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ABSTRACT

This paper discusses the validity of test preparation practices in the context of large-scale norm-referenced and criterion-referenced tests. It presents a framework for conceptualizing the various aspects of test preparation that includes the basic premises underlying the validity of the practices. Five areas of test preparation are outlined: (1) curriculum and test content; (2) assessment approaches and test formats; (3) test-taking strategies; (4) timing of test preparation; and (5) student motivation. Guidelines and specific test preparation practices related to each of the areas are presented with comments about their appropriateness and ethnical nature. Political factors influencing the test preparation beliefs and practices of educators are described briefly, and some conclusions are suggested. A second purpose of this paper is to expand the relationship between validity-based judgments about appropriate test preparation practices and their implications to the areas of curriculum and classroom instruction. If educators can understand test preparation practices from an instructional perspective, they can more easily integrate appropriate test preparation practices into their regular classroom instruction and focus on student learning rather than raising test scores. The difference between teaching to the curriculum content objectives and teaching to the test depends on the scope of the content domain taught, the focus of instruction, and the content focus of the test forms. (Contains 17 references.) (SLD)

A Framework for Evaluating the Validity of Test Preparation Practices

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A Framework for Evaluating the Validity of Test Preparation Practices

Introduction

The measurement community's last extended discussions of test preparation practices took place in the late 1980's and early 1990's. These discussions occurred shortly after the first round of large-scale basic skills achievement testing when these measures began to be used for accountability purposes. Educators were faced with pressure to raise test scores. Administrators and teachers increased their attention to test preparation and to the burgeoning development of local and commercial test preparation practice test materials.

Several changes have occurred in testing programs and practices since the test preparation discussions of almost a decade ago.

- Most states now have adopted state academic content standards in various subject areas based on standards of national professional education organizations. These standards have been incorporated into most school district curricula and teachers are required to teach to these standards. Many standards include more specific content objectives that represent higher levels of learning than were evident in the basic skills curriculum standards of the 1980's and early 1990's.
- Both norm-referenced tests (NRTs) and criterion-referenced tests (CRTs) have been developed on the basis of the content standards of these national education organizations. As a result, there is a closer alignment between national, state, and district content standards and large-scale assessments than ever before.
- In some states, CRTs have been "extracted" from NRTs by identifying a subset of items in the NRTs that closely match the state content standards and objectives.
- Some NRTs and CRTs now include a combination of selected-response and constructed-response assessment approaches.

This presentation has two purposes. The first is to examine the validity of test preparation practices in the context of large-scale norm-referenced and criterion-referenced tests. A framework for conceptualizing the various aspects of test preparation will be presented including basic premises underlying the validity of the practices. Five areas of test preparation will be delineated. These include (1) curriculum and test content, (2) assessment approaches and item formats, (3) test-taking strategies, (4) timing of test preparation, and (5) student motivation. Guidelines and specific test preparation practices related to each of the areas will be presented with comments about their appropriateness and/or ethical nature that reflect a review of the literature and the basic premises. Political factors influencing educators' test preparation beliefs and practices will be described briefly. Finally, conclusions that address the symposium topic will be offered.

A second purpose of the presentation is to expand the relationship between validity-based judgments about appropriate test preparation practices and their implications to curriculum and classroom instruction. Often test preparation guidelines are written from the measurement perspective. The

guidelines and comments in this presentation are framed to help educators better understand the implications of these guidelines from an instructional perspective. In this way, educators could more easily integrate appropriate test preparation practices into their regular classroom instruction and focus on student learning rather than raising test scores.

Basic Premises Related to Test Preparation Practices

This discussion of test preparation practices will examine the validity of such practices in light of the changes in tests and test purposes and the changing concepts of validity itself. It is proposed that the validity of test preparation practices can be framed with respect to the content and substantive aspects of the construct validity of the assessment (Messick, 1994, 1995). The following are basic premises used to examine the validity of test preparation practices.

- Most large-scale assessments are administered to make reasonable inferences about the students' achievement with respect to a domain of content knowledge and/or skills (Popham, 1991).
- When test scores are intended to represent achievement with respect to a broad domain of content knowledge and skills, test preparation practices should not minimize the accuracy of the inference to the broader domain (Mehrens & Kaminski, 1989; Popham, 1991; Popham, Mehrens & Ryan, 1998).
- Test preparation practices should increase students' mastery of the content domain tested and not artificially increase students' test scores (Mehrens & Kaminski, 1989; Popham, 1991).
- Test preparation practices should not violate ethical standards of the profession; e.g., theft, cheating, lying (NCME Task Force, 1991; Popham, 1991). These practices are often illegal and nullify the validity of students' test results.

Major Test Preparation Areas

The various test preparation practices can be categorized into five areas of test preparation compiled from a review of the literature and extensive field experiences with district and school administrators and teachers. General descriptions of these areas are provided below.

1. **Curriculum and Test Content** Test preparation practices that involve the test content objectives including the national, state and district curriculum standards and objectives on which the test was based.
2. **Assessment Approaches and Item Formats** Test preparation practices that involve familiarizing students with a variety of assessment approaches, (e.g., multiple-choice items, short answer items, extended response, performance tasks) and item formats within each assessment approach (e.g., different types of multiple-choice item formats).

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|-------------------------------|---|
| 3. Test-Taking Strategies | Practices that involve general test-taking or test-wiseness strategies unrelated to specific test item content. |
| 4. Timing of Test Preparation | Practices conducted at various points in time before or during the administration of the test. |
| 5. Student Motivation | Practices related to motivating students to perform their best on the test. |

Each test preparation area will be presented in more detail in the pages that follow. In each area, an introduction is provided, a general guideline will be given, and specific test preparation practices will be listed. Comments about the appropriateness/educational defensibility or ethics/legalities of the practice are provided. To clarify the meaning of the comments, definitions of these terms are given below focusing on undesirable practices.

**Educationally Indefensible/
Inappropriate**

Practices that increase students' test scores without simultaneously increasing student mastery of the content domain tested, i.e., practices that artificially raise students' scores. These practices are not in the student's best interest because inappropriate instructional and other educational decisions may be made on the basis of this inaccurate estimate of the student's achievement (Popham, 1991).

**Professionally Unethical/
Illegal**

Practices which discredit the profession and/or reduce public confidence in public schooling. Some of these practices also violate state test security procedures and may have legal consequences e.g., loss of credentials (Popham, 1991).

The comments about the appropriateness and ethics of the various test preparation practices are closely related to the changing nature and purposes of norm- and criterion-referenced tests. For this reason, several comments may be provided for a particular test preparation practice. Multiple comments may be needed because the appropriateness of the practice may *depend* on different circumstances such as the type of test (NRT or CRT) or the size of the content domain assessed in the test form.

1. Curriculum and Test Content Preparation Practices

This area of test preparation involves practices related to the curriculum standards and/or content objectives on which tests have been developed. Before presenting the general guideline and comments about particular test preparation practices, it is useful to examine the meaning of certain phrases used in describing content-related practices. Because some measurement specialists and educators use the same phrase to refer to different practices, the phrases and their meaning in this presentation are provided.

Teaching to the Curriculum Objectives	Teaching the objectives or the knowledge and skills in the curriculum content <u>domain</u> defined by the construct.
Teaching to the Test	Teaching/reviewing <i>only</i> the content objectives that are <u>tested</u> and including highly-similar test item content.
Teaching the Test	Teaching the <i>actual</i> content/skills in the items of the test.

Most CRTs and many NRTs assess content that is a part of the national, state, and district curriculum standards and objectives. In many states, teachers are required to teach to the standards and objectives that represent what students should know and be able to do. Thus, regular classroom instruction and assessment which focuses on adopted objectives is test preparation that would include *teaching to the curriculum objectives*.

In examining test content issues, *teaching to the test* can have different impacts on instruction and test preparation practices depending on how the test specifications are configured. Some of the different test configurations are presented below.

Test Configuration	Number of Forms Administered	Content Objectives Sampled	Items in Test	Potential Focus of Test Prep
A	One	Same	Same	Narrow
B	Multiple	Same	Different	Narrow
C	Multiple	Different	Different	Broad

Conclusions about the appropriateness of test preparation practices could depend on the number of test forms that are administered and released as well as the ways in which the objectives and items in the test are sampled. For example, Test Configuration A has the potential impact of narrowing instruction and test preparation since one form of a test that contains the same items is administered annually. This configuration is typical of many norm-referenced test administrations and presents a situation where the most test information is known. Educators can be most tempted to *teach to the test* or even *teach the test* since the test specific content objectives are published and the items can become familiar to teachers who see the test every year.

In Test Configuration B, the same objectives are assessed but by different items. This may have the potential to prompt *teaching to the test* by focusing instruction narrowly on the objectives. However, there is less potential for *teaching the test* since the specific content of the items will not be familiar.

Test Configuration C has the potential to promote a broader focus of instruction and test preparation since different specific objectives are being assessed by different items in any one of the multiple test forms. This configuration provides the least specific test information and thus, educators are more likely to *teach to the curriculum objective domain* because they do not know what objectives and specific item content will be assessed in any given year.

It is important to recognize that test developers also play a role that may result in the narrowing or broadening of instruction and test preparation. The test specifications and the amount of item specification information provided to educators can potentially affect focus of their test preparation practices.

Highly-focused test content instruction and test preparation practices can also have the prospect of *artificially* raising test scores, that is, increasing student scores relative to the specific test content without increasing student learning relative to the broader content domain. If such practices are effective in raising test scores, they can still be educationally indefensible--detrimental and unfair to students who would not have the opportunity to learn other knowledge and skills in a broader content domain. Earlier studies involving some commercially-developed materials (Byrd, 1987; Deaton, Halpin, and Alford, 1987) have shown no decisive or consistent test score gains of students who used such test preparation materials and those who did not. If these materials have not been shown to be effective in raising test scores, then they would not pose a threat to the validity of the test results. However, since these materials are not effective, then the time spent using them could be better spent on regular classroom instruction.

Guideline 1: *Test preparation should be embedded in and focus on teaching the entire curriculum objective domain which may include state content standards and appropriate norm-referenced test objectives* (Mehrens & Kaminski, 1989).

Test Preparation Practice	Comments
<ul style="list-style-type: none"> Teaching, practicing, and assessing the entire domain of content objectives including the test objectives, during regular classroom instruction. 	<p>CRT: Very appropriate and often required if these are state standards/objectives which will be assessed (Mehrens & Kaminski, 1989; Popham, 1991).</p> <p>NRT: Appropriate if the test objectives are also included in the state standards or in the district's curriculum.</p> <p>NRT: Inappropriate if the test objectives are not in the state standards and/or purposely not included in the district curriculum at the grade level tested.</p>

Test Preparation Practice	Comments
<ul style="list-style-type: none"> Developing, teaching, and /or practicing curriculum objectives based solely on the content objectives of the test. 	<p>CRT: Possibly appropriate if the content of the test forms is based on state standards which represent a broad domain of knowledge and skills.</p> <p>CRT & NRT: Inappropriate especially when the test objectives are relatively limited in scope and are intended to represent only a part of the content domain or construct (Mehrens & Kaminski, 1989; Haladyna, Nolen & Haas, 1992).</p>
<ul style="list-style-type: none"> Teaching and/or practicing with actual content on previous forms or items of the test. 	<p>CRT: Possibly appropriate if the previous forms have been released and include a wide range of content from the entire content domain (Killian, 1992).</p> <p>CRT: Inappropriate if the forms have a narrow content focus that would not increase mastery of the content domain tested (Popham, 1991).</p> <p>CRT: Unethical-Illegal if the previous form is not released.</p> <p>NRT: Inappropriate if the objectives of the previous test are not the same for the current test and/or if the objectives are not included in the district curriculum.</p> <p>NRT: Inappropriate if objectives are similar but these forms are all that are used to teach or review.</p>
<ul style="list-style-type: none"> Teaching and/or practicing with highly similar test content on a parallel form (locally- or commercially-developed) of the current test. 	<p>CRT & NRT: Inappropriate and educationally indefensible because such tests could artificially raise students' test scores (Mehrens & Kaminski, 1989; Popham, 1991; Haladyna, Nolen & Haas, 1991).</p>
<ul style="list-style-type: none"> Teaching and/or practicing actual item content on the current form of the test. 	<p>CRT & NRT: Unethical (Mehrens & Kaminski, 1989; NCME Task Force, 1991; Popham, 1991; Haladyna, Nolen & Haas, 1992) and possibly illegal depending on state test security regulations. NOTE: Sometimes unavoidable. There may be a few instances particularly in primary grades when the content related to an objective is very limited, e.g., addition facts with sums to 10. In teaching the objective comprehensively, teachers will be teaching actual test item content (Cohen & Hyman, 1991).</p>

2. Assessment Approach and Item Format Test Preparation Practices

Many large-scale assessments now include a combination of selected-response and constructed-response assessment approaches such as multiple-choice items, short answer items, and extended response tasks. This broadening of the assessment approaches was advanced by educators who advocated closer alignments between instruction and assessment. The expanded variety of assessment approaches has several benefits: different types of content objectives can be measured in ways that yield more valid information about student achievement; and, students have more ways to demonstrate different types of learning through different assessment modes.

Familiarizing students with these assessment approaches and item formats has been generally accepted as an appropriate part of test-taking strategy instruction. However, because test preparation involving assessment approaches is so closely linked to classroom instruction, this area of test preparation is being presented separately from the other test taking practices that will be discussed in the next section.

Using a variety of assessment approaches within classroom instruction has the potential to *enrich* instruction as well as prepare students to take tests that include the various assessment formats. Teachers will have more and different types of information about what students know or don't know. All of this information can be very useful for understanding students' misconceptions and determining more effective ways to reteach the content objectives.

Different approaches and formats can yield different diagnostic information to teachers. For example, well-developed multiple-choice items contain alternatives that represent common student misconceptions or errors. Short answer item responses can give the teacher information about the student's thinking underlying the answer.

Classroom assessments and test preparation instruction should also include a variety of item formats within each assessment approach. For example, students should have the opportunity during instruction to take different types of multiple-choice item formats (including enhanced stimulus formats) that assess different levels of cognition (e.g., comprehension, application, analysis, synthesis, etc.).

Generally, performance assessment approaches such as writing assessment are included in tests because the curriculum objectives specify the performance. Thus, teaching the objective is test preparation involving the performance assessment approach. Students should understand the performance criteria (rubrics) and be able to apply them to their own work. The scoring rubrics operationalize the curriculum content objectives, i.e., the six-trait writing analytic rubric describes various levels of performance of each trait.

Guideline 2: Test preparation practices should involve a wide variety of assessment approaches, e.g., multiple-choice items, short answer items, extended response, performance tasks, especially those that are included in the test (Popham, 1991, Mehrens, Popham & Ryan, 1998). Practices should also include a variety of item formats within each assessment approach, e.g., different types of multiple-choice item formats.

Test Preparation Practice	Comments
<ul style="list-style-type: none"> Administering classroom assessments that include a wide variety of assessment approaches, e.g., multiple-choice items, short answer items, extended response, performance tasks, especially those that are included in the test. 	<p>CRT & NRT: Very appropriate especially if a variety of assessment formats are used. Students will have the opportunity to demonstrate their learning in several ways. Teachers will have more information about how well students understand and can apply their learning in different contexts (Popham, 1991).</p>
<ul style="list-style-type: none"> Administering classroom assessments that include a wide variety of item formats for each assessment approach. 	<p>CRT & NRT: Very appropriate. Students should encounter several different types of multiple-choice or performance tasks. For example, there are different multiple-choice item formats to assess place value concepts or to add whole numbers in vertical columns or horizontal rows or story problems where students have to know how to arrange the numbers.</p>
<ul style="list-style-type: none"> Identifying and teaching students how to apply evaluative criteria (such as rubrics) in performance assessments (Popham, Mehrens & Ryan, 1998). 	<p>CRT & NRT: Very appropriate. The rubrics are part of the task and students should understand what they are expected to know as well as the various "levels" of performance to which they can demonstrate their learning.</p>
<ul style="list-style-type: none"> Administering practice tests with samples of actual item formats used in the test. 	<p>CRT & NRT: Appropriate if item <i>format</i>, not the content, is the focus of the practice. Many large-scale assessments have developed and administer short practice tests just before the subject area test are given.</p>
<ul style="list-style-type: none"> Administering classroom assessments that only contain item formats from the test. 	<p>CRT & NRT: Inappropriate because it places undue focus on particular item formats and limits the ways in which students can demonstrate their learning (Popham, 1991; Haladyna, Nolen & Haas, 1992). Refer to discussion in the introduction to this section.</p>

3. Test-Taking Strategy Preparation Practices

There is general agreement between measurement specialists and educators that instruction in test-taking strategies is important in giving students an equal opportunity to perform -- to demonstrate their learning. These strategies are important for ensuring that all students are familiar with the basics of taking the test and to minimize or eliminate test-taking demands as a source of score variance.

In their book, *A Teacher's Guide to Standardized Reading Tests*, Calkins, Montgomery & Santman (1998) describe how their test preparation attitudes and teaching strategies changed as they went through a process of rethinking their test preparation practices.

"...For a great many progressive reading teachers, the standardized test is the enemy, and this means that test preparation is too...the school or district office would throw a practice test booklet at us and we'd throw all this at our kids...'Test practice is not test preparation.' (K. Tolan)...our test preparation work was at odds with the rest of our curriculum...we had never really considered our most trusted methods of teaching reading to teach children how to read tests..." (pp. 69-71)

The book goes on to describe the reading test-taking strategies they developed and how they incorporated these into their regular teaching. It is important to note that many teaching standards from national educator associations do not advocate drill and practice strategies in regular classroom instruction, particularly when teaching curriculum standards that focus on meaningful learning which students can apply.

Guideline 3: *Test preparation should include instruction in and practice of test-taking strategies* (Mehrens & Kaminski, 1989; Popham, 1991; Haladyna, Nolen & Haas, 1991; Smith, 1991; Popham, Mehrens, & Ryan, 1998; Calkins, Montgomery & Santman, 1998).

Test Preparation Practice	Comments
<ul style="list-style-type: none"> • Teaching test-taking skills not related to test content such as <ul style="list-style-type: none"> - marking answer sheets; - making optimal guesses for certain types of items; - allocating test-taking time. 	<p>CRT & NRT: Very appropriate. Students should be taught test-taking skills to ensure that all students are familiar with the basics of taking a test. (Mehrens & Kaminski, 1989; Popham, 1991; Haladyna, Nolen & Haas, 1991; Smith, 1991; Popham, Mehrens, & Ryan, 1998).</p>
<ul style="list-style-type: none"> • Teaching general strategies related to subject area test and item formats. 	<p>CRT & NRT: Generally appropriate. Subject important in timed tests (Calkins, Montgomery & Santman, 1998).</p>

4. Timing of Test Preparation Practices

Test preparation practices take place at various points in time long before, just before, or during the administration of the test. The recommendation that test preparation practices involving content objectives and assessment approaches and item formats be embedded in regular classroom instruction implies that test preparation can and should take place throughout the school year. Cramming instruction or test preparation a few weeks before the test administration may do more harm than good, especially for lower achieving students.

Guideline 4: *Test preparation should take place throughout the year.*

Test Preparation Practice	Comments
During regular instruction (throughout the year)	
<ul style="list-style-type: none"> Teaching, reviewing, and assessing the curriculum content objectives, including the test objectives, in a variety of assessment approaches and item formats. 	CRT & NRT: Very appropriate (Matter, 1986; Popham, 1991). High-quality teaching and assessment throughout the year are the best test preparation strategies.
In close proximity to the test (e.g., one month to one week)	
<ul style="list-style-type: none"> Teaching and/or reviewing a wide-range of content objectives, (which may include some test objectives) and a variety of assessment approaches and item formats. 	CRT & NRT: Generally appropriate. However, if too much is taught too close to the test, such "cramming" could do more harm than good especially for low achieving students..
<ul style="list-style-type: none"> Administering practice tests that include a wide-range of content objectives and a variety of assessment approaches and item formats. 	CRT & NRT: Generally appropriate. However, if students take "practice tests" involving unfamiliar content, assessment approaches and/or item formats, they may get more confused.
<ul style="list-style-type: none"> Teaching and/or reviewing only the test content objectives. 	CRT & NRT: Inappropriate because this practice can artificially raise students' scores (Michigan Dept. of Education, 1999).
<ul style="list-style-type: none"> Administering review/practice tests that are highly similar parallel forms of the test. 	CRT & NRT: Inappropriate because this practice can artificially raise students' scores. (Mehrens & Kaminski, 1989; Popham, 1991; Haladyna, Nolen & Haas, 1991).
After seeing the items on the test (just before testing)	
<ul style="list-style-type: none"> Teaching or reviewing the actual test content a day(s) before students take the test. 	CRT & NRT: Unethical and generally illegal (e.g., Michigan Dept. of Education, 1999; Ohio Dept. of Educ., 1999).
<ul style="list-style-type: none"> Administering practice items that are the actual items in the test. 	CRT & NRT: Unethical and generally illegal (e.g., Michigan Dept. of Education, 1999; Ohio Dept. of Educ., 1999).

5. Student Motivation Test Preparation Practices

Educators and parents are often involved in trying to get their students motivated for school events such as athletic or academic Olympiad competitions. Motivating students to take the test seriously is at least as critical.

Many teachers can tell us that when students are not motivated to take tests they often complete a test quickly or mark answers randomly without really trying or thinking about their responses to the questions. Some students stop responding when they encounter a difficult item. Teachers and parents can do much to help students better understand what tests are about and to encourage them to do their best and complete the test.

Guideline 5: *Test preparation practices should help students understand the importance of doing their best on the test without feeling inappropriately pressured.*

Test Preparation Practice	Comments
<ul style="list-style-type: none"> • Discussing the importance of tests with students. 	CRT & NRT: Generally appropriate if the importance is not over-emphasized so students get anxious about taking the test (Nolen, Haladyna & Haas, 1992).
<ul style="list-style-type: none"> • Encouraging students to do their best and to persevere in completing the test. 	CRT & NRT: Generally appropriate if students feel comfortable about what's expected of them.
<ul style="list-style-type: none"> • Telling students and/or sending notes home to parents about getting a good night's sleep and having breakfast. 	CRT & NRT: Generally appropriate (Smith, 1991; Nolen, Haladyna & Haas, 1992).
<ul style="list-style-type: none"> • Encouraging attendance during testing week. 	CRT & NRT: Generally appropriate (Nolen, Haladyna & Haas, 1992). If students are sick or there is a legitimate emergency, then arrangements could be made for students to take a "make-up" test.
<ul style="list-style-type: none"> • Having school pep rallies to promote student motivation to do well. 	CRT & NRT: Generally inappropriate. Such activities can place undue emphasis on testing and decrease instructional time.
<ul style="list-style-type: none"> • Telling students that their school can get an incentive award if they do well. 	CRT & NRT: Inappropriate. This kind of motivation takes the focus off learning and create too much pressure on students to do well.

Test Preparation Contexts - A View from the Field

Several studies have shown that some educators and measurement specialists don't always have a common view about the appropriateness or ethical nature of test preparation practices. (Gonzalez, 1985; Mehrens & Kaminski, 1989; Haladyna, Nolen & Haas, 1991). In trying to understand, not necessarily agree with the beliefs and practices of these educators, it is important to consider the social and political contexts of testing and the use of test results. Both have an impact on educators' beliefs about the importance of tests, their roles in addressing the mounting pressures of accountability, and their test preparation views and practice. These contextual realities and their relationship to test preparation practices include the following.

- High-stakes use of test results can produce extraordinary pressure on administrators and teachers to raise students' test scores. Some examples of high-stakes uses of test results include graduation or promotion decisions, money from school incentive awards, or having the school and districts scores published in the newspapers
- Teachers' and administrators' knowledge and beliefs about the usefulness or validity of the test can influence the kinds and amount of test preparation practices they think are warranted and appropriate.

For example, Smith (1991) concluded from her study that "teachers see fundamental discrepancies between true educational attainment and information conveyed by test score indicators...Because of these limitations and distortions, the teachers believed that the scores were 'just a number' or a number so heavily influenced by pupil social class and ethnic group or by transitory emotional or volitional states as to be virtually worthless...because tests are so distinct from ordinary instruction, teachers believed that test preparation is the only control they can exert over test scores...Teachers used *Scoring High on the ITBS* because they believe that it is the most effective and efficient method of test preparation, at the least cost of time stolen from ordinary instruction" (pp. 538-540).

Summary and Conclusions

In summary, the difference between *teaching to the curriculum content objectives* and *teaching to the test* depends on the scope of the content domain taught, the focus of instruction, and the content focus of the test forms. Classroom instruction which focuses on the objectives of the entire curriculum domain is not only recommended as appropriate test preparation, it is also required by many states that administer standards-based assessments. On the other hand, focusing regular classroom instruction and practice only on the test content objectives is considered to be inappropriate. It could artificially raise test scores and decrease the validity of the test results and resulting inferences and decisions made on the basis of these results. In addition, this narrowing of instruction is also unfair to students who may not have the opportunity to learn the larger content domain. *Teaching the test* is regarded as unethical and illegal by most states' test security policies.

There are still dilemmas about test preparation that conscientious teachers and administrators raise. The higher the stakes of the results, the greater the dilemmas. For example, imagine the feelings and thoughts of a high school teacher who has a conscientious student with an otherwise acceptable academic record who has failed a high school graduation test by only one or two points and has only one more opportunity to take the test. What might be the focus of test preparation that this teacher is

considering as he or she reviews the larger issues involved? Hopefully, educators will address these dilemmas by making more informed and deliberate judgments about test preparation practices based on the context of the testing situation and the curriculum-, instruction-, and measurement-related comments in this presentation.

This presentation has attempted to provide a educators with a bridge between the validity premises on which the test preparation comments are based and the implementation of appropriate preparation strategies in classroom instruction. Many teachers believe that test-ing and test preparation take valuable time away from regular classroom instruction. They often see test preparation assomething they do separately from instruction for a period of time before the test administration. Figure 1 below portrays this point of view.

Regular Classroom Instruction	Test Preparation	Test Adm.
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Figure 1. Test preparation separate from regular classroom instruction.

A major recommendation of this presentation is that high-quality teaching of the content objectives and item formats during regular classroom instruction is test preparation of the "best" kind and minimizes the need for extended test preparation. Figure 2 below represents this point of view.

Regular Classroom Instruction (Test Preparation)	Test Prep	Test Adm.
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Figure 2. Test Preparation embedded in regular classroom instruction.

Also emphasized in this presentation is the idea that general test-taking strategy *instruction* throughout the year is more important and can be more effective in enhancing student learning than test *practice* that seeks to raise test scores through strategies such as drill and practice. Embedding this test-taking strategy preparation in regular classroom instruction was also recommended.

In considering the title of this symposium, "Instructionally Corrupt Test-Preparation: Can It Be Detected or Deterred, " we should again to return bridge between validity-based measurement guidelines and the implementation of these in schools and classrooms. Too often, it is the psychometricians examining "anomalies" in test data who end up detecting inappropriate or unethical practices. This is important if teaching the actual test item content is involved. However, there are many situations in which administrators and teachers may, unknowingly, be teaching to the test because they are not fully informed or do not understand the measurement as well as the curriculum and instructional aspects of test preparation. Hopefully, the concepts, guidelines, and comments presented here can help administrators and teachers better detect both the appropriate and inappropriate test preparation practices they advocate and use. Understanding the critical link between test preparation and high-quality teaching may help educators refocus their efforts on finding ways to better understand the curriculum objectives and expand their repertoire of teaching strategies that truly increase student learning.

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