



# Applicant Potential Test

A.P.T.

**HR•Assessments®**

Developed by J. M. Llobet, Ph.D.

## Administrator's Manual



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To ensure that you are obtaining the full benefits available to you from the use of HR•Assessments® products, please read all information contained in this manual carefully. By using this assessment product, you are acknowledging that you have read and understand the general guidelines provided in this manual, and that if you have any specific questions, you have referred them to a competent testing and/or legal expert for advice. The test developer and publisher do not assume liability for any unlawful use of this product.

The test developer and publisher do not assume any responsibility for the employer's use of this test or any decision the employer makes which may violate local, state or federal law. By selling this test, the publisher is not giving legal advice.

While HR•Assessments® are designed to help predict various aspects of human behavior, score results are presented in terms of probabilities. False Positives and False Negatives are expected. EDI and the test developer are not liable for test taker, applicant or employee behaviors.



## **HR•Assessments® Products: An Investment in Your Company's Future**

The decision to use assessment products in the employment process is one that can be very beneficial to your company in many ways. A well-designed, properly validated assessment, when used in conjunction with other employment screening tools, can save your company from investing training resources in an applicant who is not suited to perform the job for which he or she was hired, and, as a consequence, can help protect your company from negligent-hiring lawsuits.

Each HR•Assessments product has been researched and developed by our staff of testing professionals, which includes experienced industrial psychologists.

### **Use of Assessment Products as “Tools”**

Validity studies of the assessment products we offer have shown them to be predictive of job performance and therefore quite useful during the selection process. It is important to remember that assessments should be used in conjunction with other, equally important employment screening tools – such as criminal background checks, work histories and employer references – to present a balanced picture of the particular job candidate. Only when used in coordination with one another will you be able to truly determine a “fit” between the candidate and the particular job for which he or she is applying.

Employment assessments, as defined in this manual, can be of several different varieties, including trustworthiness or integrity assessments, skills-oriented assessments and personality assessments. Each assessment can center on one of these elements, or may include several different components, assessing a variety of factors. Choosing the proper assessment product for your needs is a key factor in making your selection process more effective.

### **Legal Aspects of Assessment Use and Administration**

Although employment assessments have been in use for more than 40 years, their use became more prevalent after the passage of the Employee Polygraph Protection Act (EPPA) of 1988, which made it illegal for most private employers to use polygraph examinations as a routine pre-employment screening tool. Employment assessments that are not prohibited by the EPPA are designed to give the employer a legal way to gauge an employee's job-related skills and personality traits as an alternative to the polygraph test. Whereas the polygraph test is designed to monitor an applicant's physiological reactions to certain questions, the employment assessments seek to gain information on the job candidate through a series of questions designed to measure job-related attributes.

Today, the use of employment assessments continues to increase. Many of the country's largest corporations use such screening devices on a regular basis, and have found great success in using them to hire and promote the best candidates.



### **Assessment Products and “Adverse Impact”**

A common misperception of these assessments is that they all tend to discriminate against certain classes of applicants, in violation of state and federal laws against discrimination in employment decisions. In fact, this is not the case. Although there is evidence of poorer performance by some members of protected classes on some skills tests that include language and mathematical components, the use of such tests is still justified, so long as the skills assessed by the test are essential for the successful performance of one or more of the job's key functions. In addition, researchers have found no evidence that well-constructed personality assessments discriminate on any unlawful basis.

However, it is incumbent upon employers who use assessment products to continually monitor selection procedures to ensure that no “adverse impact” is occurring in the overall selection process. Adverse impact is defined as a situation in which there is a substantially different rate of selection in hiring, promoting or other employment decisions that works to the disadvantage of members of a race, sex or ethnic group. If adverse impact does occur, the employer needs to be able to demonstrate the job-relatedness of the selection process. For further guidance in this area, read the *Assessment Selection and Follow-Up Procedures* section of this manual.

### **Federal Laws**

There are federal laws and regulations governing the use of “selection” tools, such as employment assessments, insofar as they have any “adverse impact” on the employment opportunities of protected classes of individuals. Some of the more subtle aspects of these laws as they apply to the selection process are discussed in the section of this manual titled, *Using Job Analysis to Justify Use of Assessment and Its Sections (Legal Implications)*.

### **Title VII**

Title VII of the Civil Rights Act of 1964 (Title VII), covering employers with 15 or more employees, prohibits discrimination in employment decisions on the basis of race, sex, color, religion and national origin. Title VII authorizes the use of “any professionally developed ability test, provided that such test, its administration or action upon the results, is not designed, intended or used to discriminate” on any unlawful basis. In 1971, the U.S. Supreme Court, in *Griggs v. Duke Power Co.* (401 U.S. 424), adopted the standard that employer practices that had an adverse impact on minorities and were not justified by a business necessity violated Title VII. Congress amended Title VII in 1972, adopting this legal standard.

As a result of these developments, the government sought to produce a unified governmental standard on the regulation of employee selection procedures because the separate government agencies had enforcement powers over private employers, and each used different standards. This resulted in the adoption of the Uniform Guidelines on Employee Selection Procedures (Guidelines), codified at 29 CFR Part 1607, which established a uniform federal position in the area of prohibiting discrimination in employment practices on the grounds of race, color, religion, sex or national origin, and applies to all public and private employers covered by Title VII, Executive Order 11246, the State and Local Fiscal Assistance Act of 1972, the Omnibus Crime Control and Safe Streets Act of 1968, and the Intergovernmental Personnel Act of 1970.





Highlights of the Guidelines include:

Provision of a uniform set of principles governing use of employee selection procedures that is consistent with applicable legal standards.

Setting out validation standards for employee selection procedures generally accepted by the psychological profession.

The Guidelines do not require a validation of the selection device unless evidence of adverse impact exists. It is important to note also that compliance with the Guidelines does not remove the affirmative action obligations for assessment users, including federal contractors and subcontractors.

### **The Americans with Disabilities Act**

The Americans with Disabilities Act (ADA) provides that an employer “shall not conduct a medical examination or make inquiries of a job applicant as to whether such applicant is an individual with a disability or as to the nature or severity of such disability.” (42 USC Sec. 12112(d)(2)(A); see also 29 CFR Sec. 1630.13.) Inquiries into a person’s disabilities are prohibited at the pre-offer employment stage, except in a very narrowly defined situation when the applicant has *voluntarily* disclosed a medical condition requiring accommodation. The ADA protects disabilities, not a characteristic that an employer may consider to be a personal flaw or undesirable aspect of an applicant’s personality. The ADA does not prohibit inquiries into such personality attributes as propensity for honesty, ability to get along with others, organizational skills or management skills, to cite a few examples. No question or series of questions designed to elicit information about a person’s mental impairment (as defined by the ADA), or questions that would even tend to elicit such information, should appear on an assessment product. Each HR•Assessments product has been carefully reviewed under this standard, to avoid any conflict with ADA guidelines.

### **Recordkeeping Requirements**

Various federal laws require employers to retain tests and test results for at least one year from the date the test is administered or from the date of any personnel action relating to the testing, whichever is later.

### **State and Local Laws**

Due to the wide variety, complexity and ever-changing nature of state laws, it is impossible to summarize each state’s requirements in this brief overview. If you are unfamiliar with the state and local laws governing the use of screening devices applicable in your locale, consult with a qualified labor law attorney or testing specialist who may provide competent guidance on this topic.



## **Assessment Selection and Follow-Up Procedures**

### **Selection**

Generally, when selecting an assessment or any other selection tool, you should choose one that has been designed specifically to measure the skills or traits necessary for the position in question. It is recommended that a thorough job analysis be performed to determine the connections between job functions and the attributes the assessment product is designed to measure.

### **Monitoring**

Monitor your selection process to ensure compliance with all applicable federal, state and local laws, checking your selection process for evidence of adverse impact. This should be conducted on a continual basis. HR•Assessments products include testing logs that can be used to record each assessment taker's scores, as well as other important data that may be used to compute your own norms and adverse impact statistics.

### **Validation**

Should your monitoring results indicate that adverse impact is occurring in the selection procedures, you should determine in which component of the selection process it is happening. If the use of a certain assessment product is found to be the cause, you will need to conduct a validation study of the assessment. Qualified testing professionals may be contacted to help in conducting a validity study. These professionals will be able to help determine whether the assessment is the cause of the adverse impact and whether the assessment is emphasizing a bona fide occupational qualification for the job. In some instances, assessments that in some context may be considered discriminatory may be lawful to use in others, so long as the assessment is centered on a bona fide occupational qualification.

### **Scoring**

Cutoffs and suggested "pass" or "fail" scores are not provided with these assessments. Instead, norms and, in some instances, average assessment scores for various levels of job performance are provided. This information is provided for the elements the assessment is designed to measure. This information is a result of the testing universe used in the validation studies performed by HR•Assessments, and is for demonstrative purposes only. Assessment results always should be interpreted, along with other information gathered through your selection process, to ensure that you get a complete picture of the job candidate or employee. It is recommended that you administer the assessment to your current employees so you may develop your own company-specific norms for assessment performance. These norms then can be used as benchmarks during your assessing and selection process.



## **Importance of Cognitive Ability**

A tremendous amount of research in the testing literature has examined cognitive ability (intelligence) and its effectiveness in predicting job performance and/or training success. The results of the research are clear: Cognitive ability tests are valid across all jobs in predicting job performance and training success.<sup>1</sup>

The HR•Assessments® Applicant Potential Test (A.P.T.) helps employers accurately test an applicant's level of general cognitive ability. More specifically, the test measures an individual's potential to be trained, to effectively and efficiently solve problems, to communicate clearly and to comprehend complex relationships.

The A.P.T. provides you with the opportunity to objectively test the intellectual skills of job applicants. By using the A.P.T. as part of the selection process, organizations can more objectively and accurately screen out those individuals lacking the cognitive skills needed for successful job performance and training success.

## **Description of the A.P.T.**

The A.P.T. is a 12-minute test consisting of 40 problems. The problems are arranged from least to most difficult. The different problems included in the test are:

### **Mathematical and Logical Reasoning Questions**

- Basic Mathematical Concepts
- Math Word Problems
- Logic Statements
- Recognizing Number Patterns
- Shadow and Object Relationships
- Spatial Recognition

### **Verbal Reasoning Questions**

- Relationships of Words and Objects
- Word Associations
- Word Definitions
- Unscrambling Letters to Form Specific Words

The 10 kinds of problems that make up the A.P.T. measure important aspects of cognitive ability and have been proved effective in predicting an individual's job performance and potential to learn.

<sup>1</sup> Hunter, J.E., & Hunter, R.F. (1984). "Validity and Utility of Alternative Predictors of Job Performance." *Psychological Bulletin*, Vol. 96, No. 1, 72-96.





Below are the test directions and two examples of the problems in the test.

### DIRECTIONS

This is a test to see how rapidly and accurately you can solve different types of problems. You are to place a **checkmark** in front of the appropriate response. Please look over the sample problems below that have been answered for you.

**1. RICH means the same as:**

☐ destitute   ☒ wealthy   ☐ plain   ☐ reward   ☐ accomplished

The correct answer is “wealthy” because “wealthy” is the only word from among those given whose meaning is the same as “rich.”

**2. Look at the row of numbers below. What number should come next?**

2   4   6   8   10   12   14   \_\_\_\_\_

☐ 15     ☒ 16     ☐ 17     ☐ 18     ☐ 19

The correct answer is “16” because “16” is the only number from among those given that would continue the pattern set by the row of numbers (i.e., each number in the row is increased by two as you move from left to right).

### Do you have any questions?

This test contains 40 problems similar to those presented above. You will have 12 minutes to work on as many as you can. Problems must be worked without the aid of a calculator. You may make any desired calculations in the space provided along the center of the test. You should use a ballpoint pen when taking the test. If you make a mistake, **Do Not Erase** your mark. Draw a circle around the ✓ like this: Ⓢ. Then place a **checkmark** in front of the desired response. You are not expected to complete all of the problems in the time allowed, but try your best. Your score will be determined by the number of problems you answer correctly. The problems become more difficult as you go along. Therefore, it is not recommended that you skip around.

**The examiner will not answer any questions once you have started.**



### Using Job Analysis to Justify Use of Assessment and Its Sections (Legal Implications)

From a legal standpoint, if a test is to be used for selection or promotion purposes, it is important that users of the test take the necessary actions to establish a clear connection between the job tasks and the occupational environments measured by the test. This relevance should exist to meet the principles outlined in the Uniform Guidelines on Employee Selection Procedures (1978) and other federal government employment-related legislation, such as Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, and the American with Disabilities Act of 1990.

The tasks that are crucial or essential to the job in question should first be identified. Then, the abilities underlying each task can be determined. This process should reveal the traits that are relevant to the job in question and should be carefully documented to justify the appropriateness of the A.P.T. in the employee selection process. The following are examples of job abilities similar to those measured by the A.P.T.

Job Abilities
Understand and accurately follow written and verbal directions.
Interpret information from different sources and use this information to make appropriate decisions.
Adjust priorities based on logical assessment of work responsibilities and deadlines.
Use reasoning to effectively and efficiently solve complex work problems.



As a general guideline for compliance with federal discrimination and disability laws, test users should not subject test takers to any adverse employment decision based on a test result, unless the test result and other factors considered in the decision-making process reveal that the person does not possess qualifications that are crucial or essential to the job in question. To illustrate, if a test taker performs poorly on a test section designed to measure inspection skills, and inspection skills are not crucial or essential to the position for which the test taker is being considered, the test result should not serve as a basis for excluding the test taker from the position. Similarly, if a test result indicates that a test taker is unable to perform certain physical tasks that are not crucial or essential to the job position at issue, the test taker should not be excluded from that position on the basis of the test result.<sup>1</sup> Test users can avoid such a scenario altogether by carefully identifying the tasks that are essential to the job position at issue, and administering only those tests or test sections that are appropriate and relevant to the position's requirements.

Test sections measuring proficiency in the English language also should be administered in accordance with these principles. Thus, if spelling, grammar, vocabulary, or reading comprehension skills are not essential to a job position, a test taker should not be subjected to an adverse employment decision based on poor test results in those areas. Requiring employees or applicants to be fluent in English may constitute national origin discrimination in violation Title VII of the Civil Rights Act if the requirement is not justified by business necessity or directly related to job performance. There are some limited exceptions to this rule for jobs involving dangerous work requiring a heightened understanding of written or verbal safety instructions in English, or service positions that require significant communication in English with the public. Test users should consult with an attorney before subjecting any test taker to an adverse employment decision on the basis of English language deficiencies.



## Administration Instructions for Paper Tests

Please read these instructions before administering the A.P.T.


1. Before administering, you should be familiar with the assessment and its instructions. Be prepared to answer any questions that may be raised.
2. The assessment should be administered in a quiet room, free from distractions and interruptions.
3. Provide each applicant/employee with a ballpoint pen to ensure clear markings on the answer sheets.
4. Distribute the assessment and have the applicant/employee complete the information on the front page (i.e., name, Social Security number and date).
5. Introduce the assessment to the applicant/employee. Say, “This questionnaire is designed to assess your opinion of different work-related behaviors and attitudes.”
6. Have the applicant/employee read the directions. You should say, “Read the directions on the front cover. Remember, your first response is often your most candid and honest one.”
7. After the applicant/employee has read the assessment directions, ask, “Are there any questions?” If there are no questions, state, “You have 40 minutes to answer as many questions as you can. Remember to think about the questions as they relate to your day-to-day working situations and not to situations outside of the working environment. You may begin.”

Test users who are subject to the Americans with Disabilities Act of 1990 may be required to provide accommodations to disabled test takers who need assistance during the testing process. This may include, for example, relaxing the time limitations of timed tests, offering visual or audio assistance, or providing special lighting or seating arrangements. Test users who are uncertain of their obligations under the Americans with Disabilities Act should consult an attorney if an accommodation is requested in the testing process.

8. Once the applicant/employee completes the assessment, ask him/her to make sure he/she has answered every question. When the assessment is turned in, say, “Thank you. We appreciate your taking the time to complete this questionnaire.”



### **Scoring Instructions for Paper Tests**

1. Open the assessment and tear off the perforated tab on the right side of the test. Carefully separate the test cover from the answer key.
2. The applicant's answers should appear as checkmarks on the carbonless copy. An answer is correct when the check appears inside the answer box. If an applicant checks off two answers for the same question, this should be counted as incorrect. If an answer choice is marked with a , this indicates a mistake made by the applicant and should not be counted as correct or incorrect.
3. Add the number of correct responses and write this number in the space provided on the front cover of the assessment. This is the applicant's test score.



## Administration Instructions for Web-based Tests

**Please read the following instructions before administering this test.**

To access the Online Testing website:

*Make sure to be using Internet Explorer to access the site*

1. Open your web browser and go to <http://www.mytests.hrdirect.com>
2. Click **Administrator Login**
3. Enter the user name and password we've provided you via e-mail.

### Step 1 – Create applicant(s)

*It is important that you complete this step first as most of the other screens will not be functional until applicant names have been entered into the system.*

In the Applicant Setup tab, fill out the form with the applicants information and click the **Save** button at the bottom left of the page. You should receive the message “You have successfully created a new applicant.” If you wish to create more applicants, click on the **Create New Applicant** button at the bottom of the page for a blank form and don't forget to click the **Save** button after entering each applicant.

### Step 2 – Assign a test to an applicant

Click the “Assign Test” tab and select the applicant you would like to assign a test to from the drop-down list. Below you will see a list of tests that are available to the selected applicant. To the right of each test is a link to view their respective Administrator's Manuals. Click the checkbox next to the test you wish to assign, then click the **Assign Test** button at the bottom of the page.

### Step 3 – Administer a test

*Please inform your applicants:*

1. Take the test using **only** Internet Explorer.
2. Make sure pop-up blockers are inactivated as the system will open a new screen.
3. Do not use the back button on the task bar during the test, as this will kick the applicant out of the test.

Click the “Administer Test” tab. Select an applicant, with previously assigned tests, from the drop-down list. Select the test that you want to administer. You may administer the test in one of three formats:

The **Begin Test Now** button will start the test immediately.

The **Send Email** button will e-mail an applicant the URL to our testing site along with a unique Session ID for them to enter to take the test.

The **Print Access Info** button will print out the URL to our testing site along with a unique Session ID, for the applicant, to enter to take the test.





## Scoring Instructions for Web-based Tests

All web-based tests are scored automatically. Please read the following instructions to view the scores of a test.

### View Test Results

Once a test has been completed, log in as an administrator and click the “Test Results” tab. You may view test results in one of two ways:

1. Select the applicant’s name from the “Applicant Name:” drop-down list and click the **Show Tests for Applicant** button. This presents all tests taken by the selected applicant. Click on one of the tests to present its results.
- or-
2. Select the test from the “Test Name:” drop-down list and click the **Show Applicants for Test** button. This presents all applicants who have taken the selected test. Click on the applicant’s name to present test results.

At any time in the future you may go back and view past applicants’ test results. They are saved in our system indefinitely.

### Interpreting the Test Results

There are five tabs on a test’s results page:

**Test Scores:** Presents raw score, corresponding percentile with interpretive text and the average score for each test scale.

**Test Score Graphs:** Presents the same information as Test Scores along with the graphical view of the corresponding percentile score.

**Interview Questions:** Presents suggested follow-up questions to help you further evaluate the candidate’s responses to particular test items. If the test does not include this feature, clicking on this tab will result in the following message: “There are no follow-up interview questions for this test.”

**Candidate Responses:** Lists each test question along with the applicant’s response. If a test includes multiple scales, the test questions and applicants’ responses are separated by Scale.

**Utilities:** Allows you to change your online testing password and print the various test result sections.



## Interpretation and Use of Scores

Use the test score to evaluate the applicant. A low test score indicates that there is a strong probability the applicant possesses limited cognitive ability. A high test score indicates that there is a strong probability the applicant possesses a high level of cognitive ability.

For example, a score of 1 indicates the applicant probably possesses limited potential to be trained, little ability to effectively and efficiently solve problems, has problems communicating clearly and has trouble comprehending complex relationships. Conversely, a score of 30 on the same test indicates the applicant probably possesses a very high level of these abilities.

## Norms

When interpreting test scores, norms provide a point of reference regarding the relative test performance of each applicant. Norms are the average scores or distribution of scores obtained from a study sample. These score “patterns” can be compared to your own applicant’s test score to help define his or her test performance.

Tables 1-4 on the following pages contain norms obtained from thousands of applicants who have taken the A.P.T. These norms offer perspective to assist you when evaluating each applicant’s test scores. Tables 1-3 consist of two columns of numbers. The first column is the raw test score. The second column is the percentile rank of that particular score or score range. The percentile rank is the percentage of applicants in the sample who obtained scores lower than the corresponding raw test score. For example an applicant obtaining a total score of 24 on the A.P.T. would have scored in the 80th percentile. This means the applicant would have scored higher than 80% of the applicants in the norm sample.

In addition to the Total A.P.T. Score norm table, norms are provided for both the Mathematical/Logical Reasoning questions and the Verbal Reasoning Questions. While these “subset” scores may offer insight into the strengths and weaknesses of the candidate with respect to these two types of reasoning problems, the Total A.R.P. Score is a more comprehensive indicator of the candidates overall cognitive ability.

Table 4 provides score ranges and average test scores for various job categories. In addition, an interpretation as to the types of duties involved in these jobs is furnished.



**Table 1**  
**A.P.T. Total Scale**

<b>Scale Score</b>	<b>Corresponding Percentile</b>
33 to 40	99
32	98
31	97
30	95
29	93
28	91
27	89
26	87
25	84
24	80
23	77
22	72
21	68
20	62
19	56
18	51
17	45
16	39
15	33
14	27
13	22
12	17
11	13
10	10
9	7
8	5
7	3
5 to 6	2
0 to 4	1

Average Score	19
Standard Deviation	6.62
Number of Participants	5,012



**Table 2**  
**Mathematical and Logical**  
**Reasoning Scale**

Scale Score	Corresponding Percentile
18 to 20	99
17	98
16	95
15	92
14	88
13	82
12	75
11	66
10	56
9	45
8	34
7	24
6	15
5	9
4	5
2 to 3	2
0 to 1	1

Average Score	10
Standard Deviation	3.60
Number of Participants	5,012



**Table 3**  
**Verbal Reasoning Scale**

Scale Score	Corresponding Percentile
16 to 20	99
15	97
14	94
13	90
12	85
11	78
10	70
9	60
8	50
7	39
6	29
5	20
4	13
3	8
2	5
1	3
0	2

Average Score	9
Standard Deviation	3.67
Number of Participants	5,012



**Table 4**  
**A.P.T. Score Ranges by Average Test Scores**  
**by Job Category**

Job Group	A.P.T. Score Range	Average A.P.T. Test Score	Expected Performance
<b>Entry Level:</b> Data Entry, Warehouse Personnel, Shipping Clerks, Collections	12-24	19 (56 <sup>th</sup> percentile)	Is able to understand simple instructions and can perform routine tasks. Can perform basic math computations.
<b>Mid-Level:</b> Office Clerical, Administrative Assistants, Customer Service, Payroll, Telemarketing, First Line Supervisors	15-28	21 (68 <sup>th</sup> percentile)	Is able to perform more advanced math calculations. Can perform more advanced clerical duties. Has the ability to reason and can solve basic to slightly more advanced problems. Is able to learn quicker and can train others on basic job concepts.
<b>Management-Staff Professional:</b> Executives, Managers, Upper-Level Supervisors, Staff Professionals, Programmers, Attorneys, Engineers, Professional Sales	20-36	26 (87 <sup>th</sup> percentile)	Can problem solve efficiently. Utilizes logic and reasoning in problem solving and decision-making. Utilizes all sources of information available to draw conclusions and inferences. Has the ability to independently analyze a problem and create solutions to that problem. Easily trained on cognitive concepts and tasks.





You can use the information in Tables 1 to 4 as a guide when evaluating job candidates; however, we strongly recommend that you collect and validate your own assessment data. The applicant/employee pool in your organization may differ from the study sample presented in this manual. Factors such as geographic location, business category and job responsibilities may have a significant effect on assessment scores.

One way to develop your own norms and benchmarks is to administer the A.P.T. to your current employees. This will allow you to compare the scores of your top performers with those of your less productive employees. The information then can serve as a guide during your applicant evaluation process.

In addition, if you can establish and document that, in general, high scorers on specific Scales are also your better-performing employees, this can serve as an initial step in establishing the validity of the A.P.T. within your organization.

If you do administer the A.P.T. to your employees for establishing company-specific norms, make sure your employees understand that the results of your study will be used for norm development only and that their employment status will in no way be affected by their scores.

The EEOC and the Uniform Guidelines on Employee Selection Procedures recommend that job analyses be performed in conjunction with validation studies to determine the job-relatedness of each assessment and other selection tools used throughout the hiring process. It is the employer's responsibility to periodically monitor its employment screening process to ensure that it is fair and valid.



## Discussing Results of the A.P.T.

Your company should develop a procedure for telling the applicant what the next step in the hiring process is, regardless of his/her score on the A.P.T. or any other assessment tool. Emphasize that the A.P.T. is only one of the criteria used to determine whether the applicant is a good match for the position. Remind the applicant that there are many people applying for the same position, and that each applicant will be considered based on how all of his/her qualifications and experience match the position's requirements.

Some interviewers may be tempted to look for a quick or easy reason to tell the applicant why he/she was not selected. "Blaming" a test may seem like a plausible reason, but it is no comfort to the rejected applicant and should not occur. The fact is, the reason to hire or not hire should **never** be based solely on any single assessment score. It is the interviewer's responsibility to review all of the information gathered from the various tools used during the hiring process – such as the job application, the interview, reference checks and other tests – to form the decision on the applicant's appropriateness for the position.

The issue is and should always be whether there is an appropriate job-fit between position and applicant. Using the A.P.T. is only a part of the information you need to make a decision. The other important part is knowing what else is required and desired in the employee filling the position, and effectively using all the sources available to you to make the best decision. This will ensure an effective selection process that offers a more comprehensive view of the applicant and results in hiring the best for your organization.

The employer assumes full responsibility for the proper use of the A.P.T. as mentioned in this manual. This includes establishing its job-relatedness to the position in question. If you have any questions about the proper use of employment tests, contact HR•Assessments or an employment testing specialist.



## Validity and Reliability

To be effective, selection procedures need to be valid and reliable. Extensive research has been conducted to determine the validity and reliability of the A.P.T. This research is described below.

The primary research method used in the studies presented here is referred to as Concurrent Validation Methodology. This validation method complies with the Uniform Guidelines on Employee Selection Procedures. Basically, the approach requires that the test be administered to existing employees and, concurrently, performance data be collected. The relationship between test scores and performance ratings is then examined to determine the test's ability to predict performance. If a test is valid, and positively correlated with performance, you would expect that, in general, those individuals scoring highly on the test would receive high performance ratings while those obtaining lower scores would receive poor performance ratings.

### Validity Study #1 – Warehouse Personnel

The Applicant Potential Test was administered to 33 warehouse personnel in a manufacturing plant. Study participants were rated by their supervisors on the following job dimensions:

	Very Low Level		Average Level			Very High Level	
<b>1. Learning Ability</b>							
Learns from on-the-job experiences.							
Grasps new ideas/materials with ease.							
Uses information available to draw correct inferences.	1	2	3	4	5	6	7
<b>2. Problem Solving Ability</b>							
Adapts well to problems encountered.							
Uses information and resources available to resolve problem situations effectively and efficiently.	1	2	3	4	5	6	7
<b>3. Ability to Understand Instructions</b>							
Interprets instructions correctly and uses knowledge and experiences to effectively complete the task at hand with minimal supervision.	1	2	3	4	5	6	7
<b>4. Overall Job Performance</b>							
From a cognitive standpoint, is able to perform all aspects of the job in an above-satisfactory manner. This is a bright employee.	1	2	3	4	5	6	7

The Applicant Potential Test was then statistically compared to the supervisors' performance ratings using correlation analysis. Table 5 provides the results of this analysis.



**Table 5**  
**Correlations Between A.P.T. Scores and**  
**Job Performance Ratings – Warehouse Personnel**

Sample	Work-related Behavior	Validity Coefficient	Significance Level	N
Warehouse Employees	Learning Ability	.46	p<.008	33
	Problem Solving Ability	.42	p<.016	33
	Ability to Understand Instructions	.28	p<.113	33
	Overall Job Performance	.43	p<.013	33

Note: N equals the number of participants in the analysis.

These correlations indicate that warehouse personnel who scored high on the Applicant Potential Test were also rated high on various cognitive dimensions and on overall job performance. Those who scored lower on the test were rated low on the various performance criteria.



### Validity Study #2 – Customer Service/Sales Representatives

The Applicant Potential Test was administered to 30 customer service representatives employed in a call center. Fifteen of the 30 were also involved in telephone sales. The supervisors of these study participants were asked to rate each on the following job dimensions:

	Very Low Level		Average Level			Very High Level	
<b>1. Communication</b> Ability to communicate clearly in writing and verbally with customers and coworkers.	1	2	3	4	5	6	7
<b>2. Clerical Functions</b> Ability to perform all clerical functions of the job (e.g., filing, faxing, computer tasks, writing, etc.) effectively and efficiently.	1	2	3	4	5	6	7
<b>3. Service</b> Ability to provide excellent customer service to both internal and external customers by applying customer service principles.	1	2	3	4	5	6	7
<b>4. Sales Ability</b> Ability to sell products and services when the situation presents itself.	1	2	3	4	5	6	7
<b>5. Overall Job Performance</b> From a cognitive standpoint, is able to perform all aspects of the job in an above-satisfactory manner. This is a bright employee.	1	2	3	4	5	6	7

The Applicant Potential Test was then statistically compared to the supervisors' performance ratings using correlation analysis. Table 6 provides the results of this analysis.



**Table 6**  
**Correlations Between A.P.T. Scores and Job Performance Ratings –  
Customer Service/Sales Representatives**

Sample	Work-related Behavior	Validity Coefficient	Significance Level	N
Customer Service/Sales Representatives	Communication	.25	p<.181	30
	Clerical Functions	.32	p<.081	30
	Service	.33	p<.077	30
	Sales Ability	.37	p<.172	15
	Overall Job Performance	.35	p<.056	30

Note: N equals the number of participants in the analysis.

These correlations indicate that customer service/sales representatives who scored high on the Applicant Potential Test were also rated high on the various important job dimensions included in this study. Those who scored lower on the test were also rated lower by their supervisors.





### Validity Study #3 – Clerical Staff

The Applicant Potential Test was administered to 35 office clerical staff employed in various organizations. Jobs included data entry, secretarial/administrative and, accounting clerks. The supervisors of these study participants were asked to rate each on the same criteria as were used in the Customer Service/Sales validation study above. The only exception was that Sales ratings were not obtained because these jobs did not involve any form of selling.

The Applicant Potential Test was then statistically compared to the supervisors' performance ratings using correlation analysis. Table 7 provides the results of this analysis.

**Table 7**  
**Correlations Between A.P.T. Scores and**  
**Job Performance Ratings – Clerical Staff**

Sample	Work-related Behavior	Validity Coefficient	Significance Level	N
Customer Service/Sales Representatives	Communication	.41	p<.017	34
	Clerical Functions	.41	p<.021	31
	Service	.31	p<.072	35
	Overall Job Performance	.33	p<.055	35

Note: N equals the number of participants in the analysis.

These correlations indicate that clerical staff who scored high on the Applicant Potential Test were also rated high on the various important job dimensions included in this study. Those who scored lower on the test were also rated lower by their supervisors.



#### Validity Study #4 – Managers

The Applicant Potential Test was administered to 236 Managers employed in the Hospitality Industry. One hundred fifty three of these managers were employed in jobs requiring customer contact. The other 83 were employed in noncustomer-interacting jobs. The supervisors of these study participants were asked to rate each on their “cognitive skills” which was defined as follows: Level of Effectiveness in learning the various aspects of the job quickly and being able to apply what is learned to perform the job in an efficient and effective manner and in thinking through and solving work problems or issues encountered as part of performing his or her daily duties and responsibilities. Ratings were collected using a 9-point likert scale.

The Applicant Potential Test scores were then statistically compared to the supervisors’ performance ratings using correlation analysis. Table 8 provides the results of this analysis.

**Table 8**  
**Correlations Between A.P.T. Scores and**  
**Job Performance Ratings – Managers**

Sample	Work-related Behavior	Validity Coefficient	Significance Level	N
Customer Facing Managerial Jobs	Cognitive Skills	.25	p<.002	153
Non-Customer Facing Managerial Jobs	Cognitive Skills	.29	p<.009	83

Note: N equals the number of participants in the analysis.

These correlations indicate that managers who scored high on the Applicant Potential Test were also rated high on cognitive skills demonstrated on the job. Those who scored lower on the test were also rated lower by their supervisors.



### Validity Study #5

Years of research have provided evidence that general cognitive ability is the single best predictor of future training success. To demonstrate the A.P.T.'s proficiency to predict the ability to be trained, a predictive validation research study was conducted.

Study participants were 33 students enrolled in a graduate-level, business psychology course at a large university. A majority of the students were employed full-time and held jobs such as secretary, bank teller, manager, supervisor, computer programmer and correctional officer. Each student took the A.P.T. during the first three weeks of the class. At the end of the semester, students' scores on the test were correlated with their final grades in the course. To avoid possible bias in grade distribution, scores on the A.P.T. were not evaluated until final grades were assigned. The results of the correlation analysis are presented in Table 9.

**Table 9**  
**Correlation Between A.P.T. Scores**  
**and Final School Course Grades**

Criteria	Validity Coefficient	Significance Level	N
School Course Grades	.46	p<.007	33

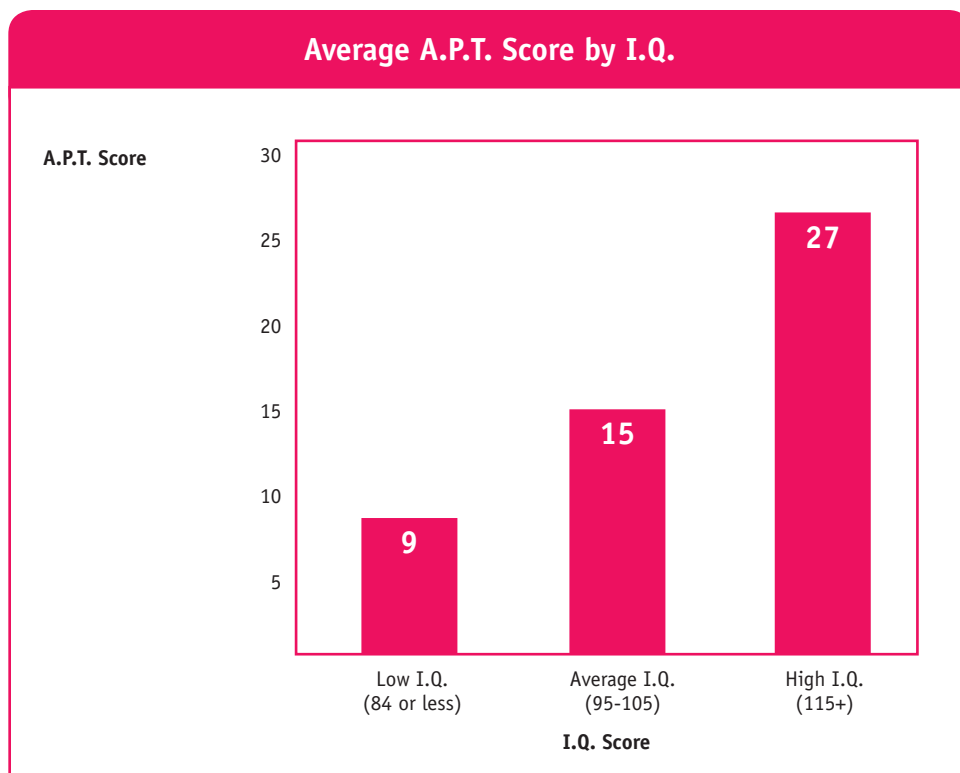
Note: N equals the number of participants in the analysis.

This analysis indicates that the higher the individual's test score, the higher the final grade received. In other words, the higher one scored on the A.P.T., the better that person was able to grasp the course material.

### Validity Study #6

An alternate way of testing the psychometric soundness and utility of a screening instrument is to show that it has construct-validity. Construct-validity is demonstrated when the test shows that it measures the traits, concepts or dimensions that it claims to measure. Such a validation is accepted by the Equal Employment Opportunity Commission as evidence that the test has been properly developed. The following paragraph describes a construct-validity study undertaken to further demonstrate the validity of the A.P.T.

Sixty-nine people employed in a wide array of job categories participated in the study. Some of the job categories represented were secretarial and clerical, data entry, programmer, engineer, customer service, sales, public service and management. Each participant took both the A.P.T. and the Wechsler Adult Intelligence Scale-Revised (WAIS-R). The WAIS-R is an intelligence test that takes approximately one and a half hours to complete and measures a person's I.Q. This test has undergone years of validation demonstrating its ability to measure intelligence levels. A correlation analysis was performed between the A.P.T. scores and the WAIS-R to determine the degree to which the two tests were related. Results of this study indicate that scores on the A.P.T. were strongly associated with scores on the WAIS-R ( $r=.79$ ,  $p<.0001$ ), meaning the A.P.T. is an accurate predictor of intelligence. The bar graph on the next page presents average A.P.T. scores for I.Q. score ranges.



The results of the validity studies described above document that the A.P.T. predicts future job performance, training success, and is an accurate measure of an individual's intelligence level. Table 10 summarizes these findings.



**Table 10**

**Correlation Between A.P.T. and Job Performance,  
Training Success and I.Q.**

Criteria	Validity Coefficient
Job Performance (Average Validity)	.35
Training Success	.46
I.Q.	.79

**Additional Validity Studies – Cognitive Ability**

Table 11 shows the mean validity coefficients obtained from years of researching cognitive ability and its relationship with job performance for various jobs.

**Table 11**

**Average Validity Coefficients for Cognitive Ability  
and Job Performance**

Job Families	Mean Validity Cognitive ability Tests
Salesperson	.61
Clerk	.54
Manager	.53
Service Worker	.48
Trades and Crafts Worker	.46
Protective Professions Worker	.42
Elementary Industrial Worker	.37
Vehicle Operator	.28
Sales Clerk	.27

Source: Hunter, J. E., & Hunter, R. F. (1984). Validity and Utility of Alternative Predictors of Job Performance. *Psychological Bulletin*, 96, 72-96.



When compared to other methods of predicting job performance, cognitive ability tests have consistently been found to be the best. Table 12 presents data accumulated from years of research comparing the mean validities of a wide variety of selection methods. The research demonstrates that cognitive ability is by far the most valid tool for predicting future job performance.

**Table 12**  
**Comparison of Various Employment-Screening Methods**

Predictor	Mean Validity	Standard Deviation	Number of Correlations	Number of Subjects
Ability Composite (cognitive ability)	.53	.15	425	32,124
Job Tryout	.44	—	20	—
Biographical Inventory	.37	.10	12	4,429
Reference Check	.26	.09	10	5,389
Experience	.18	—	425	32,124
Interview	.14	.05	10	2,694
Training & Experience Ratings	.13	—	65	—
Academic Achievement	.11	.00	11	1,089
Education	.10	—	425	32,124
Interest	.10	—	3	1,789
Age	.01	—	425	32,124

Source: Hunter, J. E., & Hunter, R. F. (1984). Validity and Utility of Alternative Predictors of Job Performance. *Psychological Bulletin*, 96, 72-96.

### Reliability

In addition to validity research, studies have been conducted to assess the consistency (or reliability) of the A.P.T. That is, how likely is an applicant's assessment score to remain consistent from one test administration to another? The more reliable the test, the less likely it is that the scores will differ significantly from one administration to the next. The A.P.T. was administered to 98 people employed in a wide variety of jobs (e.g., managers, customer service representatives, warehouse personnel, and sales representatives). Four weeks later, the same employees were tested again. This test/retest reliability analysis indicates that there is a significant correlation between the first and second administration test scores ( $r=.72$ ,  $p<.001$ ). The findings offer strong evidence that the A.P.T. is a reliable instrument that is consistent over time.

While HR•Assessments were designed to help predict various aspects of human behavior, score results are presented in terms of probabilities. False Positives and False Negatives are expected. EDI and the test developer are not liable for test taker, applicant or employee behaviors.

To order the Applicant Potential Test or any other HR•Assessments® product, or if you have any questions, call toll-free **800-264-0074**.