



# Standard 8: High School Content

## What consumers need to know about teacher preparation

To learn more about how programs are scored on this standard, including how individual indicators are satisfied, please see its [scoring methodology](#).

### Background

High school teachers should have a deep understanding of their content area. Under the federal No Child Left Behind statute, “highly qualified” high school teachers must have a major in the subject they teach or pass a rigorous test in that subject. Further, there is direct research indicating that sufficient coursework preparation in mathematics and science makes high school teachers more effective.

Ideally, all high school certifications would require adequate state licensing tests that ensure content knowledge mastery. While a couple of states fully meet that goal, the vast majority come up short.<sup>1</sup> We endorse an academic major for teachers of a single subject. For high school certifications that allow instruction in multiple subjects, we instead require two minors (15 semester credit hours (SCHs) each). These multiple-subject certifications are problematic because, while they require licensing tests, independent cut-scores are not typically provided for each subject area. This standard thus must rely on the evaluation of coursework requirements in states without rigorous testing requirements for all high school certifications.

### Before addressing findings, the following important background information on evaluation procedures should be noted

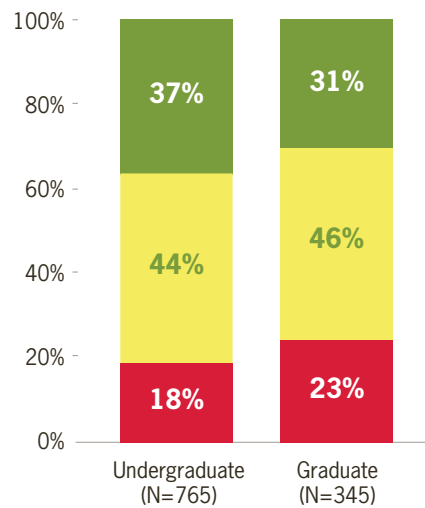
When coursework analysis is required at the undergraduate level, analysts conduct a systematic examination of all courses required for graduation in each of four “pathways” being reviewed: English, mathematics, the sciences and the social sciences. At the graduate level, analysts examine all admissions requirements to verify that content mastery is ensured for applicants to the teacher preparation program who are seeking all certifications available in each pathway.

Each pathway in which certifications are offered by a program is determined to “pass” or “fail” by analysis of all certifications in the pathway offered. The proportion of pathways that pass determines a program’s score under this standard.

<sup>1</sup> For information on each state’s licensing test requirements, refer to the [High School/Secondary Certification Framework Infographics](#)

## Overview

Distribution of scores on Std. 8: High School Content  
(N=1,110 high school programs)



The combination of state licensing tests and program coursework requirements ensures that all high school candidates have content knowledge in the subjects they will teach.



The combination of state licensing tests and program coursework requirements ensures that most, but not all, high school candidates have content knowledge of the subjects they will teach.



The combination of state licensing tests and program coursework requirements ensures that only a small share of high school candidates have content knowledge in the subjects they will teach.

The sample of high school programs evaluated under this standard includes all but 18 high school and secondary preparation programs in IHEs in the Review sample offering initial certification. For simplicity's sake and to best complement our references to middle school programs, we refer to both high school programs (grades 9-12) and secondary programs (grades 7-12) as "high school programs." For more information, see our teaching licensing structure information for each state.

Because of differences in the distributions of scores found across undergraduate and graduate programs, findings are reported separately for each.

## What are common reasons that programs do not satisfy or only partly satisfy the High School Content Standard?

- *Programs do not appropriately limit the subjects within the social sciences that can serve as an area of academic concentration.* Majoring in anthropology is excellent preparation for candidates seeking anthropology certification. However, when anthropology, geography, and sociology are treated as concentrations equivalent to economics, history, political science/government and psychology for a general social science certification, programs are not preparing candidates for the teaching assignments they are most likely to receive.
- *Multiple-subject certifications do not provide adequate content preparation.* Every high school teacher candidate needs to take upper-level coursework in at least two subjects to teach at the level of rigor required to ensure students are ready for college or their ensuing career. To this end, a candidate must be required to take at least 15 SCHs of coursework in two subjects covered under the relevant certification.
- *Graduate programs fail to require or specify undergraduate content area coverage for prospective high school teacher candidates.* Transcript review forms and admissions requirements often fail to specify the content that graduate teacher preparation programs expect applicants to know before enrolling. Without specification, it is unlikely that all candidates will be adequately prepared to teach the subjects for which they will be certified.

## Program findings

### Undergraduate and graduate high school programs (N=1,110)

Programs generally perform well on this standard. Over 35 percent of the programs reviewed fully satisfy the standard by ensuring adequate content knowledge in all pathways through either state licensing tests or coursework requirements. In addition, 45 percent of the remaining programs only partly meet the standard because they are deficient in only a single pathway.<sup>2</sup>

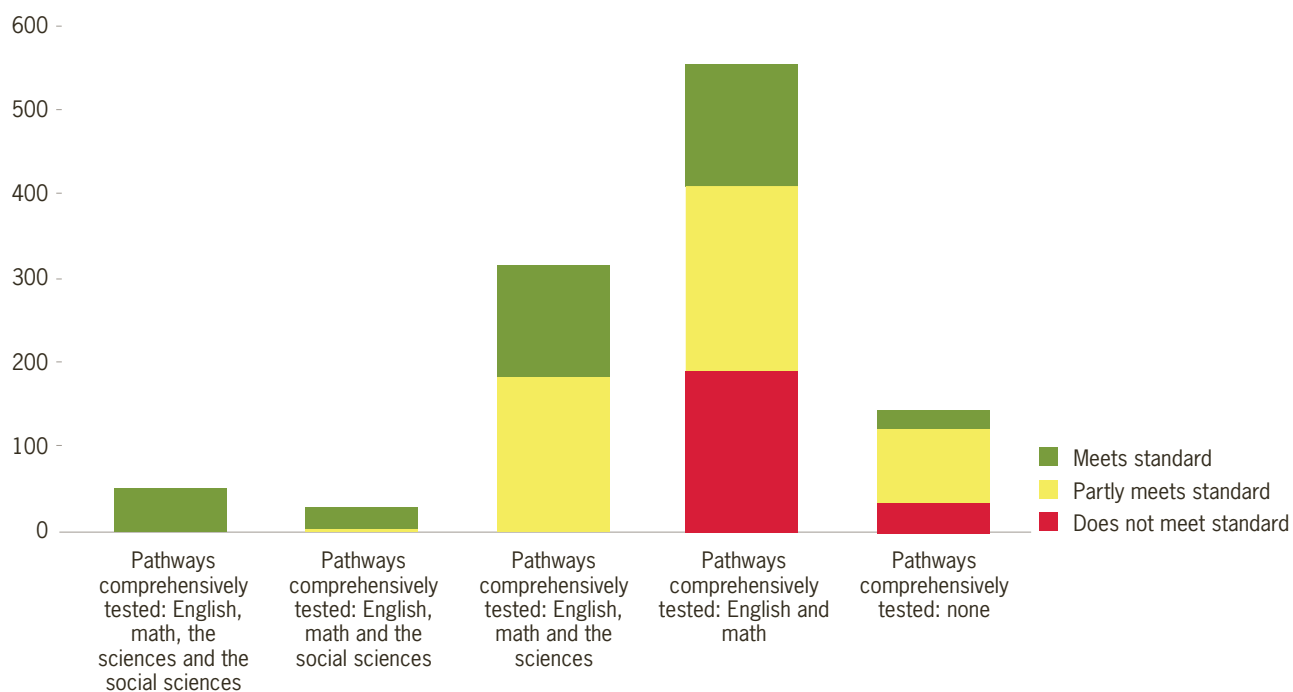
Weak preparation in multiple-subject certifications in the sciences and social sciences pathways is the Achilles heel of secondary preparation. Of the 247 undergraduate programs whose sciences pathway fails, more than 92 percent are inadequately preparing candidates for multiple-subject certifications. In the social sciences pathway, more than 92 percent of the 360 undergraduate programs that fail are inadequately preparing candidates for multiple-subject certification.

State context has a significant impact on program performance as evaluated by this standard. Single-subject pathways automatically pass in states where corresponding licensure tests are required. And because English and math high school candidates are tested in their respective subjects in all but eight states, the vast majority of English and math pathways pass. Program scores will therefore tend to vary according to each state's approach to the certifications and testing requirements in the sciences and social sciences pathways, as these certifications can be single-subject (e.g., "history") or multiple-subject (e.g., "general social studies"). Regardless of the state context, all programs should ensure that teaching candidates gain adequate content knowledge through rigorous coursework requirements.

As the graphic below shows, the overwhelming majority of programs not satisfying the standard are in states that do not comprehensively test certifications in the sciences and social sciences pathways or do not test certifications in any pathways. In addition, almost all programs that partly satisfy the standard are in states where testing in the social sciences pathway is not comprehensive.

<sup>2</sup> This statistic refers to programs offering three or four pathways.

## Relationship between comprehensive testing regulations and program scores on the High School Content Standard



- ✓+ It is incumbent upon programs located in states with inadequate licensing test requirements and multiple-subject certifications in either or both the sciences and social sciences to ensure that teacher candidates know the subjects they will teach.

The following undergraduate high school programs are located in states with inadequate licensing tests in the both the sciences and social sciences pathways, but the programs require sufficient coursework to prepare teacher candidates for multiple-subject certifications in each pathway:

### **Arkansas Tech University**

**Ashland University** (OH)

**Athens State University** (AL)

**Bowling Green State University** (OH)

**Clemson University** (SC)

**Doane College** (NE)

**John Carroll University** (OH)

**Marian University** (WI)

**McMurry University** (TX)

**Miles College** (AL)

**Mount Vernon Nazarene University** (OH)

**Neumann University** (PA)

**North Dakota State University**

### **Northern Arizona University**

**Ohio Dominican University**

**Ohio Northern University**

**Quincy University** (IL)

**Texas State University – San Marcos**

**Texas Tech University**

**University of Akron** (OH)

**University of Central Arkansas**

**University of Mary Hardin – Baylor** (TX)

**University of North Alabama**

**University of Texas – Pan American**

**Utah Valley University**

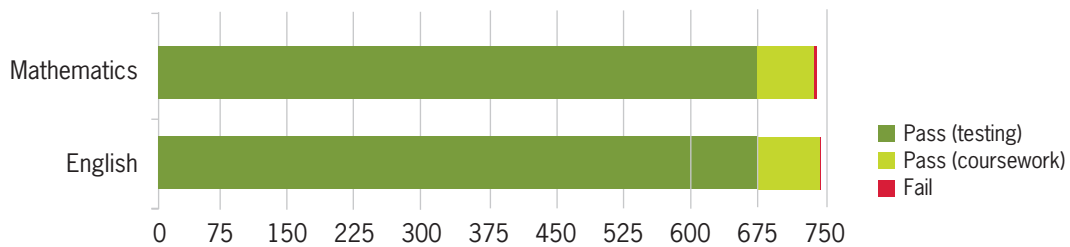
**Viterbo University** (WI)

✓+ **Cleveland State University** (OH) is an exemplary graduate program under the **High School Content Standard**. The program defines specific prerequisite content coursework that must be completed before graduation and these requirements exceed the NCTQ standards in both general science and general social studies certification.

The following graphics provide pathway-specific findings for undergraduate and graduate high school preparation programs. As mentioned earlier, each pathway in which certifications are offered by a program is determined to “pass” or “fail” by analysis of *all* certifications in the pathway offered. The percentage of pathways that pass determines a program’s score under this standard.

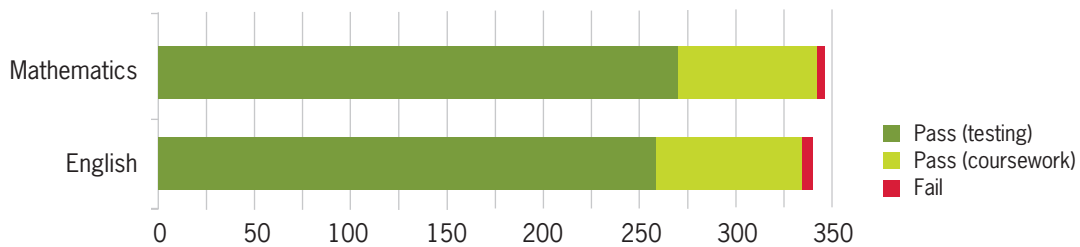
## Mathematics and English Pathways

### Undergraduate Programs



The three undergraduate programs that do not pass these pathways fail to require a full major (30 SCHs) in the subject.

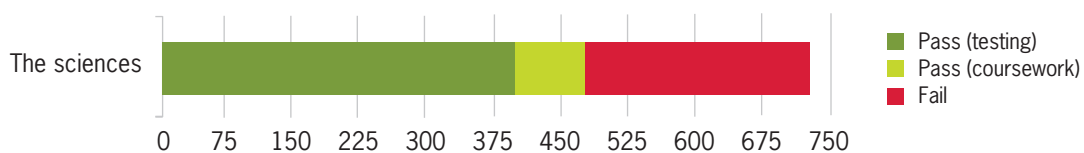
### Graduate Programs



The nine graduate programs that do not pass in these pathways have admissions criteria that specify fewer than 30 SCHs.

## Sciences Pathway

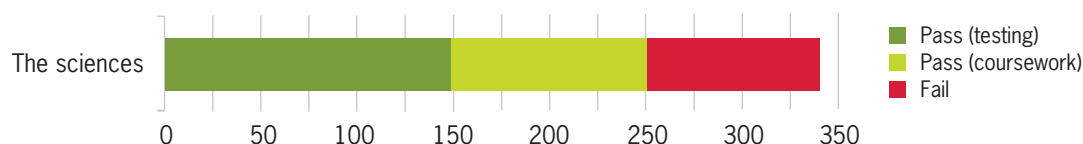
### Undergraduate Programs



The graphic above paints a somewhat misleading picture. Programs with sciences pathways that pass due to licensing tests typically only offer majors leading to single-subject certifications in the sciences (e.g., biology or physics). Of the 70 different multiple-subject certifications offered by 41 states, only 13 certifications require adequate licensure testing.<sup>3</sup> In the review of coursework that is conducted when testing is inadequate, 228 of 247 programs fail due to insufficient coursework requirements for multiple-subject certifications.

<sup>3</sup> Six of the 13 the acceptable licensure tests are found in **Ohio**, which allows combinations of science certifications, but requires that candidates pass a test for each subject covered by the certification.

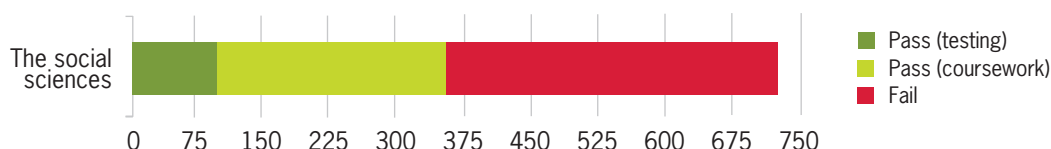
## Graduate Programs



A greater percentage of graduate science pathways than undergraduate pathways pass primarily because of **California**,<sup>4</sup> which does not offer multiple-subject certifications. On the other hand, **California** also does not have required licensure tests for candidates who complete state-approved programs, which explains the increased proportion of programs evaluated by examining coursework requirements.

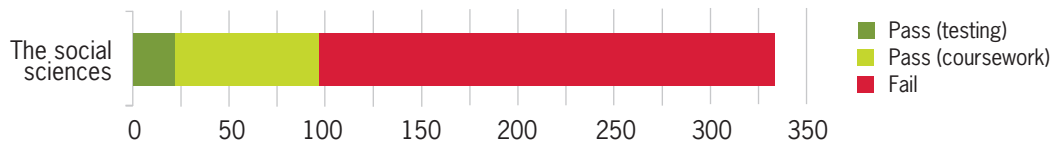
## Social Sciences Pathway

### Undergraduate Programs



While forty-one states have at least one multiple-subject certification in the sciences pathway, 48 states have at least one in the social sciences.<sup>5</sup> Nearly 40 percent of the programs that fail this pathway offer a general social sciences major that requires less than a minor (15 SCHs) in history, when an assignment teaching history is what most teachers with the certification will be given.

### Graduate Programs



More graduate programs than undergraduate programs tend to fail in this pathway because admissions requirements too often specify only that applicants have a “content area major,” without stating the particular major and ancillary coursework that are required for admission. Consequently, the successful applicant may have a major in history, but also could have a major in any other social science subject — even a subject rarely taught in secondary schools, such as sociology.

- 4 The vast majority of **California**'s traditional preparation programs are post-baccalaureate programs, which the *Review* evaluates at the graduate level. The strengths (and deficiencies) in **California**'s certifications are therefore overrepresented in the graduate sample.
- 5 Of the states offering multiple-subject certification in the social sciences pathway, only **California** and **Minnesota** provide comprehensive licensure testing. California, however, does not require that all candidates must take this licensure test.

 National Council on Teacher Quality

1120 G Street, NW, Suite 800  
 Washington, D.C. 20005  
 Tel: 202 393-0020 Fax: 202 393-0095  
 Web: [www.nctq.org](http://www.nctq.org)