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## Core Testing: Introduction and Performance Objectives

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Core providers are responsible for the administration of the tests that are used to assess the trainees' mastery of the core course subject matter. This course provides information that will assist core coordinators with developing and implementing test administration policies and procedures that ensure fair and equitable testing for trainees. Its primary focus is on the:

- types of test used to assess each trainee's ability to meet the course performance objectives.
- basic principles of test development.
- best practices for test administration.

Additionally, score report forms and guidelines for the development of the different types of the tests are provided in the appendices. Core coordinators are encouraged to read the appendices and provide the information to core instructors.

The appendices include:

- Guiding Principles for Core Courses
- Score Report Forms
- Guidelines for Designing Behavioral Skills Tests and Written Skills Tests
- Structure of Multiple-Choice Items
- Multiple-Choice Formats
- Multiple-Choice Item Writing Guidelines

The information provided applies to the following core courses:

- Adult Corrections Officer (ACO) Core Course
- ACO Supplemental Core Course

- Juvenile Corrections Officer (JCO) Core Course
- Probation Officer (PO) Core Course

### Performance Objectives

- **Identify the types of test that are used to assess performance objectives in core courses.**
- **Identify the basic principles of test development.**
- **Identify best practices for test administration.**
  - **Identify the key components of test remediation policies and procedures.**
  - **Identify the best practices for test retention and storage.**
- **Given a scenario, describe how to handle the situation in accordance to the best practices for test administration.**

## Types of Tests in STC Core Courses

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Most performance objectives in the core training manuals are followed by the type of test that is required to assess each trainee's ability to accomplish the performance objective. This section describes the three types of tests including who is responsible for test development and time of delivery.

### Behavior Skills Test (BST)

BSTs require the trainee to physically demonstrate a job skill such as donning a self-contained breathing apparatus. The design of BSTs is guided by or laid out in the performance objectives. For example, consider BST #8 from the Adult Corrections Officer (ACO) Core Course provided below. The instructor would provide the instruction and guided practice necessary for trainees to learn the appropriate techniques to perform a rear break fall. Then each trainee would be responsible for individually demonstrating a rear break fall. The components listed in the bullets shall be demonstrated during the rear break fall. BSTs are completed *during* classroom instruction time and are graded by the instructor as pass/fail.

#### **BST #8 ACO Core Course**

ACO Core Performance Objective 8.4.1 (p. 42): In a simulation of a frontal assault, demonstrate a rear break fall technique incorporating the following:

- correct body positions
- proper movement
- balance
- position of advantage

### Written Skills Test (WST)

WSTs require the trainee to write a simulated job document such as a portion of a report, interview questions, or an incident report. The design of WSTs is guided by the performance objectives. For example, consider WST #2 from the ACO Core Course provided below. The instructor would provide a sample case description and policy. Each trainee would independently classify the individual in the description and provide supporting rationale. The instructor would develop the sample case description and sample department classification policy. This WST would be completed *during* the classroom instruction time and graded by the instructor during non-training hours.

#### **WST #2 ACO Core Course**

ACO Core Performance Objective 5.2.3 (p. 32): Given a sample case description, classify the individual using a sample department classification policy and state your rationale.

## Job Knowledge Test (JKT)

JKTs are paper and pencil tests that are usually presented in a multiple-choice format. The multiple-choice test (MCT) format is the preferred methodology for measuring knowledge-based performance objectives because of its proven value in measuring different types of learning, as well as ease of administration and scoring. A MCT is comprised of many questions, commonly referred to as *items*, that when combined, assess multiple performance objectives from one or more course modules or units.

In the ACO and JCO Core Course Manuals, performance objectives that are assessed with a JKT will also identify the minimum number of items that must be used to assess the performance objective. Two examples are provided below. In the first, the performance objective must be assessed with at least two items while the second requires a minimum of one item to assess the performance objective.

### Example 1

ACO Core Performance Objective 2.2.5 (p. 26): Distinguish the major types of dispositions (e.g., incarceration, probation, restitution). JKT 2 items

### Example 2

JCO Core Performance Objective 2.2.3 (p. 18): Describe the steps in the Juvenile Justice System from arrest to disposition. JKT 1 item

In the Probation Officer (PO) Core Manual, these tests are referred to as MCTs. For each objective that is assessed using a MCT, at least one multiple-choice item must be used to assess the performance objective. Because the example provided below is from the PO Core Course, the performance objective must be assessed by a minimum of one item.

### PO Core Course Example

PO Core Manual Performance Objective 2.3.1 (p. 39): Student will be able to identify the elements of civil liability law as they relate to the probation officer and probation department. (MCT)

In most cases, instructors for each core course module should develop the multiple-choice items that are combined to develop the MCTs or JKTs. Instructors will be able to link the items most accurately to the performance objective and lesson plans. It is also recommended that instructors develop a bank of items to draw on to prepare for remediation, substitute for poorly written items, and alternate items for test security. Each core course has time designated for the administration of MCTs or JKTs. Thus, these tests are administered *after* the delivery of the associated content (i.e., module or unit).

## Basic Principles of Test Development

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### Core Courses are a Selection Standard

#### **Role of STC: Penal Code 6035**

(a) For the purpose of raising the level of competence of local corrections and probation officers and other correctional personnel, the board shall adopt, and may from time to time amend, rules establishing minimum standards for the selection and training of these personnel employed by any city, county, or city and county who provide for the custody, supervision, treatment, or rehabilitation of persons accused of, or adjudged responsible for, criminal or delinquent conduct who are currently under local jurisdiction. All of these rules shall be adopted and amended pursuant to Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.

#### **California Code of Regulations: Title 15 § 131. Minimum Selection Standards**

(a) In addition to the requirements set forth in Section 830 et seq. of the Penal Code and Section 1029 et seq. of the Government Code, the standards set forth below shall apply. These standards for entry probation officer positions, entry juvenile counselor positions, and entry corrections officer positions shall include but not be limited to the following:

- (1) Basic abilities and other characteristics important for successful job performance as demonstrated by passing the Board's written examination. An alternative examination may be substituted pursuant to Section 132.
  - (2) Competence in oral communication as demonstrated in an interview.
  - (3) Past behavior compatible to job requirements as demonstrated by a background investigation.
  - (4) Competence in the knowledge, skills and abilities necessary for entry-level job performance, as demonstrated by successful completion of the required core curriculum.
  - (5) Competence in the performance of entry-level duties as demonstrated by successful completion of the probationary period.
  - (6) The ability to perform the essential job functions of the position as demonstrated by meeting the Board's current guidelines for Vision, Hearing, and Medical Screening.
  - (7) A minimum of 18 years of age prior to appointment.
- (b) The level of competence in (a) (2) and (a) (3) above shall be commensurate with the needs of the individual job classifications of each county or city. The level of competence in (a) (1) above shall be commensurate to the cutoff score that is chosen by the county or city and is consistent with research validation.

## Legislation and Personnel Selection

### Fair Employment Law

1964 Civil Rights Act – This had many titles. The most important for personnel decisions was Title VII, which:

- made it illegal to discriminate based on race, color, religion, sex, or national origin as a basis for making hiring decisions.
- created protected groups and subgroups including Blacks, American Indians (including Alaskan Natives), Asians (including Pacific Islanders), Hispanic (including persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish origin or culture regardless of race), and Whites (Caucasian) other than Hispanic.
- created the Equal Employment Opportunity Commission (EEOC) for oversight and enforcement.
- defined selection procedures.

### Selection Procedure

A selection procedure is any measure, combination of measures, or procedure used as a basis for any employment decision.

Selection procedures include the full range of assessment techniques from traditional paper and pencil tests, performance tests, **training programs**, or probationary periods and physical, educational, and work experience requirements through informal or casual interviews and unscored application forms.

As a result of Title VII, there was and continues to be close examination of the procedures that are used for making hiring decisions. This examination has mostly happened through litigation settled at the Supreme Court level. Additional protected groups were identified as a result of the:

- 1967 Age Discrimination in Employment Act – This forbids discrimination against people who are age 40 or over.
- 1990 Americans with Disabilities Act – This prohibits discrimination against people who have disabilities. “A disabled person is defined as one with a physical or mental impairment that substantially limits one or more major life activities, or who has a record of such impairment, or who is regarded as having such impairment” (Guion, 1998, p. 199). This does not protect the employment of those who would threaten the safety or property of others on a given job.

### Outcomes of Important U.S. Court Cases

- Procedures must be job related as demonstrated through research.
- Defendants are responsible for providing validity evidence.
- Procedures may not wrongfully discriminate.
- Definition of a test – A test is **any form** of collecting information on individuals when that information is used as a basis for making employment decisions.

## Legal Requirements and Professional Standards for Employee Selection

### **Uniform Guidelines on Employee Selection Procedures**

- These provide a single set of principles which are designed to assist employers, labor organizations, employment agencies, and licensing and certification boards to comply with requirements of Federal law, prohibiting employment practices which discriminate on the grounds of race, color, religion, sex, and national origin.
- They were designed to provide a framework for determining the proper use of tests and other selection procedures.
- They are consistent with professional standards, such as those described in the *Standards for Educational and Psychological Testing* and the *Principles for the Validation and Use of Personnel Selection Procedures*.

### **Application to Testing in STC Core Courses**

Any test that is used as the basis for making an employee decision must:

- be based upon job information (job analysis) obtained from experts who know about the job [subject matter experts (SMEs)] who represent the population of job incumbents.
- assess components that are necessary for successful job performance such as:
  - important job behaviors.
  - knowledge, skills, and abilities (KSAs) to do the job.
  - work products that are representative of the job.

### **Standards for Educational and Psychological Testing**

- These provide criteria for the evaluation of tests, testing practices, and the effects of test use.
- While the evaluation of tests and personnel selection procedures depends heavily on professional judgment, the *Standards* provide a frame of reference to ensure that relevant issues are addressed.

### **Principles for the Validation and Use of Personnel Selection Procedures**

- These specify established scientific findings and generally accepted professional practice in the field of personnel selection psychology concerning the choice, development, evaluation, and use of personnel selection procedures designed to measure constructs related to work behavior.
- The *Principles* focus on the accuracy of the inferences that underlie employment decisions.

STC and core instructors are partners in meeting the legal and professional standards for selection procedures. STC developed the core courses in accordance with legal and professional standards. Core instructors are responsible for ensuring that tests assess the performance objectives and adhere to legal and professional selection standards. To assist in evaluating compliance with this requirement, consider the Reasonable Person Test provided on the following page. Remember, defendants (i.e., STC, agencies, core coordinators, core instructors) are responsible for providing evidence for the job-relatedness of tests.

## Reasonable Person Test

Reasonable Person: An individual with considerable experience on the job who would be asked to use their professional judgment to evaluate the validity of a test.

***Would a reasonable person judge the test (BSTs, WSTs, and JKTs/MCTs) to be clear and unambiguous, tied to the performance objective, tied to the lesson plan, related to the job, and representative of work products?***

***If the answer is NO,  
do not use the test!***

## Notes

## Best Practices for Test Administration

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Because core courses are a selection standard, it is important to ensure that tests are developed in accordance with legal and professional standards. A trainee's failure may mean the loss of employment. Therefore, all tests must be constructed, administered, scored, and reported appropriately. Each provider/agency should have a written policy and procedure for test administration. The goal of which is to provide accurate and comparable assessment of all trainees and unfair advantage to no one. This is achieved by developing and adhering to standardized procedures for test administration. This section focuses on the following key criteria that should be incorporated in policies and procedures for test administration:

- Test Individual Trainees
- Proctored Testing
- Test Security (include age of the test)
- Testing Environment
- Cheating
- Individuals with Disabilities
- Reviewing Test Performance and Cut Scores
- Remediation Policy
- Reporting Test Scores to STC



### Core Testing Frequently Asked Questions

1. What are the types of tests used to assess trainee performance in core? Where and when is each test (a) administered and (b) scored?
2. Who should develop the tests? Should the instructor or someone skilled at test item writing
3. Why doesn't STC provide test questions?
4. What's wrong with "teaching to the test?"
5. Who is responsible for setting pass points or cut-off scores for JKTs? How are the cut-off scores determined?
6. What should an agency's policy and procedures for core testing include?
7. What if it is clear someone is failing major portions of the course?
8. What test documentation should be retained and for how long?
9. How many test questions should be written for each performance objective assessed with a JKT/MCT?
10. What should be done if a majority of students incorrectly answer a specific test question?
11. If a student fails a test, can the same test be used for remediation?

### Test Trainees Individually

The core course is a part of the selection process and agencies may base employment decisions on an individual's performance in a core course. Therefore, it is critical that the core tests represent individual performance. For this reason, STC requires that all tests are completed individually by each trainee.

### Proctored Testing

All tests should be proctored; that is, they are overseen by an individual who monitors and supervises the trainees taking the exam. For STC core courses, BSTs and WSTs are proctored by the instructor. JKTs/MCTs can be proctored by staff or an instructor. The role of the proctor is to ensure tests are administered under the proper conditions and to maintain the security of tests. The test administration policies and procedures should document the specific responsibilities of proctors and proctors should be trained on these responsibilities. The proctor responsibilities may include:

- maintaining test security at all times.
- ensuring the physical conditions are appropriate for testing.
- making sure materials are appropriately distributed and all materials are returned upon completion of the test.
- ensuring appropriate test administration procedures are followed.
- assisting students with emergencies and restroom breaks during testing.
- monitoring students.
- following appropriate procedures for providing accommodations.
- reporting all testing irregularities.

It is also beneficial for providers/agencies to have detailed test administration instructions, possibly including a script, for the proctor who is administering a test. These instructions generally inform test takers of how to make their responses, what kind or level of help they may be given if they do not understand a question or task, how to correct inadvertent responses, and any time constraints.

### SAT and ACT Test-Takers Face Tighter Security NY Times March 28, 2012 Marry Ann Giordano

The SAT cheating scandal involving at least 20 Long Island high school students last fall triggered criminal charges and test-maker recriminations — and now it will result in tougher security measures for test-takers nationwide.

The College Board's Educational Testing Service, which administers the SAT, and ACT Inc., which administers the ACT — both of which are used for college admissions — said students would now be required to submit photos with their applications to take the exams. The photos will be printed on their admissions ticket and on the roster at the testing location.

Students will also be required to list the high school they attend. That school will receive a copy of the photo submitted by the student, to help verify the test-taker's identity.

Another measure, which would require that the photos also be sent to colleges with the test scores, came under fire after the security changes were announced, with some expressing concerns that a photo could sway college admissions.

The announcement of the new security measures was made Tuesday by Kathleen M. Rice, the Nassau County district attorney, who brought cases against 20 students at five Long Island high schools for either taking the SAT for other students or for paying for the test to be taken by an imposter. Jenny Anderson reports in The New York Times on Wednesday that the changes will take place nationwide, in the fall.

## Test Security

Because core tests are part of the selection process, it is crucial that the security of the tests is ensured. Maintaining the security and confidentiality of tests is crucial for ensuring valid test scores and providing all trainees with an equal performance opportunity. Providers/agencies should have written documentation of their security procedures. The security procedures should address the physical security protocols for developing tests, storing tests and answer keys, printing tests, preparing/setting-up examination sites, and taking inventory of testing materials (Buchendahl & Plake, 2006). The written security procedures should include the following components:

- **Pre-testing security** – Testing materials should be kept in a locked storage area when not in use.
- **Consequences of test security violations** – These includes consequences for all parties who may have access to a test (e.g., trainees, instructors, proctors, etc.)
- **Testing procedures** – These are steps for maintaining security during test administration (e.g., distribution, collection).
- **Use of test information** – This includes procedures to protect test items and trainees' scores on the test.
- **Test access** – This defines who has access to testing materials. Individuals who have access to testing materials:
  - must sign a confidentiality agreement.
  - may not discuss, disseminate, describe, or otherwise reveal the contents of the test to any third party with the intent to compromise the validity of the test.
  - may not make copies of the test or any test items, take notes, or otherwise reproduce the test or test items.
  - may not publish, or cause to be published, the test or any of the test items.
- **Security breaches** – This defines how breaches in test security will be reported and handled if they occur. Procedures for handling a breach in test security should include:
  - the individual to whom the breach should be reported.
  - immediate suspension of the test.
  - a discipline policy for the individual (e.g., trainee, proctor, instructor, etc.) responsible for the breach.
  - a procedure and protocol for replacing the compromised test.
- **Test replacement** – The age of a test can have an impact on security. The longer a test is in use, the greater the probability that the security of the test has been compromised in some manner. Additionally, older tests are also at risk of assessing outdated content. Tests should be updated on a consistent basis. In order to maintain security and content validity, test should be replaced as often as it is feasible.

In addition to adhering to a training provider's/agency's security procedures, instructors are responsible for ensuring the security of the tests they develop and/or administer. To ensure the security of tests, instructors:

- are personally responsible for and accountable for all testing material in their possession.
- shall not permit trainees or other unauthorized individuals to have access to testing materials other than as is required for administration.
- shall not leave testing material in unsecured locations (e.g., on top a desk, in a notebook, or with materials for instruction) that can be accessed by unauthorized individuals.
- shall not discuss tests with anyone who is not directly involved in the testing process (e.g., development, administration).
- shall not email tests and testing materials. It is impossible to control the servers or networks on which the test may inadvertently be stored.
- shall not engage in any classroom behavior that provides trainees a verbatim copy of test questions. This “teaching to the test” is not training and constitutes a breach in test security.

## Testing Environment

The testing environment should be reasonably comfortable with minimal distractions. Noise disruptions, extreme temperatures, poor lighting, inadequate workspace, illegible materials and so forth are conditions that should be avoided. The testing area should be readily accessible and monitored by a proctor to assist test takers when necessary in order to maintain administration procedures.

## Cheating

Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to use fraudulent means to improve scores. Test development and administration procedures should minimize the possibility of cheating. When practical this may include constructing seating charts, specifying appropriate space between seats, limiting the type and content of personal property (e.g., bags, backpack, purses, cell phones, etc.) permitted in the testing area, and continuous monitoring of the testing process. In general, providers and proctors should take steps to minimize the possibility of cheating.

## Individuals with Disabilities

For the administration of tests, the Americans with Disabilities Act (ADA) makes it unlawful to:

- fail to select and administer a test such that it reflects what the test is intended to measure rather than reflecting a trainee's or employee's impairment.
- fail to make reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual unless such accommodation would impose an undue hardship on the provider/agency.

Prior to the first course delivery, providers/agencies should have a *written* policy on reasonable accommodation. Examples of reasonable accommodations include additional testing time, assistance (e.g., reader, accessible work stations), format (i.e., larger print), or a separate room for testing. The following criteria may be included in a reasonable accommodation policy:

- formal procedures for requesting and receiving accommodations
- informing test takers of the procedures for reasonable accommodation prior to testing.
- documentation requirements for modification to testing procedures.

## Notes

## Reviewing Test Performance

Tests are designed to reflect course content and objectives. They are an essential component of core courses. They reinforce performance objectives and are the final measure of trainee success. Therefore, it is important to develop tests that meet these requirements in a valid manner. An important, often overlooked, step in developing and designing tests is a thorough editing and review process. An editing and review process can greatly improve the quality of tests (Wallach, et. al., 2006). It is STC's recommendation that core tests (BSTs, WSTs, and MCTs) are reviewed by a committee of peers prior to their first use whenever possible. The focus of edit and review committees is to:

- detect any lack of clarity in the test (e.g., question, supporting materials, appropriate response).
- identify and remediate multiple correct answers or lack of one best answer.
- verify the correct answer.
- offer suggestions to improve the item.

For developing JKT/MCT items, it is not uncommon that for every three items that are developed, only one will make it through the review process. Consider also that a remediation test should also be developed. This means that for each MCT item that is required, at least 6 MCT item should be written. Thus after review, 3 MCT items will be available. The instructor will have one item for the test, another for the remediation test, and as a replacement in case it is needed. A similar argument could be made for WSTs and BSTs as well.

*“If item writing is considered an art, then item editing is a craft, which can improve the overall validity of a test (Baranowski, 2004, p. 349).”*

After tests are taken by trainees, STC recommends that instructors evaluate the performance of the tests or test items they developed. This evaluation can be as simple as determining the percent of trainees who responded appropriately to the test (BST or WST) or answered the JKT/MCT item correctly. If trainees have poor performance overall, the cause of the poor performance should be considered. Once the cause is identified, steps should be taken to correct the problem. The following are some possible causes of poor performance:

- the content was not included in the course instruction.
- the content covered in course instruction was unclear or ineffective.
- the test or item was unclear, ambiguous, or tricky.
- the test or item is completely flawed.

## Cut Scores

Because tests are generated by instructors, STC cannot set cut scores. Throughout the state there may be wide variation in the difficulty of the tests, the average difficulty of the questions, number of test questions, and emphasis of the questions. To accommodate these variations, providers determine what constitutes a passing score. Ideally, all tests would be pilot tested prior to first use. The pilot data would provide test and question level information to determine the cut score. While it is not always feasible to pilot a test, it is possible to have tests reviewed by a committee of peers who then determine a cut score or pass/fail criteria.

### Setting the Cut-Off Score for JKTs/MCTs

Based on the recommendations of the review committee or analysis of pilot data, a cut-off score for a JKT is set. Typically, providers use a percentage cut-off such as 70% or 80%. To determine a cut-score for JKTs, the review committee should consider:

- the difficulty of each test question.
- critical questions that must be answered correctly.
- the number of questions included above the minimum required for each objective.
- the overall difficulty of the exam.

If pilot data is available, the following should be considered:

- The number of correct answers for each question.
- The correlation between performance on a test question and the test score.
- Feedback regarding the clarity of each question.

### Scoring WSTs

WSTs are scored as pass/fail only. The key to evaluating mastery of the curriculum by examining the WST lies in the specifications of the performance objective. To score a WST, the instructor should look for the elements listed in the associated performance objective and score the trainee according to how many of the elements were addressed and how well they were addressed. In addition, the instructor should also:

- base scoring on how well the trainee incorporated previous elements of the course that build toward the specific objective called for in the WST.
- review the trainee's grammar and writing skills as well as content. However, this is a secondary consideration in the scoring. If the trainee is in need of improvement in writing skills, the instructor may inform the employing agency and/or include this on the Individual Trainee Evaluation Form (see *Handbook for Presenting Local Corrections Core Courses*).

### Scoring Behavior Skills Tests

BSTs are also scored as pass/fail. The specifications for passing these tests are embedded in the performance objectives. The trainee can either correctly perform the task or not and thus receives a pass or fail score. For each BST, the instructor should look for the elements listed in the associated performance objective and score the trainee according to how many of the elements were addressed and how well they were addressed.

## Remediation Policy

Prior to the first course delivery, providers/agencies should have a *written* policy on how they will handle a test failure. According to the *Standards* (AERA, APA, NCME, 1999) and the *Principles* (SIOP, 2003), opportunities for reassessment and reconsideration should be provided. It is STC's recommendation that training agencies have a remediation policy in place for reassessment. This policy should be followed consistently and fairly for all trainees. For example, if one re-take is available for a trainee who fails a test, then one re-take should be available for all trainees. The following criteria should be incorporated into a remediation plan:

- **Proctored.** The test that is used for remediation must be proctored. It cannot be a take-home test.
- **Multiple versions of the BSTs, WSTs, and MCTs.** When a trainee takes a test and fails and is then permitted to retake the same test as a remediation process, practice effects may influence the scores on the second test (Kaplan & Saccuzzo, 2005). When a test is given a second time, test takers score better simply because they have sharpened their skills by having taken the test the first time. For this reason, STC:
  - *recommends* that the training agency have available multiple versions of the BSTs, WSTs, and MCTs.
  - *requires* that quizzes are not the same as the final BSTs, WSTs and MCTs.
- **Communication and Coordination with the Employing Agency.** When an employing agency is informed that a trainee has not successfully completed core training, a difficult decision must be made as to whether to retain the employee. For this reason, training agencies and employing agencies should communicate and coordinate with each other especially when a trainee is struggling in a core course. This means the employing agency is aware of the remediation plan. Also, the employing agency should be consulted before a trainee is dismissed from a core course.

## Reporting Test Scores to STC

Within thirty days after course completion, providers/agencies are required to send all test scores (JKT/MCT, BST, WST) to STC. Appendix B provides the following score report forms:

- Job Knowledge Test Score Report Form
- Behavior Skills Test Score Report Form
- Written Skills Test Score Report Form
- Adult Corrections Officer Physical Tasks Test Scores
- Juvenile Corrections Officer Physical Tasks Test Scores

## Test Challenges

There may be times when a trainee challenges a test indicating it was unfair or not related to the job. Providers should take these challenges seriously and investigate the complaint. Providers who implement best practices for test development and administration are more likely to have a favorable outcome to such challenges. Additionally providers should have the ability to:

- link each test question to a core course performance objective.
- link each test question to a lesson plan.

To investigate the complaint, the provider should ask the trainee questions to clarify the specific aspect of the exam that is being challenged (e.g., the overall content, the content was not covered in course instruction, a specific question, the cut score, etc.). The validity of the exam with respect to the specific challenge should then be investigated. The investigation steps may vary for a variety of complaints, but the focus of any investigation should be to determine if the test was administered appropriately, the test content was covered during course instruction, the test or test question was clear and unambiguous, the test was tied to a specific performance objective and lesson plan, and level of difficulty of the test was appropriate for an entry-level core course. The complaint, investigation, and outcome should be thoroughly documented.

If it is determined that the challenge to a test or test question is valid, appropriate steps should be taken to resolve the complaint. For example, if only one question on a 50-question test is found to be unfair because it assessed material that was not covered in class, only scores on the 49 fair questions should be included in each trainee's overall test score. The flawed question should be replaced before the test is used again. If a WST or BST is determined to be flawed or unfair, a replacement WST or BST should be administered for all trainees.

## Record Retention and Storage

In accordance with the *STC Handbook for Presenting Local Corrections Core Courses*, rosters, test scores, and individual trainee evaluations should be kept on file for at least three years **and** in accordance with the local agencies document retention policy. STC has no requirement that providers retain trainee's original test documents (i.e., their completed tests). Providers may wish to keep the original test documents in case of any litigation that pertains to core training. Remember all test materials must be stored in a secure location at all times.

Providers or agencies that have the storage space (electronic or physical) are encouraged to maintain records for the life of a career. It never fails that the one test that is questioned, is the one that was thrown away. At the minimum, a copy of the test, test scores, and documentation linking each test question to performance objectives and lesson plans, should be retained for at least three years. However, agencies should **always** comply with their record retention policy.

## Appendix A: Guiding Principles

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Training design involves a series of decisions, many of which are critical to producing an effective instructional program. For example, the designers must repeatedly make decisions regarding the inclusion or exclusion of specific content in the course. While such decisions are often complex and difficult, they are more easily made if guiding principles have been established. The principles that guided the development of the core courses are presented below.

### **Guiding Principle 1: Develop a Job-Related Course**

The content of the course must be related to the job. To the extent that knowledge or skills are essential to job performance, they are included in the course.

### **Guiding Principle 2: Specify the Training Needed by “Entry-level” POs, ACOs, and JCOs**

The course should specify the training needed by “entry-level” POs, ACOs, and JCOs who have no prior training or experience in corrections. Although some entry-level staff may have some background in corrections, the assumption of no prior training or experience ensures that the course will cover the needs of all entry-level personnel.

### **Guiding Principle 3: Training Must Be Applicable to Departments across the State**

The course should meet the training needs in all departments across the state regardless of department size, location, or budget.

### **Guiding Principle 4: Specify Minimum Training**

The course should provide the basic knowledge, tools, and skills that are essential to meet minimum performance standards. It is very important to recognize that the course cannot and should not be expected to produce an experienced officer capable of handling every job assignment.

### **Guiding Principle 5: Course Should Be Completed Prior to First Work Assignment**

Research conducted during the core revision process indicated that students actually attend the course after different lengths of time on the job (ranging from 0 to about 8 months). To the extent that it is feasible for jurisdictions to do so, it is recommended that newly hired POs, JCOs, and ACOs be provided with the opportunity to complete the course as early as possible, preferably prior to their first work assignment.

### **Guiding Principle 6: Delivery is Administratively Feasible**

To enable every training course to operate within certain administrative constraints (e.g., time, budget, personnel, etc.), the core courses were designed with the following considerations:

- Daily Schedule – Daily course schedules are designed to be 8 hours per day, 5 days per training week.
- Testing Periods and Methods
  - Multiple Choice Tests (MCTs) are designed to be scheduled in blocks. This provides for the potential use of a test proctor as an alternative to the instructor monitoring this type of testing.
  - Written Skills Tests (WSTs) and Behavior Skills Tests (BSTs) are to be administered by the designated instructor during training delivery. WSTs are designed to be graded by the instructor during non-instructional time.

Instructional Methods – The traditional classroom training model is the preferred training delivery format. This allows for a variety of delivery methods along with the use of supportive multi-media technology. Where feasible, it is recommended that course delivery take into account adult learning styles and that student participation is encouraged.

## Appendix B: Score Report Forms

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This appendix provides the following score report forms:

- Job Knowledge Test Score Report Form
- Behavior Skills Test Score Report Form
- Written Skills Test Score Report Form
- Adult Corrections Officer Physical Tasks Test Scores
- Juvenile Corrections Officer Physical Tasks Test Scores

**Job Knowledge Test Score Report Form**

STANDARDS AND TRAINING FOR CORRECTIONS PROGRAM  
CORE COURSE TEST SCORE REPORT

**Job Knowledge Test Scores:** Please enter scores as percentage of correct responses

CERTIFICATION NUMBER	COURSE START DATE	COURSE END DATE	COURSE TITLE					TRAINING PROVIDER				
<b>Name</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>	<b>JKT#</b>
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17.												
18.												
19.												
20.												
NAME AND TITLE							AUTHORIZED SIGNATURE					

**Behavior Skills Test Score Report Form**

STANDARDS AND TRAINING FOR CORRECTIONS PROGRAM  
CORE COURSE TEST SCORE REPORT

**Behavior Skills Test Scores:** Please mark as either “*pass*” or “*fail*.” Total number tests required for:  
**ACO** = 38 BSTs (#35-38 on separate sheet); **ACO Supplemental** = 6 BSTs (#27, 29, 30-33); **JCO** = 13 BSTs;  
**PO** = 35 BSTs

CERTIFICATION NUMBER	COURSE START DATE	COURSE END DATE	COURSE TITLE						TRAINING PROVIDER				
<b>Name</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>	<b>BST#</b>
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NAME AND TITLE								AUTHORIZED SIGNATURE					

**Written Skills Test Score Report Form**

STANDARDS AND TRAINING FOR CORRECTIONS PROGRAM  
CORE COURSE TEST SCORE REPORT

**Written Skills Test Scores:** Please mark as either "**pass**" or "**fail**." Total number tests required for:  
**ACO** = 10 WSTs; **ACO Supplemental** = 5 WSTs (#2-4, 8, 10); **JCO** = 27 WSTs; **PO** = 27 WSTs

CERTIFICATION NUMBER	COURSE START DATE	COURSE END DATE	COURSE TITLE						TRAINING PROVIDER				
<b>Name</b>		<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>	<b>WST#</b>
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## Appendix C: Guidelines for Designing BSTs and WSTs

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### Solicit Appropriate Trainee Response

The response that the test solicits from the trainee should be appropriate for the test type.

- BSTs should require the trainee to perform a physical behavior that can be seen (e.g., interview, handcuff, takedown, etc.). BSTs should not result in a test that has a trainee write a report, justification for a response, etc.
- WSTs should require the trainee to produce a written document such as a report, completed form, case plan, etc.
- BSTs and WSTs are to be completed individually by each trainee.

In the example provided to the right, the performance objective specifies that the trainee must demonstrate how to safely approach a compliant subject prior to the application of handcuffs. The poor BST is inappropriate because it does not require a physical demonstration of the required behavior; that is a safely approaching a compliant subject prior to the application of handcuffs. It also does not require the trainee to demonstrate the behavior for the three positions (standing, kneeling, and prone). For these reasons, the better BST is more appropriate as it requires a physical, visible behavior.

### BST Example

**Performance Objective:** Demonstrate how to safely approach a compliant subject in a standing, kneeling, and prone position prior to the application of handcuffs. (BST)

**Poor BST:** The trainee is provided with several diagrams that illustrate several options for approaching a subject in a standing position. The trainee is asked to circle the diagram that corresponds to the safest approach for handcuffing the subject.

**Better BST:** The trainee is presented with a person in the standing position. The trainee must physically demonstrate in front of the instructor the appropriate safe approach for the application of handcuffs. This procedure is then repeated with the trainee approaching a person in both kneeling and prone positions.

## Measure the Core Course Performance Objective

Each BST and WST must be carefully designed to provide a valid indicator of the trainee's ability to meet the associated performance objective. The verb(s) in a performance objective has a direct affect on the test design. The test must directly measure the performance specified by the verb(s) in the performance objective.

In the WST example provided, the key verbs in the objective are classify, assign, and justify. The poor WST is inappropriate because it does not require the trainee to apply knowledge of classification and housing assignments. It also does not require the trainee to justify the classification or housing assignment. For these reasons, the better WST is more appropriate as it is directly associated with all of the verbs in the performance objective.

### WST Example

**Performance Objective:** Given a sample intake profile and a sample classification plan, classify the juvenile and assign housing according to key classification factors, and justify your decision. (WST)

**Poor WST:** A written skills test that asks the trainee to list key factors that should be considered in classifying and assigning a juvenile to a housing unit.

**Better WST:** A written skills test that provides a sample intake profile and classification plan. The test asks multiple questions requiring the trainee to write a narrative that (a) classifies the individual, (b) assigns housing, and (c) justifies the classification and housing assignment of the juvenile.

## Provide the Resources Specified in the Performance Objective

BSTs and WSTs require resources specified in the condition of the performance objective. These resources may include, but are not limited to, sample scenarios, penal code, handcuffs, sample case plans, sample procedures, etc. Instructors may need to develop these resources as part of designing the BST or WST. For WSTs the vocabulary and reading level of the resources should be at the appropriate level for the trainees.

In the example provided, the performance objective specifies that the trainee will be provided with a scenario of inmate behavior. The poor WST is inappropriate because it does not provide a scenario for the trainee to use in the assessment of the performance objective. It also does not require the trainee to apply job knowledge. The trainee is simply asked to list what should be included in documentation, rather than actually writing a report that includes the required content based on a provided scenario. For these reasons, the better WST is more appropriate because it provides the resources specified in the performance objective and requires the application of job knowledge.

### WST Example

**Performance Objective:** Presented with a scenario of inmate behavior, generate a written report of the inmate's behavior and appearance. Include the following:

- factors that indicate risk
- statements made by inmate
- corrections officer actions

**Poor WST:** A written skills test that asks the trainee to list content that should be included when documenting an inmate's behavior or appearance.

**Better WST:** A written skills test that provides a scenario (e.g., written description, vignette, video, or skit/play) that includes an inmate whose behavior or appearance requires documentation. The test question requires the trainee to write a narrative that (a) documents the inmate's behavior (if necessary), (b) appearance (if necessary), and (c) the required content as identified in the performance objective.

## Assess Important Content

BSTs and WSTs should measure important content from the course that is necessary to perform the job. The tests should not measure trivial knowledge, skills, or abilities that are not pertinent to successful job performance. It is important to remember that these tests are part of the selection process. Trainees should not fail based on irrelevant, trivial content that is not job-related or critical to job performance.

In the example provided above the performance objective specifies that the trainee will list key considerations for planning cell extractions. The poor WST is inappropriate because it does not measure the performance objective. Telling a story about a poorly executed cell extraction may be considered trivial compared to identifying the key considerations for planning a cell extraction. The better BST is more appropriate because it measures the performance objective rather than knowledge of a past incident.

### WST Example

**Performance Objective:** List key considerations that must be addressed in planning cell extractions.

**Poor WST:** A written skills test that asks the trainee to describe a cell extraction incident that did not go as planned.

**Better WST:** A written skills test that requires the trainee to write a list of the key considerations that must be included in a cell extraction plan, which includes the required content presented during the instruction of the course module.

## Pass the Reasonable Person Test

Would a reasonable person judge the test (BST, WST, or MCT) to be clear and unambiguous, tied to the performance objective, tied to the lesson plan, related to the job, and representative of work products? If the answer is NO, do not use test. The test should be redesigned before it is used to measure the associated performance objective.

In the example provided, the performance objective specifies that the trainee will demonstrate the proper manipulation of handcuffs. The poor BST is inappropriate because it does not require each student to demonstrate the physical task of correctly applying handcuffs to a subject. Simply asking students if they learned it in another training class is inappropriate. A reasonable person could speculate that a trainee saying he or she took a previous course that included handcuffing does not indicate that the trainee can definitely apply handcuffs correctly. Therefore, the better BST is more appropriate because it requires each trainee to physically apply handcuffs correctly to a subject, incorporating the principles outlined in the performance objective.

### BST Example

**Performance Objective:** Demonstrate proper manipulation of handcuffs. For example:

- retrieval
- pistol grip by chain
- ensuring swing arm is facing toward subject's wrist
- ensuring that handcuffs are not double locked before attempting to place them on the subject's wrists
- once placed on subject's wrists, check for excessive tightness before double locking
- double locking on subjects wrists

**Poor BST:** Ask the trainees to raise their hands if they already learned how to correctly apply handcuffs in the PC 832 course. Have only those students who did not raise their hand demonstrate the proper manipulation of handcuffs.

**Better BST:** Require each trainee to correctly apply handcuffs on a subject incorporating the principles identified in the performance objective.

## Appendix D: Structure of Multiple-Choice Items

Multiple-choice (MC) items consist of the following components:

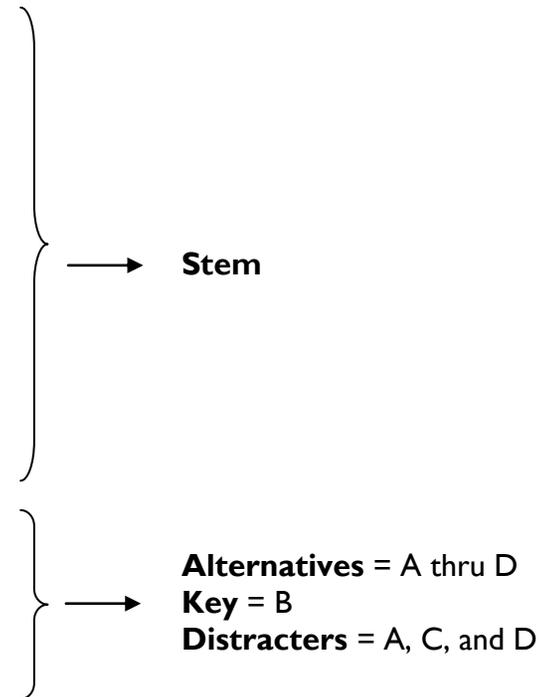
- **Stem** – This states the question or problem. The stem may be a simple question, a statement, or a question incorporating a reading passage, chart, graph, or other information.
- **Alternatives** – These are the response options from which the test taker may choose from to answer the item.
  - The **key**, or the keyed response, is the correct alternative.
  - **Distracters** are the incorrect alternatives.

### Example

Use the information in the table below to answer question 1.

Inmate K's Schedule		
Time	Activity	Duration
8:00 a.m.	breakfast	1 hour and 15 minutes
9:30 a.m.	laundry duty	1 hour
10:30 a.m.	recreation time	30 minutes
11:15 a.m.	counseling	1 hour
12:30 p.m.	kitchen duty	4 hours

1. The table above provides Inmate K's schedule for the day. Which two activities will have LESS THAN a 15 minute break between them?
- A. breakfast and laundry duty
  - B. laundry duty and recreation time
  - C. recreation time and counseling
  - D. counseling and kitchen duty



## Appendix E: Multiple-Choice Formats

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This appendix presents a variety of MC formats, including examples, that are recommended by Halydyna (2004).

### Conventional MC

The conventional MC format is the most common. There are three variations of the conventional MC format: question, incomplete stem, and best answer. An example of each is provided below.

#### Examples of Conventional MC Format

##### Question Format:

Who is John Galt?

- A. A rock star
- B. A movie actor
- C. A character in a book

##### Incomplete Stem Format

John Galt is a character in an Ayn Rand novel who is remembered for his

- A. integrity.
- B. romantic tendencies.
- C. courage.

##### Best Answer Format

Which is the most effective safety feature in your car?

- A. seat belt
- B. front air bag
- C. anti-lock braking system

### Matching

The matching format is used when a set of options is available that is useful for two or more items. The format begins with a set of options at the top followed by a set of stems at the bottom. The instructions at the top inform the test takers how to respond and where to mark their answers. An example is provided below.

#### Example of the Matching Format

For each question select the correct answer from the options provided below. Mark your answer on the answer sheet.

- A. Minnesota
- B. Illinois
- C. Wisconsin
- D. Nebraska
- E. Iowa

1. What is the home state of the Hawkeyes?
2. Which state is known for its cheese heads?
3. Which is the land of many lakes?
4. What state is Cornhuskers country?
5. Which state contains Cook County?

## Extended Matching

The extended matching (EM) format uses a long list of options linked to a long list of stems. A set of EM items has four components: (a) a theme, (b) a set of options, (c), a lead-in statement, and (d) a set of stems. The theme focused a test taker on the context. The list of options, which can be lengthy, is possible right answers. The list of options can exhaust the content domain, but must be similar in content. The lead-in statement may be a scenario or vignette. The stems should be able to be independently answered. The set of items must have at least two stems. An example is provided below. The theme for the example is neuropsychological tests.

### Example of the Extended Matching Format

For each question, select the correct answer from the options provided below. Mark your answer on the answer sheet.

- A. Cognitive Estimates Test
- B. Digit Span
- C. Go-No Go Test
- D. Mini Mental State Examination
- E. National Adult Reading Test
- F. Raven's Progressive Matrices
- G. Rivermead Behavioural Memory Test
- H. Stroop Test
- I. Wechsler Memory Scale
- J. Wisconsin Card Sorting Test

A 54-year old man has a year's history of steadily progressive personality changes. He has become increasingly apathetic and appears depressed. His main complaint is increasing frontal headaches. On examination, he has word-finding difficulties. His EEG shows frontal slowing that is greatest on the left.

1. You are concerned that he may have an intracranial space-occupying lesion. Which test should you consider?
2. Tests indicate that his current performance IQ is in the low to average range. Which test should you consider?
3. The estimate of his premorbid IQ is 15 points higher than his current performance IQ. It is recommended that he has a full WAIS IQ assessment to measure both performance and verbal IQ. On the WAIS his verbal IQ is found to be impaired over and above his performance IQ. Which test is part of the WAIS verbal subtests?
4. An MRI shows a large meningioma compressing dorso-lateral prefrontal cortex on the left. Which test is most likely to indicate impairment?

### Alternate Choice

Alternate choice is a conventional MC with only two options. An example is provided below. Although the alternate choice format is a downsized version of the conventional MC format, it is not a true/false format. Alternate choice requires a comparison between two choices. The true/false format does not explicitly require a comparison.

#### Example of the Alternate Choice Format

What is the most effective way to motivate a student?

- A. intermittent praise
- B. consistent praise

### True/False

The true/false (T/F) format has been well established in classroom assessment but is seldom used in standardized testing programs (e.g., SAT, GRE). T/F format can be traditional or unusual. An example of each is provided below. The T/F format should be used with caution because research suggests it tends to be used to assess recall of trivial knowledge.

#### Examples of the T/F Format

##### Traditional T/F Format:

Mark A on your answer sheet if true and B if false.

1. The first thing to do with an automatic transmission that does not work is to check the transmission fluid.
2. The major cause of tire wear is poor wheel balance.
3. The usual cause of clutch “chatter” is in the clutch pedal linkage.
4. The distributor rotates at one half the speed of the engine crankshaft.

##### Unusual T/F Format:

Place an X beneath each structure for which each statement is true.

Characteristic	Root	Stem	Leaf
Growing point protected by a cap			
May possess a pithy center			
Epidermal cells hair-like			
Growing region at tip			

### Multiple True/False

The multiple true/false (MTF) format has much in common with the TF format. The difference is that TF items should be different in content. However, MTF has similar content that is a result of a lead-in statement. For this reason it is also similar to the EM format. The MTF format can be simple or complex. An example of each is provided.

#### Example of the Simple MTF Format

Mark A on your answer sheet if true and B if false.

The Lion, the Witch, and the Wardrobe by C. S. Lewis can be summarized by saying:

1. A penny saved is a penny earned.
2. If you give them an inch, they will take a mile.
3. Good will always overcome evil.
4. Do not put off tomorrow what you can do today.
5. Do not put all your eggs in one basket.

#### Example of the Complex MTF Format

Your video store rents VHS for \$2.00 on weekdays and \$3.00 on weekends. You also rent DVDs for \$3.00 on weekdays and \$4.00 for weekends. Below is a weekly summary of rentals.

	Videos Rented	
	VHS	DVDs
Monday	38	35
Tuesday	31	28
Wednesday	40	45
Thursday	47	49
Friday	55	52
Saturday	63	60
Sunday	75	68

Mark A on your answer sheet if true and B if false.

1. The video store makes more money from VHS than from DVD.
2. DVDs and VHSs are more expensive on the weekdays.
3. The video store rents more DVDs in a week than VHS.
4. DVDs are more expensive than VHS.
5. The video store rents more videos Friday, Saturday, Sunday than on the weekdays.
6. Customers rent about the same number of DVDs and VHSs on the weekdays.
7. The video store rents more VHS than DVDs on the weekends.

## Appendix F: Multiple-Choice Item Writing Guidelines

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Many books and journal articles have been written that provide guidance on writing MC items. However, despite this guidance, item writing is not yet a science. It is still part art and part science. The guidelines presented in this appendix were quoted from and adapted from a journal article by Haladyna, Downing, and Rodriguez (2002) and *Developing and Validating Multiple-Choice Test Items* (Haladyna, 2004, p. 97 - 121). These guidelines were drawn from textbooks and analyses of over 90 research studies on the validity of these guidelines.

### Content Guidelines

#### I. Assess the Core Course Performance Objective

Items must be carefully written so that they provide a valid indicator of the trainee's ability to meet the associated performance objective. The verb(s) in the performance objective has a direct affect on the test item. The item must directly measure the performance specified by the verb in the performance objective.

In the example provided to the right, the performance objective specifies that the trainee will identify primary legal references and sources. The poor MCT item is inappropriate because the question is not related to the performance objective. The better BST is more appropriate because it requires test takers, who are given a list of possible legal references and source, to identify the option that impacts the work of a corrections officer. The better BST measures the performance objective.

#### Example of Assessing the Performance Objective

**Performance Objective:** Identify the primary legal references and sources that impact the work of a corrections officer. For example: code statutes, case law, and regulations.

##### Poor MC Item:

Which of the following agencies is responsible for establishing and maintaining the minimum standards for local corrections facilities?

- A. Office of Administrative Law
- B. Corrections Standards Authority
- C. State Personnel Board
- D. California Department of Corrections and Rehabilitation



##### Better MC Item:

Which of the following options is a primary legal reference or source that impacts the work of a corrections officer?

- A. Title 15
- B. Evidence Code
- C. Title 2
- D. Civil Code



## 2. Assess Important Content

MC items should only assess important content and avoid trivial content. Judging the importance of content is subjective. Haladyna (2004) suggests consulting with other content experts to determine if the content is too trivial. The example below shows the difference between trivial and important content. The poor stem asks for a fact that is trivial to trainees. The better stem addresses the population for which a specific risks and needs assessment was developed. The better stem seems more appropriate for probation officers.

### Example of Assessing Important Content

#### Poor MC Stem:

When was the STRONG created?

#### Better MC Stem:

The STRONG was created as a risk and needs assessment for which of the following populations?



## 3. Use Novel Material to Test for Understanding

It is important to test for understanding rather than simple recall. Testing understanding can be done by presenting a concept, procedure, or principle in a novel way. This can be done by presenting scenarios or vignettes that require the trainee to use critical thinking or problem solving skills. The example below shows the difference between testing recall and understanding. The poor item provides definitions which are likely to be memorized. The better item tests understanding. The trainee who understands a metaphor will select the correct alternative.

### Example of Using Novel Material to Test for Understanding

#### Poor MC Item:

Which is the best definition of a metaphor?

- A. Metaphors describe something as if they are something else.
- B. Metaphors make comparisons to other things.
- C. Metaphors are trite; stereotyped expressions.

#### Better MC Item:

Which of the following is a metaphor?

- A. At the breakfast buffet, I ate like a pig.
- B. My cat has fur like knotted wool.
- C. She is like a rose, full of thorns and smelly.



#### 4. Keep Content of Each Item Independent

When writing multiple items it is possible to provide information in one item that will help the test taker correctly answer another item. Test wise trainees will look for clues in items. For example, consider the two items below. A test taker who correctly answers the first item can use the information to assist with answering the second item. Because Roxie is correct for the first item, it cannot be for the second. Also, because Kate was mentioned in the first item, it can be ruled out as the correct answer. Therefore, the correct answer must be Sara.

##### Example of Item Dependence

###### MC Item:

Who was Lupe's best friend?

- A. Kate
- B. Delores
- C. Roxie\*



###### MC Item:

Who was quarreling with Lupe?

- A. Kate
- B. Sara\*
- C. Roxie

#### 5. Avoid Overly Specific or Overly General Content

Items may assess knowledge on a continuum from very specific to very general. Items should be written with this continuum in mind. That is, the extremes should be avoided. Overly specific items tend to be trivial and overly general items tend to be ambiguous. In the examples below the first item is too specific and the second is too general.

##### Example of Very Specific and Overly General Content

###### Very Specific Item:

Who wrote the Icon of Seville?

- A. Lorca
- B. Ibanez
- C. Rodriquez



###### General Item:

Which is the most serious problem in the world?

- A. hunger
- B. lack of education
- C. disease

## 6. Avoid Opinion-Based Items

Items should assess well-known facts, concepts, principles, and procedures. It is unfair to test a trainee on an opinion unless that opinion is qualified by analysis, supported by evidence, or presented during instruction. The example below shows the difference between an unqualified and qualified opinion.

### Example of Avoiding Opinions

#### Unqualified Opinion Item:

Which is the best comedy film ever made?

- A. Abbot and Costello Go to Mars
- B. Young Frankenstein
- C. A Day at the Races



#### Qualified Opinion Item:

According to the American Film Institute, which is the greatest American film?

- A. It Happened One Night
- B. Citizen Kane
- C. Gone with the Wind
- D. Star Wars



## 7. Avoid Trick Items

Trick items deceive the test taker into choosing a distracter instead of the right answer. Items may be written to deliberately trick the test taker or may accidentally trick the test taker. Test takers perceive the following elements as tricky:

- The item appears to intentionally deceive, confuse, or mislead.
- Trivial content was presented.
- The difference between the alternatives was too fine.
- The item included information that was not important to the problem.
- Principles were presented differently than in instruction.
- The item was too ambiguous such that even the best trainee didn't know the answer.

According to Haladyna (2004) trick items are difficult to illustrate, but the open-ended questions below are a few examples of trick items. Of course there is a fourth of July in England, as there is around the world. Also, all months have 28 days.

### Examples of Trick Items

Is there a fourth of July in England?

Some months have 31 days. How many have 28?

## Format and Style Guidelines

### 8. Use Question, Phrase, or Best Answer Format

The most common MC item formats are question, incomplete stem, and best answer. Each format has the following three parts: (a) a stem, (b) the correct choice, and (c) several wrong answers called distracters. An example of each is provided below. The use of these MC item formats is recommended by Haladyna, Downing, and Rodriguez (2002) based on a review of various item formats that were identified as supported, not supported, or uncited in the text-books that were reviewed.

#### Examples of Common MC Formats

##### Question Format:

Who is John Galt?

- A. A rock star
- B. A movie actor
- C. A character in a book



##### Incomplete Stem Format

John Galt is a character in an Ayn Rand novel who is remembered for his

- A. integrity.
- B. romantic tendencies.
- C. courage.

##### Best Answer Format

Which is the most effective safety feature in your car?

- A. seat belt
- B. front air bag
- C. anti-lock braking system

### 9. Format Items Vertically

The examples below illustrate horizontal and vertical formatting. Horizontal formatting is sometimes preferred because more items can fit on a single page. However, vertical formatting is more visually appealing because it looks less cramped. Students with test anxiety may find horizontal formatting harder to read. As a result, it may confuse students and unfairly lower test scores.

#### Example of Horizontal and Vertical Format

##### Horizontal Item Format:

You draw a card from a deck of 52 cards. What is the chance you will draw a card with an odd number on it?

- A. 36/52    B. 32/52    C. About one half



##### Vertical Item Format:

You draw a card from a deck of 52 cards. What is the chance you will draw a card with an odd number on it?

- A. 36/52
- B. 32/52
- C. About one half



## 10. Edit and Proof Items

Clarity is the most important consideration in editing and proofing items. The first step for editing and proofing items is determining if the central idea is presented clearly. Once the item is edited for clarity, editing to ensure that each item has correct grammar, punctuation, capitalization, and spelling is also important.

## 11. Use Appropriate Vocabulary and Reading Level

MC items are developed to measure knowledge and skills. Some items can even measure aspects of problem solving, critical thinking, and other cognitive abilities. Unless the test is measuring reading comprehension, the test taker's reading level should not affect test performance. Thus, vocabulary and reading level should be simple and at the level of the weakest readers in the group. Unless reading comprehension is a focus of the tests, items should not measure both reading comprehension and the desired knowledge or skill.

## 12. Minimize Reading Time

Items should not be overly wordy. In fact, wordy items tend to lack clarity. Long test items will also require longer administration time. If a fixed testing time is available, wordy items limit the number of items that can be presented. With fewer items, the content area cannot be sampled appropriately. For these reasons, items should be as brief as possible without compromising the item. Both the stems and the alternatives should get to the point and be as brief as possible. In the example to the right, the first item has repetitive wording. The second item eliminates the unnecessary words.

### Example of Minimizing Reading Time

#### Wordy Item:

Effective student grading should probably minimize:

- A. the student's present status.
- B. the student's progress against criteria state in the syllabus.
- C. the student's status relative to his or her ability.
- D. the student's status relative to the class.
- E. the student's progress relative to state standards.

#### Better MC Item:

Which should determine a student's grade?

- A. achievement against stated criteria
- B. status relative to other class members
- C. progress relative to his or her ability



## 13. Proofread and Have Each Item Peer Reviewed

The most important part of item writing is proofreading. Preferably the items are proofread by a peer. Thus, they can be reviewed not only for correct grammar, formatting, spelling, and capitalization, but also for clarity. Even after thorough review, tests will have items with errors. According to Haladyna (2004), if four errors are found in the final review of an item, at least one error was not found. Errors in a test suggest carelessness and negligence. This may lead to the impression of poor test development. This should not be conveyed to a test taker. Additionally, errors may reduce clarity in the item and may distract test takers resulting in unfairly lower scores.

## Stem Guidelines

### 14. Clear Directions

The stem should be written so that the test taker knows the focus of the item immediately. From the stem the test taker should know what situation or problem is presented. In the poor stem below, a test taker would have to review the options to guess what happened to the plant. In the better stem, the clearer directions lead to the expectation that the plant would grow in the direction of the light source.

#### Example of Clear Directions

**Poor Stem:**

A plant in a flower pot fell over. What happened?

**Better Stem:**

A plant growing in a flower pot was turned on its side. A week later, what would you expect to see?



### 15. Include Central Idea

The item stem should always include the main idea. The test taker should always know what is being asked after reading the stem. Failing to put the main idea in the stem may affect the quality of the item. In the example below the poor item does not provide adequate information while the second is more direct, asks a question, and provides plausible options.

#### Example of Including the Central Idea

**Poor Item:**

Corporal punishment:

- A. has been outlawed in many states.
- B. is psychologically unsound for school discipline.
- C. has many benefits to recommend its use.

**Better Item:**

What is corporal punishment?

- A. a psychologically unsound form of school discipline
- B. a useful disciplinary technique if used sparingly
- C. an illegal practice in our nation's schools



## 16. Make as Brief as Possible

Lengthy items increase administration time. Thus, it is a good idea to keep the stems as brief as possible while still including all of the necessary information. The example below shows both lengthy and brief stems.

### Example of Brevity

#### Lengthy Stem:

Destruction of certain cortical tissue will lead to symptoms affecting our behavior. However, this destruction may lead to symptoms that are due to withdrawal of facilitation in other cortical areas. Thus, the tissue damage affects cortical functioning both directly and indirectly. While such effects may be temporary, what is the typical recovery time?

- A. immediately
- B. several days to a week
- C. several months
- D. seldom ever



#### Brief Stem:

What is the typical recovery time for cortical functioning when tissue is destroyed?

- A. immediately
- B. several days to a week
- C. several months
- D. seldom ever



## 17. Word Positively

The use of negative words in the stem (e.g., not, except, etc.) has negative effects on test takers and their performance. Test takers may have difficulty understanding the meaning of negatively phrased stems. The example below shows the use of EXCEPT in a stem. While this is a popular item format, it is not recommended. This type of item taxes a test taker's working short-term memory. If a negative term is used, it should be in bold type, underlined, capitalized, or all three of these. This is because test takers often read through the **NOT** and forget to reverse the logic required to answer the question. This is why **NOT** shouldn't be used in stems.

### Example of Using "Except"

Each of the following drugs is appropriate for the treatment of cardiac arrhythmia EXCEPT one. Which one is the exception?

- A. Phenytoin
- B. Lidocaine
- C. Quinidine
- D. Propranolol



## Alternative Guidelines

### 18. Develop as Many as Possible, but Three is Adequate

Research is beginning to support the use of three alternatives for MC items. That is, two distracters and one correct answer. However, there is a slight benefit to having as many alternatives as possible, but only if they are plausible and different from each other. As many alternatives as possible should be written, but it is typical to find that only one or two work as intended.

### 19. Only One Correct Choice

Unless the whole test is designed to have test takers choose the best of a correct set of alternatives, and this is virtually never done, then make sure that there is only one choice that is technically correct for each item.

### 20. Balance the Key Position

Item writers have a tendency to place the key as the B or C response options. Also, wise test takers will identify patterns for key responses and use this information when they are in doubt as to the correct answer. For these reasons, the location of the key should be varied. For example consider a 100 item test on which each item has four alternatives. Approximately 25% of the items should have A as the correct option or keyed response. Thus, 25% of the items should have B as the correct option. This applies to options C and D as well.

### 21. Logical or Numerical Order

The alternatives should always appear in logical or numerical order. The example below shows two versions of the same item, first with the numerical order wrong and then with the order correct. Alternative should always be in either ascending or descending order. Also, decimal points should always be aligned. The intent of an item is to test for knowledge, not have the test taker hunt for a correct answer. Doing so only wastes the test taker's time and causes unnecessary stress.

#### Example of Numerical Order

##### Incorrect Numerical Order:

What is the cost of an item that normally sells for \$9.99 that is discounted 25%?

- A. \$5.00
- B. \$7.50\*
- C. \$2.50
- D. \$6.66



##### Correct Numerical Order:

What is the cost of an item that normally sells for \$9.99 that is discounted 25%?

- A. \$2.50
- B. \$5.00
- C. \$6.66
- D. \$7.50\*



## 21. Logical or Numerical Order (continued)

Logical order is more difficult to demonstrate. Logical order of items requires judgment, but alternatives may be ordered based on the order of the information provided in the stem, alphabetically, or by the form of the alternatives.

### Example of Logical Order

#### Alphabetical Order:

Which is the most important consideration in preparing a waxajet?

- A. lubricant\*
- B. O-ring integrity
- C. positioning
- D. wiring



#### Organized by Length:

When an item fails to perform on a test, what is the most common cause?

- A. The item is faulty.\*
- B. Instruction was ineffective.
- C. Student effort was inadequate.
- D. The item failed to match the objective.



## 22. Keep Choices Independent

Alternatives should not be overlapping. These types of options may give clues to wise test takers about the correct and incorrect response. Also, if alternatives have overlapping values or meanings, it is possible that the item has more than one correct answer. Consider the example below. If the correct answer is 25 years of age, then both C and D are correct. This can be corrected by creating ranges that are distinct from each other. These types of errors can lead to embarrassing challenges to test items.

### Example of Non-Independent Choices

What age range represents the physical “peak” of life?

- A. 11 to 15 years of age
- B. 13 to 19 years of age
- C. 18 to 25 years of age
- D. 24 to 32 years of age
- E. over 32 years of age



### 23. Similar in Content and Grammatical Structure

Alternatives should be similar in content. Alternatives that are different in content provide a clue to the test taker. These cues are not the intent of the item and are an unfortunate accident. To avoid this situation, the alternatives should be similar in content. In the example provided below, the correct answer, B, is different from the other alternatives. It is the only alternative that mentions beta burns and therefore provides a clue to the test taker.

#### Example of Content Clues

The treatment of beta burns depends on the nature and seriousness of the injury. If no physician is available, Beta burns should be treated just like other burns. After all fallout is removed, such burns should be bandaged, and salves and jellies should be used to protect the wound.

According to the paragraph, which statement is most correct?

- A. All minor burns should be treated by a physician.
- B. Beta burns should be treated similar to heat burns.
- C. Radioactive burns should be covered with salves and jellies for protection.
- D. Fallout should be removed from all burns.



Alternatives should be similar in grammatical structure. Alternatives that have different grammatical structure provide a clue to the test taker. Several examples are

provided below. In the first example, because the stem ends with “an,” the correct response must begin with a vowel. Thus, even a test taker who does not know the answer could use the clues to answer the item correctly. In the second example, the article “a” in the stem indicates that the correct response is singular. Therefore, a wise test taker could rule out A, C and D as correct answers.

#### Example 1 of Grammatical Clues

##### Poor Item:

An example of an extinct animal is an:

- A. sloth
- B. Eskimo curlew
- C. gorilla
- D. baboon



#### Example 2 of Grammatical Clues

##### Poor Item:

Penicillin is obtained from a:

- A. mold
- B. bacterium
- C. coal-tars
- D. tropical trees



##### Better Item:

From which of the following is penicillin obtained?

- A. mold
- B. bacterium
- C. coal-tars
- D. tropical trees



## 24. Equal Length

The length of the alternatives should be kept about the same. Item writers tend to make the correct choice the longest. This should be avoided. Generally this occurs because the stem and correct answer are written and then the distracters are written quickly to complete the item. In the example below, the keyed response for the poor item, D, is longer and more detailed than the other alternatives. A test taker without knowledge of the subject matter would likely choose D because it is more detailed than the other options. The better item fixes this problem.

### Example of Length of Alternatives

#### Poor Item:

Which of the following organizational development interventions is designed to improve the effectiveness of individuals?

- A. process consultation
- B. team building
- C. survey feedback
- D. education and training designed to increase skills in the areas of decision-making, problem-solving, and goal setting



#### Better Item:

Which of the following organizational development interventions is designed to improve the effectiveness of individuals?

- A. process consultation
- B. team building
- C. survey feedback
- D. skills training



## 25. Avoid “None of the Above” and Never use “All of the Above”

It is easy to use “none of the above” as a final alternative. However, the research on the usefulness of these options is mixed and controversial. Some researchers support the “none of the above” format in that it forces test takers to solve the problem rather than choose the correct answer. Thus, it may be useful for math problems. “None of the above” should be used sparingly. If it is used, it should be the correct answer an appropriate number of times. For example, if 4 items use “None of the above as an alternative. At least one of the items should have “None of the above” as the correct response.

Never use “all of the above.” The use of this as an alternative is controversial. Item writers sometimes use it because it is easy to identify one, two, or even three correct answers. But using this choice may help wise test takers. That is, a test taker with partial knowledge may identify two choices as correct, but not the third. The test taker could then choose “all of the above” as the correct choice. The use of “all of above” seems to assess test taking strategies rather than the knowledge the item was designed to measure. For this reason it should be avoided.

## 26. Phrase Positively

Just as stems should be phrased positively, so should the alternatives. The use of negatives such as NOT and EXCEPT should be avoided. These words have inappropriate negative effects on test takers and their performance. Test takers may have difficulty understanding the meaning of negatively phrased sentences.

## 27. Avoid Giving Clues to the Correct Answer

The following clues tip off test takers to the correct answers:

- **Specific determiners:** Specific determiners include the terms always, never, totally, absolutely, and completely. These are so extreme that they are seldom the right answer. If the use of one of these is appropriate for the right answer, be sure at least one of the incorrect alternatives also contains one.
- **Clang associations:** Clang associations occur when a word or phrase is used in the stem and it also appears in an alternative. Usually this alternative is the right answer. If it is not, the item might be a trick question.
- **Blatantly absurd, ridiculous options:** When trying to develop a third or even fourth alternative it is tempting to develop an absurd or ridiculous choice as either humor or out of frustration. In either case these alternative will not be chosen. Distracters that are not plausible are useless.

An example of each clue is provided on the right.

### Examples of Giving Clues

#### Item with a Specific Determiner:

Which of the following does research on homework support?

- A. Never assign homework on Fridays.
- B. Homework should be consistent with class learning.
- C. Always evaluate homework the next day.



#### Item with Clang Association (tax):

What is the purpose of the tax table? To help you determine:

- A. your gross income.
- B. the amount of tax you owe.
- C. your net earnings.
- D. your allowable deductions.



#### Item with Ridiculous Distracters:

Who is best known for contributions to microelectronics?

- A. Comedian Jay Leno
- B. Robert Sveum
- C. Actor Bruce Willis



## 28. Make all Distracters Plausible

The incorrect answers must be plausible. Plausibility refers to the idea that the test takers with a high degree of knowledge should answer the item correctly. However, test takers with little knowledge should answer the item incorrectly. A plausible distracter will look right to a test taker who does possess the required degree of knowledge. Thus the incorrect options “distract” the less knowledgeable test taker.

Once a quality stem is written, the effectiveness of a test item depends on the quality of the distracters. The series of examples provided to the right shows this principle. In the item with very poor distracters, a test taker with no knowledge of history could correctly answer the item. This is because the only plausible option is C, Franklin D. Roosevelt, because the remaining options are a well known cartoon character, an actor, and an author. The item with poor distracters is a slight improvement because at least all of the options are or were presidents. However, even test takers with limited knowledge could rule out B, Barack Obama, and C, George Washington. Obama can be ruled out because he is the current president. George Washington can be ruled out because most people know he was the first president. A test taker with limited knowledge could rule out Andrew Jackson because he was the 7<sup>th</sup> president and known for creating the modern Democratic Party; which must have been a long, long time ago. The better item has the best distracter as the options are all presidents who were not very recent or very early presidents. In fact, the options were the 30<sup>th</sup>, 31<sup>st</sup>, 32<sup>nd</sup>, and 33<sup>rd</sup> presidents.

### Examples of Distracter Plausibility

#### Item with Very Poor Distracters:

Who was the thirty-second United States President?

- A. Mickey Mouse
- B. David Hasslehoff
- C. Franklin D. Roosevelt
- D. Anne Frank

#### Item with Poor Distracters:

Who was the thirty-second United States President?

- A. George Washington
- B. Barack Obama
- C. Franklin D. Roosevelt
- D. Andrew Jackson

#### Item with Better Distracters:

Who was the thirty-second United State President?

- A. Calvin Coolidge
- B. Herbert Hoover
- C. Franklin D. Roosevelt
- D. Harry S. Truman



## 29. Use Typical Errors of Students to Create Distracters

Good plausible distracters come from a thorough understanding of common trainee errors. These can be identified when a trainer reviews student work products (e.g., reports, documents students write, answers to essay or short answer questions, scratch paper). In these work products, trainees may provide the correct answer and plausible wrong answers that are actual trainee errors.

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## Resources

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### **Handbook for Presenting Local Corrections Core Courses**

<http://www.bscc.ca.gov/programs-and-services/stc/services/stc-forms-and-publications>

### **Lesson Plan Development for Core Courses**

<http://www.bscc.ca.gov/programs-and-services/stc/services/stc-forms-and-publications>

### **SPB Selection Analyst Training Program**

[http://www.spb.ca.gov/training/catalog/selection\\_analyst.htm](http://www.spb.ca.gov/training/catalog/selection_analyst.htm)

### **Testing in Core Courses**

<http://www.bscc.ca.gov/programs-and-services/stc/services/stc-forms-and-publications>

### **Uniform Guidelines on Employee Selection Guidelines**

<http://uniformguidelines.com/uniformguidelines.html>

### **Uniform Guidelines Questions and Answers**

<http://uniformguidelines.com/questionandanswers.html>

### **WRIPAC (Western Region Intergovernmental Personnel Assessment Council)**

<http://www.wripac.org/>

WRIPAC occasionally has one-day item writing courses.

### **Enforcement Guidance: Reasonable Accommodation and Undue Hardship under the Americans with Disabilities Act**

<http://www.eeoc.gov/policy/docs/accommodation.html>