

# The Case for Content Specificity

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## INTRODUCTION

SINCE THE PASSAGE OF THE No Child Left Behind Act (NCLB) in 2001, states have focused primarily on testing basic reading and math skills and devalued rigorous content. Although policy debates about the appropriate degree of content specificity in state standards appear to have largely died down, recent calls for “fewer, clearer, higher” standards may yet resuscitate them.

This report, which examines the curriculum and assessment practices of nine of our international competitors, suggests that high-performing countries have very specific content standards in a wide range of liberal arts subjects. Interestingly, these nations’ students perform admirably on international math and science assessments even though their education does not appear to focus exclusively on those subjects. Perhaps it is time to take another look at why we in the United States remain so fearful of specifying clear expectations for teachers and students: not just for basic reading, math and science skills, but also for literature, history, and other aspects of a full liberal arts curriculum.

The most recent comprehensive review of state standards from the Thomas B. Fordham Institute (2006) finds that states “still produce vague platitudes instead of clear expectations. Knowledge is still subordinated to skills.”<sup>1</sup> At the same time, states that *do* maintain content-specific standards *and assessments* actually perform well on the rigorous National Assessment of Educational Progress (NAEP).<sup>2</sup> A recent study also reveals that Massachusetts 4th grade students ranked fourth when compared with countries taking the 2007 Grade 4 Trends in Mathematics and Science Study (TIMSS-4 assessment).<sup>3</sup> Is it possible that resisting content specificity in standards and assessments is a critical but overlooked aspect of stagnant student achievement both within the U.S and internationally?

Two critically important questions emerge in a policymaking climate teeming with calls for “international

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benchmarking” and murmurs about the subsequent development of voluntary common standards—and perhaps tests. How can we expect our students to compete internationally if our competitors are holding students to very specific academic expectations while U.S. teachers must infer from vague standards what students must actually know and be able to do? How should we delineate and communicate our academic expectations to teachers who must in turn apply them to students? Many suggest that we should learn from the practices of high-performing countries. That argument, as the basis for new, “common” standards goes something like this: informed by what we know about how our global economic competitors educate their students, we can enhance our own standards and tests in the same ways to ensure that more kids will graduate from high school “college- and career-ready”—i.e., internationally competitive.<sup>4</sup>

This essay therefore examines, through the eyes of an ex-teacher, the level of content specificity in a sampling of standards and assessments from countries that consistently outperform the United States on Programme of International Student Assessment (PISA). The samples reveal two significant phenomena related to questions about content specificity:

- 1) that many of our international competitors not only detail rigorous, content-specific standards, but also administer content-rich (often high-stakes) assessments; and
- 2) that they offer content-specific standards and assessments in more than just the basic areas tested on PISA and prioritized by NCLB.

Because of their high performance, one might assume

that these countries place an inordinate emphasis on literacy, math, and science. Instead, these samples illustrate that students are exposed to a full complement of liberal arts coursework throughout elementary and secondary school. Perhaps it is even the case that development of deep content knowledge *enhances* literacy, as some research has suggested.<sup>5</sup> At the very least, however, the samples imply that it *is* possible to develop basic literacy and math skills without denying students a content-rich curriculum across the range of liberal arts disciplines.

#### CONTENT VERSUS SKILLS: A FALSE DILEMMA

Despite recent cries about the need for so-called “21<sup>st</sup> century skills” in state standards, often at the expense of true content within a discipline, this sampling of standards and assessments indicates that these high performing countries value a much more content-specific approach to addressing a rich array of liberal arts disciplines and *disciplinary* skills. Important skills of inference and other types of “critical thinking” are obviously assumed in these examples, and would be developed as the natural consequence of good instruction, but it is real content that these countries seem to value most.

**In Japan**, a country that has long outperformed the United States on international comparisons of educational achievement, detailed content is specified. For example, the Japanese standards<sup>6</sup> for science in grades 7–9 (and presumably for other content areas) are divided into two categories, “Purpose” and “Content,” followed a detailed description of content for each “field” (strand):

- A. *Facts and phenomena of matter and energy*
- B. *Physical facts and phenomena*
- C. *Chemical facts and phenomena*
- D. *The relationship between human life and the development of science and technology*

The overall “purpose” of the entire science curriculum for these grades is stated at the outset and immediately implies that the inquiry-based nature of science is meaningless unless inextricably combined with content. The stated purpose is “to nurture the fundamental capabilities and attitudes needed to engage in scientific inquiry, *relating to the facts and phenomena of nature...*” (see page 37, Chapter 4. Science, Grades 7–9). Some version of the statement, “with regard to the facts and phenomena,” is restated in field-specific statements of purpose that precede the content, presumably to make it clear that skills alone will not suffice (see page 37).

As an example of the level of specificity throughout, consider the category of “Chemical Changes,” one of three sub-categories within a set of expectations called “Chemical Changes, Atoms and Molecules” (within strand C, as noted above; (see page 37):

#### (i) *Compounds*

*To conduct experiments to combine two different substances, to discover that the reaction produces a different kind of substance, and to understand that chemical changes can be explained using atomic and molecular models, that the constitution of a compound is expressed using a chemical formula, and that a chemical change is expressed using a chemical reaction equation.*

#### (ii) *Oxidation and Reduction*

*To conduct experiments in oxidation and reduction, and to discover that oxygen is involved in reactions of oxidation and reduction.*

#### (iii) *Chemical Changes and Heat*

*To conduct experiments in which heat is generated by chemical changes, and to discover that chemical changes can involve the generation or absorption of heat.*

Compare the level of rigor and detail in the Japanese standards to the corresponding New Jersey state science standards (seen below) posted on the web for grades seven–eight:<sup>7</sup>

#### B. *Chemical Reactions*

1. *Show how substances can chemically react with each other to form new substances having properties different from those of the original substances.*
2. *Show that in most chemical reactions energy is transferred into or out of a system.*
3. *Demonstrate that regardless how substances within a simple closed system interact, the total mass of the system remains the same.*
4. *Illustrate how atoms are rearranged when substances react, but that the total number of atoms and the total mass of the products remain the same as the original substances.*

The level of content specificity in the Japanese standards conveys a much clearer set of expectations to teachers and students than the New Jersey standards and is typical of other content areas in the Japanese curriculum. Mastery of the standards is critical to success on entrance exams for the best universities, whereas most states have not historically assessed science. The level of detail in Japan is particularly impressive, yet content specificity is also evident in the samples from Finland, the Netherlands, Canada, Finland, Switzerland, and Korea.

**In the Netherlands**, a sample high school exit history exam for the college-bound reveals a remarkable level of content-based expectations for the study of history, assessed with both multiple choice questions and rather

complex open-ended questions. The questions require the skills of historical analysis, such as the examination of primary and secondary sources, but *always and clearly grounded in actual historical content that had to have been learned in order to answer the questions successfully.*

For example, consider the following presentation of a primary source and the source-based questions that follow (see page 68):

### Source 3

*In an 1899 plea in the magazine “De Gids,” C.Th. van Deventer argued in favor of paying off the “debt of honor” owed to the Dutch East Indies, primarily through (wealth) taxes paid by the more affluent Dutch people.*

*Let me then remind (the Dutch taxpayers) that in the Netherlands, the prosperity of the upper classes to which they belong is very closely related to the preservation of our colonies in the Dutch East Indies, and that there is no better way to ensure this preservation than a policy of justice and fairness. Only then will we be able to secure a long-term power unmatched by even the strongest landing forces: the respect, the love, and the loyalty of Insulinde’s large population. It is not too late yet: A large majority of natives is content (or at least not discontent) under Dutch rule, and does not know any better. But even in Indonesia, “les idées marchent” (ideas will spread) among the native population!*

### 7. Use Source 3.

*A Statement:*

*Van Deventer is considered one of the originators of the Dutch Ethical Policy. Nevertheless, based on this fragment, the Dutch government that introduced the Ethical Policy around 1900 would have objected to Van Deventer’s view. Explain:*

- *what Van Deventer viewed as a motive for changing the colonial policy, and*
- *with which motive the Dutch government of that time responded.*

Note that the question requires factual knowledge and deep understanding of the “Dutch Ethical Policy.” Both the interpretation of the excerpt and the required explanation of the Dutch government’s proposed objections demand that students must have learned and analyzed the competing motivations that may have driven both the author of the source document and the Dutch government to support the same “Ethical Policy.” Without specific content knowledge, other skills of historical analysis required here are ineffectual. The vast majority of the exam questions are document-based and content-specific.

In a similar example from the high school exit exams for history and literature in **British Columbia (BC)** in

**Canada**, actual historical and literary content is essential to success. In the first case, the BC history exam requires students to answer straightforward, factual questions in selected response (multiple choice) formats. While that format has obvious limitations (and psychometricians debate the efficacy of selected response questions for measuring certain outcomes if item design is too complex), these questions function well to check understanding of basic knowledge, such as in the following questions (see pages 19 and 22):

8. Which of the following is an accurate statement about the Russian Civil War?

- A. The White Army was a unified force.
- B. The Treaty of Brest-Litovsk ended the war.
- C. The Red Army had superior morale and determination.
- D. The foreign interventionists controlled the industrial heartland.

22. What was one significant outcome of the Battle of Stalingrad?

- A. Hitler was able to send troops to Italy.
- B. The Russians were forced to retreat eastward.
- C. A second front was established to satisfy Stalin.
- D. Germany was denied access to the Caucasus oil fields.

The combination in this exam of simple selected response questions and demanding constructed response questions indicates that the exam is testing in the aggregate a breadth of rather complex content knowledge. The “Written Response and Evidence” portion of the exam [18% OF THE GRADE], for example, asks students to read five different statements from primary and secondary sources related to the causes of the partition of India (quotations from the British Prime Minister at the time, Nehru, and three secondary history texts). The required responses demands that students answer the following question (see page 23):

*To what extent were Muslims responsible for the partition of India? Refer to the five documents provided, as well as other historical evidence.*

Further details about how the exams are evaluated are ultimately essential for determining the real rigor of a constructed response (e.g., required length of the essay, criteria are for evaluating, such as for content? for style? for neatness?), yet it remains easy to see that the question itself demands the prior acquisition of real historical content knowledge, as well as the ability to marshal that information to form an historical analysis.

Finally, the exam includes an essay question (see page 24), for 27% of the grade, the response for which must:

- *develop a thesis*
- *use examples throughout the history of the period 1917–1991 and*
- *develop both sides of the argument*

A choice of two questions follows:

1. To what extent did totalitarianism reduce the quality of life for the average citizen throughout the period 1917–1991?

OR

2. To what extent have individual leaders in democratic states been successful in gaining popular support for their actions and policies throughout the period 1917–1991?

While they are open-ended questions indeed, they certainly require specific historical knowledge, and appear to comprise—in combination with the specific questions asked in the multiple choice section—a content-rich exam on twentieth century world history.

Turning to the grade 12 English Literature exam sample for British Columbia, it is easy to recognize a similar format and comparable level of detail requiring specific *literary* content knowledge. Selected response questions ask straightforward questions about specific works of English literature and specific terms of literary analysis (see pages 25 and 26):

*In “On His Blindness,” which metaphor does Milton use to represent his literary powers?*

- A. a talent
- B. a yoke
- C. a kingly state
- D. the dark world

AND

*“The guests are met, the feast is set”*

*Which literary technique is used in the above quotation?*

- A. aside
- B. caesura
- C. apostrophe
- D. cacaphony

The second section, a seven-question section called “Recognition of Authors and Titles,” requires students to identify the author of the quotation or the title of the work from which the excerpt is taken, as in (see page 29):

*“The land’s sharp features seemed to be The Century’s corpse outleant.”*

- A. “The Hollow Men”
- B. “The Darkling Thrush”
- C. “The Second Coming”
- D. “Because I Could Not Stop for Death”

As in the history exam, selected response questions are mixed with constructed response questions to create a rigorous exam that addresses a full complement of content knowledge in English literature. Part C is a written (25-minute) response to a question on Shakespearean drama and references specific passages from three

different plays. The student chooses the question/passage and must write at least 200 words. All questions would be impossible to answer without specific knowledge of at least one of the three plays. Finally, the 40-minute “General Essay” requires a multi-paragraph essay of 400 words. The task states, “You must refer to at least one work from the Specified Reading List,” which is reprinted in the examination booklet for the student’s reference.

The following, on the other hand, is a sample, released item from a U.S. state high school English exam.

**Read this paragraph from an article about building a picket fence.**

*Once you have the posts, rails, and pickets, the hardest part begins—digging the holes for the posts. Posts should be approximately eight feet apart. Less than that is okay, but it can get expensive when you have to buy more posts. Much more than that can result in a lack of support and make it much easier for a fence to lean or fall over.*

**A paraphrase is a rewording of an excerpt that does not change the meaning or leave out important details. Which of these is a paraphrase of the paragraph above?**

- A *When you have the supplies to build a fence, it is time to begin digging postholes. They should be at about eight-foot intervals. Putting the posts closer to each other won’t be a problem but may cost more. Putting them farther apart can actually make the fence topple.*
- B *When you have the supplies, “the hardest part begins—digging the holes for the posts.” They should be eight feet apart. They can be less but if they are more, the fence can lean or fall over.*
- C *Once you have the posts, rails, and pickets, the hardest part begins—digging the holes for the posts. They should be eight feet apart. Putting them closer is expensive, and putting them farther apart can cause the fence to fall over.*
- D *Once you have gathered your supplies, it is time to dig the holes for the posts. These holes should be eight feet apart. Less than that is okay. Much more than that can make the fence “lean or fall over.”<sup>28</sup>*

It seems reasonable to question the quality, complexity and significance of the chosen passage, as well as the rigor of the demanded task, especially when compared to those that are represented on the Canadian exams.

Even in states where the standards are strong, such as California, it is possible to develop low-level high school exams, such as the California High School Exit Exam (CAHSEE), obviating the need for students to learn the more content-specific, higher order disciplinary skills

detailed in the standards. Following is a reading excerpt from the CAHSEE and a sample released test item associated with it:

*Despite Esperanto's seeming lack of popularity, it is estimated that several million people can speak the language. Many magazines are published in Esperanto, and books—from Shakespeare to Dante—have been translated into Esperanto. Esperanto leagues and organizations help maintain the language and provide interested people with information. Perhaps in the future, Esperanto will find its place as a widely used and accepted universal language.*

**10. Read this sentence from the passage.**

*Learning a new language can be time-consuming, and many people will not take the time to learn one unless they have an inclination to learn languages or see some personal benefit in doing so.*

**What does the word *inclination* mean?**

- A liking
- B voice
- C profit
- D indifference

**12. How does the passage reflect the themes and concerns of the 21st century?**

- A It is about global communication.
- B It describes a particular language.
- C It reinforces the importance of research.
- D It focuses on one person's achievement.<sup>9</sup>

Indeed, what gets tested matters. Some U.S. states have developed content-based “social studies” exams, yet few states require students to pass these exams in order to receive a diploma. Where reading and literature is concerned, it is important to remember that *what we ask students to read matters as much as what we ask them to do* with what they read, as the international samples here—and the performance of those students—suggest.

### A Word About Reading Lists

It is significant to note that four of the nine high performing countries maintain lists that name specific authors and/or texts to be studied:

- Australian territories
- Canadian provinces
- Hong Kong
- New Zealand

Three of those lists prescribe titles and/or authors, meaning the suggestions are mandatory, not recommended. Three other high performing countries on international tests also have reading lists:

- Ireland
- Singapore
- United Kingdom

*...the countries reviewed here also appear to share a belief that requiring students to master basic literacy and math skills is not sufficient for defining a well-rounded curriculum.*

In the United States, owing to perceived fears of overly prescriptive and/or not politically correct enough titles and authors, reading lists have long been controversial and difficult for state authorities to approve. Still, Indiana and Massachusetts (and even California) have developed *recommended* reading lists that are expansive in terms of both literary and informational texts, genres, and cultures. Unfortunately, because these lists are not required reading, they do not carry the weight that could help develop in U.S. students the ability to appreciate and discuss our common literary heritage.

The countries represented here, on the other hand, do not appear conflicted about offering teachers specific guidance about the quality and complexity of required reading. It is worth noting that neither do these countries resist requiring that a specific percentage of that country's literature be included on the list. Further analysis of how other countries determine what students will read in school, particularly those that are much older than the United States, is a much-needed research task in the context of renewed efforts to develop some kind of voluntary national standards. Americans appear to have become disdainful of the idea that we should study and understand our own literary heritage, an important component of cultural literacy that would help nurture good citizens, as perhaps these countries have already determined.

### BREADTH OF LIBERAL ARTS EXPECTATIONS

In addition to maintaining specificity of content, the countries reviewed here also appear to share a belief that requiring students to master basic literacy and math skills is not sufficient for defining a well-rounded curriculum. Nearly all the countries discussed in this essay require students to study the arts, literature, history, geography, and civics in addition to literacy and mathematics. A few of them (Korea, Finland, and the Netherlands) even require the study of religion and/or Ethics. Notably, all require the study of at least one foreign language, if not more, unlike the United States, where only four<sup>10</sup> states require the study of a foreign language for high school exit, a number up from only one state and the District of Columbia just five years ago.

In **Finland**, which ranked second in math and first in science on both the 2003 and 2006 PISA, the required

subjects of study include mother tongue (i.e., Finnish or Swedish) and literature, the other national language, foreign languages, environmental studies, civics, religion or ethics, history, social studies, mathematics, physics, chemistry, biology, geography, physical education, music, visual arts, craft, home economics and “pupil counseling.” U.S. schools, on the other hand, appear to be concentrating efforts to develop “STEM” (science, technology, engineering and math initiatives to make our graduates competitive for highly-skilled and highly-compensated jobs both here and abroad. Requiring the liberal arts does not seem to have precluded Finland from performing well in science and math.

Although they are somewhat broadly worded, the Finnish music standards in grades 5–9, (see page 3), detail music-specific objectives, including performance, as in:

- *Master, as individuals, the basic technique of some rhythm, melody, or harmony instrument so as to be able to play in an ensemble*
- *Know how to listen to music and make observations about it, and present justified opinions about what they have heard*
- *Know how to listen to both their own music and music produced by others, so as to be able to make music together with others*
- *Recognize, and know how to distinguish between, different genres of music and music of different eras and cultures*

The **Ontario** curriculum outlines even more specific expectations for music in a curriculum that also addresses language arts, mathematics, arts education, health education, physical education, science and technology, and social studies. For example, at grade eight, the curriculum specifies such theory and performance standards as (see page 34):

- *Read music appropriate for this grade, showing their understanding of the necessary aspects of notation (e.g., clefs, key signatures);*
- *Identify and perform the major scale in keys that they encounter in the music they sing or play;*
- *Demonstrate the ability to produce the same pitch as others, vocally or instrumentally (e.g., in pairs, in sections, in a large group);*
- *Identify metres and the corresponding time signatures in the pieces they play or sing;*
- *Play or sing music with appropriate articulation and phrasing;*
- *Conduct 2/4, 3/4, and 4/4 time, or a metre in a piece appropriate for their grade, correctly using standard conducting patterns (e.g., indications of*

*upbeats, downbeats, and entries);*

- *Demonstrate understanding of the markings and Italian terms for dynamics, tempo, articulation, and phrasing in the music they play or sing;*
- *Explain the meaning of D.C. al coda, d.s. al fine, and d.s. al coda;*
- *Identify the type of texture in music appropriate for the grade;*
- *Recognize rondo form (ABACA) and theme-and-variations form (A, A1, A2, etc.) in music they perform and hear.*

Canada has ranked in the top ten performing countries in math on the PISA in each administration since 2000, a fact that may lend some support for studies that suggest a correlation between the study of music and a facility with math.<sup>11</sup>

Sample college matriculation exams from **Switzerland** demonstrate that history and geography—among the required content areas—are not necessarily conflated into a social studies curriculum. Alternatively, each of these distinct disciplines carries its own weight among those required, including: one national language (depending on the region, German, French, Italian or Romanic), mathematics, history and political science, geography, science, drawing and design, handicrafts, music, and sports.

Finally, in **Korea**, which has ranked as a top ten performing country in both math and science on every PISA administration since 2000, the national curriculum takes the additional step of delineating *the number of hours* to be devoted to each required content area. It spans a wide variety of liberal arts content areas—beyond literacy, math, and science: Korean Language, Moral Education, Social Studies, Mathematics, Science, Practical Arts (Technology, Home Economics), Physical Education, Music, Fine Arts, and Foreign Language (English). A significant number of hours are devoted both to music and the arts at every level of schooling. More hours are required for Korean language arts than for math in the early grades (through year seven) (see page 11). In years nine and ten, more hours in are required for geography, politics and economics than for either mathematics or science. A teacher in Korea would have no trouble understanding exactly what s/he is accountable for teaching, nor what students must learn in order to succeed in school.

In fact, the countries discussed here include a breadth of study in the liberal arts. In each case they are called out as distinct disciplines, specifically “history,” “geography,” and “civics,” rather than just “social studies,” suggesting that these countries value the disciplinary ways of thinking and the content unique to each of other content areas.

## CONCLUSION

While the samples discussed here do not themselves provide a definitive and comprehensive view of standards-based accountability systems in top-performing countries, they certainly offer a compelling and current glimpse into systems that clearly value content-specific expectations for students in elementary and secondary school. The assessments reviewed all demand specific content knowledge in both history and literature, something that many states in the U.S. have been reluctant to do. Instead, the practice in the U.S. has been to blur the lines among history, civics and geography (into “social studies”) and to prioritize vaguely-worded skills-based standards in language arts instead of requiring the examination of rich literary texts and important expository texts. With so much attention being given to so-called “twenty-first century skills” in the United States, it might be wise to examine what really works in high-performing countries before concluding that defining specific content in standards and holding teachers and students accountable for addressing them is somehow unnecessary or passé.

It is easy to point to other important attributes of the countries’ educational systems that contribute to their success, such as the content knowledge and preparation of the teachers themselves. Other cultural proclivities, such as the importance given to education, may also differ from those that are generally evident in the United States, but if in fact the United States is lurching towards some form of national standards, we would be wise to examine more closely the systems of countries that already have this structure in place. In particular, we should look beyond “standards” and examine curricula carefully, especially the content area requirements, reading lists, and the relative emphases in hours of study required at various grade levels. It appears that our competitors value a broad and rich liberal arts education, rather than just literacy and math, where the priorities in the U.S. have shifted in recent years. The liberal arts approach does not seem to have disadvantaged these countries in internationally tested subject areas, and it may indeed be worth studying whether the liberal arts approach might be part of the reason for their success.