



A Closer Look at Elementary Content

Undergraduate Elementary Programs

KEY FINDINGS: Only 5 percent of the 875 programs evaluated ensure that aspiring elementary teachers know the science, history and geography, and literature and composition content they will teach.

Why teacher prep programs should have strong elementary content criteria

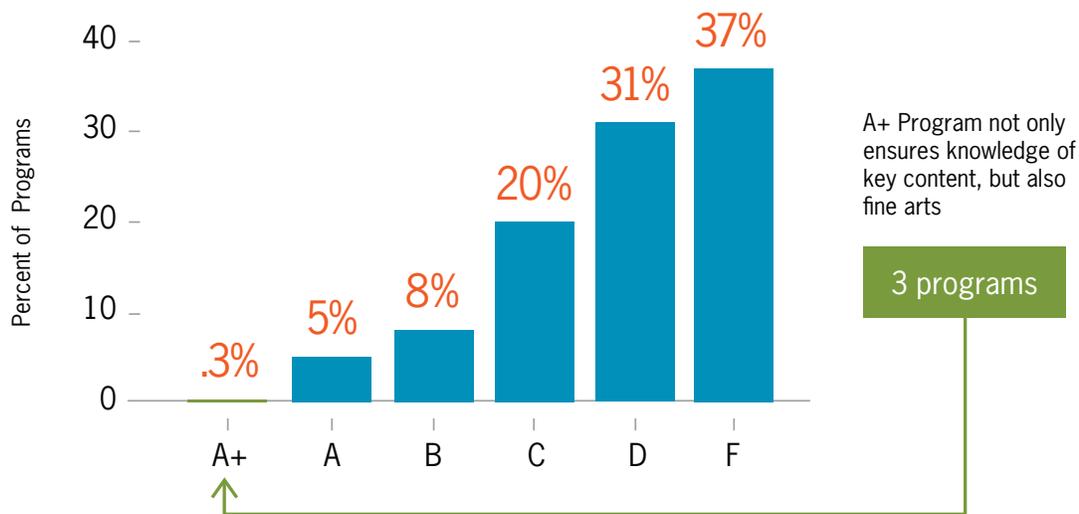
Elementary teachers have to be ready to plan lessons, guide students to understanding, and answer the question “why?” on nearly any topic. In contrast to most middle and high schools, where the teacher primarily instructs in a single subject, elementary classroom teachers teach all the core subjects required for a grade. This is not an inconsiderable task. To teach college and career-readiness standards, teachers must be well-versed in wide-ranging subjects: mathematics, social studies, language arts, and sciences.¹ A fifth-grade teacher, for instance, may have to present the basic concepts of statistics, algebra, and geometry in mathematics; elements of physics, chemistry, and biology in science; as well as tackle literature, reading fluency, American history, and geography. While teaching these content areas is often required, it’s also often the most fun part of the school day for teachers—and their students. These subjects are when students conduct exciting science experiments, learn about fascinating people from history, and read great children’s novels. To prepare a teacher to provide this well-rounded education, elementary teachers’ training should mirror the subjects that they will be expected to teach, in both breadth and depth. To earn an A on this standard, a program should require aspiring teachers to know content across literature and composition, history and geography, and the sciences.²

For more information about analysis and program grades, see the *Methodology in brief* and *Understanding program grades* sections below.

- 1 Teacher prep programs’ coursework in training teachers to teach elementary math is explored in a separate findings report, [A Closer Look at Elementary Mathematics](#). Coursework in training teachers to teach reading is explored in [A Closer Look at Early Reading](#).
- 2 Program-specific course requirements, general education course requirements, and content tests taken prior to admission into the teacher prep program all count toward these content areas. For specific information about the requirement to earn an A, see the section *Understanding program grades* below.

How many programs ensure that elementary teacher candidates learn the content they will be expected to teach?

(N=875 undergraduate elementary programs)



In the *2014 Teacher Prep Review*, 3 percent of programs earned the equivalent of an A on this standard. Since then, the standard has been revised to accommodate more variation in how institutions establish course requirements. In the *2016 Review*, 5 percent of programs now earn an A.

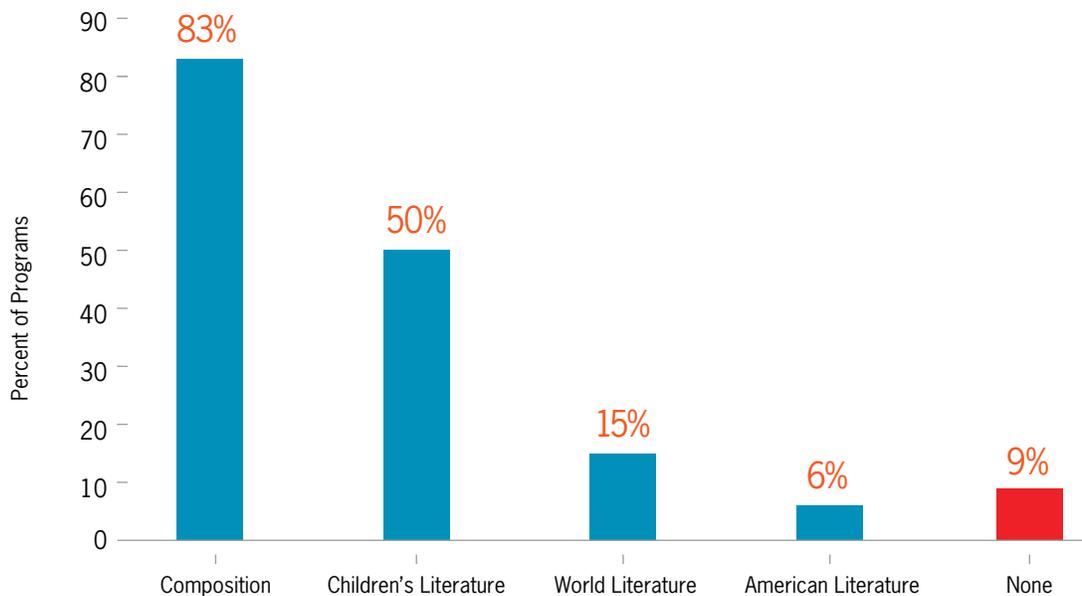
A closer look at undergraduate elementary content subjects

Literature and composition content

The literature and composition content comprises world literature, American literature, composition, and a survey of children’s literature, which should provide a broad-based knowledge in writing and literature for the elementary classroom. Programs should require aspiring teachers to demonstrate knowledge in at least two of these four topics, either through a course or through a test taken prior to admission.³ Half of all programs (51 percent) provide an adequate base in literature and composition, while 39 percent ensure knowledge in only a single topic.⁴ Nearly one in ten programs did not require any literature or composition topics. To count for a topic, courses must be focused on content rather than on methods of teaching. Therefore, courses such as “Teaching American Literature” would not be acceptable.

- 3 For each subject area, programs can also ensure that candidates master content if they require a general knowledge exam with subject-specific scores prior to admission into the program, such as the Missouri Educator Gateway Assessments (MoGEA) or the College Basic Academic Subjects Examination (C-BASE) prior to admission to the teacher education major. Credit was applied only if the programs accepted or exceeded the qualifying score set by the state. Few programs require adequate assessments prior to admission into a program, despite the multiple benefits from doing so. Given that aspiring teachers take much of their content coursework as part of their general education requirements, this content would be at the forefront of their minds if they were to take the coursework prior to admission rather than as they approach graduation. Also, given how much pedagogical and clinical coursework already fills teacher prep programs’ training periods, programs would benefit from verifying that candidates have the content knowledge they need already—partly so that prep programs do not have to give up other courses in order to teach this content, and partly so that candidates do not enter the program if they ultimately will not be able to fulfill its requirements.
- 4 Over 80 percent of the programs in this sample are in institutions that require that all undergraduates, not just education majors, complete at least one composition course.

Programs that ensure candidates have learned literature and composition content



Only a handful of programs chose to require content-based admissions tests prior to admission into the teacher prep program to verify candidates' knowledge of literature and composition content. Of the programs that have ensured that candidates have knowledge in these areas, only 1 percent do so through tests for composition and children's literature, and 3 percent do so for world and American literature.

How could a program not earn any credit for coursework in composition or literature? There are a few reasons. First, programs or the general education requirements may allow teacher candidates to choose from a long list of different courses—when the list becomes too long (we found this point is around seven course options), there is too high a risk that at least one course the candidates could choose would not be relevant or sufficient for teaching elementary school (e.g., candidates can choose from a long list of literature courses that include relevant courses such as American literature and irrelevant courses such as an English course focused on film noir). Second, the scope of the course could be insufficient—for example, it may be too broad (e.g., all literature from all time periods) or too narrow (e.g., a composition course devoted to writing persuasive essays, or a literature course only on the works of Emily Bronte), or it could be religious in nature. In some cases, there is simply no required course—or a prep program may recommend that candidates take a specific course, but not make it mandatory.

The fraction of programs that fail to earn credit for literature and composition tend to do so for a variety of reasons (e.g., there is no composition course or children's literature course, too many options related to world literature, and the American literature coursework is too narrow in scope). However, one in four programs (24 percent) do not earn credit simply because they have no required course in any of the literature and composition topic areas.

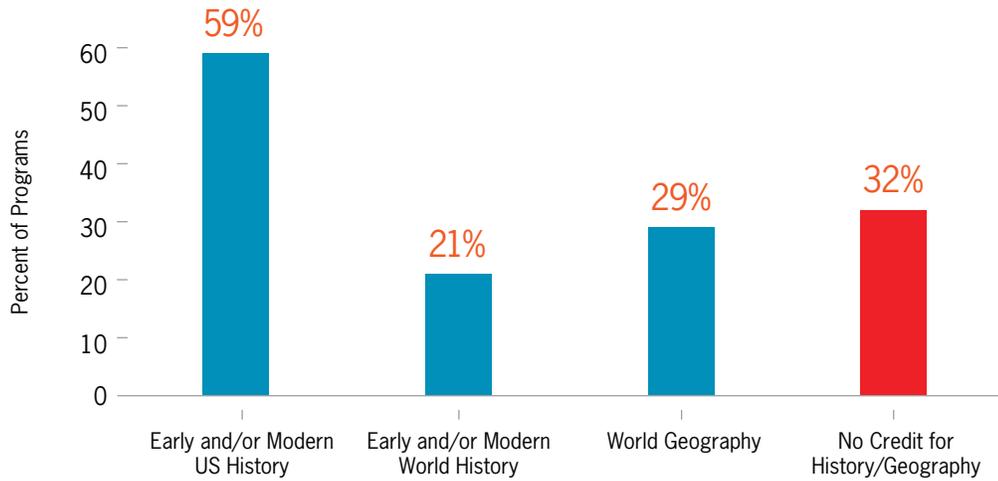
The most common issues actually differ by topic—for world and American literature, programs that do not earn credit are largely split between requiring no course or offering too many options, while for children's literature and composition, the most common issue is that no course was required.

History and geography content

Programs should ensure that candidates have knowledge across five topic areas: early American history, modern American history, early world history, modern world history, and world geography. Eighteen percent of programs require a course or test in at least three of the five topics, which would ensure that elementary teachers have content knowledge in a range of social studies content. The most commonly required topic is American history: fifty-nine percent of programs require at least one early or modern American history course or required candidates to pass a

subject-specific content test before they were admitted into the program.⁵ To count, courses must be focused on content rather than on methods of teaching. Therefore, courses such as “Lesson Planning for Social Studies” are not acceptable.

Programs that ensure candidates have learned history and geography content



Most programs that verify candidates’ history and geography knowledge do so through required coursework; only one percent of programs require a test prior to admission in any of these subjects.

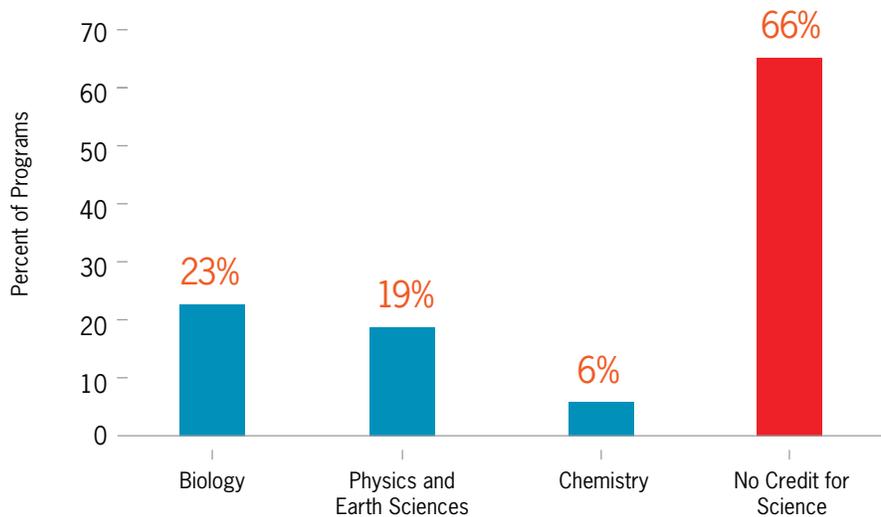
The third of programs that fail to earn credit in history and geography tend to do so for a combination of reasons across topics. However, 25 percent of these programs give candidates too many course options in every topic area, and 20 percent of these programs have no required course in any topic area. In the topics of history and geography, programs were more likely to offer too many options. The one subject where this was not likely to be the main issue was geography, which many programs did not require at all.

Science Content

Teacher prep programs should ensure that aspiring elementary teachers have substantive content knowledge in a range of topics, including biology, chemistry, and physics (which, for the purpose of this analysis, encompasses physical science, geology, earth science, astronomy, climatology, geology, and oceanography). Requiring coursework (including one lab course) or testing in at least two topic areas is considered adequate to ensure that aspiring teachers have the science knowledge they will need—and programs are less likely to meet this point in science than they were in other subject areas. Only 12 percent of programs require teacher candidates to demonstrate knowledge in at least two topics. Sixty-six percent of programs either did not require, or do not receive credit for, even a single science topic (see below for more information). To count, courses must be focused on content rather than on methods of teaching. Therefore, courses such as “Physics for the Elementary Teacher” are not acceptable.

5 For more on admissions testing, see Footnote 3, above.

Programs that ensure candidates have science content



Few programs employ assessments to verify candidates' content knowledge—only 1 percent of programs do so in biology or chemistry, and less than 1 percent do so in physics.

To provide aspiring teachers with the knowledge and understanding derived from hands-on experiences and experimentation in science, programs should require that aspiring elementary teachers take at least one science course that includes or is accompanied by a lab course. In each science topic, programs were more likely to require a course with a lab than one without.⁶

While the lab requirement is prevalent among programs that require science coursework, only one in four programs (28 percent) require even one lab in the sciences. A fraction of these (sixteen programs in total) require a lab course in each of the three science topics.

Two in three programs earn no credit for science content. The most common reason is that candidates have too many course options in every topic area—this was true in more than half of programs (56 percent). In a small number (5 percent), the scope of courses in every topic are insufficient for elementary curricula. Only 8 percent of programs have no required course in any topic area. For biology and physics, the scope of the course is often a problem—many are too narrow, too broad, focused on current events, or offered with a pedagogical focus. In chemistry, the second most prevalent problem was that no course was required.

Programs that promote deeper content knowledge

Some programs require candidates to not only develop a breadth of knowledge across subject areas, but also to build a deeper understanding of a single subject. These programs do so by requiring a dedicated major, minor, or concentration totaling at least 18 credits in a teachable subject or by having at least 18 hours of credit in a teachable subject built into the coursework requirements.⁷

6 In biology, 19 percent of programs require a course with a lab, compared to 4 percent that required a course without a lab; in physics and earth sciences, 14 percent require a course with a lab, compared with 4 percent that require a course without; and in chemistry, 5 percent require a course with a lab, compared to 1 percent that require a course without.

7 There are six disciplines that are considered teachable elementary subjects: English/language arts, social studies, mathematics, science, foreign language, and fine arts (art history or music theory or practice). For social studies and science, at least 12 hours of credit must be within the same discipline. For example, a social studies concentration must require 12 of the 18 hours in history, or a science concentration must require at least 12 hours in chemistry.

A total of 79 programs (9 percent) require this deeper content coursework.⁸ Seventeen of these programs require their elementary teachers to pursue a formal teachable major or minor/concentration of their choosing in addition to their teaching degrees. Sixty-two programs require coursework in teachable subjects that added up to at least 18 hours, the credit hour equivalent of a minor. The most frequent area in which candidates have a de facto concentration is in history and/or geography, in which 35 programs require at least 18 credits of coursework.

Noteworthy test requirements

Some programs require aspiring teachers to pass content tests prior to admission into training programs. Requiring candidates to pass a rigorous content test ensures that the program only accepts candidates who already know the content they will teach, and allows programs to dedicate more time to other fundamental courses, such as classroom management or the science of reading. This requirement is noteworthy because these tests provide a standardized measure of how well aspiring teachers understand content which can be compared across programs and other institutions. This Elementary Content Standard only acknowledges those tests which are required prior to admission into the teacher prep program.

All states require newly graduated teachers to pass one or several certification tests in order to obtain elementary licensure; these tests are generally taken after admission to the teacher prep program. Although the tests vary by state, they serve the same purpose: to ensure that future teachers are proficient in the content they will be teaching. Unfortunately, these states require content tests too late in the teacher prep program. By requiring these tests as a condition of graduation rather than admission, prep programs may have admitted teacher candidates who lack the necessary content knowledge to be effective—but will only identify this deficit after the teacher candidate has nearly completed her undergraduate degree. Furthermore, given that teacher candidates take much of their content coursework as part of fulfilling their general education requirements, prior to entering teacher preparation, it would benefit those candidates to take the content tests sooner when the information is still recent in their minds.

One state, Missouri, is ahead of the curve in requiring that all undergraduate elementary teacher candidates pass the Missouri General Education Assessment (MoGEA) test prior to admission into the teacher education program. However, for the 2015-16 school year, while the state sets the minimum cut scores for Missouri State University institutions, other institutions in the state can set their own cut scores. We awarded credit for literature and composition to the 24 of the 31 programs in Missouri that set their cut scores at or above the state minimum.⁹ As the new state-mandated cut scores fully take effect, all programs in the state should earn credit in literature and composition.

Two programs stand out for their exemplary testing requirements. These programs require candidates to meet state-set passing scores before admission into teacher prep on either all four sections of the College Basic Academic Subjects Examination (C-BASE) or all four sections of the Praxis II exam #5001-Elementary Education Multiple Subjects test. Lewis-Clark University in Idaho and Graceland University in Iowa were awarded perfect scores because of these requirements. All elementary programs could create this same requirement, thereby ensuring that their elementary teacher candidates demonstrate adequate content knowledge.

8 When a program requires 18 credits in a single teachable subject, its score on the Elementary Content Standard increases by one letter grade.

9 These programs were rated in 2015-16 when individual institutions were allowed to set their own scores, some of which were below the state recommendations for passing. Therefore, we only gave credit to those programs that required the state cut-scores. While the Missouri State [website](#) asserts that in the 2016-17 school year, all programs must abide by the state cut-off scores, it still allows teacher candidates to be grandfathered in if they had previously met the institution's own requirement. Further, students must pass all sections of the MoGEA (reading comprehension, writing, mathematics, and science and social studies). Because science and social studies are combined, we only give credit for literature and composition topics.

Providing a well-rounded education in core subjects and the fine arts

Elementary teachers should infuse art and music into all aspects of learning. Programs that require content knowledge in all core subject areas and coursework in the fine arts, or that require content knowledge in most areas and require a concentration, earn an A+.

Commendably, undergraduate elementary programs at three institutions not only provide comprehensive coverage in all three core disciplines, but also require a fine arts course in either music history or art history. These institutions are:

NJ ▶ Kean University

NM ▶ University of the Southwest

TN ▶ Martin Methodist College

Methodology in brief

We review course requirements and descriptions, and admissions requirements regarding licensure tests to determine whether the program ensures that aspiring teachers know the subjects that they will teach. Specifically, elementary teachers need grounding in literature and composition, history and geography, and the sciences (mathematics knowledge is looked at separately). We also consider whether aspiring teachers are required to have a concentration in a subject area that they could teach.

Click [here](#) to read more.

Understanding program grades for elementary content

Each program's letter grade is based on the level of their coverage of topics in literature and composition, history and geography, and sciences. We also examined fine arts, but only to identify "A+" programs. The levels are:

Literature and composition (4 topics)

- Great coverage: 2-4 topics required
- Good coverage: 1 topic required
- No coverage: no topics required

(Note: There is no Poor coverage for Literature and composition)

History and geography (5 topics)

- Great coverage: 3-5 topics required
- Good coverage: 2 topics required
- Poor coverage: 1 topic required
- No coverage: no topics required

Science (3 topics)

- Great coverage: 2-3 topics required, with at least 1 lab required
- Good coverage: 2 topics with no lab, or 1 topic with a lab
- Poor coverage: 1 topic without a lab
- No coverage: no topics required

- A** All subjects have great coverage OR program has an admissions requirement that the applicant pass all sections of an elementary content test. (An example is the ETS Elementary Content: Multiple Subjects test.)
- B** Two subjects have great coverage and one has good coverage.
- C** Two subjects have great coverage and one has poor to no coverage OR one subject has great coverage, one good coverage, and the last has good or poor coverage.
- D** All three subjects have good or poor coverage OR two subjects have good coverage and one has no coverage OR one subject has great coverage while two have poor coverage OR one subject has great coverage, another has good or poor coverage, and the last has no coverage.
- F** Any other combination (e.g., at least two subjects have no coverage OR one subject has good or poor coverage, another has poor coverage, and the last has no coverage).



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