



# Texas

Educator Certification  
Examination Program

## **TEXAS EDUCATOR CERTIFICATION EXAMINATION PROGRAM**

### **Annual Technical Development Manual 2019–2020**

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## Preface

This technical manual provides information on examination development activities undertaken for the Texas Educator Certification Examination Program during the 2019–2020 program year. Specifically, the manual provides validity evidence to support the use of new Pre-Admission Content Test (PACT) examinations, which became operational in January 2020. This manual also provides evidence to support the validity of score interpretations for the new PACT examinations.

This manual is intended for policy makers, state educators, and other interested stakeholders who would like to learn more about the:

- purpose, structure, and composition of the Texas Educator Certification Examination Program generally;
- exam item validation processes generally, and those related to the PACT examinations in particular;
- content and bias review processes related to the PACT examinations; and
- establishment of Texas educator passing standards for certification related to the PACT examinations.

In 2017, The Texas Education Agency (TEA) awarded the Evaluation Systems group of Pearson (Pearson) the contract to support the Texas Educator Certification Examination Program, beginning on September 1, 2018. As part of the transition process from the previous vendor, all the existing examinations and preparation materials at that time were delivered to Pearson for use as-is. Specific details about the development of these materials by the previous vendor can be found on the TEA website at [https://tea.texas.gov/sites/default/files/texas\\_technical\\_manual\\_8.31.18.pdf](https://tea.texas.gov/sites/default/files/texas_technical_manual_8.31.18.pdf). As described in that manual, those examinations were developed in accordance with the practices recommended by the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) (*Standards*). The *Standards* require a clear definition of content domain and a rationale to support a claim that the knowledge, skills, and abilities being assessed in a licensure test are required for credential-worthy performance. The *Standards* also require that the assessments are fair, valid, and reliable with administration conditions that are equitable for all examinees.

Separately, in 2019-20, new PACT examinations were adopted by the Texas Education Agency from other assessment programs. The examinations that launched in the 2019-20 program year include the PACT exams. The primary purpose of this technical manual is to document the evidence and exam development activity that Pearson facilitated in support of launching the PACT examinations. Future annual technical manuals will document evidence in support of all new and redeveloped examinations that launch in the program years covered by those manuals.

In the 2018-19 Technical Development Manual, Pearson defined and described the exam development activities that Pearson conducted in support of the launch of the Principal as Instructional Leader (PAIL) exam in July 2019. In 2019-20, Pearson conducted additional item bank development to support the construction of new PAIL exam forms, and that development activity is documented in this manual. In addition to PAIL, development activity occurred in support of the following educator certification exams that was ongoing and did not result in an exam launch during 2019-20:

- Core Subjects EC-6 English Language Arts and Reading (901)
- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education (370)
- English Language Arts and Reading 4-8 (217)
- Health EC-12 (257)
- Physical Education EC-12 (258)
- English Language Arts and Reading 7-12 (331)

The exam development activities referred to in this technical manual reflect **all** tasks of the exam development process that are followed by Pearson, a subset of which were performed for the PACT examinations and other educator certification examinations leading up to and during the 2019-20 program year. Those that Pearson conducted specifically for PACT, PAIL, and the specific educator certification examinations named above are identified throughout the manual.

**Note:** In 2019-20, Pearson also began providing services for the Texas Education Agency in support of delivery of the following three American Association of Family and Consumer Sciences (AAFCS) certification exams:

- AAFCS Family and Consumer Sciences, Composite
- AAFCS Hospitality, Nutrition, and Food Science
- AAFCS Human Development and Family Studies

Technical information about the development of these three exams can be found at <https://www.aafcs.org/credentialing-center/professional-testing/aafcs-exam>.

## Purpose of the Texas Educator Certification Examination Program

### Introduction

The purpose of the Texas Educator Certification Examination Program is to verify that each educator has the prerequisite content and professional knowledge, skills, and abilities necessary for an entry-level position in Texas public schools and has the capability of becoming a highly effective educator. In the 2019-20 academic year, the Texas Educator Certification Examination Program, administered by Pearson, included four categories of examinations for educator certification: the Texas Examinations of Educator Standards (TExES), the Texas Assessment of Sign Communications (TASC), the Texas Assessment of Sign Communications—American Sign Language (TASC-ASL), and the American Association of Family and Consumer Sciences (AAFCS) exams.

In addition, the Texas Educator Certification Examination Program included a series of Pre-Admission Content Test (PACT) examinations that can be used to obtain admission into an Educator Preparation Program (EPP). EPPs are expected to teach pedagogical concepts to educator candidates, so the purpose of the PACT exams is to determine whether the applicant has already acquired the necessary content knowledge for the field they intend to become certified to teach. Taking PACT does not ensure admittance into a program. EPPs may have additional admission requirements.

Prior to January 27, 2020, exams taken through the PACT route were the same exams used for the purpose of certification. The new PACT exams launched on January 27, 2020, replacing those exams for the PACT route; the new exams assess only content knowledge and include no pedagogical component. Beginning January 27, 2020, the exams used for the purpose of certification were no longer used for the purpose of the PACT route.

### Program Policy

Texas law requires that educators pass appropriate examinations to become certified. The examination(s) required for certification are specified in Texas Administrative Code, §230.21(e):

<http://ritter.tea.state.tx.us/sbecrules/tac/chapter230/ch230c.html>.

The examinations are aligned to standards for beginning educators. These standards are created and approved by the State Board for Educator Certification (SBEC)<sup>1</sup>: <https://tea.texas.gov/about-tea/leadership/state-board-for-educator->

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<sup>1</sup> SBEC was created by the Texas Legislature in 1995 to recognize public school educators as professionals and grant educators the authority to govern the standards of their profession. The Board oversees all aspects of the preparation, certification and standards of conduct of public-school educators. SBEC's mission statement is "SBEC is dedicated to improving student achievement and ensuring the safety and welfare of Texas school children by upholding the highest level of educator preparation, performance, continuing education, and standards of conduct."

[certification](#). The standards are focused upon the Texas Essential Knowledge and Skills (TEKS), the required statewide public-school curriculum. They reflect current research on the developmental stages and needs of children from Early Childhood (EC) through Grade 12. Additionally, the Texas Commissioner of Education has adopted rules pertaining to Texas educator standards in Texas Administrative Code Chapter 149, accessible through the TEA website: <https://tea.texas.gov/texas-educators/preparation-and-continuing-education/approved-educator-standards>.

Texas law also allows for the administration of an appropriate content certification exam to an applicant seeking admission to an EPP, if that applicant does not meet a minimum GPA requirement, as specified in Texas Administrative Code §227.10: <https://tea.texas.gov/sites/default/files/ch227a-New-Fig-Link.pdf>

The new PACT exams launched in 2020 serve the function of “content certification exam” under Texas Administrative Code §227.10.

### **Composition of the Texas Educator Certification Examination Program**

As of August 31, 2020, the Texas Educator Certification Examination Program comprised 77 examinations across the categories of TExES, TASC, TASC-ASL, and AAFCS, as well as 35 PACT examinations. The available examinations are listed by category and examination code in Table 1.

The Texas Educator Certification Examination Program examinations are computer-administered and delivered through a national network of Pearson testing centers. Pearson offers several web-based resources to help candidates prepare for the examinations. These resources include online preparation manuals, interactive practice exams, detailed score reports, and computer-administered testing tutorials. In addition, a suite of web-based faculty resources and interactive worksheets are available to assist in candidate preparation.

The TEA and Educator Preparation Programs (EPPs) have access to an interactive, electronic exam results database called *ResultsAnalyzer*® that allows them to create customized reports. Using *ResultsAnalyzer*®, faculty can generate tailored reports by exam and by candidate and filter these results through many factors including time period, candidate demographics, and Title II eligibility. Some analyses are available as charts and graphs. Data from *ResultsAnalyzer*® can be printed or downloaded into an Excel spreadsheet for further analyses and merging with other data sets. Candidate individual score reports (ISRs) are also available to EPPs through *ResultsAnalyzer*®.

From August to November 2018, Pearson conducted a series of webinars to train EPP representatives on the functions and features of *ResultsAnalyzer*®. In addition, individual one-on-one sessions with a *ResultsAnalyzer*® specialist were provided in-person to EPP representatives at the Consortium of State Organizations for Texas Teacher Education (CSOTTE) 2018 annual conference. Additionally, in November and December 2019, Pearson delivered multiple webinar demonstrations of enhanced features and functions to support EPPs in their data analysis.

**Table 1. Texas Educator Certification Examination Program Composition**

<b>TExES™</b>	
113 English Language Arts and Reading/Social Studies 4–8	610 Languages Other Than English (LOTE) French
114 Mathematics/Science 4–8	611 Languages Other Than English (LOTE) German
115 Mathematics 4–8	612 Languages Other Than English (LOTE) Latin
116 Science 4–8	613 Languages Other Than English (LOTE) Spanish
117 English Language Arts and Reading 4–8	801 Core Subjects EC–6 English Language Arts and Reading
118 Social Studies 4–8	802 Core Subjects EC–6 Mathematics
129 Speech 7–12	803 Core Subjects EC–6 Social Studies
150 School Librarian	804 Core Subjects EC–6 Science
151 Reading Specialist	805 Core Subjects EC–6 Fine Arts, Health and Physical Education
152 School Counselor	806 Core Subjects 4–8 English Language Arts & Reading
153 Educational Diagnostician	807 Core Subjects 4–8 Mathematics
154 English as a Second Language Supplemental	808 Core Subjects 4–8 Social Studies
157 Health EC–12	809 Core Subjects 4–8 Science
158 Physical Education EC–12	
160 Pedagogy and Professional Responsibilities EC–12	<b>TASC™</b>
161 Special Education EC–12	072 Texas Assessment of Sign Communication (TASC)
162 Gifted and Talented Supplemental	
163 Special Education Supplemental	<b>TASC–ASL™</b>
164 Bilingual Education Supplemental	073 Texas Assessment of Sign Communication—American Sign Language (TASC–ASL)
171 Technology Education 6–12	
177 Music EC–12	<b>PACT</b>
178 Art EC–12	700 TX PACT: Essential Academic Skills
180 Theatre EC–12	710 TX PACT: LOTE French: Early Childhood–Grade 12
181 Deaf and Hard-of-Hearing	711 TX PACT: LOTE German: Early Childhood–Grade 12
182 Visually Impaired	712 TX PACT: LOTE Latin: Early Childhood–Grade 12
184 American Sign Language (ASL)	713 TX PACT: LOTE Spanish: Early Childhood–Grade 12
190 Bilingual Target Language Proficiency Test (BTLPT) Spanish	714 TX PACT: LOTE Chinese: Early Childhood–Grade 12
195 Superintendent	715 TX PACT: Mathematics: Grades 4–8
231 English Language Arts and Reading 7–12	716 TX PACT: Science: Grades 4–8
232 Social Studies 7–12	717 TX PACT: English Language Arts and Reading: Grades 4–8
233 History 7–12	718 TX PACT: Social Studies: Grades 4–8
235 Mathematics 7–12	721 TX PACT: Family and Consumer Sciences
236 Science 7–12	729 TX PACT: Speech: Grades 7–12
237 Physical Science 6–12	731 TX PACT: English Language Arts and Reading: Grades 7–12
238 Life Science 7–12	732 TX PACT: Social Studies: Grades 7–12
240 Chemistry 7–12	733 TX PACT: History: Grades 7–12
241 Computer Science 8–12	735 TX PACT: Mathematics: Grades 7–12
242 Technology Applications EC–12	736 TX PACT: Science: Grades 7–12
243 Physics/Mathematics 7–12	737 TX PACT: Physical Science: Grades 6–12
256 Journalism 7–12	738 TX PACT: Life Science: Grades 7–12
268 Principal as Instructional Leader (PAIL)	739 TX PACT: Physics: Grades 7–12
270 Pedagogy and Professional Responsibilities for Trade and Industrial Education 6–12	740 TX PACT: Chemistry: Grades 7–12
272 Agriculture, Food and Natural Resources 6–12	
273 Health Science 6–12	
274 Mathematics/Physical Science/Engineering 6–12	
275 Marketing 6–12	
276 Business and Finance 6–12	
279 Dance 6–12	
283 Braille (UEB)	



- 741 TX PACT: Computer Science: Grades 8–12
- 742 TX PACT: Technology Applications: Early Childhood–Grade 12
- 756 TX PACT: Journalism: Grades 7–12
- 757 TX PACT: Health: Early Childhood–Grade 12
- 758 TX PACT: Physical Education: Early Childhood–Grade 12
- 771 TX PACT: Technology Education: Grades 6–12
- 772 TX PACT: Agriculture, Food, and Natural Resources: Grades 6–12
- 776 TX PACT: Business and Finance: Grades 6–12
- 777 TX PACT: Music: Early Childhood–Grade 12
- 778 TX PACT: Art: Early Childhood–Grade 12
- 779 TX PACT: Dance: Grades 6–12
- 780 TX PACT: Theatre: Early Childhood–Grade 12
- 784 TX PACT: American Sign Language (ASL): Early Childhood–Grade 12 (Subtest I)
- 785 TX PACT: American Sign Language (ASL): Early Childhood–Grade 12 (Subtest II)
- 790 TX PACT: Core Subjects: Grades 4–8

**AAFCS**

- 200 AAFCS Family and Consumer Sciences, Composite
- 201 AAFCS Hospitality, Nutrition, and Food Science
- 202 AAFCS Human Development and Family Studies

## **Validity Evidence to Support the Texas Educator Certification Examination Program**

Validity is the degree to which evidence and theory support the interpretation of test scores for proposed uses of tests. Validation techniques traditionally used to support the use of tests for licensure and certification are described in the *Standards* (AERA, APA, & NCME, 2014). The *Standards* provides professional guidelines for accumulating validity evidence. The guidelines are clear that the process for accumulating such validity evidence must be comprehensive and draw from every aspect of exam development.

For the Texas Educator Certification Examination Program, the primary validity focus is content validity. Gathering content-related validity evidence includes a comprehensive process of reviewing assessment content for alignment with state requirements for licensure, reviewing content to verify it is equitable and free from bias, validating competencies and items, and establishing an appropriate passing standard. Pearson works with the TEA, Texas educators, and educator preparation faculty to implement such a process for the development of new exams in the Texas Educator Certification Examination Program, collecting key validity evidence to support the use of the assessments for the purpose of educator licensure.

The process used to gather validity evidence to support the use of the PACT exams was designed to establish and/or support the connection between the exam and its educational purpose (i.e., educator licensure). This connection provides evidence supporting the validity of score interpretations, which is the central concern in high-stakes professional testing programs. Comprehensive validity evidence strengthens the credibility of a licensure test for state use.

## **Bias Prevention and Fairness in Exam Development**

To create sensitive, fair, and valid examinations for test takers, Pearson makes bias prevention and equity a priority during the development and review of examination materials. Exam developers and editors are charged with detecting and removing potentially biased content, situations, language, and stereotypes throughout the exam design process. The composition of educator review committees reflects, to the extent possible, various institutions and educational philosophies and the diversity of the Texas population demographically, geographically, and by professional expertise. Sampling of participants for content validation surveys and standard setting activities also takes into consideration these demographic variables.

Additionally, Pearson exam development staff employ statistical analyses designed to detect instances where one group of candidates performs significantly better on an item than another group of equivalent ability (differential item functioning). Based on these results, any issues with the items can be addressed before the exams become operational.

Pearson's *Fairness and Diversity in Tests* (2009) manual guides these efforts. This

manual was developed by psychometricians and exam development experts and is used by educators across the country for exam development purposes. In four major sections, it provides an in-depth discussion of the dimensions of bias in test development, addresses specific bias prevention steps and methods of bias review to be taken in exam development, and includes a comprehensive understanding of equity inclusion (i.e., the inclusion of content that reflects diverse populations).

The sources of bias discussed in the manual include:

- bias due to content;
- bias in language;
- bias due to assumptions and stereotypes; and
- bias due to lack of inclusion of exam content that reflects diversity of the population for whom the exam is intended.

While bias prevention is an integral part of Pearson’s test development activities and a component of each Content Advisory Committee’s (CAC’s) responsibility, Pearson establishes a separate and independent Equity Assurance Panel (EAP), composed of Texas educators, to specifically focus on reviewing examination materials for potential bias concerns, an exam development step recommended by the *Standards* (AERA et al., 2014).

## **Examination Development Process**

As previously discussed, the examinations launched in the 2019-20 program year include the PACT exams. For the PACT exams, the Texas Education Agency intended to no longer use certification exams for the purpose of the PACT route and instead to use exams that measure only content knowledge and not pedagogical knowledge. Given the large number of PACT subjects that required an associated exam, TEA selected exams from other testing programs and conducted a review of those exams to confirm alignment with the Texas Essential Knowledge and Skills before adopting and implementing them.

What follows are two distinct sections regarding exam development processes for 2019-20: 1) the process used in the development of exams that were implemented as PACT exams, and 2) the general process Pearson follows in custom exam development, with specific descriptions included for the activity associated with exam development for PAIL as well as other certification exams, where appropriate.

In both cases, the examination development and validation processes consist of defining exam materials and linking them to the most appropriate measurement tools for assessing the content. Pearson develops examinations in accordance with the guidelines specified in the *Standards* (AERA et al., 2014) for defining examination materials, developing examination questions, establishing passing standards, and collecting evidence to support the validity of the examinations. The following activities are conducted to collect validity evidence to support the use of an examination.

## **EXAM DEVELOPMENT SECTION 1: PACT**

Exams adopted for the PACT route (see Table 1) were developed in accordance with the guidelines specified in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) for defining test content, developing test items, establishing passing standards, and collecting evidence to support the validity of the tests. These guidelines were incorporated for exam development for the source exams generally in eight distinct steps:

### **1. Establish Test Development Committees**

Content Advisory Committees were established to recommend the content, wording, and specifications for the exams. An Equity Advisory Panel was formed to review testing materials for potential bias. The members of these committees were chosen from applications received from well-qualified educators and educator preparation faculty. Committees comprised individuals who reflect racial, gender, ethnic, and regional diversity.

### **2. Define and Review Test Content**

National standards documents from representative professional organizations and other highly regarded resources, such as the Council of Chief State School Officers: Interstate Teacher Assessment and Support Consortium (InTASC) standards, were used to develop draft exam competencies (sets of exam objectives that define eventual exam content). The draft exam competencies for each exam field were reviewed and revised by the Equity Advisory Panel and the appropriate field-specific Content Advisory Committee.

### **3. Conduct the Content Validation Survey**

Content validation surveys were conducted for all approved exam competencies. A large sample of teachers, school administrators, and educator preparation faculty participated in surveys to rate the importance of each competency in each exam field for performing the job of an entry-level teacher. Results from the content validation surveys were analyzed to confirm that all competencies measured by the assessments are important to that job.

### **4. Develop and Review Exam Questions**

Exam questions matching the final exam competencies for each exam field were drafted. Each draft exam question was developed to correspond to an approved element of the exam competencies. This correspondence established the alignment of the exam questions—through the exam competencies—with approved standards.

## 5. Review Draft Exam Questions for Bias and Content

The Equity Advisory Panel focused its review on excluding from the exam materials any language, content, or perspectives that might disadvantage a certification candidate because of gender, race, ethnicity, national origin, sexual orientation, religion, age, or disability, or because of cultural, economic, or geographic background. The Equity Advisory Panel also focused on including in the exam materials diverse content and perspectives. The Content Advisory Committees met to review and revise the draft exam questions primarily from a content perspective. Content Advisory Committees reviewed the questions for accuracy and freedom from bias, and they confirmed that questions are matched to competencies, align with standards, and relate to the job of an entry-level teacher. The committee-approved exam questions were then finalized.

## 6. Conduct Pilot Testing

Exam questions were pilot tested with teacher candidates. The pilot-test data show how the questions perform with potential certification candidates. Questions that did not perform acceptably on the pilot tests were either deleted or revised and re-examined by the Equity Advisory Panel and Content Advisory Committees.

## 7. Construct Preparation Materials

A preparation guide for each exam field was prepared. Preparation materials include the exam designs and competencies, sample questions, and other related materials for each assessment.

## 8. Conduct Texas-Specific Validation Activities

Exam Validation and Standard Setting Panels were established prior to any exam being adopted for use in Texas. First, Pearson prepared crosswalks between each exam framework and the associated Texas Essential Knowledge and Skills (TEKS) to confirm alignment of the exam with the statewide student curriculum. Next, a separate Standard Setting Panel was convened for every exam to make judgments regarding a recommended passing score for that exam in Texas. Following these in-state exam validation activities, passing score judgments were compiled and presented to the Texas Education Agency, and the state established its own passing score for each PACT exam.

## **EXAM DEVELOPMENT SECTION 2: General (and PAIL)**

### **Task 1: Conduct Program Planning**

Pearson met with representatives of the TEA in Texas and by conference calls, as needed, to discuss and formulate a plan for program development activities. Topics discussed included TEA's vision for improvements to the Texas Educator Certification Examination Program, identification of Texas and national standards to inform development, proposed conference dates, the recruitment of Texas educators to participate in assessment development activities, and the involvement of Texas stakeholder groups. Development and maintenance topics are reviewed weekly and on an as-needed basis.

Generally, exam development activities have been split into several phases to meet the priorities determined by TEA.

### **Task 2: Establish Texas Advisory Committees**

As part of the standard process, Texas educators and educator preparation program faculty are called upon to review and validate test materials for use in the Texas Educator Certification Examination Program. Pearson worked with the TEA to establish Equity Assurance Panels (EAP) and separate Content Advisory Committees (CACs) to review materials for each field as they are developed. Selection of committee members for each panel was guided by the *Standards* which state:

*When appropriate to documenting the validity of test score interpretations for intended uses, relevant experts external to the testing program should review the test specifications to evaluate their appropriateness for intended uses of the test scores and fairness for intended test takers. The purpose of the review, the process by which the review is conducted, and the results of the review should be documented. The qualifications, relevant experiences, and demographic characteristics of expert judges should also be documented. (AERA, APA, & NCME, 2014, p. 87).*

Potential committee members include certified Texas educators and educator preparation program faculty as recommended by educator stakeholder groups (e.g., professional organizations, preparation program deans, school superintendents and principals). Recommended individuals are invited to complete a committee application form. In assembling each review group, Pearson worked with the TEA to provide representation in terms of ethnicity, gender, geographic region of the state, and school setting (e.g., urban, suburban, and rural areas). The TEA approved all committee participants.

For PAIL, items used in pilot testing and initial operational form production were delivered to Pearson in summer 2018 from the previous vendor. These items were identified as being ready for administration and were used in the initial construction of the first operational exam forms. In fall 2018, Pearson established an EAP and CAC to review new items drafted by Pearson specifically

for PAIL after July 2019, following the process outlined above.

Also, in fall 2018, Pearson initiated the process for assembling an EAP and CAC to review draft exam materials for all of the following fields in which exam development activity occurred within the 2019-20 year:

- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education 6-12 (370)
- English Language Arts and Reading 4-8 (217)
- Health EC-12 (257)
- Physical Education EC-12 (258)
- English Language Arts and Reading 7-12 (331)

In fall 2019, in response to House Bill 3 (2019) and TEA’s direction, Pearson initiated the process for assembling an EAP and CAC to review a draft examination framework for the following field:

- Core Subjects EC-6 English Language Arts and Reading (901)

### **Task 3: Align with Texas Standards**

The process of gathering validity evidence to support the use of the Texas Educator Certification Examination Program examinations continues with the alignment of the examination frameworks to Texas and national standards. The TEA and Pearson verified that the content of examinations under development is appropriate as defined by these standards (see *Approved Educator Standards: [https://tea.texas.gov/Texas\\_Educators/Preparation\\_and\\_Continuing\\_Education/Approved\\_Educator\\_Standards](https://tea.texas.gov/Texas_Educators/Preparation_and_Continuing_Education/Approved_Educator_Standards)*).

For PAIL, the framework had been completed and approved prior to September 1, 2018, when Pearson’s contract term began.

In 2019-20, Pearson began the process of reviewing state and national standards in preparation for framework development in each of the following fields:

- Core Subjects EC-6 English Language Arts and Reading (901)
- English Language Arts and Reading 7-12 (331)

Framework development for the following fields was completed prior to 2019-20:

- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education 6-12 (370)
- Physical Education EC-12 (258)
- English Language Arts and Reading 4-8 (217)

#### **Task 4: Develop and Review Examination Frameworks**

Standard 11.13 of the *Standards* requires that evidence should be provided to show that the knowledge, skills, and abilities that the examination intends to assess are required for credential-worthy performance in the occupation and are consistent with the purpose of the licensure program (AERA, APA, & NCME, 2014, p. 178). For each developed examination in the Texas Educator Certification Examination Program, a Content Advisory Committee (CAC) reviews examination materials for accuracy and validates materials to include only content that is pertinent to the field and important for use in a licensing instrument. The role of each CAC is to review examination materials for content accuracy and appropriateness. The CACs provide content-related validity evidence to support the use of the examinations. CACs review frameworks and test questions and participate in standard setting activities. This section describes the major components of examination frameworks, as well as the steps and criteria for bias and content review of the frameworks.

#### **Composition of Examination Frameworks**

An examination framework defines the content knowledge, skills, and abilities important for the job of an entry-level educator in the area being assessed. Pearson develops an exam framework for each Texas Educator Certification Examination Program examination, guided by recommendations in the *Standards*:

*The first step in developing test specifications is to extend the original statement of purpose(s), and the construct or content domain being considered, into a framework for the test that describes the extent of the domain, or the scope of the construct to be measured. Content specifications, sometimes referred to as content frameworks, delineate the aspects (e.g., content, skills, processes, and diagnostic features) of the construct or domain to be measured.... The delineation of the content specifications can be guided by theory or by an analysis of the content domain (e.g., an analysis of job requirements in the case of many credentialing and employment tests). The content specifications serve as a guide to subsequent test evaluation. (AERA, APA, & NCME, 2014, p. 76)*

Each Texas Educator Certification Examination Program examination framework is structured to include content domains, competencies, and descriptive statements that outline the knowledge and skills to be covered by the examination. Domains, competencies, and descriptive statements are described in more detail and further illustrated in Table 2.



- **Domains.** The framework is organized into multiple domains. The domains structure the subject matter for both examination preparation and score reporting. Together, the domains indicate the main areas of subject matter knowledge and skills important for the job of a public-school educator in Texas.
- **Exam Competencies.** The examination competencies are the key elements of the examination framework. They are intended to be broad, meaningful statements of the knowledge and skills important to the job of an educator in Texas public schools. The competencies define the range of knowledge and skills to be measured by the examination.
- **Descriptive Statements.** The descriptive statements further define each competency. Descriptive statements provide more detailed information about the content of a competency by including examples of the types of knowledge and skills covered by the competency. The descriptive statements are intended to provide only examples of the subject matter of a competency and do not cover the entire range of knowledge and skills represented by the competency.

**Table 2. Sample Framework Format**

<b>Domain</b>	READING AND VOCABULARY
<b>Competency</b>	Understand the literal content of a variety of authentic materials.
<b>Descriptive Statement</b>	Includes determining the stated main idea; summarizing; identifying character, setting or events described in a selection; and determining the sequence of events.

### **Equity Review of Examination Frameworks**

The frameworks for the Texas Educator Certification Examination Program are reviewed by the EAP for potential issues of fairness and to verify the content reflects the diversity of Texas. They are then reviewed for content by the CACs; however, CAC committee members are also instructed to review for potential issues of fairness. For the review of the frameworks, Pearson trainers and facilitators provide information to EAP committee members regarding the background, purpose, and policies of the Texas Educator Certification Examination Program, and directions for completing the framework reviews. Committee members are trained in the definition of bias as well as the inclusive and exclusive aspects of bias review. They review the competencies included in the frameworks using criteria pertaining to content, language, offense, stereotypes, fairness, and diversity. Committee members, in both EAP and CAC settings, consider each competency as fair only if it meets all criteria for fairness and diversity.

The following criteria are provided to EAP and CAC members as they review the exam frameworks.

**Content**

Does any element of the framework, including domains, competencies, and descriptive statements, contain content that disadvantages a person because of her or his gender, race, religion, age, sexual orientation, disability, or cultural, economic, or geographic background?

**Language**

Does the language used to describe any element of the framework, including domains, competencies, and descriptive statements, disadvantage a person because of her or his gender, race, religion, age, sexual orientation, disability, or cultural, economic, or geographic background?

**Offense**

Is any element of the framework, including domains, competencies, and descriptive statements, presented in such a way as to offend a person because of her or his gender, race, religion, age, sexual orientation, disability, or cultural, economic, or geographic background?

**Stereotypes**

Does any element of the framework, including domains, competencies, and descriptive statements, contain language or content that reflects a stereotypical view of a group based on gender, race, religion, age, sexual orientation, disability, or cultural, economic, or geographic background?

**Fairness**

Taken as a whole, is the framework fair to all individuals regardless of race, gender, cultural background, or other personal characteristics?

**Diversity**

Does the framework permit appropriate inclusion of content that reflects the diversity of the Texas population?

**Content Review of Examination Frameworks**

As required by the *Standards* (AERA et al., 2014), examination frameworks for licensure need to focus on knowledge, skills, and abilities necessary for safe and effective practice in the profession. Therefore, the role of the CACs in Texas is to consider if the frameworks are aligned with expectations for Texas educators, address important areas of Texas educator knowledge, skills, and abilities clearly

and appropriately, and are free from potential bias.

Pearson provides information regarding the background and purpose of the Texas Educator Certification Examination Program and directions for completing the content review. Committee members review the examination frameworks for alignment, completeness, language and terminology, and freedom from bias. The criteria used to determine if revisions are needed to the framework included the following:

- improving alignment to Texas and/or national standards
- adding emerging content
- addressing potential bias
- enhancing job-relatedness
- increasing or decreasing the emphasis of one component of content versus another component to align with Texas needs
- incorporating terminology commonly used in Texas
- increasing representativeness of content with Texas educator preparation program curricula

CAC members were provided the following criteria when conducting their review of the draft examination frameworks.

#### **Program Purpose**

Is the framework consistent with the purpose of the Texas Educator Certification Examinations (i.e., to determine whether prospective educators have the knowledge and skills to perform the job of an educator in Texas)?

#### **Organization**

Is the framework organized in a reasonable way?

#### **Inclusiveness**

Is the content of the framework complete?

Does the framework reflect the knowledge and skills an educator should have to perform the job of an educator?

Is there any content that should be added?

Additionally, CAC members were provided the following criteria when reviewing the competency and descriptive statements.

#### **Significance**

Do the competencies and descriptive statements describe knowledge and skills that are important for educators to have?

#### **Accuracy**

Do the competencies and descriptive statements accurately reflect the content, as it is understood by educators in the field?

Are the competencies and descriptive statements stated clearly and accurately, using appropriate terminology?

### **Freedom from Bias**

Are the competencies and descriptive statements free of elements that might disadvantage an individual because of her or his gender, race, ethnicity, nationality, national origin, religion, age, sexual orientation, disability, or cultural, economic, or geographic background?

### **Job-Relatedness**

Do the competencies and descriptive statements cover important knowledge and skills that an educator should have to perform the job of a Texas educator?

For PAIL, the framework had been completed and approved prior to September 1, 2018, when Pearson’s contract term began. Pearson did not conduct this task.

In 2019-20, a draft exam framework for the following field was reviewed by an EAP and CAC:

- Core Subjects EC-6 English Language Arts and Reading (901)

Framework development for the following fields was completed prior to 2019-20:

- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education (370)
- Physical Education EC-12 (258)
- English Language Arts and Reading 4-8 (217)

## **Task 5: Conduct Content Validation Surveys**

Content-related validity evidence is important in licensure testing because it provides evidence that the examination adequately represents the content domain of the occupation for which the examination is developed (AERA et al., 2014). The *Standards* (AERA et al., 2014) require a clear definition of content domain and a rationale to support a claim that the knowledge, skills, and abilities being assessed in a licensure test are required for credential-worthy performance. The sections below describe how Pearson typically selects participants and the criteria used to evaluate results of the content validation surveys.

### Survey participants and ratings

Pearson targets practicing public school teachers and/or administrators and educator preparation faculty for participation in the Content Validation Surveys of examination frameworks in the Texas Educator Certification Examination Program. Using an interactive, online survey instrument, participants use a five-

point scale to independently rate the components of the examination framework. The survey consists of three questions pertaining to importance, representativeness, and completeness of the knowledge and skills presented in the frameworks.

### Criteria for evaluating survey results

Pearson reviews overall ratings to determine the final status of the examination framework components. In general, a rating of 3.00 or higher is considered to be a clear indication that the content addressed by a competency is of the appropriate level of importance for an educator certification examination. Ratings below 3.00 may also be included if they are deemed to address topics that are articulated in the relevant state standards.

For PAIL, the framework had been completed and approved prior to September 1, 2018, when Pearson’s contract term began. Pearson did not conduct this task.

In 2019-20, Pearson completed a content validation survey for the following field:

- Core Subjects EC-6 English Language Arts and Reading (901)

Framework development, including the content validation survey, for the following fields was completed prior to 2019-20:

- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education (370)
- Physical Education EC-12 (258)
- English Language Arts and Reading 4-8 (217)

### **Task 6: Develop Examination and Item Specifications**

Texas Educator Certification Examination Program items are developed in accordance with the final, validated examination frameworks and examination designs. Pearson assembles a team of content specialists, exam development specialists, editors, content reviewers, and equity advisors to develop the examination items and associated scoring rubrics to support a close link between the examination materials produced and the examination frameworks and to verify they meet Pearson’s standards for editorial quality.

Pearson develops Exam Specifications for each field to inform the details and features of each examination and to guide item development needs. This includes the number and types of examination items on each form, the proportion or weighting of items from each competency, the allotted time to complete the examination, the proportion of scorable and non-scorable items and other guidelines relevant to form development. Information about each examination is located on the Texas Educator Certification Examination Program

website: [http://www.tx.nesinc.com/PageView.aspx?f=GEN\\_Tests.html](http://www.tx.nesinc.com/PageView.aspx?f=GEN_Tests.html).

Pearson prepares items for the Texas Educator Certification Examination Program by drawing from existing item banks and by drafting additional items as necessary. Examination item and material development involves a series of activities designed to produce an examination that is technically sound, reliable, and valid.

Pearson develops Item Specifications for each field to provide explicit content limits and requirements by competency in the exam framework to guide item development and provide the specifications by which items can be approved. Pearson prepares draft Item Specifications for TEA review, updates the specifications based on TEA feedback – including direct meetings as needed to further develop and clarify the specifications – until TEA approves the document for use in new item development. Any items drawn from existing banks and proposed for adoption into the new bank must meet the new approved Item Specifications for that bank or they are revised and reviewed again until they do.

Items used in initial pilot testing and initial operational form production were delivered to Pearson in summer 2018 from the previous vendor. These items were identified as being ready for administration. Exam Specifications were also approved in advance and delivered to Pearson. Therefore, in relation to the PAIL exam launched in July 2019, Pearson did not develop new Exam Specifications. However, based on the output of the pilot test conducted in December 2018–January 2019, Pearson and TEA reviewed the Exam Specifications and updated them prior to the operational launch.

In 2018-19, Pearson began developing new items to support the PAIL item bank and the creation of new examination forms in the future. Pearson drafted new PAIL Item Specifications for TEA’s review following the process described above, and the final Item Specifications governed ongoing development.

In 2019-20, Pearson drafted new exam specifications only (not item specifications) for a new Core Subjects EC-6 (391), as follows:

- Core Subjects EC-6 English Language Arts and Reading (901)
- Core Subjects EC-6 Mathematics (902)
- Core Subjects EC-6 Social Studies (903)
- Core Subjects EC-6 Science (904)
- Core Subjects EC-6 Fine Arts, Health, and Physical Education (905)

Development of exam and item specifications for the following fields was completed prior to 2019-20:

- Science of Teaching Reading (293)
- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)
- School Counselor (252)
- Pedagogy and Professional Responsibilities for Trade & Industrial Education (370)
- Physical Education EC-12 (258)
- English Language Arts and Reading 4-8 (217)

## **Task 7: Prepare and Review Examination Items**

### Equity Assurance Panel (EAP)

Pearson conducts item review and validation conferences with the Texas EAP for items in new and re-developed item banks. The purpose of the meetings is to review draft examination items to verify that the materials are free from potential issues of fairness and reflect the diversity of Texas according to established review criteria. As the *Standards* state:

*Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests' being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics. (AERA, APA, & NCME, 2014, p. 64)*

Pearson trainers and facilitators provide EAP committee members with information regarding the background, purpose, and policies of the Texas Educator Certification Examination Program, and directions for completing the review. Committee members are provided training in the definition of bias as well as the exclusive and inclusive aspects of bias review. If the committee indicates that an item contained a potential issue, they are asked to suggest possible revisions to address it. The EAP concerns and suggested revisions are shared with the content advisory committees.

### Content Advisory Committee (CAC)

For new and re-developed examinations, Pearson conducts item review and validation activities with CACs. Committee members participate in a consensus review of each item in the item bank. Once committee consensus is reached on an item, with or without revisions, each committee member provides an independent item validation judgment. Committee members rate each item as either "valid" or "not valid" according to the review criteria listed below.

- Match to competency or content domain
- Accuracy
- Freedom from bias
- Job-relatedness

An item is rated "valid" if it matches all four of the review criteria; an item is rated "not valid" if it fails to match one or more of the review criteria. When rating items "not valid," committee members are instructed to indicate which of the four criteria were not met and provided a written reason for the "not valid" rating. Pearson analyzes the item validation ratings and reviews the committee members' item validation comments.

In 2019-20, Pearson organized and facilitated Equity Assurance Panels and Content Advisory Committees to review, revise, and approve draft exam items in the following fields:

- Principal as Instructional Leader (268)
- Science of Teaching Reading (293)

- Early Childhood: PK-3 (292)
- Educational Diagnostician (253)

### **Task 8: Conduct Pilot Testing**

Newly developed or revised examination items should be tried out through an established field test or pilot test process to determine whether the items function as intended and to assess statistical characteristics of new examination questions or forms. This step in the examination development process relies on a sample of test-takers to try out one or more aspects of a new examination or new examination items such as item response formats or options and new item types. The process also provides a check of the adequacy of testing procedures such as the clarity and accuracy of examination directions and the appropriateness of the allotted testing time (AERA, APA, & NCME, 2014).

Pilot testing provides another source of validity evidence by gathering data regarding the performance characteristics of the examination items. When testing volumes and candidate populations permit, Pearson conducts pilot testing to collect this data. For examinations with constructed-response sections, pilot testing also serves the purpose of obtaining authentic examinee responses for the establishment of markers and scorer training.

Pilot testing was not completed for any field in 2019-20.

**Note:** Pearson conducted a pilot test of Principal as Instructional Leader (PAIL) items from December 2018 to January 2019 using content developed by and delivered from the previous vendor. The outcomes from these activities are described in the *Program Year 2018-2019 Outcomes* section of the 2018-19 Annual Technical Development Manual. PAIL exam items that Pearson initially developed, and that were reviewed by the EAP and CAC and approved by TEA, were not pilot tested in 2019-20. However, during 2019-20 operational administrations, selected-response items were included in nonscorable slots on active operational exam forms. In this model, candidates do not know which items on the exam are scored and which are not. Pearson collects item performance data on the items in nonscorable slots to determine whether the items function as intended and to assess their statistical characteristics prior to using them in a scorable capacity. Additional stand-alone pilot testing will be conducted to collect performance data on constructed-response items to assess the items' statistical characteristics.

### **Task 9: Build Operational Examination Forms**

Strict measures of quality control supported the process of assembly, production, preparation, and transmission of the first operational exam form, including definition of examination form content, review of item data, and examination form blueprinting and assembly.

In 2019-20, Pearson did not create new operational examination forms in any new or redeveloped certification field.



## **Task 10: Conduct Standard Setting**

The process of establishing passing requirements on an examination is referred to as standard setting. Standard setting relates directly to the validity of the interpretations made about candidates based on their test scores because the process produces a recommended passing score. The recommended passing score defines the boundary line between the acceptable level of knowledge, skills, and abilities required of an entry-level educator and an unacceptable level of knowledge, skills, and abilities. The *Standards* require that passing scores be set high enough to distinguish adequate from inadequate performance, but not too high to be unreasonably limiting (AERA, APA, & NCME, 2014).

Hambleton and Pitoniak (2006) recommend that standard setting processes include the following nine steps:

1. Selecting standard setting method
2. Choosing panelists
3. Preparing performance-level descriptors
4. Training panelists
5. Collecting item ratings
6. Providing feedback to panelists
7. Compiling panelists' ratings to obtain performance standards
8. Conducting panelists' evaluation, and
9. Compiling validity evidence and preparing documentation

### *Standard setting method*

The modified Angoff method (Angoff, 1971) is used to set passing scores for the PAIL selected-response items section of the first operational exam form. Using this method, subject matter experts review each item and marked the proportion of the target population that would provide a correct response. An extended-Angoff standard setting method is used for constructed-response items. Details about the two methods are provided in a later section below.

### *Standard setting panel*

The committee established to participate in standard setting consists of public-school educators who are certified and practicing in the field, and faculty from Texas colleges and universities who are currently preparing (or have prepared) prospective Texas educators. Panel members are selected to include educators from public schools and preparation programs that represent districts and colleges across the state and generally reflect the diversity of the state of Texas.

### *Performance-level descriptor*

Performance-level descriptors are descriptions of the skills and knowledge that candidates in a performance category should possess. Performance-level descriptors form the basis for making judgments and providing ratings in standard setting. Appropriate threshold candidate description(s) are referenced when establishing a passing score.

For the purpose of Texas standard setting, this description is referred to as the “Just Acceptably Qualified Candidate (JAQC).”

The TEA defines the Just Acceptably Qualified Candidate (JAQC) for Texas teachers generally as:

*An individual who is just at the minimum level of knowledge and skills needed to be an effective educator in Texas and positively contribute to student learning*

#### *Training of panelists*

Panelist training is a critical component in setting performance standards. Training allows panelists to receive information pertaining to the testing program, test development procedures, scoring, and the task the panelists are required to complete. Panel members for the standard setting meeting are given an orientation that explained the standard setting recommendation process, the materials they will use, the concept of the Just Acceptably Qualified Candidate, and the judgments about examination items that they are asked to provide.

Panelists also complete a training exercise, which includes items with a range of item difficulty and cognitive complexity, to prepare them for the actual rating activity. The roles of the TEA in establishing the final passing score are also explained.

Training also involves a simulated test-taking activity, which allows panelists to become familiar with examination content. Panel members are asked to review the framework and then “take the exam.” Each panel member is provided with a copy of an examination form and is asked to read and answer the questions on the exam without referring to the answer key. After responding to all questions, panelists are provided with the answer key and asked to score their own answers as circled in the booklet. Panelists are encouraged to write and make notes as needed in their copies of the exam booklet to assist them with their review.

#### *Collecting item ratings*

Standard setting panelists provide performance-level judgments for each item on the exam form. The facilitator provides training in this step of the standard setting process, in which panel members make item-by-item judgments using a modified Angoff procedure. Referring to the exam form they had reviewed and taken earlier, panel members are asked to provide their individual, independent judgments regarding the expected performance of the JAQC on each of the selected-response and constructed-response items.

Panel members are asked to envision a group of Texas educators who are just at the minimum level of knowledge and skills an educator needs to be an effective educator in Texas and positively contribute to student learning. Panel members are asked to refer to the concept of these candidates in making their judgments throughout the standard setting process. For the constructed-response items, panelists review the sample “marker” responses from the constructed-response items on the examination form and descriptions of performance at each score

point on the scoring scale. An iterative procedure is used, in which standard setting ratings are gathered in multiple rounds.

Following the training for round one, panelists provide item by-item judgments of the performance on the selected-response items from the examination form. For constructed-response items, panelists provide passing score judgments that range from “2” to “8” points.

In round two, panelists are given an opportunity to change their ratings in light of feedback from round one.

In some cases, standard setting may include a round three, in which panelists provide individual recommendations for an exam-level minimum passing score, based on feedback from rounds one and two.

#### *Providing feedback*

Giving feedback to panelists is advantageous in that it helps to improve consistency of ratings and reduces variability among panelists because the panelists can develop a clearer and common understanding of expected performance. Feedback also allows identification of inconsistent and outlier panelists who can be asked to review or justify their ratings.

Therefore, prior to the second round, panelists review results from the initial round of ratings as well as item difficulty data from the pilot test. Panel members are then given an opportunity to revise their individual round-one item ratings. For constructed-response items, as with the selected-response items, following their first round of judgments, panelists are provided with a summary of their own and other panelists’ first round ratings. This information is used together to provide a final recommendation in the second round.

If a third round is planned, panelists review results from the round two selected-response item-based passing score judgments, which are calculated into an exam-based passing score judgment for the set of scorable selected-response items. Panelists are then asked to provide an exam-level judgment regarding the number of scorable selected-response items to which a JAQC would respond correctly.

Following a group discussion, panelists are asked to consider the information presented, the purpose of the Texas Educator Certification Examination Program, the framework and exam items, and the requirements for the entry level principal. Panelists are then asked to provide individual recommendations for an exam-level minimum passing score.

In all rounds and throughout the ratings process, panelists are provided multiple opportunities to ask for further clarification of how to read and interpret the information.

#### *Compiling ratings to get cut scores*

After panelists complete their selected-response ratings, their rating forms are analyzed to produce a panelist-specific Round One Item Rating Summary to be given to each panelist. The report is prepared for each selected-response item, including the panelist’s rating, the median rating provided by all panelists rating the item, and the distribution of ratings across all panelists. Similar calculations

are made after round two ratings. The exam-level ratings provided in round three, if needed, are used to compute a median score of the committee, which is then presented to the TEA for approval.

*Conducting panelists' evaluations of the standard setting process and procedures*

Panelists' evaluations provide data that could be used to improve the process and that serve as a good source of procedural validity evidence. Panelists that participate in a standard setting meeting are given a chance to evaluate the standard setting process.

The panelists complete evaluation forms to provide their professional judgments about the standard setting meeting. On a five-point scale, panel members are asked to rate the various aspects of the meeting. Panel members are also provided space to make additional comments regarding the standard setting meeting proceedings.

Implementation of the Modified-Angoff Procedure for Selected-response Questions

Panelists provide standard setting ratings based on their professional judgment, their knowledge of their examination field, their understanding of the qualifications of prospective educators, the content of an examination form, and examination data, when available, about candidate performance on the examination form. This process conforms to Standard 5.22 of the *Standards*, which states:

*When cut scores defining pass–fail or proficiency levels are based on direct judgments about the adequacy of item or test performances, the judgmental process should be designed so that the participants providing the judgements can bring their knowledge and experience to bear in a reasonable way. (AERA, APA, & NCME, 2014, p. 108)*

The modified-Angoff procedure requires panelists to use their professional judgment and understanding of the knowledge and skills of the target group to estimate the proportion of target examinees that would provide a correct response to each item. For standard setting for the certification of teachers in Texas, panelists are asked to respond to the following question:

*Imagine a hypothetical group of individuals who are just at the minimum level of knowledge and skills needed to be an effective educator in Texas and positively contribute to student learning.*

*What percent of this group would answer the item correctly?*

0% - 10% = 1	51% - 60% = 6
11% - 20% = 2	61% - 70% = 7
21% - 30% = 3	71% - 80% = 8
31% - 40% = 4	81% - 90% = 9
41% - 50% = 5	91% - 100% = 10

Panelists are instructed to keep in mind the hypothetical reference group. Individuals in the hypothetical reference group are defined as having a sufficient level of knowledge, skills, and abilities needed to serve as initially licensed educators or instructional leaders.

### Implementation of the Extended-Angoff Procedure for Constructed-response Questions

For a description of focused holistic scoring, see the next section “Scoring and Reporting.”

Standard setting panelists review the sample “marker” responses from the constructed-response item(s) on the exam form and descriptions of performance at each score point on the scoring scale. The marker responses function as guides for focused holistic scoring. Panelists then provide a passing score judgment that ranges from “2” to “8” points for each constructed-response item. As with the selected-response items, following their first round of judgments, committee members are provided with a summary of their own and other committee members’ first round ratings. This information is used together to provide a final recommendation in the second round.

In 2019-20, Pearson did not conduct standard setting in any new or redeveloped certification field.

### **Task 11: Establish Passing Standards**

A Standard Setting report and presentation are provided to TEA including the outcomes of the Standard Setting Conference. This includes the recommended passing score made by the committee, which is then considered in the process of establishing the final approved passing standard.

Texas Education Code, §21.048(a) requires the commissioner of education to determine the satisfactory level of performance for each educator certification examination and a satisfactory level of performance on each core subject covered by an examination.

In 2019-20, Pearson did not conduct standard setting in any new or redeveloped certification field, and TEA did not establish new passing standards.

### **Scoring and Reporting**

This section of the report addresses the scoring and reporting processes and procedures for the Texas Educator Certification Examination Program generally, including the PACT exams.

#### Selected-response Item Scoring

Scoring verification of selected-response items delivered within a computer-administered testing environment is comprehensive and continuous. After the complete set of examination forms for a score reporting date have been scored,

a comprehensive quality control system verifies accurate computation of candidate scores. As part of the quality control process, Pearson prepares a preliminary item analysis report and flags items that do not perform within defined statistical parameters and the overall form performance for each test form administered. Score review is not available to candidates for exams that have only selected-response items because of the quality-control measures in place to deliver accurate scoring of selected-response items.

### Constructed-response Item Scoring

The responses to the constructed-response items are scored using a method known as focused holistic scoring. In this method, scorers judge the overall effectiveness of each response while focusing on a set of performance descriptions that have been defined as important. These performance descriptions guide scorers in the assignment of holistic scores in order that uniform criteria are used to assign a score to each response.

Though this method focuses on specific descriptions, it is holistic in that each assigned score describes the overall effectiveness of these descriptions working in concert. Each response is rated on a scale of "1" to "4," with a "1" representing a response that reflects very weak or no understanding of the relevant knowledge and skills and a "4" representing a response that reflects a thorough understanding of the relevant knowledge and skills. The performance descriptions are used to form the basis of the four-point scale.

Each examinee response to a constructed-response item is evaluated independently by two or more trained and calibrated scorers. Each response is assigned a numerical score on the four-point scale from each scorer. The two independent scores are combined, resulting in a total constructed-response item score that ranges from 2 to 8. For example, if two scorers both assigned a score of "3" to an examinee response, the total raw score for the response would be "6" ("3" + "3").

Exam takers who do not pass may request a score review for exams with a written- or spoken-response section (including an interview), and only for that written- or spoken-response section (or interview).

### **Support Materials and Other Tools**

Pearson developed multiple web-based Texas Educator Certification Examination Program preparation tools designed to help candidates prepare to take relevant examinations. The preparation tools are available on the Texas Educator Certification Examination Program website: <http://www.tx.nesinc.com/>. The online tools are designed to accommodate varying methods of preparation (independent study or under the direction of an instructor or faculty advisor); areas of focus (examination content); and opportunities for access (at school, at home, while traveling). Educator preparation program faculty can also gain an understanding of the examinations and how to help their candidates prepare through resources available on the Educator Preparation Program page: [http://www.tx.nesinc.com/PageView.aspx?f=GEN\\_FacultyResources.html](http://www.tx.nesinc.com/PageView.aspx?f=GEN_FacultyResources.html).

Candidates have access to the following resources to guide their preparation.

- **Examination Frameworks.** Examination frameworks include the content domains and competencies covered by each examination. In each framework, the competencies are organized into content domains that reflect the main areas of pedagogical or content area knowledge included on the examination. Descriptive statements provide details about the nature and range of content covered by each competency.
- **Examination Preparation Manuals.** Online preparation manuals are available for each exam. The preparation manuals include an overview of the examination format, number of questions, testing duration, competencies with descriptive statements, and sample exam questions with rationales. The preparation manuals also include information to assist candidates in preparing for and taking the examinations.
  - **Note:** A preparation manual for each PACT exam was adopted along with the exam itself for use in Texas. PACT preparation manuals include the examination framework as well as other features described above.
- **Interactive Practice Exams.** Online interactive practice exams simulate the computer-administered testing experience. The interactive practice exam can be taken in real time or paused and returned to at any time. Test-takers receive a competency-level report with instant scoring of selected-response questions and explanations of correct responses.
- **Computer-administered Testing Tutorials.** Two tutorials are available to examinees on the program website. One tutorial is designed to help familiarize examinees with the navigation tools and operations of computer-administered testing. It includes information about how to navigate through an examination, select answers, and end the examination. The second tutorial is downloadable and interactive. It guides examinees on how to record, change, and review answers. The tutorial also gives examinees the opportunity to practice using various functions of the computer-administered environment, including viewing visuals and exhibits, scrolling pages, reviewing items, typing in an essay box, and using an on-screen calculator.
- **Faculty Resources.** EPP faculty have access to an array of resources, including specially designed worksheets that may be used to map the examination framework content to the program curriculum. This mapping may assist in assessing the degree of alignment between the knowledge and skills taught in the preparation program curriculum and in the content of the Texas Educator Certification Examination Program frameworks.
- **Exam Preparation Worksheets.** Candidates can complete worksheets to assess their preparedness to test. Faculty can review the completed worksheets to help assess whether a candidate may be ready to test based on the content covered in their coursework and guide further candidate preparation.

## **Program Year 2019-2020 Outcomes**

Prior to the 2019-20 program year, each PACT examination was validated using industry-approved processes, including the review of content, job-relatedness, and prevention of bias. Texas educators and educator preparation program faculty and administrators made recommendations for the selected-response and constructed-response passing scores for the examination.

### **Pilot Testing Background**

There was no completed pilot test and no outcomes from pilot testing for the Texas Educator Certification Examination Program in 2019-20. Pilot testing that was completed after 8/31/20 will be reported in the 2020-21 Annual Technical Development Manual.

### **Standard Setting Background**

Standard setting activities were conducted for PACT with Texas educators from April 29-May 3, 2019. The standard setting committees convened for PACT included experienced Texas educators and EPP faculty representing each of the PACT fields identified in Table 1. Pearson used an industry accepted modified Angoff Standard Setting process described under Task 10 of this manual. The exam designs by item type (i.e., SRI and where present, CRI) for each of the PACT exams are provided in the Appendix.

At the end of the standard setting meeting, the Standard Setting Panelists were asked to complete an evaluation of the standard setting process. An evaluation form requested their feedback about the training they received, their confidence in their ability to provide standard setting ratings, and any comments regarding the Standard Setting Conference proceedings.

### **Standard Setting Summary**

The panelists recruited for the PACT Standard Setting Conference were drawn from Texas educators and EPP faculty. Each Standard Setting Committee (SSC) consisted of between 9-18 members. All panelists were reviewed and approved by TEA prior to serving on the committee. The demographic distribution of members is shown in Table 4.



**Table 4. PACT Standard Setting Committee Demographics**

	EPP Faculty		Public School Educator		No Response		Total	
	N	%	N	%	N	%	N	%
<b>PACT Conference Committees (Overall)</b>	79	17%	398	83%	1	0%	478	100%
Female	59	75%	292	73%	1	100%	352	74%
Male	20	25%	100	25%	0	0%	120	25%
No Response	0	0%	6	2%	0	0%	6	1%
African-American	8	10%	42	11%	0	0%	50	10%
American Indian or Alaska Native	0	0%	3	1%	0	0%	3	1%
Asian	4	5%	12	3%	0	0%	16	3%
Hispanic	18	23%	80	20%	0	0%	98	21%
Native Hawaiian or Other Pacific Islander	0	0%	1	0%	0	0%	1	0%
White	42	53%	213	54%	1	100%	256	54%
No Response	7	9%	47	12%	0	0%	54	11%

Based on the results of the Round 2 judgments, the overall committee recommended passing scores were calculated for each PACT field. The committee recommended raw passing scores were provided to TEA for review along with passing scores at 1 and 2 standard error of measurement (SEM) adjustments above and below the committee recommendations.

Each time a candidate takes an examination, there is a random chance that the score will be slightly different, and applying the SEM is one way to take this into account. The SEM allows educational analysts to determine a range of scores an examinee would receive if tested repeatedly without studying or other remediation between attempts. By adjusting the committee-recommended passing score to account for this range, a policy board can adjust for the likelihood of “false positive” or “false negative” results.

The assessment validation activities described above, and in greater detail throughout this manual, provide support that the PACT examination fields are aligned to the state’s need for a system of evaluating whether potential educator candidates possess the necessary content knowledge for entering into an educator preparation program.

## References

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (2014). *Standards for educational and psychological testing*. American Educational Research Association.

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## **Appendix**

The exam designs for the PACT exams follow. Each table provides the percentage of questions from each of the framework domains and competencies by item type (SRI, CRI, when present).

701 TX PACT: Essential Academic Skills (Subtest I: Reading)				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001	20%	.	20%
001	002	20%	.	20%
001	003	20%	.	20%
001	004	20%	.	20%
001	005	20%	.	20%
<b>SRI Total Items:</b>	45			
702 TX PACT: Essential Academic Skills (Subtest II: Writing)				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
002	001	33%	.	25%
002	002	33%	.	25%
002	003	33%	.	25%
002	004	.	100%	25%
<b>SRI Total Items:</b>	36			
<b>CRI Total Items:</b>	1			

703 TX PACT: Essential Academic Skills (Subtest III: Mathematics)				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
003	001	20%	.	20%
003	002	20%	.	20%
003	003	20%	.	20%
003	004	20%	.	20%
003	005	20%	.	20%
<b>SRI Total Items:</b>	45			
710 TX PACT: LOTE French: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	26%	.	15%
002	003-004	26%	.	15%
003	005-006	22%	.	13%
004	007-008	26%	.	15%
005	009	.	50%	20%
006	010	.	50%	22%
<b>SRI Total Items:</b>	100			
<b>CRI Total Items:</b>	2			

711 TX PACT: LOTE German: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	26%	.	15%
002	003-004	26%	.	15%
003	005-006	22%	.	13%
004	007-008	26%	.	15%
005	009	.	50%	20%
006	010	.	50%	22%
<b>SRI Total Items:</b>	100			
<b>CRI Total Items:</b>	2			
712 TX PACT: LOTE Latin: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	40%	.	40%
002	005-007	30%	.	20%
003	008-010	30%	.	20%
005	014	.	50%	10%
006	015	.	50%	10%
<b>SRI Total Items:</b>	63			
<b>CRI Total Items:</b>	2			

713 TX PACT: LOTE Spanish: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	26%	.	15%
002	003-004	26%	.	15%
003	005-006	22%	.	13%
004	007-008	26%	.	15%
005	009	.	50%	20%
006	010	.	50%	22%
<b>SRI Total Items:</b>	100			
<b>CRI Total Items:</b>	2			
714 TX PACT: LOTE Chinese: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	26%	.	15%
002	003-004	26%	.	15%
003	005-006	22%	.	13%
004	007-008	26%	.	15%
005	009	.	50%	20%
006	010	.	50%	22%
<b>SRI Total Items:</b>	100			
<b>CRI Total Items:</b>	2			

715 TX PACT: Mathematics: Grades 4-8				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	17%	.	17%
002	003-006	32%	.	32%
003	007-009	26%	.	26%
004	010-012	26%	.	26%
<b>SRI Total Items:</b>	125			
716 TX PACT: Science: Grades 4-8				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	19%	.	19%
002	004-008	31%	.	31%
003	009-012	25%	.	25%
004	013-016	25%	.	25%
<b>SRI Total Items:</b>	125			



717 TX PACT: English Language Arts & Reading: Grades 4-8				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	21%	.	21%
002	004-007	30%	.	30%
003	008-009	15%	.	15%
004	010-012	21%	.	21%
005	013-014	14%	.	14%
<b>SRI Total Items:</b>	125			
718 TX PACT: Social Studies: Grades 4-8				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-008	50%	.	50%
002	009-011	19%	.	19%
003	012-014	19%	.	19%
004	015-016	12%	.	12%
<b>SRI Total Items:</b>	125			

721 TX PACT: Family and Consumer Sciences, Composite				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	32%	.	32%
002	005-007	26%	.	26%
003	008-010	26%	.	26%
004	011-012	17%	.	17%
<b>SRI Total Items:</b>	125			
729 TX PACT: Speech: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-006	33%	.	28%
002	007-013	11%	100%	24%
003	014-017	19%	.	16%
004	018-021	19%	.	16%
005	022-025	19%	.	16%
<b>SRI Total Items:</b>	80			85%
<b>CRI Total Items:</b>	1		100%	15%

731 TX PACT: English Language Arts & Reading: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	23%	.	23%
002	005-008	23%	.	23%
003	009-011	18%	.	18%
004	012-015	23%	.	23%
005	016-017	12%	.	12%
<b>SRI Total Items:</b>	125			
732 TX PACT: Social Studies: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	25%	.	25%
002	005-008	25%	.	25%
003	009-011	19%	.	19%
004	012-014	19%	.	19%
005	015-016	12%	.	12%
<b>SRI Total Items:</b>	125			

733 TX PACT: History: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	12%	.	12%
002	003-005	18%	.	18%
003	006-009	23%	.	23%
004	010-013	23%	.	23%
005	014-017	23%	.	23%
<b>SRI Total Items:</b>	125			
735 TX PACT: Mathematics: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	19%	.	19%
002	004-007	23%	.	23%
003	008-010	19%	.	19%
004	011-013	19%	.	19%
005	014-016	19%	.	19%
<b>SRI Total Items:</b>	125			

736 TX PACT: Science: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	19%	.	19%
002	004-009	37%	.	37%
003	010-013	25%	.	25%
004	014-016	19%	.	19%
<b>SRI Total Items:</b>	125			
737 TX PACT: Physical Science: Grades 6-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	8%	.	8%
002	003-006	14%	.	14%
003	007-009	11%	.	11%
004	010-011	8%	.	8%
005	012-014	10%	.	10%
006	015-017	10%	.	10%
007	018-021	14%	.	14%
008	022-025	14%	.	14%
009	026-028	11%	.	11%
<b>SRI Total Items:</b>	125			

738 TX PACT: Life Science: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	20%	.	20%
002	004-005	13%	.	13%
003	006-009	27%	.	27%
004	010-012	20%	.	20%
005	013-015	20%	.	20%
<b>SRI Total Items:</b>	125			
739 TX PACT: Physics: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	14%	.	14%
002	003-006	28%	.	28%
003	007-009	22%	.	22%
004	010-011	14%	.	14%
005	012-014	22%	.	22%
<b>SRI Total Items:</b>	125			

740 TX PACT: Chemistry: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	18%	.	18%
002	004-006	18%	.	18%
003	007-010	23%	.	23%
004	011-014	23%	.	23%
005	015-017	18%	.	18%
<b>SRI Total Items:</b>	125			
741 TX PACT: Computer Science: Grades 8-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	29%	.	29%
002	004-007	42%	.	42%
003	008-009	19%	.	19%
004	010	10%	.	10%
<b>SRI Total Items:</b>	100			
742 TX PACT: Technology Applications: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	34%	.	34%
002	003-005	55%	.	55%
003	006	11%	.	11%
<b>SRI Total Items:</b>	100			

756 TX PACT: Journalism: Grades 7-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	23%	.	23%
002	003-004	28%	.	28%
003	005	23%	.	23%
004	006-007	26%	.	26%
<b>SRI Total Items:</b>	90			
757 TX PACT: Health: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	30%	.	30%
002	004-007	40%	.	40%
003	008-010	30%	.	30%
<b>SRI Total Items:</b>	100			
758 TX PACT: Physical Education: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	38%	.	38%
002	004-006	38%	.	38%
003	007-008	24%	.	24%
<b>SRI Total Items:</b>	100			



771 TX PACT: Technology Education: Grades 6-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	002-006	24%	.	24%
002	007-009	14%	.	14%
003	010-013	20%	.	20%
004	014-016	14%	.	14%
005	017-019	14%	.	14%
006	020-022	14%	.	14%
<b>SRI Total Items:</b>	100			
772 TX PACT: Agriculture, Food, and Natural Resources: Grades 6-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	19%	.	19%
002	005-008	19%	.	19%
003	009-013	24%	.	24%
004	014-015	10%	.	10%
005	016-018	14%	.	14%
006	019-021	14%	.	14%
<b>SRI Total Items:</b>	125			

776 TX PACT: Business and Finance: Grades 6-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	19%	.	19%
002	004-006	19%	.	19%
003	007-009	19%	.	19%
004	010-012	19%	.	19%
005	013-016	23%	.	23%
<b>SRI Total Items:</b>	125			
777 TX PACT: Music: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	27%	.	27%
002	004-006	27%	.	27%
003	007-009	27%	.	27%
004	011-012	18%	.	18%
<b>SRI Total Items:</b>	125			

778 TX PACT: Art: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-002	11%	.	11%
002	003-008	33%	.	33%
003	009-014	33%	.	33%
004	015-016	12%	.	12%
005	017-018	11%	.	11%
<b>SRI Total Items:</b>	125			
779 TX PACT: Dance: Grades 6-12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	35%	.	35%
002	005-008	35%	.	35%
003	009-011	30%	.	30%
<b>SRI Total Items:</b>	100			
780 TX PACT: Theater: Early Childhood-Grade 12				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-006	36%	.	36%
002	007-013	41%	.	41%
003	014-017	23%	.	23%
<b>SRI Total Items:</b>	100			

784 TX PACT: American Sign Language (ASL): Early Childhood-Grade 12 (Subtest I)				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	50%	.	50%
002	004-006	50%	.	50%
<b>SRI Total Items:</b>	50			
785 TX PACT: American Sign Language (ASL): Early Childhood-Grade 12 (Subtest II)				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-004	100%	.	40%
002	005	.	100%	60%
SRI Total Items:	50			
CRI Total Items:	4			
791 TX PACT: Core Subjects: Grades 4-8 - English Language Arts and Reading				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
001	001-003	20%	.	20%
002	004-007	28%	.	28%
003	008-009	16%	.	16%
004	010-012	20%	.	20%
005	013-014	16%	.	16%
<b>SRI Total Items:</b>	50			

792 TX PACT: Core Subjects: Grades 4-8 - Mathematics				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
006	015-016	18%	.	18%
007	017-020	34%	.	34%
008	021-023	24%	.	24%
009	024-026	24%	.	24%
<b>SRI Total Items:</b>	50			
793 TX PACT: Core Subjects: Grades 4-8 - Social Studies				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
010	027-034	52%	.	52%
011	035-037	18%	.	18%
012	038-040	18%	.	18%
013	041-042	12%	.	12%
<b>SRI Total Items:</b>	50			
794 TX PACT: Core Subjects: Grades 4-8 - Science				
Domain	Competency	Approx. % of SR Items	Approx. % of CR Items	Approx. % of TOTAL Test
014	043-045	18%	.	18%
015	046-050	34%	.	34%
016	051-054	24%	.	24%
017	055-058	24%	.	24%
<b>SRI Total Items:</b>	50			

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