National Council on Teacher Quality

A FAIR CHANCE

An action guide for teacher preparation programs

April 2019

In February 2019, NCTQ released *A Fair Chance: Simple steps to strengthen and diversify the teacher workforce*. That report demonstrated that many elementary candidates are struggling to pass content licensing exams and identified opportunities that prep programs and their institutions are currently missing to shore up foundational content knowledge. This guide provides more detail about steps that prep programs can take, tools to support that process, and examples from real prep programs that have taken action.

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Introduction

Programs that prepare elementary teachers have a daunting responsibility – they are readying the people who will teach children reading and numeracy, build a foundation in STEM and social studies subjects, all while providing many children's first introduction to formal schooling. By rising to this challenge, programs may also help a more diverse cohort of teachers reach the classroom. Given the magnitude of this task, programs may run into a few hurdles along the way. This ***Action Guide*** is designed to help programs address the set of challenges associated with building the content knowledge that teacher candidates need to reach the classroom and succeed once they arrive.

As you dig into this ***Action Guide***, ask yourself:

- Do you want to help bring more teachers of color into the workforce?
- Do a large number of your elementary teacher candidates routinely fail your state's content licensure exam the first time they take it?
- Do your elementary candidates struggle with math anxiety?
- Does your program have to invest resources into test preparation and support?

If you answered "yes" to some or all of these questions, you are not alone. You are facing a systemic challenge shared by programs nationwide.

Of these challenges, building a more diverse teacher workforce may be one of the most complicated – and most important to remedy. Programs are taking many steps to prepare more teachers of color, from active recruitment to providing ongoing support and mentoring. But there's one approach that has gotten too little attention: strengthening candidates' content knowledge, which may help them succeed on state licensing tests.

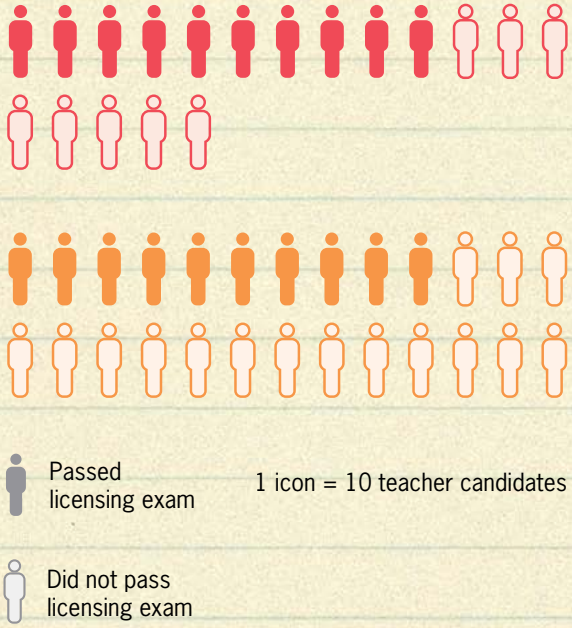
On the most commonly required content licensing test, more teacher candidates fail the test than pass it on their first attempt. It doesn't have to be this way – in other professions, first-time pass rates on professional licensing exams are far higher. For example, 85 percent of nursing candidates pass on their first attempt, as do 69 percent of civil engineers and 89 percent of psychiatrists.[i]

These pass rates are even worse for candidates of color – even allowing for test retakes, only 38 percent of black candidates and 57 percent of Hispanic candidates pass the most commonly required content licensing test.[ii] This means that many of the candidates of color who enroll in teacher prep programs cannot successfully earn a standard teaching license.

Candidates of color who enroll in teacher prep but do not pass licensing exams

To produce 100 Hispanic teachers, a program currently needs to enroll 175 Hispanic candidates.

To produce 100 black teachers, a program currently needs to enroll 263 black candidates.



The problem likely stems from a K-12 education that left large gaps in candidates' knowledge of core content – but teacher prep programs, with the help of their institutions, are in the best position to identify and fill these gaps before sending teacher candidates back into the classroom.

While most undergraduate teacher candidates take *some* content coursework, both through their general education requirements and the requirements of their education major, those courses are not always designed to be aligned with the knowledge that states and districts deem essential for elementary teachers. (For more on the hallmarks of great content coursework for elementary candidates, see below). The problem is even more endemic to graduate programs, which often devote few credits to building core content knowledge and rarely check candidates' content knowledge during the admission process.

Teacher prep programs may not even be aware of their low passing rates.

Programs need to have access to the database created by their state's testing company (ETS or Pearson) and need to know what reports to request and how to interpret them – which is rarely as easy as it sounds. Some programs do not even have direct access to their pass rate data, but instead have to request it from their state. If programs only look at pass rates for **program completers** (and especially if they require passing the test as a requirement to complete the program) and do not look at pass rates for everyone in their program who took the test, they may miss some red flags in their data.

The report *A Fair Chance: Simple steps to strengthen and diversify the teacher workforce* looks at over 1,000 undergraduate, graduate, and alternative route teacher preparation programs and finds many missed opportunities to strengthen teacher candidates' content knowledge.

Graduate programs tend to have fewer content requirements, and no graduate programs in the sample assess candidates' content knowledge at admission into the program. Alternative route programs tend to fare better, largely because most states require candidates to pass a content licensure exam before being admitted into the program.

This resource guide outlines how programs can take an active role in filling in the gaps in candidates' content knowledge, likely leading to greater success on licensure exams and in the classroom. Programs can consider steps such as specifying which general education courses candidates should take to build baseline content knowledge, assessing candidates' content knowledge when they apply for the program, and requiring relevant content coursework as part of the education program.

To find an analysis of coursework at your institution's teacher prep programs, visit *A Fair Chance Appendix A: Program coverage of core content*.

Among more than 800 undergraduate programs

10% *of programs do not require any aligned coursework in* ***English language arts****.*

3 out of 4 *undergrad programs do not cover the breadth of* ***mathematics*** *content necessary for elementary grades.*

2 out of 3 *undergrad programs do not require a single course aligned with any of the* ***science*** *topics found on all elementary licensing tests (biology, chemistry, physics, and earth science content).*

One-third *of undergrad programs do not require a single* ***history*** *or* ***geography*** *course aligned with the needs of elementary teachers.*

What content knowledge do elementary teacher candidates need?

The specific curricula elementary teachers teach varies by district and state, but much of the core content they need to know wherever they teach can be distilled into 11 topic areas across four subjects. These four subjects and the topics within were identified based on their alignment to the content on states' elementary content licensure tests, which states select to reflect the content they expect their elementary teachers to know. They also align with current research, professional standards for teachers, and learning standards for elementary students. For detailed support for these subject areas, see *A Fair Chance Appendix D: Support for essential elementary content subjects*.

The content described here intends to reflect the content teachers need to meet the current and future state of elementary education. Should the field decide that some of these topics are no longer of importance, they should be dropped from state licensure tests and school curricula before they are dropped from elementary teacher preparation.

Although neither art nor music is included on many licensing tests, there is no shortage of support behind the idea that elementary teachers should have some understanding and appreciation of both. While the analysis and recommendations stemming from *A Fair Chance* focus on building knowledge of English language arts, social studies, science, and mathematics, programs can also seek to build candidates' familiarity with art and music by requiring courses on these topics.

The core content areas examined in this report do not encompass everything elementary teachers must learn, omitting scientifically based reading methods, pedagogy, classroom management, assessment, collaborating with parents and families, and many other essential topics. We focus specifically on the core subject matter that teachers will be expected to teach, and do not delve into everything they need to know about *how* to teach it.

Courses aligned with the needs of elementary teachers should include:

Subject	Topic areas	To convey necessary content knowledge ...
English language arts	**Composition**	A course should review the stages of writing, mechanics and grammar, and different forms of writing.
	Children's literature	A course should cover nursery rhymes, myths and fables, picture books, and the origin, use, and critique of children's literature. The focus should not be on pedagogy, nor should the course include adolescent literature.

Continued

Subject	Topic areas	To convey necessary content knowledge...
English language arts	**World literature**	A course should offer a survey of the influential works of European and non-Western literature and covers the many genre forms from the epic, the tale, poetry, and prose to the modern novel.
	American literature	A course should cover the more influential works that have shaped American history, including political tracts, essays, and autobiographies, as well as the American imagination through poetry, plays, and novels.
Elementary math ***(generally three or more courses that collectively cover the following topics)***	**Numbers and operations**	A course should cover whole numbers, fractions and integers, decimals, and estimation and rounding.
	Algebra	A course should cover constants and variables, equations, and graphs and functions.
	Geometry	A course should cover measurement; basic concepts of plane geometry; polygons and circles; and perimeter, area, and volume.
	Data analysis	A course should cover probability and data characteristics.
Social studies	**Early and modern U.S. history**	This topic merits two courses, one that should cover the main events of U.S. history from early Native American populations before colonization, the American revolution, through the Civil War; and a second course that takes students from Reconstruction through modern times.
	Ancient and modern world history	This topic merits two courses, one that should cover human origins, ancient civilizations, and medieval times through the Renaissance; and a second course that covers modern world history from the Enlightenment through modern times.
	World geography	A course should address the earth's physical features and the human geopolitical impact on the world.

Continued

Subject	Topic areas	To convey necessary content knowledge...
Science	**Biology**	A course should cover the natural science of life and living organisms.
	Physics and earth sciences *(includes physical science, geology, astronomy, climatology, and oceanography)*	A course should cover the basic principles of physics (matter and energy) and/or many of the branches of earth science, such as geology, earth science, astronomy, climatology, and oceanography.
	Chemistry	A course should cover the investigation of the components of matter and how they interact.
Fine arts	**Music history**	A course should cover musical styles, history of music, composers and musicians, as well as elements of music (beat, rhythm, notation).
	Art history	A course should cover elements of art, as well as artistic styles and artists aligned with history.

Criteria for great courses – and examples of ones that miss the mark

Courses in the topics identified above need to meet four characteristics: attainability, breadth, relevance, and focus on content. Courses that do not exhibit these characteristics can still offer value for teacher candidates, developing their interest in a topic or giving pedagogical techniques. However, teacher candidates must start from a strong foundation in a topic, and so preparation programs must first make sure that candidates' core knowledge is in place.

Below are explanations of the four key criteria for great content courses and examples of real courses that miss the mark.

To find an analysis of coursework at your institution's teacher prep programs, visit *A Fair Chance Appendix A: Program coverage of core content*.

ATTAINABILITY: the scope of the course could feasibly be taught in a semester, rather than being too broad to cover the topics in sufficient detail in the time allowed.

Examples of real courses that encompass too much to sufficiently cover in a single semester	Explanation
Scientific Inquiry *A discovery-based interdisciplinary course integrating knowledge and concepts from biology, chemistry, earth science, and physics. Presented in a laboratory setting.*	This science course is too broad, attempting to encompass biology, chemistry, and physics. An aspiring teacher who took this course could expect to learn only the most surface-level concepts in each field.
The Study of American History *Introduces students to the chronology of American history, a broad selection of key documents, appropriate secondary reading materials, and descriptions of selected key events in the evolution of American history.*	This course intends to teach all of American history in a single semester, by necessity skimming past a great deal of content.

BREADTH: The course (or a combination of required courses) should be broad enough to give the candidate a foundation in the full range of content a candidate would need to know. Many college courses address a narrow and specific topic on the assumption that high schools cover the broader material. However, for teacher candidates who may lack basic understanding of a subject, specialized courses would need to be preceded by more introductory exposure that build the foundational knowledge teachers need. This problem is most common in science courses, for which teacher candidates could often choose from a menu of options to satisfy core requirements, many of which focus narrowly on a very specific facet of science.

Examples of real courses that lack appropriate breadth	Explanation
Female Detective Fiction *Study of detective novels written by women, analyzing the author's style, content, and adaptation of the genre.*	This American literature course is too narrow, looking at only a sub-genre of literature. It would not provide an aspiring teacher with a broad enough introduction to literature to inform her instruction.
America in the Sixties *The course examines the major political, social, cultural, diplomatic, and economic developments of the period, with special emphasis on the Vietnam War, the civil rights movement, and other social movements (women and youth in particular).*	This modern U.S. history course is too narrow, looking at only a single decade of recent American history. Aspiring teachers who take this as their modern U.S. history course would learn nothing about Reconstruction, World War I, the Great Depression, World War II, and so on. Certainly, this course could offer value for an aspiring elementary teacher, but not if it's the only U.S. history course a teacher candidate takes.
Lightning and Thunderstorms *An introductory course for both non-science and science-oriented students who wish to learn about thunderstorms and their associated weather, including lightning, tornadoes, hail, and flash floods. The characteristics of thunderstorms are presented using charts, graphs, and satellite pictures.*	This science course covers some content that would be relevant and interesting for elementary teachers, but it is too narrow in scope to serve as one of the only science courses an aspiring teacher takes.
History of Dance in Western Civilization *Dance in its creative and historical aspects. The significance of dance as an ancient form of primitive expression and tracing dance's Western development through the Renaissance to contemporary dance.*	This world history course may give aspiring teachers some fun ideas to incorporate into their classroom, but it would omit the vast majority of world history that aspiring teachers should learn.

RELEVANCE: The course should cover the topics most likely to be useful for the elementary classroom. While almost any topic might prove useful at some point to at least some of the students taking a course, the aim on the part of the prep programs should be to focus on the topics most likely to be useful to elementary teachers.

Examples of real courses that are not relevant for teaching public elementary school	Explanation
American Government and Politics *A study of the institutions and processes of American government and politics at the national, state, and local levels, with attention to policy-making and the relationship between citizenship and Christian faith.*	This modern American history course is influenced by a religious perspective, which is not appropriate for preparing teachers to teach history in public schools.
Introduction to Film Decades *Introduction to study of film in cultural context over an historical decade, e.g., Modernism and the Silent Era of the Twenties; Cinema of Wartime in the Forties; Vietnam, Nixon, and the Seventies Blockbuster.*	This course, which can be taken as an American literature course, will not teach aspiring elementary teachers much about American literature, and is unlikely to introduce them to much content they could use in an elementary classroom.
Sex and Western Society *Interdisciplinary perspectives to sexual practices, ideologies, and identities in the Western World from the Classical era to the modern USA.*	This American history course has a focus that is not likely to represent the history curricula found in most elementary schools.

FOCUS ON CONTENT, NOT PEDAGOGY: The course should teach core content for a general college audience, rather than being tailored to aspiring teachers (which would reduce the time and attention given to key concepts and skills). The exceptions to this are elementary math and children's literature – which may only be of interest to a teacher audience, although they should still address content rather than pedagogy. While teacher candidates *should* take methods and pedagogy courses geared around content (e.g., an elementary mathematics methods course), this should not replace (or precede) courses focused entirely on content.

Examples of real courses that do not stay focused on content	Explanation
Physics for Educators *An introductory survey of physics principles that govern our everyday lives. It covers the topics of energy, motion, electricity and magnetism, light and optics, sound and waves, and thermodynamics. The lectures are interspersed with hands-on activities intended to reinforce concepts and to provide the students with ideas for teaching their own classes. This course is for teacher candidates only.*	This science course incorporates a heavy focus on how to teach alongside the content – meaning that aspiring teachers will not learn a full semester of science content from this course.
Chemistry and Physics for the Elementary Teacher *An introductory study of concepts in physical science. The emphasis of the course will be on the techniques needed to effectively teach these concepts in an elementary and early childhood setting.*	This science course incorporates a heavy focus on how to teach alongside the content – meaning that aspiring teachers will not learn a full semester of science content from this course.

In most cases, teacher prep programs can establish parameters that will guide teacher candidates to select courses that both fulfill the institutions' general education requirements and best prepare them for an elementary teaching career. If institutions review available coursework in light of its attainability, breadth, relevance, and focus on content, they can identify coursework that is better aligned with the needs of an aspiring elementary teacher. A sure foundation in elementary content will likely lead to better outcomes for all: better licensure pass rates, better retention in the profession and, finally, better content delivery and mastery for elementary students.

What does strong elementary mathematics coursework look like?

While teaching math is a core responsibility for elementary teachers, only one in four programs adequately address elementary math content these future teachers need. Strong coursework that addresses all elementary mathematics topics listed above through both lectures and assignments generally requires two to three semester-long courses. Programs can support strong elementary mathematics instruction by assigning a great elementary mathematics textbook.

Recommended elementary mathematics textbooks

- Fierro's *Mathematics for Elementary School Teachers*
- Parker's *Elementary Geometry for Teachers and Elementary Mathematics for Teachers* (2 books)
- Beckmann's *Mathematics for Elementary Teachers with Activities*
- Billstein's *A Problem Solving Approach to Mathematics for Elementary School Teachers*

To guide the process of identifying existing courses or creating new ones, take a look at the content included in your state's teacher licensure tests, identified in the section *Guidance for topics in states' tests*, below.

For examples of course syllabi that address core content, see these *sample syllabi provided by the Core Knowledge Foundation*.

For examples of undergraduate teacher preparation programs that require aligned content in most areas, see *Programs with strong content requirements*.

Breaking it down: Steps prep programs should take

To provide elementary teachers with the solid foundation they need, teacher preparation programs can tighten up admissions criteria and course requirements, considering both the courses teacher candidates take to fulfill their general education requirements and the requirements of their education program. Teacher prep programs follow different models, and so the following section presents a variety of approaches for building candidates' content knowledge. Programs can adapt these recommendations based on their particular context.

Provide better parameters for selecting from course options that count toward general education requirements for *undergraduate* students who indicate an interest in teaching.

Often, an institution already offers great content courses – but candidates aren't required to take them. Most of the content coursework that aspiring teachers take comes through the institution's core general education requirements. If the institution gives candidates course choices that are not aligned with what future elementary teachers need, teacher prep programs can take the initiative to set boundaries on these courses. For example, if candidates have a choice of 15 different history courses, the program can require that candidates take the early American history course. By providing more explicit guidance, programs will give teacher candidates clear direction about the course material they should cover.

Most institutions already offer the necessary content courses.

A Fair Chance found that …

- In three out of four instances when teacher candidates are not required to take aligned coursework in a topic, the institution has relevant coursework available. In these instances, the teacher prep programs do not need to create any new courses, rather they can adjust the requirements. Though institutions may need to offer additional sections of the course, they would already have the curriculum materials in place.
- In one of three instances where candidates are not required to take a specific aligned course in a topic, they are choosing a course from a menu of courses that includes at least one relevant course (and one or more less relevant ones). Programs just need to set parameters on which courses from the general education menu teacher candidates can take to satisfy the requirement.
- Prep programs have power! Four times out of five, when elementary candidates take a course that is well-aligned to their needs, it is because of a course requirement set by the program and not by the institution.

What's worked for other teacher prep programs?

These are real tips from leaders of the teacher prep programs featured in our list of *Programs that Rise Above the Others*.

- **Examine what your institution already offers:** Look through the academic catalogue to identify courses that your institution already offers which directly meet your teacher candidates' needs.
- **Use a central office to organize change:** Use the provost's office or another central office to bring together deans and create formal processes to address content needs, and to work out logistical details like scheduling courses and saving seats for education majors in content courses.
- **Consider the practicalities:** Work with content faculty to create a convenient course schedule, to offer necessary courses every semester, or to save seats in courses for teacher candidates.
- **Provide guidance to potential teacher candidates before admitting them to the program:** Advisors can help teacher candidates sequence their courses to make sure they fulfill all requirements, starting freshman year. Advising sheets that detail course requirements can also help provide guidance to aspiring teacher candidates.
- **Build relationships and keep the collaboration going:** Integrate content partners into your own processes, e.g., through regular content meetings with education and liberal arts faculty.
- **Be vocal about what your candidates need:** Ask content faculty to add essential content into courses, or share results from licensure tests and work with faculty to help shore up areas where candidates are consistently weak.
- **Front-load content requirements:** Require your candidates to take most content before entering the program so that when they're in methods courses, they can focus on learning how to teach content.

Want to share your own program's tips, or share challenges you've encountered? You can share your experiences at: *https://www.nctq.org/AFairChanceFeedback/*.

> The key thing is collaboration. That's our strength here by far. We like the people in the other areas, and a working relationship is important.
>
> – Dr. Hanson, the Chair of the Fredrikson School of Education at the University of Sioux Falls

> We engage faculty from the other content disciplines who offer courses to teacher candidates in examining teacher candidates' licensure test pass rates, asking them, Where can we make this stronger?
>
> – Dr. Lawrence, the Associate Dean for College of Arts, Sciences and Education at Texas A&M, Texarkana

Use the teacher preparation program admissions process for *undergraduate*, *graduate*, and *alternative route* programs as an opportunity to identify weaknesses in content knowledge and then tailor the course of study to fill in gaps.

Testing for content knowledge as part of admission into the program offers immense promise, as teacher candidates take much of their content coursework well before they are admitted into a program. For undergraduate programs, screening needs to occur at an early enough stage in the college career that teacher candidates can take coursework to fill in any gaps, or choose a different major if they fall too far short. This step is even more critical for graduate and alternative route programs, as these programs rarely include time for additional content coursework. As an alternative to screening through a test, graduate programs could instead review incoming candidates' transcripts for relevant coursework, although this approach is more time-consuming for preparation programs.

The same test can be used for all program types – undergraduate, graduate, and alternative route programs. Additionally, you can likely use an existing test. For example, applicants could demonstrate mastery by furnishing AP and SAT subject test scores. Or, applicants could take the state's required teacher licensure content test – preferably one with separate passing scores for each subject. (If requiring the state's licensing test, programs may want to explore how to offer this as a no-cost option so that it is accessible to all college students.) A passing score early on could represent one less licensure test that they would need to take at the end of the program (depending on how long the score is valid). If a teacher candidate does not pass a test, she knows well in advance which subject she needs to study in greater depth prior to retaking a licensure test.

Want to share your own program's tips, or share challenges you've encountered? You can share your experiences at: *https://www.nctq.org/AFairChanceFeedback/*.

Content Knowledge Tests with Separate Scores in Every Subject

Content knowledge tests that provide separate scores in each subject ensure candidates' strength in one subject cannot overshadow weakness in another. The following list includes both single-subject and acceptable multiple-subject assessments.

- Advanced Placement Subject Tests (AP)
- International Baccalaureate Tests (IB)
- SAT II Subject Tests
- College Level Examination Program (CLEP)
- Defense Activity for Non-Traditional Education Support (DANTES)
- CBASE (acceptable for ELA, science, and social studies)
- Florida Teacher Certification Examinations (FTCE): Elementary Education K-6 test
- Missouri Educator Gateway Assessments (MEGA): Elementary Education Multi-content test
- TExES Core Subjects EC-6 (satisfactory for science and social studies)
- PRAXIS Elementary Education: Multi-Subject Tests (5001)

Several undergraduate elementary programs required the Praxis 5001 for admission into teacher preparation at the point of analysis for this report, including:

- Lewis-Clark State College (Idaho)
- Washington College (Maryland)
- Southern Utah University
- Utah State University
- Utah Valley University

Set undergraduate and graduate program content course requirements that align with what elementary teachers need to know.

General education requirements will not touch on every content area aspiring elementary teachers need (e.g., children's literature and elementary mathematics). Programs can review the institution's general education requirements to identify gaps in content, and then can include those courses as part of the requirements for the education program. Unlike most content coursework (which should be intended for a general college audience), these may be targeted specifically to teacher candidates – but they should still emphasize content, not pedagogy.

To learn where to find information about what content is included in teacher licensure tests, see *Guidance for topics in states' tests* (below). For examples of course syllabi that address core content, see these *samples provided by the Core Knowledge Foundation*.

What's worked for other teacher prep programs?

These are real tips from leaders of the teacher prep programs featured in our list of *Programs that Rise Above the Others*.

- **Conduct a needs analysis:** Examine the requirements for what your candidates need to learn, including the state's standards or competencies, licensure test requirements, and the curricula of schools in which they're likely to teach. Determine which areas your candidates already take courses. When there are gaps, identify whether your institution already offers relevant courses that can be substituted or added as requirements. One program described creating a matrix which they used to determine whether every state standard is covered in one or more courses.
- **Use existing program reviews:** Higher education programs generally have periodic program reviews that are a mandated part of the institution's accreditation requirements. Education program faculty can use this as an opportunity to revisit course requirements and to work collaboratively with the arts and sciences faculty and those from other colleges who have a role in preparing teacher candidates.
- **Be prescriptive:** Rather than giving teacher candidates lots of options to choose from, be clear about which courses are essential.
- **Design your methods courses to build on content, not teach it for the first time:** Leaders from many teacher prep programs shared that they want their candidates to enter the preparation program already knowing core content. While methods courses will by necessity incorporate content and pedagogical content knowledge, these methods course work best when they can build on content that candidates have already learned, rather than having to teach an entire topic area from scratch.
- **Prepare for a long process:** Programs described needing seven or eight months to make programmatic changes. By having clear support for why their candidates needed to learn core content (e.g., from state standards), garnering buy-in from the relevant faculty, and building a clear plan of action, programs were able to stay the course and make changes that lead to better outcomes for their candidates.
- **Seek continuous input to guide improvement:** In addition to looking at licensure test scores, programs can gather feedback from cooperating teachers, supervisors, and novice teachers to learn what's working well and how the program can supplement its current practice. In fact, seeking ongoing stakeholder input is also part of CAEP's expectations.

For examples of undergraduate teacher preparation programs that require aligned content in most areas, see *Programs with strong content requirements*.

> It does no good [for teacher candidates] to take specialty courses when we're trying to train them for teaching elementary school. Elementary candidates know that they have to teach all of those subjects, so we're preparing them to do that.
>
> – Dr. Dugger, Dean of the College of Education at Dallas Baptist University

Guidance for topics in states' tests

Want more information about what content your candidates need to know to succeed on an elementary content licensing tests? Testing companies provide information for most tests to help prep program faculty map their curricula against the course content. These companies also provide some free test preparation materials for candidates, which may offer program faculty further guidance. Find links to these resources below.

Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
California Subject Examinations for Teachers (CSET): Multiple Subjects Test (K-12)	**California**	None available	*http://www.ctcexams.nesinc.com/TestView.aspx?f=HTML_FRAG/CA_CSET101_PrepMaterials.html*
Certification Examinations for Oklahoma Educators (CEOE): General Elementary content test	**Oklahoma**	*http://www.ceoe.nesinc.com/Content/Docs/CEOE_Faculty_Guide.pdf* (Faculty guide to creating a "Competency to course" chart) *https://www.ceoe.nesinc.com/Content/Docs/CEOE_Framework_050.pdf* (Subtest 1 competencies) *https://www.ceoe.nesinc.com/Content/Docs/CEOE_Framework_051.pdf* (Subtest 2 competencies)	*https://www.ceoe.nesinc.com/TestView.aspx?f=HTML_FRAG/OK050_051PrepMaterials.html*
CORE Elementary Education Generalist test	**Indiana**	*http://www.in.nesinc.com/Content/Docs/IN_Curric_Instructions.pdf* (Instructions to map curriculum to test blueprint) *http://www.in.nesinc.com/Content/Docs/IN060-063_Blueprint.pdf* (Test blueprint)	*https://www.in.nesinc.com/TestView.aspx?f=HTML_FRAG/IN060_PrepMaterials.html*

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Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
Florida Teacher Certification Examinations (FTCE):Elementary Education K-6 test	**Florida**	http://www.fl.nesinc.com/PDFs/FL_curric_instructions.pdf (Guide to map curriculum to test)	http://www.fl.nesinc.com/prepPage.asp?test=060
Georgia Assessments for the Certification of Educators (GACE): Early Childhood Education Assessment	**Georgia**	https://gace.ets.org/program_providers/preparing_candidates/test_prep/course_matching_chart (Guide to map curriculum to test competencies) https://gace.ets.org/s/pdf/study_companions/gace_sc_early_childhood_education.pdf (Test competencies)	https://gace.ets.org/prepare/materials/501
Illinois Licensure Testing System (ILTS): Elementary Education (Grades 1-6) assessment	**Illinois**	http://www.il.nesinc.com/PageView.aspx?f=GEN_MappingTheTestFrameworkToTheCurriculum.html (Guide to map curriculum to test) https://www.il.nesinc.com/Content/STUDYGUIDE/IL_SG_OBJ_197.htm (Test objectives)	https://www.il.nesinc.com/TestView.aspx?f=HTML_FRAG/IL197_PrepMaterials.html
Massachusetts Tests for Educator Licensure (MTEL): General Curriculum test	**Massachusetts**	https://www.mtel.nesinc.com/PageView.aspx?f=GEN_Faculty.html (Guide to map exam objectives to curriculum) http://www.mtel.nesinc.com/Content/StudyGuide/MA_SG_OBJ_03.htm (Exam objectives)	http://www.mtel.nesinc.com/TestView.aspx?f=HTML_FRAG/MA003_PrepMaterials.html

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Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
Michigan Test for Teacher Certification (MTTC): General Elementary Content Test	**Michigan**	http://www.mttc.nesinc.com/PageView.aspx?f=GEN_FacultyResources.html (Faculty guide and materials to map test to curriculum)	http://www.mttc.nesinc.com/TestView.aspx?f=HTML_FRAG/MI103_PrepMaterials.html
Minnesota Teacher Licensure Examinations (MTLE): Elementary Education test	**Minnesota**	http://www.mtle.nesinc.com/Content/Worksheets/MN012_FrameworkWorksheet.html	http://www.mtle.nesinc.com/TestView.aspx?f=HTML_FRAG/MN191_PrepMaterials.html
Missouri Educator Gateway Assessments (MEGA): Elementary Education Multi-subject test	**Missouri**	http://www.mo.nesinc.com/PageView.aspx?f=GEN_MappingTheTestFrameworkToTheCurriculum.html (Guide to map curriculum to test) http://www.mo.nesinc.com/Content/STUDYGUIDE/MO_SG_OBJ_007.htm (Test objectives)	http://www.mo.nesinc.com/TestView.aspx?f=HTML_FRAG/MO007_PrepMaterials.html
National Evaluations Series (NES): Elementary Education test **Arizona** **New Mexico** **Oregon** **Washington**		http://www.nestest.com/PageView.aspx?f=GEN_MappingTheTestFrameworkToTheCurriculum.html (Curriculum crosswalk for Subtests I and II) http://www.nestest.com/Content/Docs/NES_Framework_102.pdf (Testing framework for Subtest I) http://www.nestest.com/Content/Docs/NES_Framework_103.pdf (Testing framework for Subtest II)	http://www.nestest.com/PageView.aspx?f=HTML_FRAG/GENRB_PreparationMaterials.html

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Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
New York State Teacher Certification Examination (NYSTCE) Multi-Subject: Teachers of Childhood (1-6) test	**New York**	http://www.nystce.nesinc.com/content/docs/NY_fld221_222_245_objs.pdf	http://www.nystce.nesinc.com/TestView.aspx?f=HTML_FRAG/NY221_PrepMaterials.html
Ohio Assessments for Educators (OAE): Elementary Education exam	**Ohio**	http://www.oh.nesinc.com/PageView.aspx?f=GEN_MappingTheTestFrameworkToTheCurriculum.html (Instructions to map test framework to curriculum) http://www.oh.nesinc.com/Content/Docs/OH018_019_ELEMENTARYEDUC_OBJ_FINAL.pdf (Test framework)	http://www.oh.nesinc.com/TestView.aspx?f=HTML_FRAG/OH018_PrepMaterials.html
Pearson: General Curriculum test	**North Carolina**	http://www.nc.nesinc.com/PageView.aspx?f=GEN_FacultyResources.html	http://www.nc.nesinc.com/TestView.aspx?f=HTML_FRAG/SA003_PrepMaterials.html
Pennsylvania Educator Certification: PreK-4 (PECT) test	**Pennsylvania**	http://www.pa.nesinc.com/PageView.aspx?f=GEN_MappingTheTestFrameworkToTheCurriculum.html (Guide to map test objectives to curriculum) http://www.pa.nesinc.com/CONTENT/HTML_FRAG/STUDYGUIDE/Study_Guide_006007008_obj.htm (Test objectives)	http://www.pa.nesinc.com/TestView.aspx?f=HTML_FRAG/PA006_PrepMaterials.html

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Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
Praxis Elementary Education: Content Knowledge for Teaching (7801) test	**Delaware Kansas Maryland South Dakota**	None available	*https://www.ets.org/praxis/prepare/materials/7801*
Praxis Education of Young Children (5024) test	**Maine**	*https://www.ets.org/praxis/institutions/services_tools/crosswalks/*	*https://www.ets.org/praxis/prepare/materials/5024*
Praxis Elementary Education: Content Knowledge (5018) test	**Alaska Iowa Montana Wisconsin**	*https://www.ets.org/praxis/institutions/services_tools/crosswalks/*	*https://www.ets.org/praxis/prepare/materials/5018*
Praxis Elementary Education: Curriculum, Instruction and Assessment (5017) test	**Alaska Mississippi Nebraska North Dakota Tennessee**	*https://www.ets.org/praxis/institutions/services_tools/crosswalks/*	*https://www.ets.org/praxis/prepare/materials/5017*
Praxis Elementary Education: Instructional Practice and Applications (5019) test	**Nevada**	*https://www.ets.org/praxis/institutions/services_tools/crosswalks/*	*https://www.ets.org/praxis/prepare/materials/5019*

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Elementary Content Test	States that use this test	Curriculum crosswalks and related faculty resources	Preparation materials provided by testing company
Praxis Elementary Education: Multiple Subjects (5001) test	**Alabama Alaska Arkansas Colorado Connecticut Delaware District of Columbia Hawaii Idaho Kentucky Louisiana Maine New Hampshire New Jersey Rhode Island South Carolina South Dakota Tennessee Utah Vermont Virginia West Virginia Wyoming**	*https://www.ets.org/praxis/institutions/services_tools/crosswalks/* (Curriculum crosswalks for subtests 5002, 5003, 5004, and 5005)	*https://www.ets.org/praxis/prepare/materials/5001*
Texas Examinations of Educator Standards (TExES): Core Subjects EC-6 (291) exam	**Texas**	*http://www.tx.nesinc.com/Content/Docs/Crosswalks/TX_291_CoreSubjects_EC_6_crosswalk.pdf*	*http://www.tx.nesinc.com/TestView.aspx?f=HTML_FRAG/TX291_PrepMaterials.html*

[i] American Board of Psychiatry and Neurology, Inc. (No Date). Pass rates for first time takers. Retrieved March 28, 2018, from https://www.abpn.com/wp-content/uploads/2016/08/ABPN-Pass-Rates-5-Year-Summary.pdf; Illinois Department of Financial and Professional Regulation. (2018). National Council licensure examination summary data. Retrieved March 4, 2018, from http://nursing. illinois.gov/PDF/IlApNursingEdProgPassRates.PDF; National Council of Examiners for Engineering and Surveying. (2017). PE exam pass rates. Retrieved March 28, 2018, from https://ncees.org/ engineering/pe/pass-rates/; Zhang, Y. O. (2006).

[ii] Educational Testing Services. (2018). Praxis Elementary Education: Multiple Subjects Passing Rate Summary.