $p < .0001$.

Item Response Theory

The WBST has been professionally developed using item response theory (IRT). The following section provides an overview of three salient concepts in IRT:

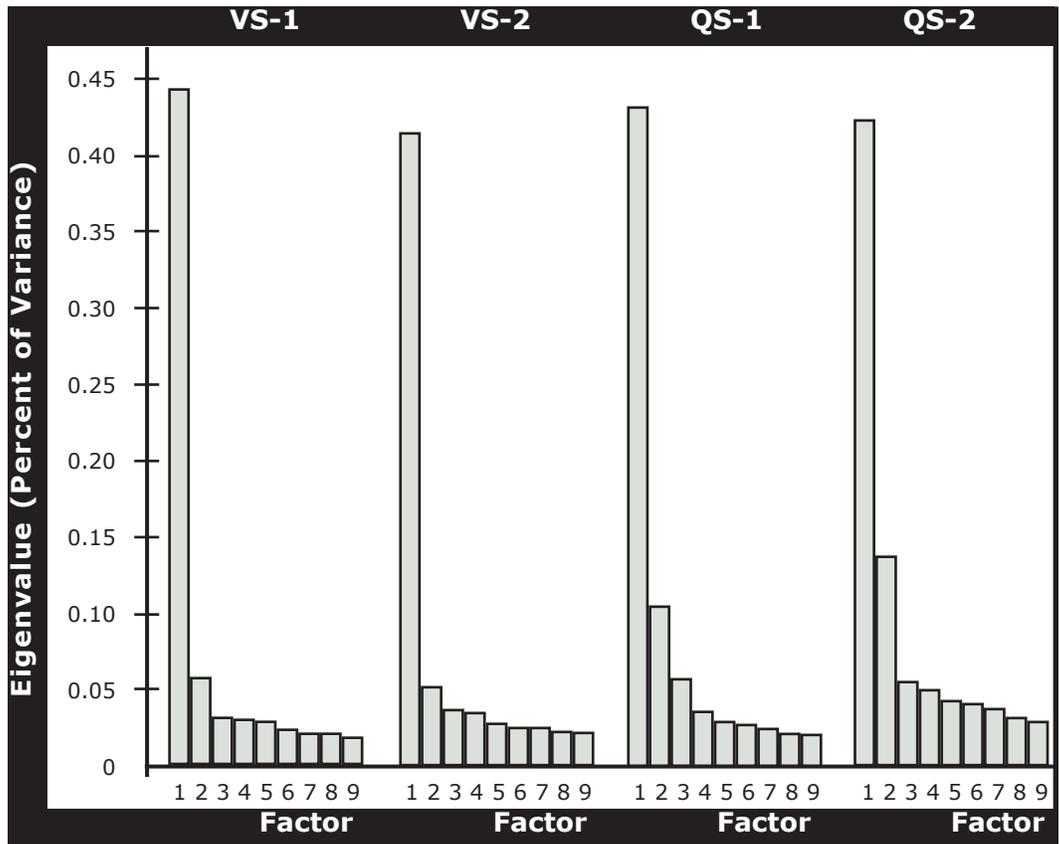
1) unidimensionality, 2) test item characteristics, and 3) test information. A basic knowledge of these concepts will help in understanding the advantages that IRT has provided in the construction of the WBST and the evaluation and interpretation of WBST scores.

Unidimensionality

IRT models include a set of assumptions about the data to which the model is applied. A common assumption of IRT models is that a single overall trait is being measured by the items that make up the test. When this is true, the test is said to be unidimensional. The assumption of unidimensionality cannot be strictly met because several cognitive, personality, and test-taking factors always affect test performance (Hambleton, Swaminathan & Rogers, 1991). These factors can include motivation, test anxiety or cognitive skills beyond what is measured in the test. However, the unidimensionality assumption does require the presence of a dominant factor that determines test performance. Of course, the dominant factor being measured by the WBST is basic verbal or quantitative skills.

A comparison of eigenvalues can be studied to determine whether a dominant factor is being measured by a particular test (Reckase, 1979). An eigenvalue is equal to the amount of variance in test scores that can be explained by the factor being measured. The largest eigenvalue should represent a much larger percentage of the total variance than does the next largest eigenvalue. Figure 10 shows the eigenvalue plots for WBST forms VS-1, VS-2, QS-1, and QS-2.

Figure 10
Eigenvalue Graphs for the WBST*



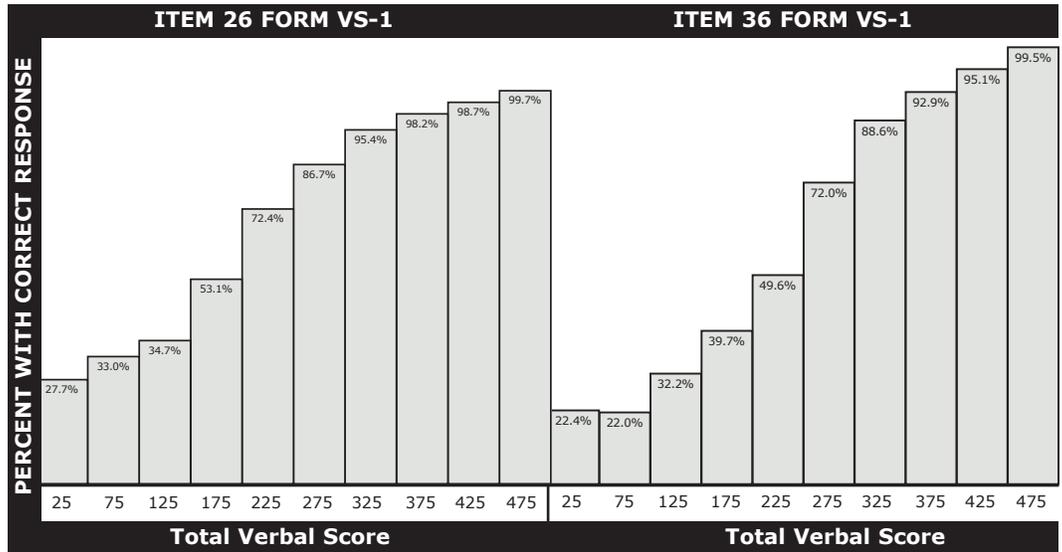
* All eigenvalues have been computed using tetrachoric correlations.

It is clear from the eigenvalue plots in Figure 10 that each form of the WBST measures one dominant trait, as is required by the unidimensionality assumption of IRT.

Test Items Characteristics

All measurements made on the basis of IRT build upon a fundamental relationship between test item performance and the specific trait being measured, such as basic quantitative or verbal skills. IRT specifies that this relationship can be described for individual test items by a mathematical function referred to as an item characteristic curve (ICC). An ICC specifies that as the level of a given trait increases, the likelihood of a correct response to a test item designed to measure that trait increases. For example, this relationship is evident in the percent-correct frequency graphs presented in Figure 11 for WBST verbal items 26 and 36.

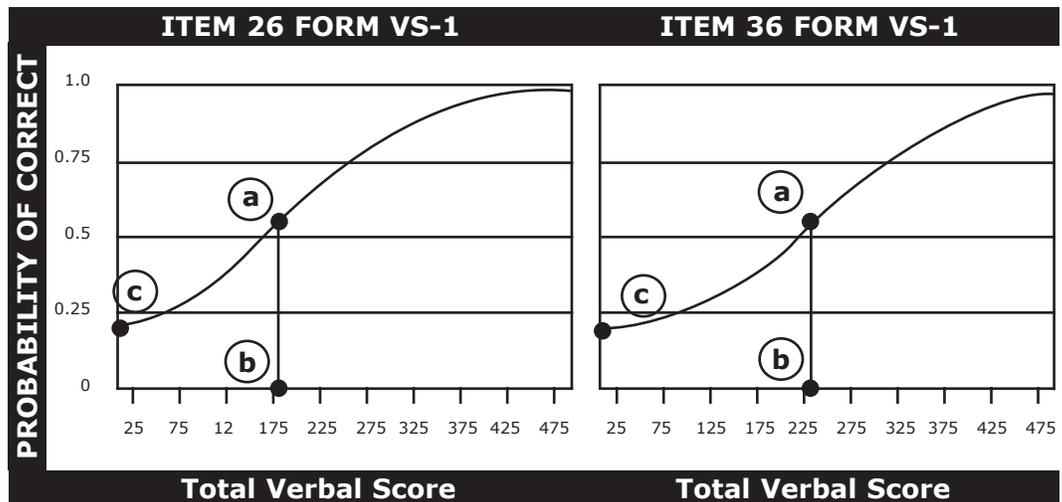
Figure 11
Percent Correct by Total WBST Score - Items 26 and 36 Form VS-1



In Figure 11 above, we see that as verbal scores increase, the percent frequency of correct responses to items 26 and 36 on WBST form VS-1 also increases.

While many mathematical forms exist for item response models, the WBST uses a three parameter logistic model. The actual three parameter logistic ICCs for items 26 and 36 on WBST form VS-1 are shown in Figure 12 below.

Figure 12
Item Characteristic Curves - Items 26 and 36 Form VS-1



The model stipulates that the following three test item characteristics uniquely define the ICC of each item and therefore describe the way in which the item functions:

1. *Difficulty (Threshold)*

The difficulty characteristic of an item is defined as the skills level which is necessary to demonstrate approximately a 50% likelihood of achieving a correct response to the item (point b in Figure 12). The difficulty level of a test item corresponds to the point of inflection on the ICC. The point of inflection is the steepest point on the curve and is generally at a skills level slightly higher than the point of 50% likelihood.

2. *Discrimination (Slope)*

The discrimination characteristic of a test item is defined as its reliability in identifying and separating examinees into their appropriate skills levels. The point of maximum discrimination on an ICC (point a in Figure 12) is at the point of inflection on the curve. Items with steep slopes at the inflection point of the ICC are more useful than those with flat slopes in reliably discriminating between examinees.

3. *Guessing (Asymptote)*

The guessing characteristic of a test item is defined as the likelihood that examinees with the lowest skills levels will achieve a correct response to the item (point c in Figure 12). In other words, by simply guessing, all examinees have at least some probability of correctly responding to the item. The guessing value of multiple choice test items, such as those on the WBST, is approximately equal to 1 divided by the number of possible choices. It follows that open-ended test items have a guessing value approximately equal to zero.

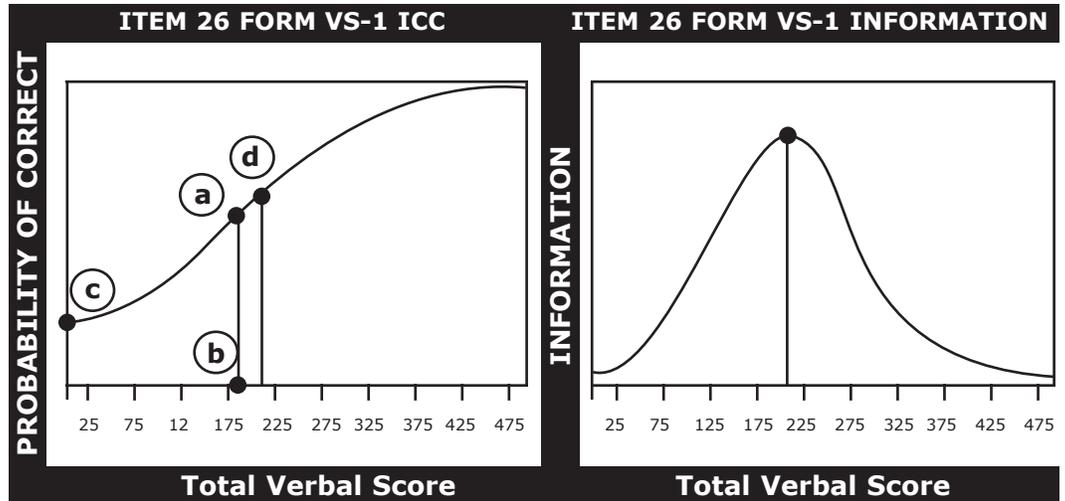
In Figure 12 we see that between the two WBST items a higher verbal skills level is necessary on item 36 to demonstrate a 50% likelihood of achieving a correct response. This means item 36 is more difficult than item 26. Also, the ICCs have similar slopes at their steepest points. This means the items have comparable capacity to separate examinees into their appropriate skills levels. Finally, people with very modest verbal skills have a slightly higher likelihood of achieving a correct response to item 26 than to item 36. This means item 26 has a higher guessing value than item 36.

The method that has been used to estimate the difficulty, discrimination, and guessing values of each item on the WBST is an iterative procedure referred to as marginal maximum likelihood estimation (MML). The steps involved in MML are beyond the scope of this discussion. For a detailed discussion of item parameter estimation procedures, refer to Hambleton and Swaminathan (1985). Nevertheless, it is quite clear that the actual percent-correct frequency graphs in Figure 11 are consistent with the theoretical ICCs which have been estimated for the WBST items.

Item Information

The ICC provides a powerful method for describing, selecting, and comparing the reliability of test items. This method involves the use of an item information function. The information function of a test item is derived from the ICC and is related to the amount of discrimination that the item provides among examinees across the full range of the trait being measured. Figure 13 shows the item information function and the ICC for WBST item 26 on form VS-1. For each test item, the maximum amount of information is provided at a level of skill which is slightly above the difficulty level of the item. In Figure 13, this skill level corresponds to point d on the ICC.

Figure 13
Item Characteristic Curves and Information Function -
Item 26 Form VS-1



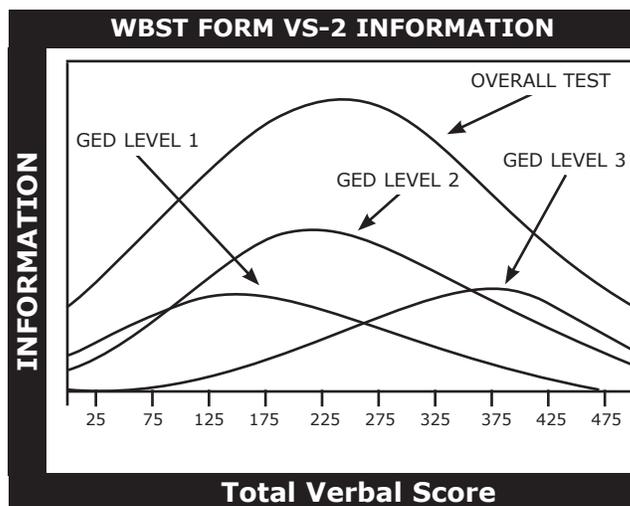
In Figure 13 we see that item 26 provides maximum information at the skills levels corresponding to a score of approximately 210.

Test Information

The information provided by a test is simply the sum of all item information. The test information function is calculated by vertically adding the item information functions at each point across the full range of the skills being measured. Figure 14 shows the information functions for the overall test as well as each of the GED subscales on form VS-2.

In Figure 14 we see that total test information is the vertical sum of the subscale information. It is also clear in Figure 14 that the WBST GED levels provide information at three different ranges of verbal skills. For further discussion on the GED scales, see the "Skills Standards" subsection in the "Test Development" section of this user's manual.

Figure 14
Test Information Functions by GED Level and Overall - Form VS-2



IRT has provided several advantages in WBST construction and in the evaluation and interpretation of WBST scores.

Test Construction

As discussed in the previous section, a key element in IRT is the item characteristic curve, which quantifies important test item characteristics such as difficulty, discrimination, and guessing. An important advantage of IRT in test construction is that these item characteristics can be applied to groups outside the group that was used to determine them. This means sample dependent group differences have no impact on the construction of test forms. This is not the case in the construction of traditional test forms, which are said to be group-dependent. The WBST can be applied equivalently to all subgroups.

Another important advantage of IRT in test construction is that the contribution that individual test items can make to the overall discrimination of the test can be identified before a test is assembled. This is because the information provided by an item is determined independently of other items, and the information provided by a test is simply the sum of all item information. Therefore, sets of items that provide discrimination across predetermined skills levels can be selected in constructing a test. This is not the case with traditional tests, which do not define item discrimination or reliability independent of other items, but rather, in reference to other items on the test.

As a test of basic skills, the WBST is not designed to provide discrimination among examinees with extreme skills levels. Some examinees have extremely modest skills and are not suited for any type of independent work. Others may have extremely strong skills and are suited for very complex jobs. These types of examinees have skills levels which are outside the range of skills accurately measured by the WBST. Therefore, all examinees who achieve scores outside this range are assigned either a score of 0 or 500.

Test Scoring

The most fundamental benefit of test scores which are based on IRT is that score calculations are made at the individual item level. This has several important advantages in test scoring.

First, IRT scores take into account more information than do scores which are based only on the number correct. Difficulty, discrimination, and guessing characteristics of not only those items answered correctly, but also those not answered correctly, are direct components of IRT score calculations. This is not the case with classical test scores which are often based only on the number correct. This additional information improves the reliability and validity of WBST scores.

Next, IRT scores and their interpretation do not depend on the particular set of test items which are administered. This means test form differences have no impact on the interpretation of test scores. Test score comparisons can be made not only for examinees who took the same (or parallel) test forms, but also for those who took different (or unparallel) test forms. This is not the case with classical test scores which are said to be test-dependent. WBST scores can be directly compared across all current and future verbal or quantitative forms.

Also, the classical concept of test-retest reliability relies on the existence of parallel or equivalent test forms. However, classically equivalent measures are difficult to achieve in practice because examinees are never in the exact same state of mind during two different test administrations. New skills can be developed, motivation and anxiety levels can change, or information can simply be forgotten between administrations. Because IRT scores are not test-dependent, test-retest reliability can be readily determined across different forms of the WBST.

Finally, IRT scores have more accurate standard errors of measurement than do classical scores. Standard errors of measurement are used to make comparisons of examinee test scores. A discussion of standard errors is provided in the "Test Reliability and Errors of Measurement" section of this manual. IRT provides standard errors that are specific to each score, while traditional test scores assume that the standard error is the same for all examinees. Therefore, comparisons between WBST scores can be made with improved accuracy.

Test Development

Definition of Purpose

Since 1937, over 100 million applicants have taken Wonderlic assessments in seeking new careers, training, and school admissions. In the last decade, Wonderlic clients have expressed a growing need to identify students and job applicants who have the necessary high school level language and math skills to successfully handle the fundamental written and computational requirements of career training programs and entry level jobs. As noted in the *Dictionary of Occupational Titles*, 1991 Revised Edition:

"In the 14 years since the release of the Fourth Edition of the Dictionary of Occupational Titles (DOT), the American workplace has undergone a revolutionary change. The skills most in demand are not what they were 14 years ago; educational requirements have steadily increased. Too many of America's young people are entering the world of work inadequately prepared. The resulting dislocation - the so called 'skills gap' - presents those of us who prepare, hire or support American workers with a serious challenge."

*Robert T. Jones
Assistant Secretary for Employment and Training
U.S. Department of Labor*

Wonderlic conducted a comprehensive review of existing language and math skills tests. It was determined that the vast majority of these assessments were too lengthy to be practically administered in business and training school environments or too focused on specific types of skills to be broadly appropriate. Also, many tests measured explicit skills knowledge without assessing the applied use of those skills. As a result, in 1991 Wonderlic began a three year development process to create a test of verbal and quantitative skills.

Working directly with business and postsecondary schools, Wonderlic determined that the most appropriate test of basic language and math skills for use in occupational assessment would: 1) contain academic subject matter that is based directly on job requirements, 2) require less than one hour for administration, and 3) be easily administered, scored, and interpreted by competent office staff.

In July of 1992, working with Dr. Nambury Raju, Professor of Psychology at the Illinois Institute of Technology, Wonderlic developed an ambitious and well-focused strategy to complete WBST development within two years time.

Validity of Test Content

The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1985) defines test validity as the appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores. The appropriateness of inferences made from the test to be developed would be supported on the basis on content validity. The *Standards* further states that:

"Content-related evidence demonstrates the degree to which the sample of items, tasks, or questions on a test are representative of some defined universe or domain of content. The methods often rely on expert judgements to assess the relationship between parts of the test and the defined universe..."

The content domain to be measured would include the fundamental verbal and quantitative skills which are required for successful performance in occupational training programs and in the workplace.

Skills Standards

Although test content of the WBST would be based primarily on job requirements, standards for grade level equivalency were also reviewed to provide a more familiar and generalized scale for measuring an applicant's overall level of basic skills. Wonderlic conducted an investigation of state requirements for language and math skills by grade level. However, because academic subject matter generally spans more than a single grade level, these requirements provided only illustrative information which broadly described educational standards. Skills are often introduced at one grade level and then mastered over the next two or three years. As a result, practical standards for grade level equivalency must be determined normatively based on the average or median skill level of students in a particular grade.

The skills standards for test content of the WBST would not include specific job knowledge but rather the fundamental verbal and quantitative skills upon which specific job knowledge would be built. Therefore, the WBST would be designed to measure the job-related language and math skills defined for the General Educational Development (GED) scales published by the U.S. Department of Labor in the *Dictionary of Occupational Titles* (DOT). The GED scale measures six levels of skills complexity which describe the language and math requirements of approximately 13,000 job titles. These skills have been culled from approximately 75,000 on-site job analyses conducted by the regional Occupational Analysis Field Centers of the U.S. Department of Labor.

In 1991, the Wonderlic Scholastic Level Exam (SLE) was approved by the U.S. Department of Education for use in ATB determination. ATB minimum passing scores for the SLE were determined for each occupational education program based directly on the GED scale. Earlier research involving the General Aptitude Test Battery (GATB) published by the U.S. Employment Service identified a strong statistical relationship between ATB minimum scores for the SLE and occupational minimum test scores for the GATB (Wonderlic, Long, & Rafilson, 1990). This research provided confirming evidence supporting the use of the GED scale as a measure of job-related language and math skills.

Although GED levels 1-6 describe the complete range of job-related skills complexity, levels 4-6 involve academic subject matter generally associated with college level curriculum, while levels 1-3 describe the basic skills required for 89.7% of the occupational titles published in the DOT. Therefore, the WBST would be designed to measure the first three levels of the GED scale.

Item Development

In February of 1993, after an extensive review of educational and workplace skills standards, Wonderlic initiated the development of WBST test content. At the recommendation of Dr. Raju, Wonderlic commissioned a panel of language and math subject matter experts led by Hill, Katien & Associates of Wildwood, Illinois, to author field test items which would measure the occupational skills defined by the GED scale. The format of all test items was to be designed in accordance with the applied methods for teaching, assessing, and interpreting basic skills as identified in research conducted by the National Assessment of Educational Progress (NAEP), the Secretary's Commission on Achieving Necessary Skills (SCANS), and the National Education Goals Panel. This research confirmed the critical need for a new approach to basic skills assessment which is focused on job requirements and proficiency of skills application.

Under the direction of Margaret Hill and Jan Katien, a strategy for item content and presentation was developed which would achieve the stated objectives using common activities and materials familiar to the broadest possible cross-section of the population. In addition, potential issues in Differential Item Functioning (DIF) were identified to avoid the development of culture- or gender-specific test content. Finally, an initial pool of approximately 600 original test items was written which included an equal proportion of verbal and quantitative questions.

Field Testing

Wonderlic worked with Dr. Raju to identify the following four primary purposes for WBST field testing:

1. Determine the difficulty and reliability of all test items
2. Evaluate all test items for cultural or gender sensitivity
3. Identify the most appropriate time limit and number of test items for reliable final test forms
4. Substantiate the appropriateness of test content, design, and procedures based on the field test experience of participating schools and businesses

Six hundred and sixteen test items from the original item pool were divided across 14 field test forms - six verbal skills forms with 60 questions each and eight quantitative skills forms with 50 questions each. The first 12 items on each of these forms were common to all other verbal or quantitative field test forms, while the remaining items were unique to a given form. This provided a reliable set of anchor items which would be used to develop final test forms that provide equivalent score distributions.

Field testing was conducted between June and November of 1993. During this time, 56,000 field test forms were distributed to participating schools and businesses in a randomized serial order. This ensured that all organizations would administer an equal number of each test form and that all test items would be administered to a random cross-section of the population. At the conclusion of field testing, approximately 15,000 completed test forms were returned to Wonderlic from 126 national test sites including high schools, private vocational training schools, community colleges, and businesses. Test data collected from field testing provided over 1,000 examinee responses to each of the 616 test items included in the field testing. This data provided the foundation for constructing the final WBST forms.

Test Item Characteristics

Using both classical test analysis and item response theory on all field test data, the relative difficulty and reliability characteristics of each test item was identified. These item characteristics were statistically quantified in relation to the performance of all examinees on the common anchor items appearing on each field test form. This provided the common scale which was used to measure test item difficulty and reliability. A review of IRT test item characteristics is provided in the "Item Response Theory" section of this manual.

Cultural and Gender Sensitivity Review

All test items were subjected to independent expert review and statistical analysis of Differential Item Functioning (DIF) to ensure that the final test forms would be equivalent for all subgroups and free of content bias.

Under the direction of Dr. Robert G. Jones and Dr. Gowri Parameswaran of Southwest Missouri State University, a committee of graduate students reviewed all test items for cultural and gender sensitivity. A total of 118 verbal items and 52 quantitative items were identified as culture- or gender-specific. In addition, Wonderlic conducted rigorous statistical analyses of differential item functioning including the Mantel-Haenszel chi square, Lord's chi square, and Raju's area method. These analyses identified subgroup differences in test item proficiency which confirmed the findings of the independent review committee.

A team of Wonderlic research staff members evaluated each item identified by the independent review process and provided a formal written response to the committee. For the vast majority of test items, minor changes to item wording were agreed upon to provide improved clarity and balance. However, the relatively small number of remaining test items were recognized as containing subject matter that was culturally sensitive or specific. For example, a quantitative test item involving a baseball pitcher's record of balls, strikes, and innings pitched relied on knowledge specific to baseball. Such test items which contained activity or materials which are not necessarily familiar to a broad cross-section of the population were simply dropped from the item pool.

In addition, the independent review for cultural sensitivity allowed distinctions to be made between potential content bias and observed group differences in skills proficiency. As reported by the committee:

"The majority of these recommendations (38) related to questions which test knowledge of certain verb usages which were thought to be likely to be more or less familiar to people, based on cultural background. This was especially so for 1) questions in which distractors did not have personal pronouns, 2) verb forms ending in 's' or 'ed,' and 3) irregular verbs."

As indicated above, the committee had identified subject-verb agreement and the correct use of verb tenses as a likely area of subgroup differences. However, these skills are essential to one of the five basic skills identified by the SCANS commission, the ability to communicate clearly. The commission states that:

"The basic skills are the irreducible minimum for anyone who wants to get even a low skill job. They will not guarantee a career or access to a college education, but their absence will ensure that the door of opportunity remains closed." (U. S. Department of Labor, 1991)

The subject matter in the remaining test items identified by the committee as culturally sensitive involved essential job-related skills. Therefore, these items were retained in the item pool.

Test Length

All field test forms were administered on an untimed basis. However, after 15, 20, 25, and 30 minutes of testing, all examinees were instructed to code in the number of the test item on which they were working. This provided an estimate of the number of items processed by a broad range of skills groups over the timed and untimed testing periods. Field test data confirmed that most examinees will have sufficient time during a 20 minute testing period to respond to test items both at and above their skills level. Furthermore, the measurement of fluid skills application provides the most accurate assessment of an individual's proficiency in applying his or her skills in work-related situations. Therefore, the final test forms would be designed to require examinees to move quickly through continually changing test subject matter. Based on field test data and the number of test items estimated to be necessary for reliable skills assessment, a time limit of 20 minutes was identified for each verbal and quantitative section of the final test forms. The verbal section would include 50 test items, while the quantitative section would include 45 test items.

Field testing provided practical experience with basic skills test administration in a wide variety of school and work environments including: public schools, vocational education programs, state social services, federal job training programs, fast food services, manufacturing and production, oil drilling, truck assembly, highway construction, and financial services. This experience substantiated the appropriateness of test content, design, and procedures.

Construction of Final Test Forms

In December of 1993, construction of WBST forms VS-1, VS-2, QS-1, and QS-2 was completed. Form equivalency was based on the test item characteristics determined in field testing. All test forms were designed based on a 20 minute timed testing period. The verbal test forms included 50 items, while the quantitative test forms included 45 items.

Norming of Final Test Forms

After the final test forms were constructed, a second phase of data collection was required to obtain test reliability estimates, to gather normative test data within specific education levels, occupational training programs and job titles, and to confirm the appropriateness of the 20 minute timed testing period.

Initial norming of the final WBST forms was conducted from January to June of 1994. During this time, 22,354 completed answer sheets were returned to Wonderlic from 202 national test sites including high schools, private vocational training schools, community colleges, and businesses. Submitted answer sheets included data from both timed and untimed test administrations. Additional normative data have been collected since the initial publication of the WBST in July of 1994.

For ATB purposes, the appropriate reliability estimates in normative test data for students in school and minimum score determination are presented in the "Test Reliability and Errors of Measurement," "ATB Minimum Score Determination", and "Grade Level Equivalency" sections of this manual. To confirm the appropriateness of the 20 minute timed testing period the following analyses were conducted:

1. Mean Number Correct by Number Attempted

Figures 15 & 16 illustrate the average number of test items that examinees answer correctly by the number of items they attempted on both the verbal and quantitative sections of the test. These figures demonstrate that examinees at all levels of skills proficiency experience difficulty with the test content as they reach the end of the 20 minute timed testing period. In these figures, the distance between the circles and the dotted line on the graphs represent the average number of incorrect or omitted test items prior to the last item attempted. This distance remains remarkably uniform over the full range of items attempted, indicating that within the 20 minute timed testing period, all examinees are experiencing comparable difficulty relative to their skills level.

2. *Correlation Between Timed and Untimed Test Scores*

As discussed in the “Untimed Test Administration” section of this manual, the approved untimed WBST administration procedure combines a standard 20 minute timed period followed by an untimed period on the same test form. This provides separate scores on both a timed and untimed basis. Figures 17 through 20 illustrate the increasing correlation between the number of test items answered correctly on an untimed basis and at each point during the timed testing period. These figures demonstrate that after the 20 minute timed testing period the rank order of individuals tested is stable and does not significantly change when additional testing time is given.

3. *Internal Consistency of Timed and Untimed Test Administrations*

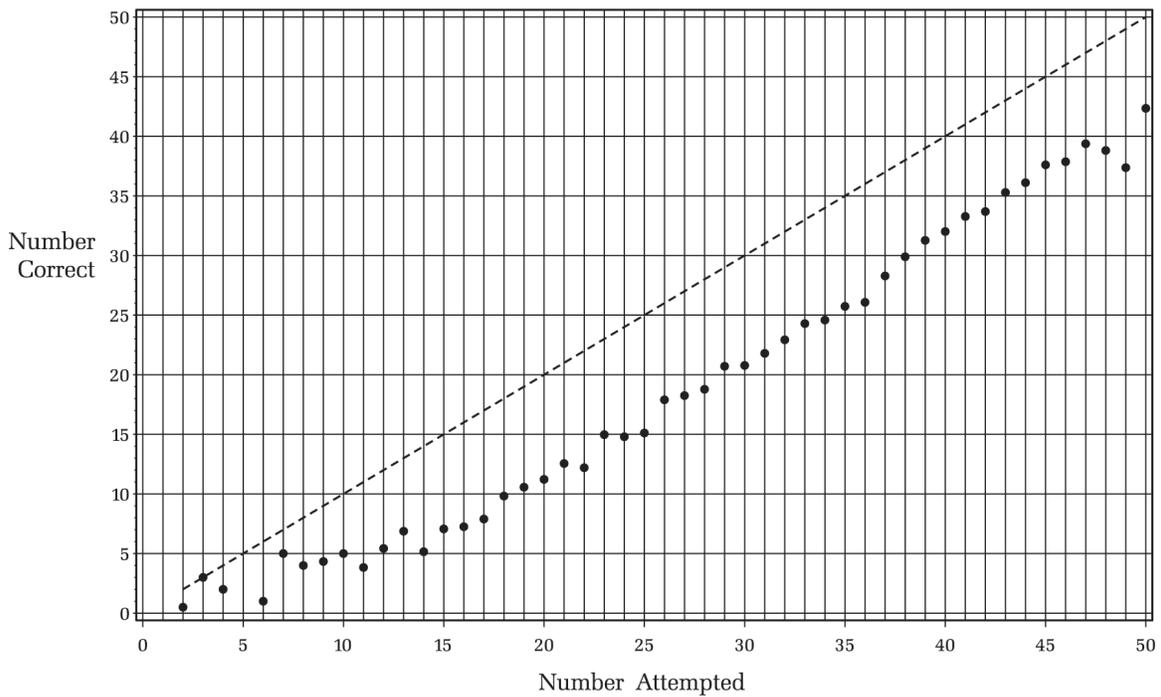
In addition, as discussed in the “Test Reliability and Errors of Measurement” section of this manual, a comparative analysis of internal consistency estimates reveals that the 20 minute timed period does not practically or significantly impact internal consistency estimates for either the verbal or quantitative section of test.

The above analyses not only confirm the appropriateness of the 20 minute time limit, but also establish that the timed testing period is sufficient to measure all primary verbal and quantitative content domains assessed by the WBST with a high degree of reliability.

Enthusiastic acceptance of the WBST by students and job applicants, confirmed support for the appropriateness of WBST content by teachers and employers, and the overwhelming consensus of participating organizations that the WBST fills an urgent need in applicant selection indicate that Wonderlic’s investment in basic skills assessment is worthwhile. More importantly, a thoughtfully crafted and well executed test development plan is fundamental to achieving the content validity of a test (Nunnally & Bernstein, 1994; Nunnally, 1972; Thorndike, 1971). As recounted in this section, the WBST development process was guided by precisely this type of plan.

Figure 15

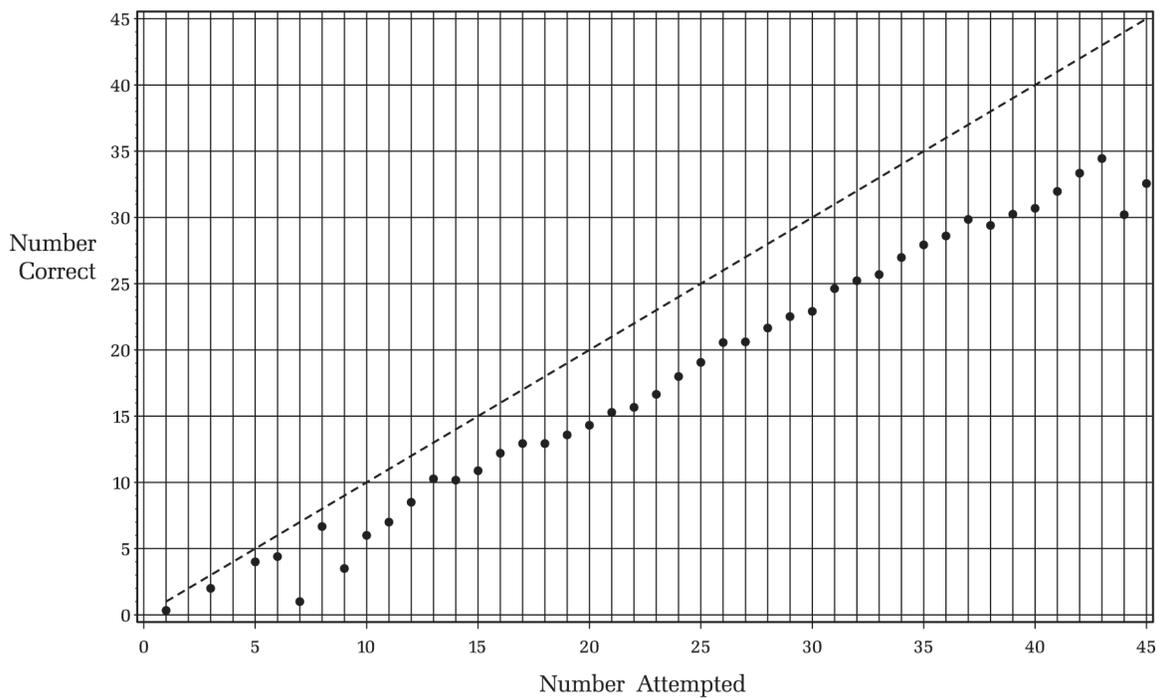
AVERAGE NUMBER CORRECT BY NUMBER ATTEMPTED ON THE WBST
TEST OF VERBAL SKILLS
(N=12,314)



Source: FEK BS\R2\MANUAL\MEANCORR.PRG (08/15/96 15:09)

Figure 16

AVERAGE NUMBER CORRECT BY NUMBER ATTEMPTED ON THE WBST
TEST OF QUANTITATIVE SKILLS
(N=12,107)



Source: FEK BS\R2\MANUAL\MEANCORR.PRG (08/15/96 15:09)

Figure 17

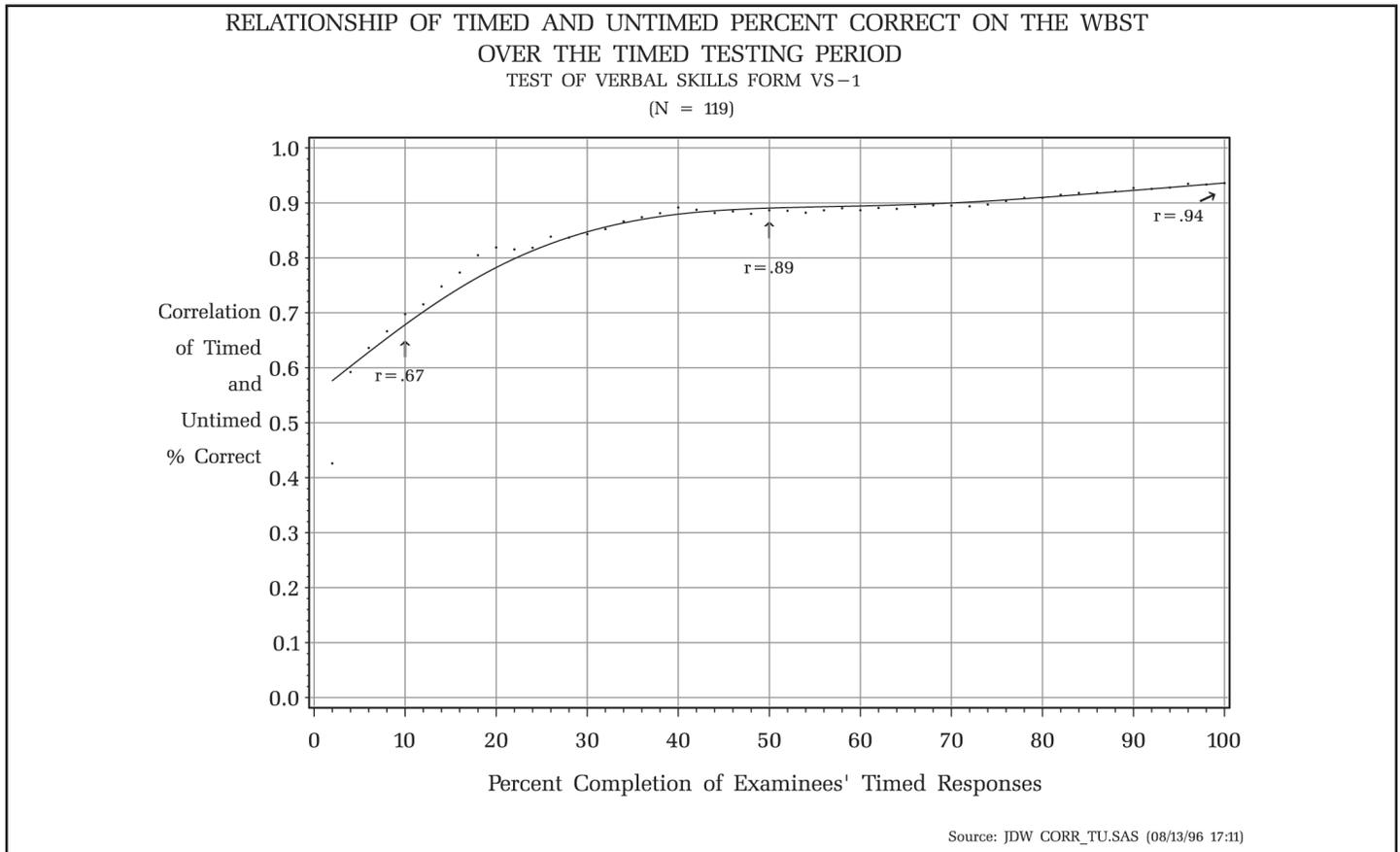


Figure 18

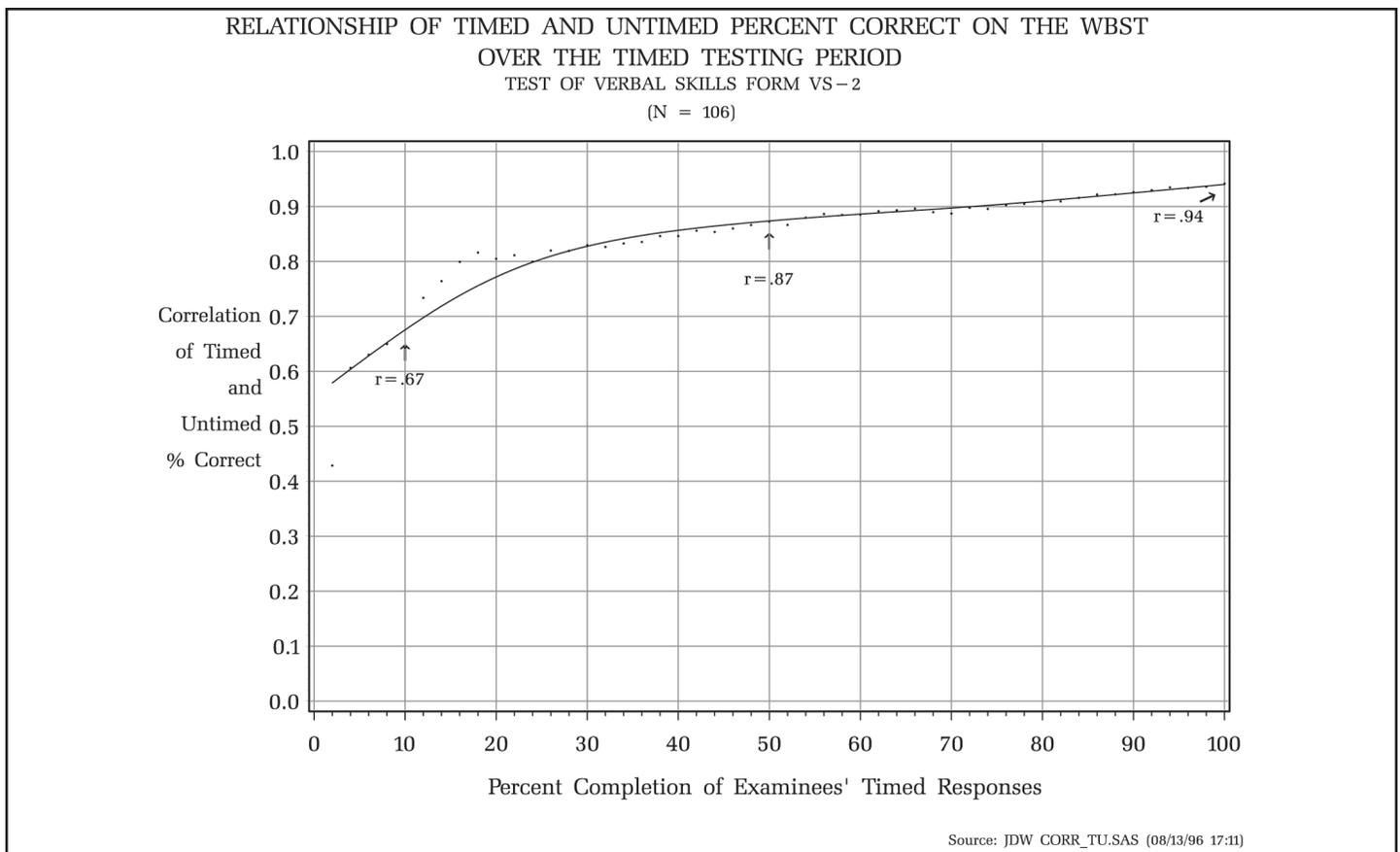


Figure 19

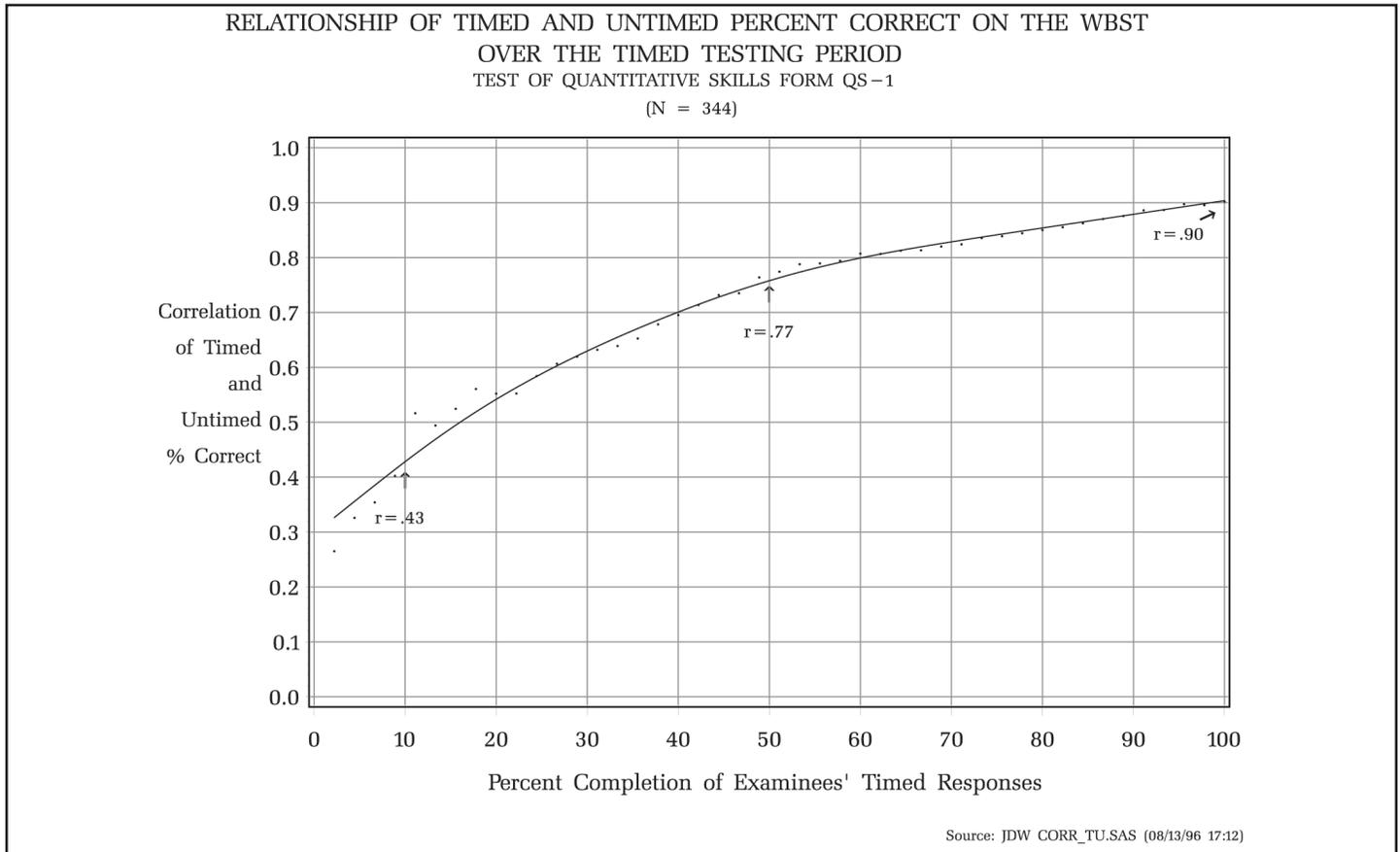
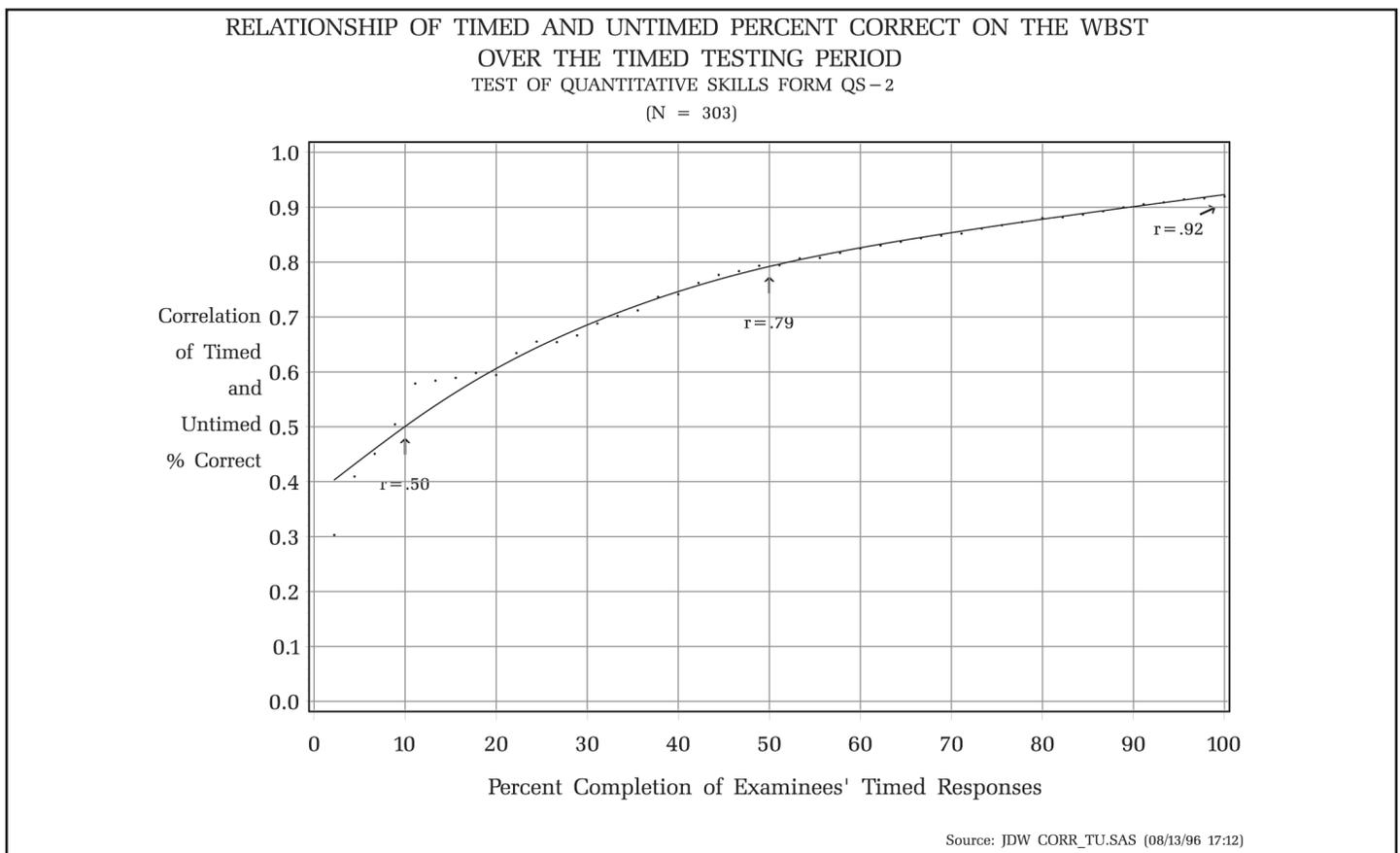


Figure 20



ACKNOWLEDGMENTS The Wonderlic Basic Skills Test development has been a truly collaborative effort. We need to acknowledge the very important roles played by Dr. Nambury Raju, Professor of Psychology at the Illinois Institute of Technology, and Margaret Hill and Janet Katien of Hill, Katien and Associates. Dr. Raju brought not only his preeminent expertise in item response theory (IRT), but also his extensive background in the practical realities of test development. Margaret and Jan are credited with the high quality original item pool and assisting in the test design.

Robert G. Jones, Ph.D., and Gowri Parameswaran, Ph.D., of Southwest Missouri State University and their collaborative team of graduate students provided an essential, independent review for cultural and gender sensitivity of the field test items.

REFERENCES

- American Council on Education (1989). *Educational Measurement, (3rd ed.)*. New York, NY: Macmillan.
- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (1985). *Standards for educational and psychological tests*. Washington, D.C.: American Psychological Association.
- Hambleton, R.K., & Swaminathan, H. (1985). *Item Response Theory: Principles and Applications*. Boston, MA: Kluwer Academic Publishers.
- Hambleton, R.K., & Swaminathan, H. & Rogers, H.J. (1991). *Fundamentals of Item Response Theory*. Newbury Park, CA: Sage Publications, Inc.
- National Assessment of Educational Progress (1996). *NAEP 1994 trends in academic progress*. Washington, D.C.: National Center for Education Statistics.
- National Center for Education Statistics, U.S. Department of Education (1992). *The condition of education*. Washington, D.C.: Author.
- Nunnally, J.C. (1972). *Educational Measurement and Evaluation (2nd ed.)*. New York, NY: McGraw-Hill, Inc.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric Theory, (3rd ed.)*. New York, NY: McGraw-Hill, Inc.
- Peterson, N.S., Kolen, M.J., & Hoover, H.D. (1989). Scaling, norming, and equating. In R.L. Linn (Ed.) *Educational measurement (3rd ed.)* (pp. 221-262). New York, NY: Macmillan.
- Reckase, M.D. (1979). Unifactor latent trait models applied to multifactor tests: Results and implications. *Journal of Educational Statistics, 4*, 207-230.
- Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor (1991). *What Work Requires of Schools*. Washington, D.C.: U.S. Department of Labor.
- Thorndike, R.L. (1971). *Educational Measurement (2nd ed.)*. Washington, D.C.: American Council on Education.
- U.S. Department of Education (December 1, 1995). "Student assistance general provisions; final rule. *Federal Register, 34 CFR Part 668, Vol. 60, No. 231*.
- U.S. Department of Education (October 25, 1996). "List of approved ability-to-benefit tests and passing scores; notice. *Federal Register, Vol. 61, No. 208*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Labor (1991). *Dictionary of Occupational Titles*. Washington, D.C.: Employment and Training Administration. U.S. Department of Labor.
- Wonderlic, C.F., Long, E.R., & Rafilson, F. (1990). *Admissions testing at college and trade school training programs*. Libertyville, Illinois: Wonderlic, Inc.
- Wonderlic, Inc. (1992). *Wonderlic Personnel Test & Scholastic Level Exam user's manual*. Libertyville, IL: Author.



Appendix

Table 12: Wonderlic ATB Program Codes and Program Titles

Program Code	Title	DOT Code	Program Code	Title	DOT Code
90965	Accountant	160.162-010	90964	Computer Accounting Clerk	209.562-010
90834	Accounting Clerk	216.482-010	90847	Computer-Aided Design	003.362-010
90938	Accounting Clerk, Data Processing	216.382-010	90930	Computer Graphic Artist	003.362-010
91021	Actor	150.047-010	90853	Computer Operator	213.362-010
90916	Administrative Assistant	209.562-010	90839	Computer Programmer	030.162-010
90942	Administrative Clerk	219.362-010	90997	Computer Repair Technician	723.381-010
90882	Agribusiness (Agronomist)	040.061-010	90836	Computer Technician	003.161-014
90941	Air Conditioner Installer	637.261-010	90801	Cosmetology	332.271-010
90819	Air Conditioning (HVAC)	620.281-010	90816	Court Reporting	202.362-010
90933	Aircraft Mechanic	621.281-014	91010	Credit Clerk	205.367-022
91011	Animal Trainer	159.224-010	90867	Crim. Justice/Law Enforcement	375.263-014
90884	Applicant Repair	723.584-010	90881	Culinary Arts/Cook	313.361-014
90929	Architectural Drafting	001.261-010	90923	Customer Service	239.362-014
91020	Artist	970.381-022	90920	Data Entry	203.582-054
90994	Asbestos Removal Worker	869.684-082	90873	Data Entry-Word Processing	203.362-010
90937	Audit Clerk	210.382-010	90835	Data Processing	203.582-054
90825	Auto Body Repair	807.381-010	90805	Dental Assistant	079.371-010
90821	Auto Mechanic	620.261-010	90872	Dental Lab Technician	712.381-018
90945	Automated Credit Management	216.362-014	90886	Dialysis Technician	078.362-014
90841	Bank Teller	211.362-018	90815	Diesel Technician	620.684-014
90883	Barber	330.371-010	91018	Diver	899.261-010
90870	Bartending	312.474-010	90887	Dog Grooming	418.674-010
90939	Billing Typist	214.382-014	90818	Drafting	005.281-014
91012	Boat Mechanic	623.281-038	90950	Draper	781.684-026
90946	Bodyguard	372.667-014	90842	Electrical	824.261-010
90855	Bookkeeper	210.382-014	90988	Electrician (Gen. Wiring)	824.261-010
90989	Bricklayer	861.381-018	90951	Electrician Helper	829.684-022
90826	Broadcasting	159.147-010	90888	Electrocardiograph Technician	078.362-018
90885	Building Maintenance/Repair	899.381-010	90889	Electroencephalographic Tech.	078.362-014
90932	Building Remodeling	860.381-022	90862	Electrolysis	339.371-010
90810	Business School	169.167-034	90817	Electronics	003.161-014
91004	Cable Installer	821.667-010	90863	Emerg. Medical Tech.	079.374-010
90823	Cabinet/Furniture Making	660.280-010	91014	Emissions Technician	620.281-014
91016	Cameraman	143.062-022	90866	English as a Second Language	No DOT Code
90991	Cardiac Monitor Technician	078.367-010	90967	Fashion Art	141.061-014
90928	Cardiovascular Technician	078.362-030	90958	Fashion Design	142.061-018
91066	Carpenter (Construction)	860.381-022	90850	Fashion Merchandise	185.157-010
90940	Cashier	211.362-010	90890	Film Video Production	187.167-174
90948	Checker II (Clerical)	209.687-010	91003	Finance-Collections	241.367-010
90868	Chemical Dependence Attendant	355.377-014	90968	Fine Arts (Visual)	144.061-010
90857	Child Care	359.677-010	91013	Fisheries Technology	446.161-010
91009	Child Development	195.227-018	90992	Floral Design & Marketing	142.081-010
90949	Chiropractor Assistant	079.364-010	90861	Food Service	319.484-010
90982	Cleaner, Housekeeper	381.687-014	91013	Funeral Attendant	359.677-014
90908	Clergy	120.107-010	90891	Gambling Dealer	343.464-010
90838	Clerical	209.562-010	90879	Graphic Arts	141.061-018
90947	Clerk, Administrative	219.362-010	90924	Groom	410.674-022
90983	Coin-Machine Service Repairer	639.281-014	90934	Gunsmith	632.281-010
90824	Commercial Foods	319.484-010	90892	Heavy Equipment Operator	850.683-010
90915	Computer Accounting	216.482-010	90814	Home Health Aide	354.377-014

Program Code	Title	DOT Code	Program Code	Title	DOT Code
91000	Hospitality Management	352.167-010	90902	Pest Control	389.684-010
90975	Hotel/Lodging Management	320.137-014	90903	Pharmacy Assistant	074.381-010
90848	Hotel/Restaurant	355.677-010	90864	Phlebotomy	079.364-022
90819	Heating (HVAC)	620.281-010	90969	Photography	143.062-030
90878	Hypnotist	079.157-010	90865	Physical Therapy Asst.	076.224-010
90970	Illustration	141.061-022	90957	Plumber	862.381-034
90952	Import/Export Clerk	214.467-010	90904	Printer	979.684-026
90894	Insurance Clerk	214.362-022	90999	Private Investigator	376.267-018
90849	Interior Design	142.051-014	90906	Psychiatric Assistant	355.377-014
90895	Jeweler Apprentice	700.381-026	90907	Quality Control Insp (Computerized)	725.687-026
90896	Landscaper (Ornam. Horticulture)	408.161-010	90909	Radiology Technician	078.362-026
90917	Legal Administrative Assistant	209.562-010	90936	Real Estate Sales	250.357-018
90875	Legal Assistant	209.362-010	90830	Receptionist	237.367-038
90846	Legal Secretary	201.362-010	91027	Recording Engineer	194.362-010
90919	Legal Transcription	203.362-010	90926	Rehabilitation Assistant	205.367-046
91024	Liberal Arts	No DOT Code	90922	Respiratory Technician	076.361-014
90843	Library Aide	249.367-046	90974	Restaurant Management	187.167-106
91015	Locksmith	709.281-010	90956	Sales Clerk	290.477-014
90820	Machine Shop	601.280-050	90910	Seamstress	785.361-010
90987	Machinist	600.280-022	90808	Secretarial Skills	201.362-030
90806	Maintenance-Repairer Helper	899.684-022	90807	Security Officer	372.667-034
90897	Manicurist	331.674-010	90893	Sewing, Industrial	782.684-058
90880	Marketing/Merchandising PRep.	205.367-054	90953	Sign Painter	970.381-026
90877	Massage Therapist	334.374-010	91008	Social Worker	195.107-018
90927	Medical Administrative Assistant	209.562-010	91005	Sports Medical Assistant	076.224-010
90803	Medical Assistant	079.367-010	90986	Surgical Technician	079.374-022
90802	Medical Office	245.362-010	90844	Surveying	018.167-018
90935	Medical Receptionist	237.367-010	90837	Systems Analyst	030.167-014
90898	Medical Record Administrator	079.167-014	90954	Tailor (Apprentice)	785.261-018
90899	Medical Records Clerk	245.362-010	90960	Taxidermy	199.261-010
90900	Medical Records Technician	079.362-014	90859	Technician, Automated Equipment	638.261-010
90858	Medical Secretary	201.362-014	91017	Telecomm. Install and Repair	822.261-022
90845	Medical Technician	078.381-014	91007	Telecommunications Office Tech.	822.281-014
90813	Medical Transcription	201.362-014	90990	Telecommunicator	379.362-018
90962	Medical Word Processor	203.382-030	90955	Transcribing Machine Operator	203.582-058
90901	Motorcycle Repair	620.281-054	90971	Travel Agent	252.152-010
90831	Nursing	075.374-010	90972	Travel-Reservation Clerk	238.362-014
90804	Nursing Assistant	355.674-014	90809	Truck Driver Training	905.663-014
90943	Office Helper	239.567-010	90998	TV & VCR Repair	723.381-010
91019	Office Machine Repair	706.381-030	90911	Ultrasound Technician	078.364-010
91030	Ophthalmic Technician	078.361-038	90912	Upholstery	780.687-054
90961	Optician	716.280-010	90921	Veterinary Assistant	079.361-014
90985	Optician Apprentice, Dispensing	716.280-010	90963	Ward Clerk (Hospital)	245.362-014
90980	Optometric Assistant	079.364-014	90978	Welder, Fitter	819.361-010
90833	Orderly	355.674-018	90822	Welder Helper	819.687-014
90851	Paralegal	119.267-026	90854	Word Processing	203.382-030
90811	Para Medical	079.374-010	90914	Word Processing Transcription	203.382-030
91002	Parts Clerk	249.367-058	90913	X-Ray Technician	078.362-026
90959	Pattern Maker	781.361-014			
90852	PC Operator/Microcomputer	213.362-010			

Sample WBST Test Sequence

First test (test #1)	QS1-VS1 on 01-05-07
First Retest (test #2)	QS2-VS2 on 01-15-07 (Requires only a 30-minute gap* and if necessary, correction of the test-affecting situation, and must be administered on an ALTERNATE FORM)
Second Retest (test #3)	QS1-VS1 on 03-07-07 (Requires at least 60 days from first test on this form* AND testing on an ALTERNATE FORM)
Third Retest (test #4)	QS2-VS2 on 03-16-07 (Requires at least 60 days from first test on this form* AND testing on an ALTERNATE FORM)
Fourth Retest (test #5 - Invalid)	QS1-VS1 on 11-10-07 This test will be marked INVALID because the student has tested >4 times in 12 months (the next available test date was 01-06-08). Please also note that INVALID tests count in the retest sequence.
Fifth Retest (test #6-Valid)	QS2-VS2 on 01-16-08 This test will be considered VALID because it meets Sequence, Time Between Tests, and Max # of Tests in 1 year criteria.

* Please note, these are minimum requirements. Local requirements may require more time between tests.



School Sponsorship Form for Independent Test Administrators



The school must complete this form and return it to Wonderlic, Inc. via fax at (847) 680-9492.

ATB School Number

School Name _____

School Director _____

Address _____

Email Address _____

City _____ State _____ Zip Code _____

School ATB Test Coordinator _____

Telephone Number _____

Email Address _____

Independent Test Administrator:

ITA Number *(not required for new ITA candidates)* _____

Independent Test Administrator's Name _____

Address _____

City _____ State _____ Zip Code _____

Email Address _____ Phone Number _____

English (WBST)

Spanish (SLE)

The above listed individual has been determined by the school to meet all requirements for independence as defined by the U.S. Department of Education and has been selected to conduct Ability-to-Benefit testing for the school. Please register this individual as an Independent Test Administrator (ITA) in the Wonderlic ATB Program for this school.

Signature of School Representative _____ Date _____

Title _____

U.S. Department of Education Requirements for Independent Administration

688.151 (b) The Secretary considers that a test is independently administered if the test is-

- (1) Given at an assessment center by a test administrator who is an employee of the center; or
- (2) Given by a test administrator who-
 - (i) Has no current or prior financial or ownership interest in the institution, its affiliates, or its parent corporation, other than the interest obtained through its agreement to administer the test and has no controlling interest in any other educational institution;
 - (ii) Is not a current or former employee of or consultant to the institution, its affiliates, or its parent corporation, a person in control of another institution, or a member of the family of any of these individuals;
 - (iii) Is not a current or former member of the board of directors, a current or former employee of or a consultant to a member of the board of directors, chief executive officer, chief financial officer of the institution or its parent corporation or at any other institution, or a member of the family of any of the above individuals; and
 - (iv) Is not a current or former student of the institution.

The U.S. Department of Education
"Student Assistance General Provisions; Final Rule"
60 Fed. Reg. 231 (Dec. 1, 1995)

