Montana Board of Public Education
Executive Summary

Date: November 15-17, 2023

Presentation	Presentation on the Request for Initial Approval for the Alternative Program- American Board for Certification of Teacher Excellence (American Board).
Presenter	Crystal Andrews and Julie Murgel
Position Title	Accreditation and Licensure Director; Chief Program Officer Office of Public Instruction
Overview	As aligned with ARM 10.58.802; the Superintendent is requesting approval of the American Board, an alternative certification program. The American Board has provided an overview along with three supporting documents which are located in the agenda packet.
Requested Decision(s)	Informational Item
Related Issue(s)	The American Board's request addresses the requirements listed in SB373; the statute for an alternative teacher certification and endorsement program. ARM 10.57.102(5)(c) "Approved preparation program" means: An educator preparation program approved by a state board of education or state education agency that leads to licensure in the state of preparation.
Recommendation(s)	None

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October 27, 2023

The Honorable Elsie Arntzen
Montana State Superintendent of Public Instruction
P.O. Box 202501
Helena, MT 59620-2501

Dear Superintendent Arntzen,

The American Board for Certification of Teacher Excellence (American Board) greatly appreciates the opportunity to partner with you, the Montana Board of Public Education, and schools across the state to become an approved alternative teacher certification program.

In reviewing SB373, passed by the Montana Legislature earlier this year and signed into law by the Governor, American Board fulfills the requirements listed in the statute for an alternative teacher certification and endorsement program. Those requirements of a program include:

1. subject-area content training in the area in which the applicant seeks to be certified and endorsed (Section 1(1)(d));

American Board provides content training in the subject areas of Elementary Education, Special Education, English Language Arts, US and World History, Mathematics, General Science, Biology, Chemistry, and Physics. There is also an additional endorsement in Reading/Literacy. Furthermore, American Board program participants are required to pass a final subject-area exam as part of successful program completion.

2. pedagogical training that covers effective instructional delivery, classroom management and organization, assessment, instructional design, and professional learning and leadership (Section 1(1)(d)); and

The domains and topics for pedagogy training (entitled Professional Teaching Knowledge) are detailed in this packet of information and include the training categories listed in the statute. As with the subject-area exam, American Board program participants are required to pass a final Professional Teaching Knowledge exam as part of successful program completion.

3. the program is accepted for teacher licensure in at least five states and has operated for at least 10 years (Section 1(4)(a)(ii)).

American Board was founded in 2001 with a $45 million grant from the US Department of Education. As an example, today, American Board operates in 13 states with at least three more coming online. In the last 20 years across those states, American Board has helped more than 16,000 teachers gain their certification. Five of the first states to approve American Board's certification program continue to accept the certification today. They are listed in the table below.

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State	Year Initiated	Website
Florida	2004	https://www.fldoe.org/core/fileparse.php/9915/urlt/RoutesEdPrep.pdf
Idaho	2003	https://www.sde.idaho.gov/be-an-educator/
Missouri	2008	https://dese.mo.gov/educator-quality/certification/facts-about-american-board-certification-teacher-excellence-abcte
Oklahoma	2009	https://sde.ok.gov/oklahoma-teaching-requirements-american-board-certification-teacher-excellence-abcte-teachers
South Carolina	2007	https://ed.sc.gov/educators/alternative-certification/programs/

In addition to submitting proof that American Board meets the requirements set forth in statute, we have responded to the additional questions your office has sent. We hope that all of this leads to your recommendation of program approval to the Board of Public Education.

Sincerely,

Melanie Olmstead, Executive Director
American Board for Certification of Teacher Excellence

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Alternative Teaching Program Information Request
American Board for Certification of Teacher Excellence

American Board for Certification of Teacher Excellence (American Board) was founded by the U.S. Department of Education in 2001, currently operates in 13 states, and has certified more than 16,000 teachers nationwide. American Board's program provides a flexible and affordable pathway for competent, local professionals seeking a career change to teaching.

In 2016, Drexel University's School of Education conducted a survey of over 150 principals at schools that employ American Board-certified teachers. The purpose of this survey was to assess the efficacy and quality of American Board-certified teachers after becoming a full-time teacher of record. Drexel's survey found that:

1. American Board-certified teachers performed better than traditional, college-certified teachers in the following areas:
    - Roots in their communities
    - Job Appreciation
    - Applying prior professional knowledge
    - Applying real world experiences
2. 97% of principals surveyed expected to offer their American Board-certified teachers a second contract.
3. 97% of principals surveyed expected to retain their American Board-certified teachers after the critical 3- year mark.

The complete Drexel Principal Survey has been submitted with this application as 'Supporting Document 1'.

Additionally, since its inception, American Board has participated in stringent third-party reviews of both its program content and the effectiveness of its teacher graduates. Renowned organizations that have reviewed American Board's program include Mathematica Inc, Drexel University's School of Education, and MetriKs Amérique LLC. American Board currently participates in an annual review with MetriKs Amérique, through which American Board's standards, study material, and certification exams are continuously reviewed.

In 2018, Drexel University School of Education professor Toni Sondergeld compared American Board pedagogy materials with the nationally recognized InTASC standards—which were developed through a cooperative process led by the Council of Chief State School Officers—and found American Board's PTK Standards are well-aligned to the InTASC Standards across the majority of content. Any noted differences represent a difference in emphasis and focus rather than missing content. This study of the American Board PTK Examination with InTASC National Standards has been submitted with this application as 'Supporting Document 2'.

Another third-party study looked at the alignment of American Board's Professional Teaching Knowledge (PTK) content standards to the Praxis Principles of Learning and Teaching (PLT) content standards. This study looked at alignment on two levels: the Domain level (or macro content) and the Specific Objective

level (or micro content). American Board content was found to be very strongly aligned at 100% whilst Specific Objectives were very strongly aligned at 98%.

In fact, the two programs were aligned well enough to be considered interchangeable based on the general content measured. “Based on results of the present alignment study, the American Board has effectively demonstrated that it adheres to recognized national Professional Teaching Knowledge standards, as represented in the PRAXIS© PLT examination for teachers. Coupled with the results from routine psychometric analyses conducted annually, it is evident that the American Board meets the guidelines for the development and administration of a psychometrically sound and legally defensible assessment program.” This PTK and Praxis Alignment study has been submitted with this application as ‘Supporting Document 3’.

American Board's admission requirements are straightforward and ensure a diverse candidate pool. First, candidates must hold at least a bachelor’s degree from an accredited college or university. Many American Board candidates hold master’s degrees and / or PhDs, in addition to decades of career experience. Candidates must also complete a background check form and submit their official transcripts within 30 days of enrolling in American Board’s program. If a candidate fails their background check or their transcripts do not meet state requirements, they cannot move forward with the program and will be issued a full refund for any paid program fees. American Board’s typical candidates include career changers, Military Veterans, substitute teachers and paraprofessionals looking for full certification, and stay-at-home parents who wish to re-enter the workforce.

In addition to providing a low one-time enrollment fee which is about 1/10 the cost of a traditional certification program, American Board also offers need-based discounts, the option to pay in installments, the ability to pay through third parties such as Workforce Innovation and Opportunity Act (WIOA) offices, and a significantly discounted price for all of our Nation’s Veterans and their spouses.

Although American Board’s program is designed for independent use by candidates, we understand the importance of providing guidance and assistance throughout their enrollment. American Board offers light counseling for candidates who are uncertain about the certification they should pursue, including information about high-need subject areas and required competencies in those areas. Although American Board does not offer career placement, we do offer guidance on the resume-building and job application process. American Board candidates also have access to an online Help Desk and dedicated phone line where they can receive technical support, ask questions, and submit program feedback to content creators.

While the program offered is self-paced and competency-based, American Board does provide remediation as needed. Candidates who require additional support beyond the standard study materials have access to American Board’s Remediation Team which is comprised of currently licensed teachers who possess firsthand knowledge of the specific skills and knowledge needed by teachers in training. It is important to note that as an alternative certification program, American Board does not offer the traditional academic counseling typically found in university programs. Instead, our focus is on providing practical support and resources that directly contribute to the success of our candidates. We are committed to guiding candidates on their journey towards becoming certified teachers, ensuring they have the tools and assistance they need to excel in the field of education.

American Board believes that highly skilled teachers should possess a comprehensive body of knowledge that is research-based and promotes student achievement. American Board's Professional Teaching Knowledge (PTK) Exam is designed to assess a new teacher's knowledge of teaching-related criteria. Such knowledge is typically obtained in undergraduate preparation in areas such as human development, classroom management, instructional design and delivery techniques, assessment, and other professional preparation. This exam also contains a writing component that evaluates a candidate's ability to write to audiences they will most likely address as a teacher: parents, colleagues, and/or school administrators.

The standards covered in American Board's PTK exam are divided into the following domains: Instructional Design, Effective Instructional Delivery, Classroom Management and Organization, Assessment, and Professional Learning and Leadership. Importantly, these standards have been shown to align with the nationally recognized InTASC standards which ensure that candidates demonstrate an understanding within four categories: "the learner and learning," "content," "instructional practice," and "professional responsibility." American Board's PTK standards have also been found to be aligned with the PRAXIS© PLT content standards. Evidence of this alignment can be found in the attached 'Supporting Document 2' from Drexel University and 'Supporting Document 3' from MetriKs Amérique. Every candidate completing American Board's program is required to pass the PTK exam.

To ensure that candidates are well-prepared for the PTK Exam, American Board provides a comprehensive array of study materials. These resources were developed by university professors and field experts through a $45 million grant from the U.S. Department of Education. The study materials include the PTK Study Plan, PTK Standards Workbook, PTK Workshop, and PTK Practice Quizzes and Exams. These materials were thoughtfully designed to facilitate candidates' understanding of the exam's content and structure. As noted above, these materials are continuously reviewed and updated by field experts as warranted.

As candidates progress through the curriculum, they are introduced to content through a provided list of standards and engaging workshops accompanying each course. To track their progress and identify areas that may require further review, candidates utilize the study plan, which encourages analysis, definition, paraphrasing, reflection, and application of each standard. To strengthen content retention, practice questions are strategically embedded within each workshop, while practice quizzes for each domain and two practice final exams further reinforce the material.

Ultimately, content mastery is evaluated during the final exams. By providing a well-structured curriculum and robust study materials, American Board ensures that its candidates receive comprehensive and effective preparation for their exams.

American Board for Certification of Teacher Excellence believes that highly skilled teachers should possess a comprehensive body of knowledge that is research-based and promotes student achievement. American Board's content area exams are a rigorous assessment of a candidate's knowledge and application of their chosen subject area. American Board offers certification in the following content areas: Biology, Chemistry, English, Elementary Education, History, Mathematics, Physics, Reading, General Science, and Special Education. The standard outlines for each course are included at the end of this document.

To ensure that candidates are well-prepared for their subject-area exam, American Board provides a comprehensive array of study materials. These resources were developed by university professors and field experts through a $45 million grant from the U.S. Department of Education. These study materials include a list of standards, study plans, informational materials, workshops, and practice quizzes and exams. Like the pedagogy material, the subject-area study material is reviewed and updated by field experts on a rolling basis.

As candidates progress through the curriculum, they are introduced to content through a provided list of standards and engaging workshops accompanying each course. To facilitate effective self-assessment and identify areas that may warrant further review, candidates make use of a detailed study plan, which encourages analytical thinking, definition, paraphrasing, reflection, and the practical application of each standard.

To strengthen content retention, practice questions are strategically embedded within each workshop, while practice quizzes for each domain and two practice final exams further reinforce the material. Ultimately, content mastery is evaluated during the final exams. By providing a well-structured curriculum and robust study materials, American Board ensures that its candidates receive comprehensive and efficient preparation for their exams.

In order to complete American Board's program, candidates must demonstrate mastery in pedagogy and their chosen content area by passing American Board's Professional Teaching Knowledge exam and the respective content area exam. These exams assess candidates on their knowledge of critical concepts and best practices in both pedagogy and their chosen content area.

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Professional Teaching Knowledge (PTK)

* Every candidate completing American Board's program is required to pass the PTK exam.

Domain 1 – Instructional Design
- Topic 1: Selects, Organizes, Plans, and Designs Content

Domain 2 – Effective Instructional Delivery
- Topic 1: Communicates Effectively
- Topic 2: Provides Clear and Focused Instruction
- Topic 3: Uses Effective Questioning Techniques
- Topic 4: Makes Efficient Use of Learning Time
- Topic 5: Builds Students' Study Skills

Domain 3 – Classroom Management and Organization
- Topic 1: Establishes Smooth, Efficient Classroom Routines
- Topic 2: Sets Clear Standards for Classroom Conduct and Applies Them Fairly and Consistently
- Topic 3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress
- Topic 4: Expects Students to Learn
- Topic 5: Involves Parents and Guardians in Supporting the Instructional Program

Domain 4 – Assessment
- Topic 1: Monitors Student Progress Closely
- Topic 2: Understands Testing Concepts
- Topic 3: Gives High-Needs Students Extra Time and Instruction They Need to Succeed

Domain 5 – Professional Learning and Leadership
- Topic 1: Professional Learning
- Topic 2: Leadership

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Biology

Basic Science

- Domain 1 – Scientific Investigation
- Domain 2 – Biology
- Domain 3 – Chemistry
- Domain 4 – Earth Science
- Domain 5 – Physics

Framework of Biology

- Domain 1 – Biochemical Basis of Life
- Domain 2 – Cell Biology and Microbiology
- Domain 3 – Classical Genetics
- Domain 4 – Molecular Biology
- Domain 5 – Evolution
- Domain 6 – Comparative Physiology
- Domain 7 – Human Physiology
- Domain 8 – Plant Biology and Physiology
- Domain 9 – Ecology

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Chemistry

Domain 1 – Scientific Investigation
- Topic 1: Scientific Investigation

Domain 2 – General Science Knowledge
- Topic 1: General Science Knowledge

Domain 3 – Atomic Structure, Periodicity, and Matter
- Topic 1: Atomic Structure and Theory
- Topic 2: Periodic Table
- Topic 3: Quantum Mechanics
- Topic 4: Nuclear Chemistry

Domain 4 – Chemical Naming and Structure
- Topic 1: Molecular Bonding and Structure
- Topic 2: Chemical Naming and Formulas

Domain 5 – Reactions and Reactivity
- Topic 1: Chemical Reactions and Stoichiometry
- Topic 2: Kinetics
- Topic 3: Electrochemistry
- Topic 4: Thermodynamics and Equilibrium

Domain 6 – Gas Laws and Solutions
- Topic 1: Gas Laws
- Topic 2: Solution Chemistry
- Topic 3: Acids and Bases

Domain 7 – Organic Chemistry

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Elementary Education

Reading and English Language Arts

- Domain 1 – Alphabetics
  - Topic 1: Alphabetic Basics and Phonemic Awareness
  - Topic 2: Phonics Instruction
- Domain 2 – Fluency
  - Topic 1: Fluency
- Domain 3 – Comprehension of Texts
  - Topic 1: Vocabulary Development
  - Topic 2: Interpretation and Evaluation of Informational Texts
  - Topic 3: Interpretation and Evaluation of Literary Texts
- Domain 4 – Oral and Written Language Development
  - Topic 1: Standard English Language Conventions
  - Topic 2: Language Acquisition and Development
  - Topic 3: Comprehension and Delivery of Spoken Messages
  - Topic 4: Writing Strategies and Application
  - Topic 5: Research Strategies

History and Social Science

- Domain 1 – World History
  - Topic 1: Ancient Civilizations
  - Topic 2: Medieval and Early Modern Times
  - Topic 3: Modern Times
- Domain 2 – United States History
  - Topic 1: Early Exploration, Colonial Era, and the War for Independence
  - Topic 2: The Development of the Constitution and the Early Republic
  - Topic 3: Civil War and Reconstruction
  - Topic 4: The Rise of Industrial America
  - Topic 5: Modern Times
- Domain 3 – Civics/Government
  - Topic 1: Civics/Government
- Domain 4 – Geography
  - Topic 1: Geography
- Domain 5 – Economics
  - Topic 1: Economics
- Domain 6 – Reasoning Skills in History and the Social Sciences
  - Topic 1: Reasoning Skills in History and the Social Sciences

Mathematics

- Domain 1 – Number Sense
  - Topic 1: Numbers, Relationships Among Numbers and Number Systems
  - Topic 2: Computational Tools, Procedures and Strategies
- Domain 2 – Algebra and Functions
  - Topic 1: Patterns and Functional Relationships
  - Topic 2: Linear and Quadratic Equations and Inequalities
- Domain 3 – Geometry and Measurement
  - Topic 1: Two- and Three-Dimensional Geometric Objects
  - Topic 2: Representational Systems, Including Concrete Models, Drawings and Coordinate Geometry
  - Topic 3: Techniques, Tools and Formulas for Determining Measurements
- Domain 4 – Statistics, Data Analysis and Probability
  - Topic 1: Collection, Organization, and Representation of Data
  - Topic 2: Inferences, Predictions, and Arguments Based on Data
  - Topic 3: Basic Notions of Change and Probability
- Domain 5 – Mathematical Reasoning and Problem Solving
  - Topic 1: Mathematical Reasoning and Problem Solving

Science

- Domain 1 – Life Science
  - Topic 1: Structure of Living Organisms and Their Function (Physiology and Cell Biology)
  - Topic 2: Living and Nonliving Components in Environments (Ecology)
  - Topic 3: Life Cycle, Reproduction, and Evolution (Genetics and Evolution)
- Domain 2 – Earth and Space Science
  - Topic 1: The Solar System and the Universe
  - Topic 2: The Structure and Composition of the Earth (Geology)
  - Topic 3: The Earth's Atmosphere (Meteorology)
  - Topic 4: The Earth's Water (Oceanography and Fresh Water Bodies)
  - Topic 5: The Earth's Resources
- Domain 3 – Physical Science
  - Topic 1: Structure and Properties of Matter
  - Topic 2: Principals of Motion and Energy
- Domain 4 – Scientific Investigation Skills
  - Topic 1: Scientific Investigation Skills

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English Language Arts

Domain 1 – Comprehension of Texts
- Topic 1: Vocabulary
- Topic 2: Interpretation of Expository Texts
- Topic 3: Interpretation of Literary Texts

Domain 2 – Oral and Written Language Development
- Topic 1: Standard English Language Conventions
- Topic 2: Speech
- Topic 3: Writing Strategies and Applications
- Topic 4: Research Strategies

Domain 3 – Instructional Knowledge/Professional Skills
- Topic 1: Instructional Knowledge/Professional Skills

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General Science

Basic Science

Domain 1 – Scientific Investigation
Domain 2 – Basic Biology
Domain 3 – Basic Chemistry
Domain 4 – Basic Earth Science
Domain 5 – Basic Physics

Biology

Domain 1 – Biology-Biochemical Basis of Life
Domain 2 – Biology-Cell Biology
Domain 3 – Biology-Classical Genetics and Molecular Biology
Domain 4 – Biology-Evolution
Domain 5 – Biology-Animal Physiology
Domain 6 – Biology-Plant Physiology
Domain 7 – Biology-Ecology

Chemistry

Domain 8 – Chemistry-Periodic Table and Trends
Domain 9 – Chemistry-Quantum Mechanics
Domain 10 – Chemistry-Molecular Bonding and Structure
Domain 11 – Chemistry-Chemical Naming and Formulas
Domain 12 – Chemistry-Chemical Reactions and Stoichiometry
Domain 13 – Chemistry-Electrochemistry
Domain 14 – Chemistry-Solution Chemistry
Domain 15 – Chemistry-Gas Laws
Domain 16 – Chemistry-Nuclear Chemistry

Earth Science

Domain 17 – Earth Science-Astronomy and Cosmology
Domain 18 – Earth Science-Structure and Composition of Earth
Domain 19 – Earth Science-Earth's Magnetic Field, Plate Tectonics, and Structural Geology
Domain 20 – Earth Science-History of Earth
Domain 21 – Earth Science-Earth's Atmosphere
Domain 22 – Earth Science-Earth's Water
Domain 23 – Earth Science-Earth's Resources and Hazards

Physics

Domain 24 – Physics-General Mathematics and Kinematics

Domain 25 – Physics-Dynamics
Domain 26 – Physics-Work, Energy, Power, and Momentum
Domain 27 – Physics-Mechanics of Fluids
Domain 28 – Physics-Thermodynamics
Domain 29 – Physics-Waves
Domain 30 – Physics-Electricity
Domain 31 – Physics-Magnetism and Electromagnetism
Domain 32 – Physics-Optics

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Mathematics

Domain 1 – Number Sense
- Topic 1: Number Sense

Domain 2 – Algebra and Functions
- Topic 1: Algebra and Functions

Domain 3 – Geometry and Measurement
- Topic 1: Geometry and Spatial Reasoning
- Topic 2: Measurement

Domain 4 – Trigonometry
- Topic 1: Trigonometry

Domain 5 – Probability, Statistics, and Data Analysis
- Topic 1: Probability, Statistics, and Data Analysis

Domain 6 – Linear Algebra
- Topic 1: Linear Algebra

Domain 7 – Calculus
- Topic 1: Calculus

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Physics

Domain 1 – Scientific Investigation
- Topic 1: Scientific Investigation

Domain 2 – General Science Knowledge
- Topic 1: General Science Knowledge

Domain 3 – Classical Mechanics
- Topic 1: Kinematics and Dynamics
- Topic 2: Work, Energy, Power, and Momentum
- Topic 3: Rotational Motion
- Topic 4: Universal Gravitation

Domain 4 – Fluids and Thermodynamics
- Topic 1: Mechanics of Fluids (Liquids or Gases)
- Topic 2: Thermodynamics

Domain 5 – Electricity and Magnetism
- Topic 1: Electrostatics
- Topic 2: Electric Currents
- Topic 3: Magnetism
- Topic 4: Ampère's Law, Faraday's Law, and Maxwell's Equations

Domain 6 – Waves and Optics
- Topic 1: Waves
- Topic 2: Geometrical (Ray) Optics
- Topic 3: Physical (Wave) Optics

Domain 7 – Modern Physics
- Topic 1: Modern Physics

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Reading

*Please note that this subject area is add-on only, and you must also be enrolled in another subject area to pursue this certification.

Domain 1 – Evaluating Reading Programs and Pedagogical Recommendations

Domain 2 – Developing Children's Phonemic Awareness

Domain 3 – Phonics Instruction

Domain 4 – Developing Fluency

Domain 5 – Vocabulary and Concept Development

Domain 6 – Teaching Understanding of Informational Texts

Domain 7 – Teaching Understanding of Literary Texts

Domain 8 – Differentiating Instruction for Different Kinds of Students

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Special Education

*Please note that candidates must complete both the Special Education and Elementary Education assessments in addition to the PTK assessment in order to complete American Board's Special Education program.

Domain 1 – Professional Skills and Background Knowledge
- Topic 1: Philosophical, Historical, and Legal Foundations
- Topic 2: Professional and Ethical Practice
- Topic 3: Professional Communication and Collaboration

Domain 2 – Understanding the Special Needs Student
- Topic 1: Characteristics of Learners with Disabilities
- Topic 2: Cultural Competence
- Topic 3: Family Participation
- Topic 4: Learning Environments and Social Interactions

Domain 3 – General Special Education Practices
- Topic 1: Assessment
- Topic 2: Effective Instructional Delivery
- Topic 3: Instructional Planning
- Topic 4: Student Self-Determination and Transition

Domain 4 – Language Development Strategies
- Topic 1: Language Acquisition and Development
- Topic 2: Reading Acquisition
- Topic 3: Spelling
- Topic 4: Writing Strategies

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United States History

*Please note that candidates must complete both the United States History and World History assessments in addition to passing the PTK assessment to complete American Board's History program.

Domain 1 – Discovery and Settlement of the New World
- Topic 1: Discovery and Settlement of the New World

Domain 2 – The Colonial Era
- Topic 1: The Founding of the Colonies
- Topic 2: The Growth of the Colonies

Domain 3 – Establishment and Growth of the Republic
- Topic 1: The American Revolutionary Era
- Topic 2: The Early Republic

Domain 4 – Jacksonian Era to the Civil War
- Topic 1: Jacksonian Era
- Topic 2: Industrial, Territorial, and Social Developments prior to the Civil War

Domain 5 – The Civil War and Reconstruction
- Topic 1: The Civil War and Reconstruction

Domain 6 – Post Civil War Period Through World War I
- Topic 1: Development of Post Civil War America
- Topic 2: The Progressive Era and the Emergence of America as a World Power

Domain 7 – The Roaring Twenties Through World War II
- Topic 1: The Roaring Twenties, Great Depression, and the New Deal
- Topic 2: World War II

Domain 8 – Post-World War II America
- Topic 1: The Cold War Era
- Topic 2: Contemporary America

World History

*Please note that candidates must complete both the United States History and World History assessments in addition to passing the PTK assessment to complete American Board's History program.

Domain 1 – From Prehistory to Ancient Civilizations

Domain 2 – Classical Civilizations

Domain 3 – Postclassical Era

Domain 4 – Early Modern Times

Domain 5 – The Long 19th Century

Domain 6 – The Global 20th Century

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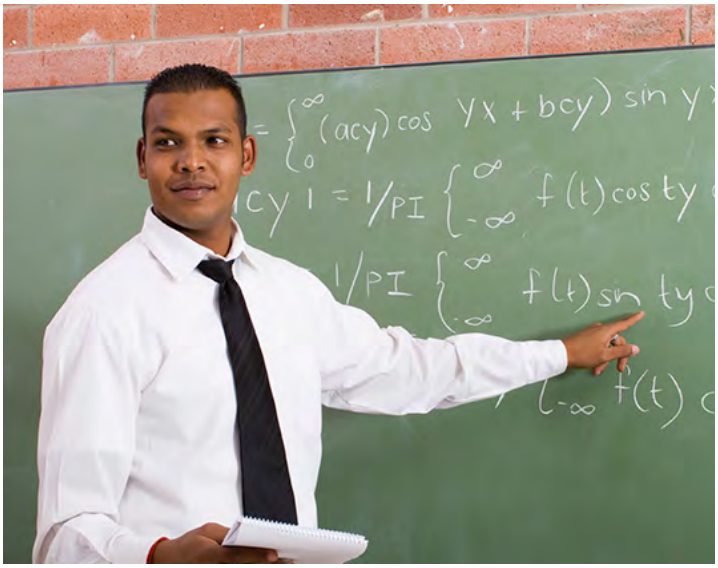

2016 Principal Survey

Toni A. Sondergeld, Ph.D.
Associate Professor

Executive Summary

Project Background – Since the inception of alternative teacher preparation programs, contradictory evidence about their quality and the impact of teachers prepared through alternative preparation programs versus traditional colleges of education has been presented. While some suggest alternative programs are weak or ineffective (Zeichner, 2016) others have presented equally compelling evidence to demonstrate their equivalence or outpacing of traditional college programs (Alhamisi, 2008). Furthermore, to suggest that all alternative preparation programs are identical is incorrect and misleading (Sass, 2013). Any suggestions that alternative teacher preparation programs are identical or will produce the same results are incorrect, in the same way that all colleges of education are not identical nor produce identical teachers. As alternative teacher preparation programs in general increase in popularity, clarity about *specific* programs is essential to better understand their unique characteristics and potential contributions to the K-12 teacher workforce.

Project Purpose – In order to begin to better assess the quality of teachers emerging from the American Board for Certification of Teacher Excellence (ABCTE) program specifically, and compare their performance to traditionally prepared college of education graduates, ABCTE commissioned an independent study in September 2016. The main purpose of this study was to evaluate both the effectiveness and retention of ABCTE prepared teachers with those teachers emerging from traditional college pathways.

Project Sample – A final sample of 155 principals (57% response rate) participated in the voluntary survey. Response rates above 33% are traditionally considered acceptable. The response rate of 57% is excellent and allows for greater generalization of results.

Overview of Findings – Five fundamental findings emerged from this study.

1. ABCTE teachers performed equivalently to traditional, college-prepared teachers across most (75%) evaluated aspects of teacher quality.

2. ABCTE prepared teachers were rated higher on four aspects (20%) of teacher quality, relative to bringing real-world experiences into the classroom, community connection, and job appreciation.

3. Traditional, college-prepared teachers were rated higher on only one aspect (5%): pedagogy.

4. Nearly all principals (151 of 155; 97%) expected to offer their ABCTE prepared teachers a second contract.

5. Nearly all principals (150 of 154; 97%) expected to retain their ABCTE prepared teachers after the three-year mark.

Conclusions – Survey results support positive attributes associated with ABCTE prepared teachers and find them largely comparable to or stronger than traditionally prepared teachers. During this time when many underserved local communities are in need of a stable teaching force, the opportunity to attract both traditionally and alternatively prepared high-quality instructors seems exceptionally important. It is clear that ABCTE prepared teachers are well-prepared to meet the needs of 21st-century learners.

Introduction and Methods

Since the inception of alternative teacher preparation programs, contradictory evidence about their quality and the impact of teachers prepared through alternative preparation programs versus traditional colleges of education has been presented. The National Education Policy Center reported that teacher preparation outside of colleges of education was sporadic, incomplete, and left student learning at stake (Zeichner, 2016). Conversely, Alhamisi (2008), noted that "teachers who completed the alternative teacher preparation programs and teachers who completed traditional teacher preparation programs did not differ on either Praxis II scores or grade point averages, as well as [across] external perceptions of job knowledge and performance" (p. 4). Further, the nature, substance, and requirements of alternative teacher preparation programs appears to influence the quality and performance of emerging teachers. Sass (2013) reported a significant difference in outcome and performance, depending on the type of preparation (coursework versus no coursework), suggesting that increased coursework was actually detrimental to the in-class performance of teachers. Thus the notion that all alternative teacher preparation programs are identical or will produce the same result is incorrect. As alternative teacher preparation programs in general increase in popularity, clarity about *specific* programs is essential to better understand their unique characteristics and potential contributions to the K-12 teacher workforce.

In order to specifically address the quality of teachers emerging from the American Board for Certification of Teacher Excellence (ABCTE) program and compare their performance to that of traditionally prepared college of education graduates, ABCTE commissioned an independent study in September 2016. The purpose of the study was to evaluate the effectiveness and retention of ABCTE prepared teachers as compared to those teachers emerging from traditional college pathways. ABCTE offers an alternative certification program currently accepted in 12 states in place of traditional teacher preparation programs. Based on teacher placement information gathered from annual ABCTE alumni surveys, a selection of 270 principals who currently employ one or more ABCTE prepared teachers were contacted and asked to participate in an anonymous survey. The final convenience sample included 155 principal participants (57%) who completed the survey fully. This response rate is considered high and supports the generalizability of the results with a ±5.15 margin of error and a 95% confidence level.

For this project, a unique survey was constructed to assess the performance of teachers across a variety of areas associated with the traditional role of a teacher. Twenty teacher performance indicators under this general domain were developed from teaching best practices literature and experience in the field. An expert panel of 12 principals were convened to review the teacher characteristics included on the instrument, as a method for instrument validation. This Delphi panel (Skulmaski, Hartman, & Krahn, 2007) supported the use of the initial set of criteria with minor fine-tuning of the instrument based on pilot results. Table 1 lists the teacher quality (performance) indicators included on the final survey distributed for this study in no particular order of importance.

Table 1. Teacher Performance Indicators Included on Final Survey

Maturity	Classroom management
Has broad real-world experiences	Organization
Works late as needed	Conflict resolution
Leadership	Applies prior professional experience to instruction
Has roots in the local community	Content knowledge
Collaborates with peers	Pedagogy
Community involvement	Models appropriate behavior for students
Incorporates professional feedback	Motivation
Punctuality	Will remain with your school long-term
Parent communication	Appreciates the job opportunity

In addition to the evaluation of fundamental teacher performance criteria, two additional questions were asked to gauge how confident principals were in the continued employment (retention) of ABCTE alternatively prepared teachers. First, principals were asked whether they would extend an offer for a second contract to the ABCTE prepared teacher(s) in their schools. Second, principals were asked whether they intended to retain their ABCTE prepared teacher(s) after the three-year mark.

Survey results were analyzed using the Rasch (1960/1980) model for rating scales (Wright & Masters, 1982). The Rasch objective measurement model allows for the creation and use of linear measures of qualities. Linear measurement provides a level of clarity and specificity not achievable through traditional statistical means. Rasch measurement is widely used in many fields and a very common method implemented in social science high stakes testing (e.g., educational state testing, medical board certification, etc.). Additionally, Rasch measurement has been noted as the most effective method for validating and analyzing survey data (Bond & Fox, 2015).

Results

Instrument Performance

Performance of the instrument was excellent, and thus supports the notion that meaningful and reliable results were produced from this study. Table 2 presents Rasch consistency and reliability statistics for the principals and teacher qualities surveyed.

Table 2. Consistency and Reliability Rasch Statistics

	Separation	Reliability
Principals	2.99	.90
Teacher Qualities (Items)	3.68	.93

Separation is a measure of clarity, specifically, the number of statistically significant groups that may be identified amongst the principals (by the items), and amongst the items (by the principals). In the present survey, separation of the principals is only useful in that it refers to the consistency and clarity of their teacher ratings. On the other hand, the separation of items helps to validate that we are carefully describing and considering a specific construct - namely the qualities of teaching professionals. In traditional survey research, reliabilities above 0.70 are and separation statistics at or above 2.0 are considered acceptable. Instrument reliabilities and separations were excellent, providing evidence to support that valid and generalizable results were found and inferences can be drawn to the greater population that was not examined.

Survey Findings

A distinct benefit of using the Rasch model for surveys, is that precise data are made available for researchers to make clear interpretations. Most specifically, to define the operation of our construct (teacher performance), separation statistics and standard errors of measure associated with *each* quality were used. This uniquely precise information allows for the construct (concept) of teaching to be meaningfully interpreted, differentially. Traditional confidence intervals established using the standard error of measures associated with the twenty qualities assessed were defined, along with the separation statistics to establish the points of difference (where ABCTE teachers are stronger, where ABCTE and college prepared teachers are equivalent, and where college prepared teachers are stronger).

Tables 3 and 4 present results relative to the observation of teacher performance. Table 3 is a modified "construct map" which succinctly explains the findings. The Rasch model defines the construct (in this case teacher performance) in terms of qualities assessed, and evaluates their developmental and/or differential nature. Table 3 may be read as a scale, wherein reported performance of ABCTE prepared teachers is either better than, equal to, or worse than traditional college prepared teachers. Reading from left to right, the results are exceptionally positive for the ABCTE program. Across 20% of the qualities evaluated (4 of 20), including having roots in the local community, an appreciation for the job opportunity, and both integrating real-world experiences in the classroom and applying prior obtained professional knowledge, ABCTE prepared teachers were reported as performing significantly better than their college counterparts. Similarly, and exceptionally positive, across 75% of the qualities evaluated (15 of 20) ABCTE and college prepared teachers were shown to perform statistically equivalent. On only one rated quality (pedagogy) did principals rate college prepared teachers as performing higher.

Table 3. Teacher Performance Indicator Map

Better performance by ABCTE Prepared Teachers	Equivalent Performance across all Teachers	Better performance by Traditional College Graduates
Roots in the community	Classroom management	Pedagogy
Appreciates the job	Content knowledge	
Applies prior professional knowledge	Organization	
Real world experience	Parental communication	
	Conflict resolution	
	Collaborates with peers	
	Incorporated professional feedback	
	Works late	
	Community involvement	
	Leadership	
	Maturity	
	Punctuality	
	Models appropriate behavior	
	Motivation	
	Remain long term	

Table 4 presents the statistics for Table 3, wherein the set of items evaluated are arranged in Rasch difficulty order along with associated standard errors. Statistical separation lines are drawn between factors to denote the three statistically and meaningfully significant divisions. Table 4 thus expresses the points and magnitude of differences as demonstrated in Table 3. Table 4 demonstrates that ABCTE prepared teachers are not simply better in four areas; but practically, significantly, and *meaningfully* better. Similarly, it demonstrates the relative meaningful performance equivalence of most all other tasks, apart from pedagogy.

Table 4: Teacher Factors Arranged by Equivalence

Measure	(SEM)	Teacher Factor
-1.27	(.20)	Real-World Experience
-1.16	(.20)	Applies Prior Professional Experience to Instruction
-1.01	(.20)	Appreciates the Job
-.88	(.20)	Roots in Community
-.56	(.20)	Remain Long Term
-.52	(.20)	Motivation
-.32	(.20)	Punctuality
-.24	(.20)	Community Involvement
-.24	(.20)	Leadership
-.20	(.20)	Maturity
-.09	(.21)	Models Appropriate Behavior for Students
.08	(.20)	Works Late
.12	(.20)	Collaborate with Peers
.25	(.20)	Incorporating Professional Feedback
.37	(.20)	Conflict Resolution
.49	(.20)	Organization
.53	(.20)	Parental Communication
1.16	(.20)	Content Knowledge
1.33	(.19)	Classroom Management
1.76	(.19)	Pedagogy

Complementary results were found to those above when principals were asked about retention of their ABCTE prepared teachers. Figures 1 and 2 clearly show that principals intend to retain their ABCTE prepared teachers through offering them a second contract and expect to keep them on staff for three years or longer.

Figure 1. Have you/Will you Offer you ABCTE Prepared Teacher a Second Contract?

Figure 2. Will you Retain your ABCTE Prepared Teacher after Three Years?

Conclusions

There exists considerable debate regarding the capacities of teachers prepared through alternative teacher preparation programs versus those prepared through traditional colleges of education. Where teacher shortages are a major concern, particularly in large urban districts, small rural districts, and those with higher levels of poverty, this concern is more than academic. Furthermore, the different natures of alternative models make the label "alternative" misleadingly simplistic. Alternative programs are not identical. The present study was designed to compare the effectiveness and retention of teachers prepared through a single alternative program, namely ABCTE, with those teachers emerging from traditional college pathways. Two fundamental, positive themes emerged from the study conducted: Performance and Longevity.

Performance (ABCTE Teachers Perform Equal to or Better than their College Prepared Counterparts)

ABCTE prepared teachers and teachers prepared through traditional colleges of education are largely equivalent in terms of their performance across the vast majority (75%) of teacher qualities assessed in our survey. Furthermore, ABCTE teachers are reported to perform significantly better across 20% of the teacher qualities assessed. ABCTE prepared teachers offer more connection to real-world issues, practical applications, community connection, and job appreciation. These findings are not entirely surprising. Newly minted traditional college-prepared teachers frequently have less exposure to "real-world" experiences useful for bringing into the classroom. ABCTE prepared teachers, who often possess degrees in the disciplines they wish to teach, typically enter teaching after having been within a specialized career path and consequently hold greater “real-world” experiences. Furthermore, teachers entering through this alternative pathway typically have made a conscious choice to leave a successful career in order to "give back" and teach, which may lead to a higher degree of community connection and job appreciation.

Teachers prepared through traditional colleges of education were reported to perform better on only one area, pedagogy (educational theory). This finding also is not surprising as traditional path teachers are generally exposed to vast amounts of educational theory courses throughout potentially four years of college. Taken holistically, ABCTE prepared teachers perform at or above expectations associated with nearly all aspects of

teacher quality assessed in this study. The finding that ABCTE prepared teachers are equally as strong or stronger than college prepared teachers across 95% of the evaluated teacher qualities is impressive and speaks well to the specific dynamics of the ABCTE program.

Longevity (ABCTE Teacher Retention Rates are Positive and Strong)

Principals overwhelmingly support the short- and long-term retention of ABCTE teachers. Indeed, 97% of principals surveyed suggested that they intended to offer their ABCTE prepared teachers a second contract. Similarly, 97% of principals surveyed suggested that they intended to retain their ABCTE prepared teachers at the three-year mark. These findings are not only strong, but quite meaningful for the development of a robust teacher workforce. Retention may, in some instances, be used as a proxy for teacher quality and effectiveness (Boyd et al., 2010). Principals are more likely to retain effective teachers. Based on the results of this study, ABCTE prepared teachers appear as quite successful, and likely to remain and/or be offered continued contracts long-term. Long-term retention is a component of great importance to administrations (Burkhauser, 2016). Nationally, 16% of public school teachers leave the teaching profession annually for reasons other than natural retirement (Goldring, Taie, & Riddles, 2014). Knowing that (1) principals surveyed perceive ABCTE teachers as having greater “roots in the community”, and (2) these principals also remain steadfast in awarding ABCTE certified teachers new contracts, the ABCTE program appears to be well positioned to offer a comparable, effective, and functional alternative pathway to teaching, and a similarly positive pool of professionals, highly desirable for recruitment.

Final Comments

Findings from this study reflect well on the generally positive attributes associated with the practices of ABCTE teachers. There are many variations of "alternative" preparation programs, as noted earlier. From the positive findings shared in this report, the structure and dynamics associated specifically with the ABCTE program appear to be very sound. Findings from this report further agree with and support those earlier reports from scholars including Alhamisi (2008) who noted that alternatively prepared teachers were largely equivalent or better in comparison to traditionally prepared teachers. During this time when many underserved local communities are in need of a stable teaching force, the opportunity to attract both traditionally and alternatively prepared high-quality instructors seems exceptionally important.

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AMERICANBOARD
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2018 Content Alignment Study

American Board PTK Examination with InTASC National Standards

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Overview

Professional Teaching Knowledge (PTK) standards were originally developed between 2002 and 2004 to create the initial PTK portion of the American Board's certification program. The process through which these standards were originally developed made extensive use of subject matter experts, curriculum review, and discussion. This extensive standard development process was essential because, at the time, nationally adopted standards had not yet been developed. Best practices in psychometrics recommends that standards be reviewed and updated at regular intervals. Through a similarly detailed process between 2017 and 2018 the American Board reconvened a standards panel who updated the PTK content standards according to the newest and accepted best practices.

The now nationally recognized InTASC standards, developed in 2011, emerged from an extensive, cooperative process led by the Council of Chief State School Officers, and inclusive of such richly diverse organizations as the National Education Association, the American Federation of Teachers, the Association of Teacher Educators, Teach for America, and the National School Boards Association. These professional teaching standards have been accepted as the integration of content considered most important and reasonable for the professional teacher to have learned in order to be called a master teacher on a national level. As stated in the collaborative InTASC (2011) report, "these Model Core Teaching Standards articulate what effective teaching and learning looks like in a transformed public education system - one that empowers every learner to take ownership of their learning, that emphasizes the learning of content and application of knowledge and skill to real world problems, that values the differences each learner brings to the learning experience, and that leverages rapidly changing learning environments by recognizing the possibilities they bring to maximize and engage learners." The InTASC standards have also undergone revisions, including the most recent iteration in 2013.

Triangulation between standards (or alignment of content) is a process that compares one set of standards to an organizationally different set of adopted standards, and is a recognized model for establishing the content validity of any set of standards. The purpose of this study is to support the content validity of the PTK standards through a detailed comparison (triangulation) with the now nationally accepted InTASC standards. This practice of continuous review and improvement ensures that American Board developed standards and nationally accepted standards remain well aligned, in their mutual goal of educating and training highly effective classroom teachers in a continually changing environment.

Standard Comparison

Comparisons conducted in this validity study link PTK Sub-standards to InTASC Performance Sub-standards. Each standard and substandard were reviewed by three content experts (two educators holding a Master’s degree and one educator holding a Doctoral degree) to determine how well the PTK standards match the content presented in the InTASC standards.

Overall Comparison

The following relational expressions were used in the classification process:

- When PTK aligns with InTASC between 90-100%, alignment is considered **complete**.
- When PTK aligns with InTASC between 60-89%, alignment is considered **substantive**.
- When PTK aligns with InTASC less than 60%, alignment is considered **lacking**.

All PTK standards were determined to be substantively or completely aligned with InTASC standards. Areas of partial alignment are to be expected in any comparison of standards and generally reflect differences in emphasis rather than misalignment. Figure 1 presents a graphical representation of the alignment between the PTK and InTasc Standards.

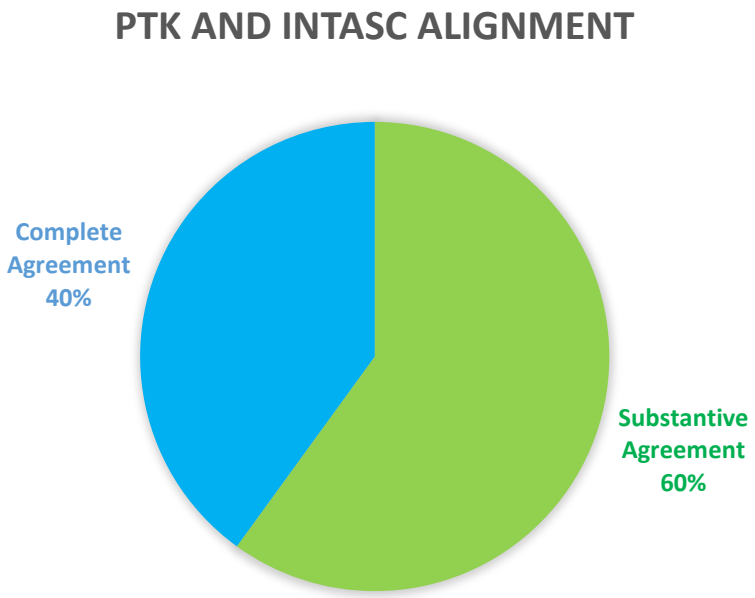


Figure 1. Degree of alignment for each of the ten InTASC standards represented visually.

Thematic Comparison of Standards

The following table presents an overall, thematic alignment between the PTK standards and the InTASC Standards. Complete alignment is suggested when the majority of ideas found in the PTK Domain and Topics (indicated below as D#-T#) reflect those found in one of the ten InTASC Standards.

InTASC Standards	PTK Standards Alignment
1. Learner Development	D3-T5: Involves Parents and Guardians in Supporting the Instructional Program D4-T3: Gives High-Needs Students Extra Time and Instruction They Need to Succeed
2. Learning Differences	D1-T1: Selects, Organizes, Plans, and Designs Content D2-T2: Provides Clear and Focused Instruction D4-T3: Gives High-Needs Students Extra Time and Instruction They Need to Succeed
3. Learning Environments	D3-T1: Establishes Smooth, Efficient Classroom Routines D3-T2: Sets Clear Standards for Classroom Conduct and Applies Them Fairly and Consistently D3-T4: Expects Students to Learn
4. Content Knowledge	D2-T1: Communicates Effectively D2-T2: Provides Clear and Focused Instruction
5. Application of Content	D2-T1: Communicates Effectively D2-T2: Provides Clear and Focused Instruction D2-T3: Uses Effective Questioning Techniques
6. Assessment	D3-T3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress D4-T1: Monitors Student Progress Closely D4-T2: Understands Testing Concepts D4-T3: Gives High-Needs Students Extra Time and Instruction They Need to Succeed
7. Planning for Instruction	D1-T1: Selects, Organizes, Plans, and Designs Content
8. Instructional Strategies	D2-T2: Provides Clear and Focused Instruction D2-T3: Uses Effective Questioning Techniques D2-T4: Makes Efficient Use of Learning Time
9. Professional Learning and Ethical Practice	D5-T1: Professional Learning D5-T2: Leadership
10. Leadership and Collaboration	D5-T1: Professional Learning D5-T2: Leadership

While standard comparisons are frequently difficult, as word choice can in some instances lead to potentially questionable alignment even though alignment in fact may exist. Such comparisons are nonetheless essential to assisting in the validation process. PTK Standards demonstrate strong alignment with the InTASC Standards. A more detailed alignment of content is presented in the next section.

Comparison of PTK Sub-standards to InTASC Performance Sub-standards

InTASC Sub-standards are divided into three categories: performances, essential knowledge, and critical dispositions. *Performances* are the specific actions taken by the teacher to fulfill that standard. *Essential knowledge* is what the teacher needs to know in order to successfully fulfill the standard. *Critical dispositions* are what the teacher needs to believe/value in order to successfully fulfill the standard. PTK assessments contain specific direct teacher actions and do not specifically address knowledge, beliefs, or values of educators. Alignment is assessed by comparing PTK Standards to the InTASC Standards listed under the "Performance" category for each standard.

The degree of alignment is calculated by determining how many of the InTASC Performance Sub-standards are addressed within the PTK standards (see Appendix). A summary for each InTASC Standard is presented below:

InTASC Standards	Degree of PTK Standards Alignment
1. Learner Development	2/3 = 67%
2. Learning Differences	6/6 = 100%
3. Learning Environments	8/8 = 100%
4. Content Knowledge	7/9 = 78%
5. Application of Content	7/8 = 88%
6. Assessment	6/9 = 67%
7. Planning for Instruction	5/6 = 83%
8. Instructional Strategies	7/9 = 78%
9. Professional Learning & Ethical Practice	6/6 = 100%
10. Leadership & Collaboration	11/11 = 100%

As seen above, four of the InTASC Standards (Standards 2, 3, 9, and 10) are completely aligned as 100% of their sub-standards are addressed by the PTK assessment. Six of the InTasc Standards (Standards 1, 4, 5, 6, 7, and 8) are substantively aligned as 67-88% of their sub-standards are addressed by the PTK assessment. No areas of misalignment or missing content were discovered.

Any alignment study would be lacking if a reverse alignment were not also conducted. A reverse alignment reviews standards presented in the target set (that is, the PTK Standards) with control set (that is, the InTASC Standards). Are there important content areas presented in the PTK Standards that do not exist in the InTASC Standards? A careful reverse review suggested that there were no standards unique to the PTK. Alternatively stated, all standards presented in the PTK set exist also in the InTASC set.

Summary

PTK Standards are determined to be well-aligned to the InTASC Standards across the majority of content. The few listed differences represent differences in emphasis and focus rather than missing content.

Appendix A

Item Comparison of PTK Standards to InTASC Standards

Each of the 10 InTASC Standards contain several sub-standards. Below is an example from Standard 1:

Standard 1: Learner Development

1(a) The teacher regularly assesses individual and group performance in order to design and modify instruction to meet learners' needs in each area of development (cognitive, linguistic, social, emotional, and physical) and scaffolds the next level of development.

1(b) The teacher creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enables each learner to advance and accelerate his/her learning.

1(c) The teacher collaborates with families, communities, colleagues, and other professionals to promote learner growth and development.

For the PTK Standards, there are numerous sub-standards listed for each topic. Below is an example from Domain 1, Topic 1:

Domain 1: Instructional Design

Topic 1: Selects, Organizes, Plans, and Designs Content

1.1.01: Writes measurable objectives for both individual or classroom performance based on student data and subject matter.

1.1.02: Guides curricular planning (e.g., content clusters, instructional methods, learning activities and assessment tools) based on goals of the instruction.

1.1.03: Organizes content across lessons around central concepts, propositions, theories, or models.

The sub-standards are not divided into by category but are simply listed under each topic.

Below is a detailed comparison of the content found in each PTK sub-standard that is reflected in the InTASC sub-standards. Each table is grouped by an InTASC Standard with all sub-standards listed. The corresponding PTK sub-standard is listed in the adjacent column. Notice, only the numeric-alpha (#.a) and numeric (#.#.#) indexing codes are used for simplicity.

InTASC Standard 1 and Performance Sub-Standards (#.a)	**PTK Sub-Standard Alignment (#.#.#)**
1(a)	None
1(b)	4.3.01
1(c)	3.5.01 3.5.02 3.5.03

InTASC Standard 2 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
2(a)	2.2.12
2(b)	4.3.01 4.3.02 4.3.03
2(c)	2.2.01 2.2.16
2(d)	2.2.15 2.1.01
2(e)	2.2.06
2(f)	4.3.03

InTASC Standard 3 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
3(a)	3.5.01
3(b)	2.2.15
3(c)	3.1.01 3.1.04 3.1.05 3.1.09 3.2.01 3.4.01 3.4.04 3.4.05
3(d)	2.2.02 2.2.19 2.2.20 2.2.21 2.4.03 2.4.04
3(e)	2.2.15 2.2.16 5.1.01
3(f)	5.1.01
3(g)	5.2.02
3(h)	5.1.01

InTASC Standard 4 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
4(a)	1.1.02 1.1.04 1.1.05 1.1.10 2.1.03 2.2.03 2.2.07 2.2.08 2.2.11 2.2.14
4(b)	1.1.09 2.2.07 2.2.13 2.2.15 2.2.16 2.3.02 2.3.03 2.3.05
4(c)	2.3.06
4(d)	1.1.09 2.1.01 2.1.02 2.1.03 2.2.15 2.2.16
4(e)	2.2.09
4(f)	3.3.03 3.3.04 3.3.08 4.1.04
4(g)	None
4(h)	2.2.06
4(i)	None

InTASC Standard 5 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
5(a)	2.2.15 2.2.16
5(b)	2.2.15
5(c)	2.2.12
5(d)	2.3.01 2.3.02 2.3.03 2.3.04 2.3.05 2.3.06
5(e)	2.2.15 2.2.16
5(f)	2.2.07 2.2.12 2.2.15
5(g)	2.2.15 2.2.16 5.1.01
5(h)	None

InTASC Standard 6 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
6(a)	4.1.02 4.1.04
6(b)	4.1.01
6(c)	4.2.05
6(d)	3.3.08 3.4.02
6(e)	4.1.03
6(f)	None
6(g)	1.1.01 2.2.01
6(h)	None
6(i)	None

InTASC Standard 7 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
7(a)	1.1.01 1.1.02 2.1.01
7(b)	1.1.01 3.4.03 4.1.04 4.3.01 4.3.02 4.3.03
7(c)	1.1.07 2.2.02 2.2.03 2.2.12 2.2.13 2.2.15
7(d)	1.1.07 2.2.01 2.2.08
7(e)	4.3.01 4.3.02 4.3.03
7(f)	None

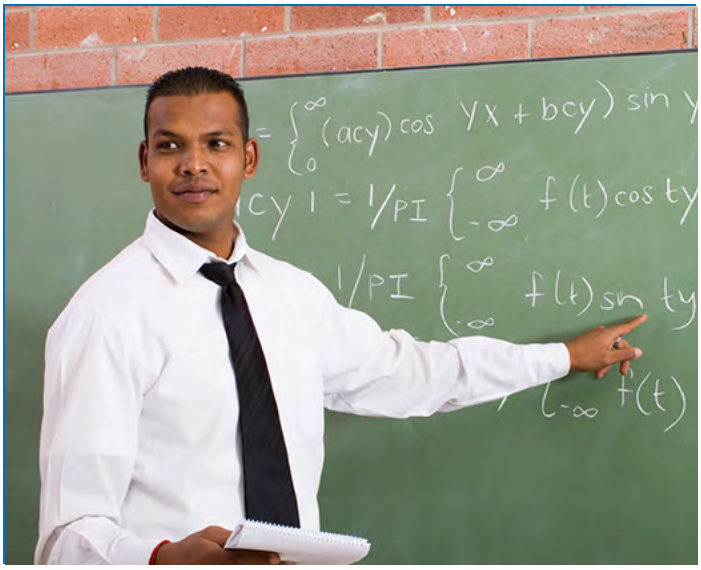
InTASC Standard 8 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
8(a)	4.3.01 4.3.03
8(b)	4.1.04
8(c)	2.1.01
8(d)	2.2.18
8(e)	1.1.04 1.1.05 2.2.07 2.2.12 2.2.13 2.2.14
8(f)	None
8(g)	1.1.05 2.2.07 2.2.14 2.2.15 2.2.16
8(h)	None
8(i)	2.3.02 2.3.03 2.3.05 2.3.06

InTASC Standard 9 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
9(a)	5.1.01 5.1.02 5.1.06 5.2.03
9(b)	5.1.01 5.1.02 5.1.04 5.1.06
9(c)	5.1.03 5.1.05 5.1.06
9(d)	5.1.01 5.1.04
9(e)	5.1.07
9(f)	5.1.01 5.1.06 5.2.02

InTASC Standard 10 and Performance Sub-Standards (#.a)	PTK Sub-Standard Alignment (#.#.#)
10(a)	5.1.03 5.1.05 5.2.01
10(b)	5.1.02 5.1.04 5.1.06 5.2.01
10(c)	5.1.02 5.1.03 5.1.04 5.1.06 5.1.07
10(d)	5.1.02 5.2.01 5.2.03
10(e)	5.2.01 5.2.03
10(f)	5.1.01 5.1.02 5.1.04 5.2.03
10(g)	5.2.02
10(h)	5.1.03
10(i)	5.1.01 5.1.04 5.1.06 5.2.01 5.2.03
10(j)	5.2.01 5.2.03
10(k)	5.1.06 5.2.03

Establishing Convergent Validity Evidence:

Alignment of the American Board Professional Teaching Knowledge (PTK) Examination to the Praxis© Principles of Learning and Teaching (PLT) Examination



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Executive Summary

Purpose: The present study was designed to evaluate the alignment of the present American Board content standards for **Professional Teaching Knowledge (PTK)**, from which examinations and study materials are produced, with currently published PRAXIS© **Principles of Learning and Teaching (PLT)** content standards. Further, this study was intended to augment routine psychometric analyses with additional information to establish convergent validity evidence.

Results: Findings from this study were positive and clear. The American Board content standards in PTK were well aligned to the PRAXIS© PLT content standards. Alignment is measured at two levels: the Domain level (or macro content) which refers to the larger, first level content standards, and the Specific Objective level (or micro content) which refers to the very specific content found in the second and third level content standards. Because micro-content or specific objectives are nearly infinite, perfect alignment was not expected. Using criteria established for typical reliability studies, American Board content was **Very Strongly Aligned** at 100% on the domain level (macro content) with Praxis© content and was **Very Strongly Aligned** at 98% on the sub-domain specific objective content levels. Proper alignment of standards, learning materials, and assessments is an essential feature in establishing content validity evidence and was documented in earlier psychometric reports. Now, based on present analyses, the assessment should be considered as fulfilling nationally adopted standards for the establishment of convergent validity (AERA, et al 2014), where the present examination is compared to the nationally recognized standard assessment, in this case Praxis©. The two examination programs are aligned well enough to be considered interchangeable vis-à-vis general content measured.

Conclusion: Based on results of the present alignment study, the American Board has effectively demonstrated that it adheres to recognized national Professional Teaching Knowledge standards, as represented in the PRAXIS© PLT examination for teachers. Coupled with the results from routine psychometric analyses conducted annually, it is evident that the American Board meets

the guidelines for the development and administration of a psychometrically sound and legally defensible assessment program.

Introduction

Alignment of standards, learning materials, and assessments is a central feature of all educational activities, including certification (Council of Chief State School Officers, 2011; Waugh & Gronlund, 2012). For an examination outcome to be considered valid, it must similarly adhere to a content blueprint that originates from the standards (Burton, et al., 1991). The American Board's Special Education standards and their corresponding learning modules and assessment fit neatly into this cycle of validation. Psychometric properties of American Board examinations have been demonstrated extensively through routine analyses conducted by independent contractor MetriKs Amérique LLC according to a pre-determined schedule. In the present study, the main goal was to qualitatively align the content presented on the American Board examination with that used in the Praxis© series of assessments. As Praxis© is used nationally, it is likely the best national test to use in order to demonstrate *convergent validity evidence.* Tests are said to possess *convergent validity evidence* if they are highly related to another test what purports to measure the same construct, particularly a test that is nationally recognized and validated. Validity evidence is both a statistical and qualitative matter and we will be defining our expectations for assessing the level of convergent validity shortly.

Validity evidence is an important aspect of any examination program (Cronbach & Meehl, 1955). Convergent validity evidence is particularly important when establishing whether or not an assessment conforms to national expectations. The PRAXIS© series of examinations represent a well-aligned set of nationally representative content standards useful across the fifty states. Therefore, using the PRAXIS© examination as a proxy for national standards is reasonable and useful. The current study was undertaken to examine the alignment across the American Board's Biology examination to evaluate the following single research question: ***To what extent does the American Board's PTK examination content align with the nationally accepted content standards used to construct the PRAXIS© PLT examination?***

In strictly quantitative analyses, convergent validity evidence is documented largely through correlations between measures obtained on one examination when compared to another. In our modified approach we will use the concept of correlation to examine proportional representation within qualitative comparisons. This approach, used specifically with content (versus scores), is supported by the literature generally referencing test equating (the practice of linking scores on one test to another):

> *Test construction and equating are inseparable. When they are applied in concert, equated scores from parallel test forms provide virtually exchangeable evidence about students' behavior on the same general domain of tasks, under the same specified standardized conditions. When equating works, it is because of the way tests are constructed*. (Mislevy, 1992)

Because criterion-related, content, and construct validity have been addressed in routine psychometric analyses, and because measures cannot be reasonably compared if the tests examine different content, the present analysis is required to demonstrate equivalency.

The following criterion, traditionally applied to correlations, are hereby modified for use in the present study:

Linking Agreement	Content Equivalent
Entirely Unrelated	00 – 19%
Weakly Related	20 – 39%
Moderately Related	40 – 59%
Strongly Related	60 – 79%
Very Strongly Related	80 – 100%

Relationships were examined on a macro- and micro-level. The first level of comparison was the larger Domain (or "macro" content area). Domains cover a broader spectrum of content within the holistic content area. There tend to be 5 – 10 Domain content areas within a given specified area. A second level of comparison is at the smaller Specific Objectives (or "micro" content areas). Specific objectives breakdown larger Domain areas into component parts. While there could theoretically be an unlimited number of specific objectives, most content standards include about 10 – 40 specific

objectives within a domain. Whilst the linking agreement levels detailed above apply primarily to Specific Objectives, they were used to categorize both. No two assessments are ever perfectly identical. Furthermore, perfect agreement (100%) agreement across both Domains and Specifics, is not necessary as long as tests are "**Very Strongly Related**" or "**Strongly Related**" using the model detailed earlier. Assessments deemed to be "**Very Strongly Related**" and "**Strongly Related**" assessments are likely to produce equivalent results because they assess the same fundamental criterion (Stone, 1996; Sondergeld, 2016). This alignment report is divided into two sections: (1) General alignment of content (Domain), and (2) Detailed alignment of content (Specific Objectives).

Section 1: General Alignment of Content

Content standards are developed to represent the integration of content considered important and reasonable for a professional teacher to have mastered in order to be called a master teacher. Such standards are frequently defined by the convening of a committee of experts in the field, who, through the use of existing content (e.g., from textbooks, curricula, and other related assessments) and through discussion within the panel, complete this important work. While no standards are perfectly comprehensive, the content standards adopted by the PRAXIS© series of examinations represent one of the most complete, *nationally acceptable* sets of standards available. Developed through an extensive, cooperative process and inclusive of richly diverse organizations across the country, they have served as a blueprint for professional teaching since their adoption. Table 1 presents results from the alignment study comparing the Praxis© PLT Examination with the American Board PTK Examination. Analysis suggests the two examinations are **Very Strongly Related**, at the level of 100%. The American Board examination covers all Domain-level content presented on the Praxis© examination.

Table 1: Alignment of PRAXIS and American Board Physics Assessment Standards

Praxis© PLT	American Board PTK
I: Students as Learners A. Student Development and the Learning Process B. Students as Diverse Learners C. Student Motivation and the Learning Environment	Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization
II: Instructional Process A. Planning Instruction B. Instructional Strategies C. Questioning and Communication Skills	Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization Domain 4: Assessment Domain 5: Professional Learning and Leadership
III: Assessment A. Assessment and Evaluation Strategies B. Assessment Tools	Domain 3: Classroom Management and Organization Domain 4: Assessment
IV: Professional Development, Leadership, and Community A. Professional Development B. Leadership and Community	Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization Domain 5: Professional Learning and Leadership

Section 2: Specific Alignment of Content

A series of tables (Table 2.1-2.6) presents information regarding the alignment of Specific Objectives on the Praxis© and American Board examinations. As was the case for Domain level content, the alignment of Specific Objectives was also reasonable. Specific Objective analysis suggests the two examinations are **Very Strongly Aligned**, at the level of 98%. The American Board examination covers most Specific Objective-level content presented on the Praxis© examination. Noted elements for possible inclusion are documented after presentation of the tables. Because the two assessments are aligned to the level of 100% at the Domain level, there is greater assurance that specific content differences do not substantially alter interpretation.

TABLE 2.1: Praxis© Domain I

Praxis© PLT	Page #	American Board PTK	Page #
I. Students as Learners			
A. Student Development and the Learning Process		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery	
1. Understands the theoretical foundations of how students learn (1a) Knows how knowledge is constructed, (1b) Knows a variety of means by which skills are acquired, and (1c) Understands a variety of cognitive processes and how they are developed	4	1.1: Selects, Organizes, Plans, and Designs Content 1.21 The teacher understands how learning is directly impacted by cognitive processing.	2
2. Knows the major contributions of foundational theorists to education • 2a: Relates the work of theorists to educational context (Bandura, Bruner, Dewey, Piaget, Vygotsky, Kohlberg, Bloom)	4	1.1: Selects, Organizes, Plans, and Designs Content 1.1.03 Organizes content across lessons around central concepts, propositions, theories, or models.	1
3. Understands the concepts and terms related to a variety of learning theories (3a: Metacognition, 3b: Schema, 3c: Transfer, 3d: Self-efficacy, 3e: Self-regulation, 3f: Zone of proximal development, 3g: Classical and operant conditioning)	4	2.5: Builds Students' Study Skills 2.5.01 Instructs students about when & how to use study skills such as: Repeating material to remember it more effectively, Outline material to structure & remember it, Self-monitoring & self-regulating to maintain concentration & task focus, Minimizing performance anxiety and fear of failure	7
4. Knows the distinguishing characteristics of the stages in each domain of human development (i.e., cognitive, physical, social, and moral) • 4a: Describes the characteristics of a typical child in each stage and each domain • 4b: Recognizes typical and atypical variance within each stage and each domain	4	1.1: Topic 1: Selects, Organizes, Plans, and Designs Content 1.1.13 The teacher recognizes the multiple learning styles of students, designs instruction to address students' strengths, and assesses authentically by allowing demonstrations in any of the intelligence domains as evidence of learning.	2
5. Understands how learning theory and human development impact the instructional process • 5a: Defines the relationship between learning theory and human development • 5b: Provides examples of how learning theory is impacted by human development • 5c: Uses knowledge of learning theory to solve educational problems • 5d: Uses knowledge of human development to solve educational problems	4	1.1 Selects, Organizes, Plans, and Designs Content 1.1.13 The teacher recognizes the multiple learning styles of students, designs instruction to address students' strengths, and assesses authentically by allowing demonstrations in any of the intelligence domains as evidence of learning.	2

TABLE 2.1: Praxis© Domain I (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
B. Students as Diverse Learners		Domain 2: Effective Instructional Delivery Domain 4: Assessment	
1. Understands that a number of variables affect how individual students learn and perform • 1A: Identifies a number of variables that affect how students learn and perform (Learning style, Culture, Socio economic status, Prior knowledge and experience, Motivation, Self-confidence, self-esteem, Cognitive development, Maturity), Language • 1B: Provides examples of how variables might affect how students learn and perform	4-5	2.1: Communicates Effectively 2.1.09 The teacher is a mentor for peers. 2.2: Provides Clear and Focused Instruction 2.2.01 Assesses students to decide where and how to begin instruction based on students' prior knowledge and prerequisite skills.	3
2. Recognizes areas of exceptionality and their potential impact on student learning • 2A: Identifies areas of exceptionality Cognitive (Auditory, Visual, Motor/physical, Speech/language, Behavioral) • 2B: Explains a variety of ways exceptionalities may impact student learning	5	4.3: Gives High-Needs Students Extra Time and Instruction They Need to Exceed 4.3.02 Provides struggling students with extra time, instruction and encouragement. 4.3.04 The special education teacher promotes a safe classroom where the learning environment is inclusive of learners with exceptionalities and develops positive outcomes. 4.3.05 The special education teacher supports students with exceptionalities by providing motivational and instructional interventions. 4.3.07 The special education teacher uses specialized instruction to teach content to students with exceptionalities.	12-13
3. Understands the implications and application of legislation relating to students with exceptionalities on classroom practice • 3A: Identifies the provisions of legislation relevant to students with exceptionalities (Americans with Disabilities Act (ADA), Individuals with Disabilities Education Act (IDEA), Sect 504, Rehabilitation Act (504) • 3B: Explains how the provisions of legislation relating to students with exceptionalities affect classroom practice	5	4.3: Gives High-Needs Students Extra Time and Instruction They Need to Exceed 4.3.10 The special education teacher understands the federal and state laws related to records of students with disabilities and maintains them in a safe place.	13

TABLE 2.1: Praxis© Domain I (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 4: Assessment	
4. Recognizes the traits, behaviors, and needs of intellectually gifted students.	5	1.1: Selects, Organizes, Plans, and Designs Content 1.1.13 The teacher recognizes the multiple learning styles of students, designs instruction to address students' strengths, and assesses authentically by allowing demonstrations in any of the intelligence domains as evidence of learning. **Suggest separating gifted from SPED.**	2
5. Recognizes that the process of English language acquisition affects the educational experience of English learners (ELs)	5	2. 2: Provides Clear and Focused Instruction 2.2.28 The teacher provides effective instruction and assessment for English language learners, consistent with WIDA instructional standards.	6
6. Knows a variety of approaches for accommodating students with exceptionalities in each phase of the education process • 6A: Recognizes students with exceptionalities require particular accommodations. • 6B: Knows how to modify instruction, assessment, and communication methods to meet a recognized need	5	4. 3: Gives High-Needs Students Extra Time and Instruction They Need to Succeed 4.3.01 Develops plans to accommodate students' special needs. 4.3.02 Provides struggling students with extra time, instruction and encouragement. 4.3.05 The special education teacher supports students with exceptionalities by providing motivational and instructional interventions. 4.3.06 The special education teacher serves as a resource in the area of behavior management for students with exceptionalities. 4.3.07 The special education teacher uses specialized instruction to teach content to students with exceptionalities. 4.3.08 The special education teacher modifies the curricula to support individuals with exceptionalities.	12-13

TABLE 2.1: Praxis© Domain I (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
C. Student Motivation and Learning Environment		Domain 3: Classroom Management and Organization	
1. Knows the major contributions of foundational behavioral theorists to education • 1A: Relates the work of behavioral theorists to educational contexts (e.g., Thorndike, Watson, Maslow, Skinner, Erikson)	5	Not specifically stated	
2. Understands the implications of foundational motivation theories for instruction, learning, and classroom management • 2A: Defines terms related to foundational motivation theory (e.g., Self-determination, Attribution, Extrinsic/intrinsic motivation, Cognitive dissonance, Classic and operant conditioning, Positive and negative reinforcement) 2B: Relates motivation theory to instruction, learning, and classroom management	6	3. 1: Establishes Smooth, Efficient Classroom Routines 3.1.11 Encourage student effort by focusing on the positive aspects of students' performance. 3.2: Sets Clear Standards for Classroom Conduct and Applies Them Fairly and Consistently 3.2.03 Provides positive feedback that is specific, descriptive, accurate, and meaningful. 3.2.04 Selects from a repertoire of correction techniques for early-stage misbehavior (i.e. non-chronic), such as: Using proximity (i.e., moving closer to the student), Using reprimand (i.e., brief, proximate, state positive expectation, avoids asking a question, emotionally supportive or neutral), Using eye contact and/or discussion, Using humor 3.2.05 Implements corrective techniques for common rule violations, such as: Using counting, Creating charts, Debriefing, Using penalties e.g. Loss of points, time owed, demerits, Using time out, Using restitution, Making parental contacts 3.2.06 Determines educational reasons for chronic student misbehavior.	9-10

TABLE 2.1: Praxis© Domain I (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization	
3. Knows principles and strategies for classroom management • 3A: Knows how to develop classroom routines and procedures • 3B: Knows how to maintain accurate records • 3C: Knows how to establish standards of conduct • 3D: Knows how to arrange classroom space • 3E: Recognizes ways of promoting a positive learning environment	6	3.1: Establishes Smooth, Efficient, Classroom Routines 3.1.01 Develops/teaches clear class rules during the first week of school. 3.1.02 Enforces rules/re-teaches as needed. 3.1.03 Designs/establishes procedures and routines for classroom activities prior to the beginning of the school year, e.g., lining up, attendance, lunch, passing out papers, pencil sharpening, restroom, entry and exit, tardiness, hall passes, attention signal. 3.1.04 Presents clear expectations concerning classroom behavior. 3.1.05 Presents expectations regarding participation in lessons & learning activities such as teacher-directed instruction, cooperative learning and independent work (class/homework). 3.1.06 Enforces expectations re: class behavior in a consistent manner. 3.1.07 Begins promptly/purposefully. 3.1.08 Avoids unnecessary delays/pauses during lessons such as stopping to consult a manual or locate an item needed for display or demonstration. 3.1.09 Teaches students procedures for carrying out recurring instructional activities, e.g., Participating in whole-class lessons, engaging in productive discourse with classmates, Collaborating in pairs or small groups, etc. 3.1.10 Provides explicit instruction (e.g., modeling and practice -- about listening, sharing, & integrating ideas of others and handling disagreements constructively). 3.2: Sets Clear Standards for Classroom Conduct. Applies Fairly and Consistently 3.2.07 Once the educational reason for the misbehavior is known, designs plan to help meet students' needs in positive ways. 3.2.08 Chooses corrective techniques for chronic misbehavior and implements them calmly, consistently, immediately, and respectfully.	9-10

TABLE 2.1: Praxis© Domain I (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization	
4. Knows a variety of strategies for helping students develop self-motivation • 4A: Assigning valuable tasks • 4B: Providing frequent positive feedback • 4C: Including students in instructional decisions • 4D: De-emphasizing grades	6	3.1: Establishes Smooth, Efficient, Classroom Routines 3.1.09 Teaches students procedures for carrying out recurring instructional activities, e.g., Participating in whole-class lessons, engaging in productive discourse with classmates, Collaborating in pairs or small groups, Storing and handling equipment, Managing learning, completing assignments on time, Knowing when and how to get help 3.1.11 Encourage student effort by focusing on the positive aspects of students' performance. 3.3: Routinely Provides Students Feedback and Reinforcement RegardingTheir Learning Progress 3.3.08 Provides feedback that is meaningful (e.g., specific, accurate, and important). 3.3.09 Avoids embarrassing, insulting, or demeaning students when providing feedback.	9, 11

TABLE 2.2: Praxis© Domain II

Praxis© PLT	Page #	American Board PTK	Page #
II. Instructional Process			
A. Planning Instruction		Domain 1: Instructional Design Domain 5: Professional learning and Leadership	
1. Understands the role of district, state, and national standards and frameworks in instructional planning • 1A: Understands the theoretical basis of standards-based education • 1B: Knows resources for accessing district, state, and national standards and frameworks • 1C: Understands how standards and frameworks apply to instructional planning	7	1.1: Selects, Organizes, Plans, and Designs Content 1.1.16 The teacher complies with all laws and state regulations governing classroom practice, curriculum, interactions with students, parents, and all other stakeholders. 5.1: Professional Learning 5.1.01 Engages in meaningful learning experiences. Selects learning experiences based on: Student needs, Teacher needs (identified by colleague, supervisor, and reflective feedback), Local and district school improvement initiatives, Engaging students in activities aligned with State and local standards	2, 14
2. Knows how to apply the basic concepts of predominant educational theories • 2A: Understands the basic concepts of cognitivism (Schema, Information processing, Mapping) • 2B: Understands the basic concepts of social learning theory (Modeling, Reciprocal determinism, Vicarious learning) • 2C: Understands the basic concepts of constructivism (Learning as experience, Problem-based learning, Zone of proximal development, Scaffolding, Inquiry/discovery learning) • 2D: Understands the basic concepts of behaviorism (Conditioning, Intrinsic and extrinsic rewards, Reinforcement, Punishment) • 2E: Knows how to apply the basic concepts of behaviorism, constructivism, social learning theory, and cognitivism to instructional contexts	7	1.1: Selects, Organizes, Plans, and Designs Content 1.1.03 Organizes content across lessons around central concepts, propositions, theories, or models. 1.1.13 The teacher recognizes the multiple learning styles of students, designs instruction to address students' strengths, and assesses authentically by allowing demonstrations in any of the intelligence domains as evidence of learning. 1.1.7 The teacher uses scientific figures in history, of both genders, to provide context for understanding of the development of scientific processes and theories. (General Science Standard)	1-2

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery	
3. Understands how scope and sequence affect instructional planning • 3A: Defines and provides examples of scope • 3B: Defines and provides examples of sequence • 3C: Understands the relationship between scope and sequence and standards of learning • 3D: Understands the role of scope and sequence in curriculum planning	7	1.1: Selects, Organizes, Plans, and Designs Content 1.1.06 Plans lessons, depending on size and content of unit, so that important ideas or skills are studied or practiced on several occasions rather than all at once. 1.1.07 Selects lesson content that builds on prior learning. 2.2: Provides Clear & Focused Instruction 2.2.02 Presents material in a logical sequence. 2.2.03 Presents new content in small steps. 2.2.05 Focuses on learning objectives without disrupting continuity by digressing. 2.4: Makes Efficient Use of Learning Time 2.4.01 Paces the lesson to allow time to develop the most important content in greater depth and according to its difficulty.	1, 3, 7 1
4. Knows how to select content to achieve lesson and unit objectives	7	1.1: Selects, Organizes, Plans, and Designs Content 1.1.02 Guides curricular planning (e.g., content clusters, instructional methods, learning activities and assessment tools) based on goals of the instruction. 1.1.04 Selects facts, samples, examples or a combination to substantiate or illustrate ideas. 1.1.05 Juxtaposes examples that differ in many ways but are the same in defining features, so that students can generalize to new examples and learn to discriminate same/different when faced with new examples. 1.1.12 The teacher designs instruction that requires students to think critically about the content & produce original artifacts as demonstrations of their learning. 2.2: Provides Clear & Focused Instruction 2.2.06 Teaches vocabulary required for mastery of the subject matter. 2.2.08 Determines that students have mastered material in lesson before introducing new idea.	1, 2, 4

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 4: Assessment	
5. Knows how to develop observable and measurable instructional cognitive, affective, and psychomotor domains • 5A: objectives in the different learning domains • 5B: Knows how to apply Bloom's taxonomy to the development of instructional objectives • 5C: Knows how to describe observable behavior • 5D: Knows how to describe measurable outcomes	7-8	1.1: Selects, Organizes, Plans, and Designs Content 1.1.01 Writes measurable objectives for both individual/classroom performance based on data and subject matter. 1.1.08 Uses routines, presentations, practice, review, memorization, application and homework, as appropriate, to organize instruction into clearly defined segments. 1.1.10 Knows about the ways to organize information for students, including: Outlines and graphic organizers that depict relationships of central ideas, super-ordinate concepts, subordinate concepts and coordinate concepts, Study guides that call attention to key ideas and address literal, interpretive, & applied levels of comprehension, Concept guides that link new information & previously learned material, Methods for identifying cause-effect relationships and temporal sequences and to compare and contrast situations, Organizers that help students keep track of the steps involved and the strategies they use to complete assignments	1
6. Is aware of the need for and is able to identify various resources for planning enrichment and remediation • 6A: Identifies when remediation is appropriate • 6B: Identifies when enrichment is appropriate 6C: Identifies a variety of resources for locating, adapting, or creating enrichment and remediation activities	8	4.1: Monitors Student Progress Closely 4.1.04 Uses information from assessments to evaluate student progress and inform instructional planning to do the following: Determine what students have learned and not learned, Identify patterns of student or class mistakes, Ensure students know how to generalize knowledge to new examples,materials, tasks, & problems., Make adjustments in time and corrective remedies and in instructional, materials or teaching plans, Identifies learners' special needs, that may require additional time or corrective remedies. 4.1.05 The teacher is informed by student voice and uses this information to plan instruction that meets students' academic, social, emotional, and cultural needs.	11-12

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 4: Assessment Domain 5: Professional Learning and Leadership	
7. Understands the role of resources and materials in supporting student learning • 7A: Identifies and explains the uses of a variety of resources and materials that support student learning (Computers, the Internet and other digital resources, Library collection (books, magazines, pamphlets, reference works), Artifacts, models, manipulatives, Guest speakers and community members)	8	1.1: Selects, Organizes, Plans, and Designs Content 1.1.12 Teacher designs instruction that requires students to think critically about the content & produce original artifacts as demonstrations of their learning. 5.1: Leadership 5.1.04 Models and provides clear expectations for the safe & ethical use of social media, information & technology.	2, 14
8. Knows how to develop lessons as part of thematic and/or interdisciplinary units • 8A: Understands the basic concepts of thematic instruction • 8B: Understands the components of thematic units (Selecting a theme, Designing integrated learning activities, Selecting resources, Designing assessments) • 8C: Understands the basic concepts of interdisciplinary instruction • 8D: Understands the components of interdisciplinary units (Collaborating, Generating applicable topics, Developing an integrative framework, Planning instruction for each discipline, Designing integrative assessment)	8	1.1: Selects, Organizes, Plans, and Designs Content 1.1.09 Designs instruction that shows relationships among content and ideas and points out opportunities for transfer. 1.1.14 The teacher supports learner literacy development in and across content areas. 1.17 The teacher uses scientific figures in history, of both genders, to provide context for understanding of the development of scientific processes and theories. (General Science Standard) 1.19 The teacher understands the importance of creating lesson content that promote healthy lifestyles. 1.20 The teacher promotes awareness of different career disciplines and how they connect in the real world.	1-2
9. Recognizes their role in collaborating with instructional partners in instructional planning • 9A: Identifies a variety of instructional planning partners (Special education teachers, School Librarian, Teachers of the gifted and talented, IEP team members) • 9B: Describes the roles each partner plays in collaborative activities	8	4.3: Gives High Needs Students Extra Time & Instruction They Need to Succeed 4.3.01 Develops plans to accommodate students' special needs. 4.3.03 Seeks expertise and help from other professionals when individual students require special provisions. 4.3.08 The special education teacher modifies the curricula to support individuals with exceptionalities. 4.3.09 The special education teacher collaborates with other stakeholders regarding various assessments to develop individual, transition & behavior plans for students with exceptionalities.	12-13

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
B. Instructional Strategies		Domain 2: Effective Instructional Delivery	
1. Understands the cognitive processes associated with learning • 1A: Critical thinking • 1B: Creative thinking • 1C: Questioning • 1D: Inductive and deductive reasoning • 1E: Problem solving • 1F: Planning • 1G: Memory • 1H: Recall	9	2.1: Communicates Effectively 2.1.03 When introducing new concepts, previews major ideas or questions to be covered in the lesson to stimulate students' thinking about topic. 2.1.04 States what will be taught in the lesson in the form of verbal associations, concepts, principles, or cognitive strategies. 2.2: Provides Clear & Focused Instruction 2.2.04 Demonstrates the steps for defining concepts, applying rules, and solving problems.	3
2. Understands the distinguishing features of different instructional models • 2A: Describes a variety of instructional models (Direct, Indirect, Independent, Experiential, Interactive)	9	2. 2: Provides Clear & Focused Instruction 2.2.25 The teacher develops instruction that values individuals' experiences and perspectives and that recognizes their influence on how individuals construct knowledge.	6
3. Knows a variety of instructional strategies associated with each instructional model • 3A: Identifies instructional strategies associated with direct instruction (e.g., Explicit teaching, Drill and practice, Lecture, Demonstrations, Guides for reading, listening, viewing) • 3B: Identifies instructional strategies associated with indirect instruction (e.g., Problem solving, Inquiry, Case studies, Concept mapping, Reading for meaning, Cloze procedures) • 3C: Identifies instructional strategies associated with independent instruction (e.g., Learning contracts, Research projects, Learning centers, Computer mediated instruction, Distance learning) • 3D: Identifies instructional strategies associated with experiential and virtual instruction (e.g., Field trips, Experiments, Simulations, Role play, Games, Observations) • 3E: Identifies instructional strategies associated with interactive instruction (e.g., Brainstorming, Cooperative learning groups, Interviews, Discussions, Peer practice, Debates	9	2.2: Provides Clear & Focused Instruction 2.2.09 Identifies mistake patterns or knowledge gaps in student responses. 2.2.10 Systematically reduces or withdraws assistance as students become proficient. 2.2.12 Provides frequent and varied opportunities for students to practice new skills, apply new knowledge, or both. 2.2.13 Provides students with ample opportunities to solve similar problems. 2.2.17 Provides closure to lesson. 2.2.18 Knows the different purposes of various instructional methods and how and when to use them, including whole class, cooperative, small group, and tutoring. 2.2.19 When using whole class instruction, implements its design principles. 2.2.20 When using small-groups, implements principles of design. 2.2.31 The teacher provides instruction using various evidence based inst strategies to advance learning.	4-6

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery	
4. Knows a variety of strategies for encouraging complex cognitive processes • 4A: Identifies complex cognitive processes o Concept learning o Problem solving o Metacognition o Critical thinking o Transfer • 4B: Knows instructional activities specific to the development of complex cognitive processes (e.g., Distinguishing fact from opinion, Comparing and contrasting, Detecting bias, Predicting, Categorizing, Analyzing, Sequencing, Summarizing, Inferring, Decision making, Evaluating, Synthesizing, Generalizing)	9-10	2.2: Provides Clear & Focused Instruction 2.2.11 Utilizes metaphors and analogies to communicate key ideas. 2.2.14 Uses both examples and non-examples, (e.g., of concepts) so those students can induce the defining features. 2.2.15 Provides opportunities for students to actively participate through questions, share task observations or experiences, compare opinions to deepen their appreciation of what they have learned and how it relates to their lives outside school. 2.2.16 Provides opportunities for students to explain in their own words how individual elements are connected in a network of related content and connect it to their prior knowledge. 2.2.27 The teacher provides instruction and experiences that build bridges of meaningfulness between home and school experiences as well as between academic abstractions and reality. 2.2.30 The teacher understands how interdisciplinary themes connect to the core subjects and knows how to develop those themes into meaningful learning experiences.	4-6

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery	
5. Knows a variety of strategies for supporting student learning • 5A: Identifies and explains uses of strategies for supporting student learning o Modeling o Developing self-regulation skills o Scaffolding o Differentiating instruction o Guided practice o Coaching	10	1.1: Selects, Organizes, Plans, and Designs Content 1.18 Teacher differentiates instruction based on learner readiness to promote Effective scientific investigation by all students (General Science Standard) 2.2: Provides Clear & Focused Instruction 2.2.22 The teacher uses figures in history of the content, of both genders, to provide context for understanding of the development of culture, concepts, processes, and theories within the various disciplines. 2.2.23 Teacher differentiates instruction based on learner readiness to promote generative learning. 2.2.24 The teacher develops culturally relevant instruction. 2.2.26 The teacher provides instruction that values the cultural heritages of different ethnic groups, both as legacies that affect students' dispositions, attitudes, and approaches to learning and as worthy content to be taught in the formal curriculum 2.2.29 The teacher uses relevant instructional technology to deliver instruction that promotes generative learning. Technology based instruction is provided with an emphasis on compliance with all state-based education and ethics policies along with all legal requirements.	2, 5-6

TABLE 2.2: Praxis© Domain I

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization	
6. Knows basic strategies for promoting students' development of self- regulatory skills • 6A: Knows how to supports students in o Setting goals o Managing time o Organizing information o Monitoring progress o Reflecting on outcomes o Establishing a productive work environment	10	2.4: Makes Efficient Use of Learning Time 2.4.02 Arranges schedule to maximize engagement of all students (e.g., teacher-directed, independent work, group work). 2.4.03 Knows the differences among uses of time: time allocated to the lesson, the time students are actually engaged in learning, and the time students are effectively learning the key objectives. 2.4.05 Extends learning through homework assignments that are relevant to the lessons being learned. 2.4.06 Extends learning time through homework that is appropriate in length and difficulty. 3.3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress 3.3.05 Provides consequences on homework that helps students assess their progress with respect to goals and to understand and correct errors or misconceptions. 3.3.07 Provides incentives to students. 3.4: Expects Students to Learn 3.4.01 Holds high achievement expectations for student learning. 3.4.02 Communicates to students the measurements and criteria for attaining learning objectives. 3.4.03 Sets goals for meeting standards, gains in learning, or both. 3.4.04 Holds all students accountable for participating in learning activities and attaining goals. 3.4.05 Holds all students accountable for completing high quality work (class work or homework). 3.4.06 Teaches that effort is necessary for success in attaining rigorous standards.	7, 10, 11

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 2: Effective Instructional Delivery	
7. Understands the design of different group configurations for learning • 7A: Describes different group configurations o Whole-class o Small-group o Independent learning o One-on-one o Pair/share	10	2.2: Provides Clear & Focused Instruction 2.2.19 When using whole class instruction, implements its design principles by Establishing whole class instruction based on lesson objective, Establishing seating arrangements so all students can see and hear instruction, Monitoring student attention during instruction, Ensuring that students receive the assistance they need to learn successfully 2.2.20 When using small-groups, implements principles of design by Establishing cooperative workgroups that are based on lesson objectives, Placing students in small groups on the basis of diagnostic information for short-term learning activities, Regrouping students when they are ready, Setting up peer tutoring and peer evaluation groups to use time effectively, When working with small groups, stays aware of and makes sure not to spend excessive time away from the remainder of the class.	5
8. Understands the use and implications of different grouping techniques and strategies • 8A: Explains the uses, strengths and limitations of a variety of grouping techniques o Cooperative learning o Collaborative learning o Heterogeneous grouping o Homogeneous grouping o Multi-age grouping	10	2.2: Provides Clear & Focused Instruction 2.2.19 When using whole class instruction, implements its design principles by Establishing whole class instruction based on lesson objective, Establishing seating arrangements so all students can see and hear instruction, Monitoring student attention during instruction, Ensuring that students receive the assistance they need to learn successfully. 2.2.20 When using small-groups, implements principles of design. 2.2.21 Holds members of cooperative work groups or small groups individually responsible for performance.	5

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 4: Assessment	
9. Knows how to select an appropriate strategy for achieving an instructional objective	10	1.1: Selects, Organizes, Plans, and Designs Content 1.1.01 Writes measurable objectives for both individual or classroom performance based on data and subject matter. 1.1.02 Guides curricular planning (e.g., content clusters, instructional methods, learning activities and assessment tools) based on goals of the instruction.	1
10. Understands the concept of monitoring and adjusting instruction in response to student feedback • 10A: Explains the instructional purposes of monitoring and adjusting instruction • 10B: Knows strategies for monitoring and adjusting instruction	10	2.4: Makes Efficient Use of Learning Time 2.4.04 Arranges classroom space to ensure monitoring of all students' engagement.	7
11. Recognizes the purpose of reflecting upon, analyzing and evaluating the effectiveness of instructional strategies	10	4. 1: Monitors Student Progress Closely 4.1.04 Uses information from assessments to evaluate student progress and inform instructional planning to do the following: Determine what students have learned and not learned, Identify patterns of student or class mistakes, Ensure students know how to generalize knowledge to new examples,materials, tasks, and problems., Make adjustments in time and corrective remedies and in instructional materials or teaching plans, Identifies learners' special needs, that may require additional time or corrective remedies.	11-12
12. Knows the characteristics of different types of memory and their implications for instructional planning and student learning • 12A: Distinguishes among the different types of memory (Short-term versus Long-term) • 12B: Considers the characteristics and effects of memory on student learning when planning instruction	11	2.5: Builds Students' Study Skills 2.5.01 Instructs students about when and how to use study skills such as: • Repeating material to remember it more effectively • Outline material to structure and remember it • Self-monitoring and self-regulating to maintain concentration and task focus • Minimizing performance anxiety and fear of failure Consider adding material specifically addressing types of memory	7

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design	
13. Recognizes the role of teachable moments in instruction • 13A: Defines and provides examples of a teachable moment • 13B: Understands the uses of the teachable moment	11	1.1: Topic 1: Selects, Organizes, Plans, and Designs Content 1.1.05 Juxtaposes examples that differ in many ways but are the same in defining features, so that students can generalize to new examples and learn to discriminate same/different when faced with new examples.	1
C. Questioning and Communication Techniques		Domain 2: Effective Instructional Delivery	
1. Knows the components of effective questioning • 1A: Allowing think/wait time • 1B: Helping students articulate their ideas • 1C: Respecting student answers • 1D: Handling incorrect answers • 1E: Encouraging participation • 1F: Establishing a non-critical classroom environment • 1G: Promoting active listening • 1H: Varying the types of questions	11	2.3: Uses Effective Questioning Tech 2.3.01 Suits questions to the knowledge and skill of students. 2.3.02 Uses factual and higher order questions to further student learning. 2.3.03 Uses open-ended higher-cognitive questions that call for students to apply, analyze, synthesize or evaluate what they are learning. 2.3.04 Provides appropriate wait-time when asking higher order questions. 2.3.05 Promotes discussion on a range of possible correct answers. 2.3.06 Requires students to clarify or justify their assertions to improve the quality of student responses. 2.3.07 When asking questions with a short and specific correct answer, orchestrates chorale responses to involve all students.	6
2. Understands the uses of questioning • 2A: Explains and provides examples of different purposes of questioning (e.g., Developing interest and motivating students, Evaluating students' preparation, Reviewing previous lessons, Helping students set realistic expectations, Engaging students in discussion, Determining prior knowledge, Preparing students for what is to be learned, Guiding thinking, Developing critical and creative thinking skills, Checking for comprehension or level of understanding)	11	2.1: Communicates Effectively 2.1.01 Stimulates student interest by connecting prior knowledge and students' personal experience to larger concepts. 2.1.02 Explains how current lessons build upon previously learned knowledge. 2.3: Uses Effective Questioning Tech 2.3.01 Suits questions to the knowledge and skill of students. 2.3.02 Uses factual and higher order questions to further student learning. 2.3.07 When asking questions with a short & specific correct answer, orchestrates chorale responses to involve all students.	3, 6

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization	
3. Knows strategies for supporting students in articulating their ideas • 3A: Explains and provides examples of strategies for supporting students in articulating their ideas o Verbal and non-verbal prompting o Restatement o Reflective listening statements o Wait time	11	2.3: Uses Effective Questioning Tech 2.3.04 Provides appropriate wait-time when asking higher order questions. 3.3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress 3.3.01 Indicates approval for correct responses. 3.3.02 Follows correct answers with new questions to maintain momentum. 3.3.03 When students are correct but uncertain, asks students clarifying questions to ensure understanding. 3.3.04 When students give incorrect responses, gives immediate corrective feedback depending on the type of student mistake made (whether by mistake of fact, concept, or rule) including Asking simpler questions, Modeling the correct answer, Providing hints or processes or rules to determine the answer, Asking student to explain his/her answer	6, 10
4. Knows methods for encouraging higher levels of thinking • 4A: Explains and provides examples of methods for encouraging students' higher levels of thinking Guiding students to o Reflect o Challenge assumptions o Find relationships o Determine relevancy and validity of information o Design alternate solutions o Draw conclusions o Transfer knowledge	12	2.1: Communicates Effectively 2.1.05 States what will be taught in the lesson in the form of verbal associations, concepts, principles, or cognitive strategies. 2.2: Provides Clear & Focused Instruction 2.2.07 Presents sufficient, varied, systematic examples, non-examples, problems, or materials in order for students to master critical concepts. So students grasp relationships, make predictions, debate alternative approaches to problems, or otherwise consider the content's implications or applications. 2.2.27 The teacher provides instruction and experiences that build bridges of meaningfulness between home and school experiences as well as between academic abstractions and reality.	3-4, 6

TABLE 2.2: Praxis© Domain II (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization	
5. Knows strategies for promoting a safe and open forum for discussion • 5A: Knows basic techniques for establishing and maintaining standards of conduct for discussions (e.g., Engaging all learners, Creating a collaborative environment, Respecting diverse opinions, Supporting risk taking)	12	2.1: Communicates Effectively 2.1.07 The teacher is committed to collaboration and communicates effectively with all stakeholders through various conduits, platforms, and in appropriate contexts.	3
6. Understands various verbal and nonverbal communication modes • 6A: Explains and provides examples of o Body language o Gesture o Tone, stress, and inflection o Eye contact o Facial expression o Personal space	12	2.2: Provides Clear & Focused Instruction 2.2.19 When using whole class instruction, implements its design principles by: • Establishing whole class instruction based on lesson objective • Establishing seating arrangements so all students can see and hear instruction • Monitoring student attention during instruction such as: using teacher eye contact, proximity or questions • Ensuring that students receive the assistance they need to learn successfully 3.2: Sets Clear Standards for Classroom Conduct and Applies Them Fairly and Consistently 3.2.01 Establishes clear standards of conduct that students are required to meet. 3.2.02 Arranges classroom so teachers can gain proximity to all students. 3.2.04 Selects from a repertoire of correction techniques for early stage misbehavior (i.e. non-chronic), such as: • Using proximity (i.e., moving closer to the student) • Using reprimand (i.e., brief, proximate, state positive expectation, avoids asking a question, emotionally supportive or neutral) • Using eye contact and/or discussion • Using humor	5, 9-10
7. Is aware of how culture and gender can affect communication	12	2.1: Communicates Effectively 2.1.06 The teacher understands the school as an entity within a cultural, social, and political contexts and can work with stakeholders throughout the entity to achieve goals.	3

TABLE 2.2: Praxis© Domain II

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization Domain 5: Professional Learning and Leadership	
8. Knows how to use various communication tools to enrich the learning environment • 8A: Audio and visual aids • 8B: Text and digital resources 8C: Internet and other computer-based tools	12	5.1: Professional Learning 5.1.04 Develops learning communities with all stakeholders using available commonly accessible technology and communication methods.	14
9. Understands effective listening strategies • 9A: Explains and provides examples of active listening strategies o Attending to the speaker o Restating key points o Asking questions o Interpreting information o Providing supportive feedback o Being respectful	12	3.1: Establishes Smooth, Efficient Classroom Routines 3.1.10 Provides explicit instruction (e.g., modeling and practice -- about listening, sharing, and integrating the ideas of others and handling disagreements constructively).	9

TABLE 2.3: Praxis© Domain III

Praxis© PLT	Page #	American Board PTK	Page #
III. Assessment			
A. Assessment and evaluation strategies		Domain 4: Assessment	
1. Understands the role of formal and informal assessment in informing the instructional process • 1A: Defines and provides uses and examples of formal and informal assessment modes • 1B: Explains a variety of ways the results of formal and informal assessment are used to make educational decisions	13	4.1: Monitors Student Progress Closely 4.1.01 Aligns assessments to taught objectives and lesson content. 4.1.02 Uses ongoing assessment to monitor and guide student learning aligned with curriculum goals. 4.1.03 Monitors procedures to check on student progress during cooperative work groups or lab activities, uses informal or formal 4.1.03 checklists, performance evaluations, papers, or projects during independent work periods, circulates to check students' work and teacher-directed instruction, monitors verbal responses	11
2. Understands the distinctions among the different types of assessment • 2A: Defines and provides uses and examples of formative, summative, and diagnostic assessment	13	4.2: Understands Testing Concepts 4.2.01 Understands the purpose and use of educational tests (e.g., norm referenced, criterion referenced, performance assessments, and portfolios).	12
3. Knows how to create and select an appropriate assessment format to meet instructional objectives • 3A: Knows how to create assessments in a variety of formats • 3B: Is able to select an assessment format to meet a specific instructional objective	13	4.1: Monitors Student Progress Closely 4.1.01 Aligns assessments to taught objectives and lesson content.	11
4. Knows how to select from a variety of assessment tools to evaluate students' performance • 4A: Knows a variety of assessment tools, their uses, strengths and limitations o Rubrics o Analytical checklists o Scoring guides o Anecdotal notes o Continuums 4B: Is able to select an assessment tool appropriate for quantifying the results of a specific assessment	13	4.2: Understands Testing Concepts 4.2.03 Can apply general testing concepts (e.g., reliability, validity and standard error of measurement). 4.2.04 Understands and uses general statistical concepts (e.g., mean, mode, median and standard deviation). 4.2.05 Understands and uses common assessment terminology to interpret test results (e.g., the differences between percentage and percentile; aggregated and disaggregated data; norm-referenced score and criterion-referenced score; achievement and aptitude tests) to teaching and diagnosing student performance.	12

TABLE 2.3: Praxis© Domain III (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 4: Assessment	
5. Understands the rationale behind and the uses of students' self and peer assessment • 5A: Defines and provides uses and examples of student self-assessment modes • 5B: Defines and provides uses and examples of peer assessment modes • 5C: Explains the strengths and limitations of self and peer assessment modes	13	4.1: Monitors Student Progress Closely 4.1.05 The teacher is informed by student voice and uses this information to plan instruction that meets students' academic, social, emotional, and cultural needs.	12
6. Knows how to use a variety of assessment formats • 6A: Describes and provides uses, strengths, and limitations of a variety of assessment formats (e.g., Essay, Selected response, Portfolio, Conference, Observation, Performance) 6B: Is able to select an assessment format appropriate to a specific educational context	14	4.2: Understands Testing Concepts 4.2.02 Understands the purposes and uses of different item types (e.g., multiple-choice, constructed response format).	12
B. Assessment Tools			
1. Understands the types and purposes of standardized tests • 1A: Explains the uses of the different types of standardized test o Achievement o Aptitude o Ability 1B: Recognizes the data provided by the different types of standardized tests	14	4.2: Understanding Testing Concepts 4.2.05 Understands and uses common assessment terminology to interpret test results (e.g.,the differences between percentage and percentile; aggregated and disaggregated data; norm-referenced score and criterion-referenced score; achievement and aptitude tests) to teaching and diagnosing student performance. Standardized testing is not *specifically* mentioned but all content points to it. Consider adding specific reference.	12
2. Understands the distinction between norm-referenced and criterion-referenced scoring • 2A: Explains the uses of norm-referenced and criterion-referenced tests • 2B: Explains data provided by a norm-referenced and a criterion-referenced test	14	4.2: Understanding Testing Concepts 4.2.05 Understands and uses common assessment terminology to interpret test results (e.g., the differences between percentage and percentile; aggregated and disaggregated data; norm-referenced score and criterion-referenced score; achievement and aptitude tests) to teaching and diagnosing student performance.	12

TABLE 2.3: Praxis© Domain III (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization Domain 4: Assessment	
3. Understands terminology related to testing and scoring • 3A: Defines and explains terms related to testing and scoring (e.g., Validity, Reliability, Raw score, Scaled score, Percentile, Standard deviation, Mean, Mode and Median, Grade-equivalent scores, Age-equivalent scores	14	4.2: Understanding Testing Concepts 4.2.03 Can apply general testing concepts (e.g., reliability, validity and standard error of measurement). 4.2.04 Understands and uses general statistical concepts (e.g., mean, mode, median and standard deviation).	12
4. Understands the distinction between holistic and analytical scoring • 4A: Describes holistic scoring and analytical scoring • 4B: Identifies an educational context for each	14	4.2: Understanding Testing Concepts 4.2.05 Understands and uses common assessment terminology to interpret test results (e.g., the differences between percentage and percentile; aggregated and disaggregated data; norm-referenced score and criterion-referenced score; achievement and aptitude tests) to teaching and diagnosing student performance.	12
5. Knows how to interpret assessment results and communicate the meaning of those results to students, parents/caregiver, and school personnel • 5A: Understands what scores and testing data indicate about a student's ability, aptitude, or performance • 5B: Is able to explain results of assessments using language appropriate for the audience	14	3.5: Involves Parents and Guardians in Supporting the Instructional Program 3.5.01 Involves parents and guardians in monitoring their child's academic progress and homework. 3.5.02 Alerts parents and guardians to the educational benefits of leisure reading. 3.5.03 The teacher involves parents and other stakeholders to gather pertinent information related to student success.	11

TABLE 2.4: Praxis© Domain IV

Praxis© PLT	Page #	American Board PTK	Page #
IV. Professional Development, Leadership and Community			
A. Professional Development		Domain 1: Instructional Design Domain 5: Professional Learning and Leadership	
1. Is aware of a variety of professional development practices and resources • 1A: Profession literature • 1B: Professional associations • 1C: Workshops • 1D: Conferences • 1E: Learning communities • 1F: Graduate courses • 1G: Independent research • IH: Internships • 1I: Mentors • 1J: Study groups	15	1.1: Selects, Organizes, and Designs Content 1.1.11 The teacher is a life-long learner and is committed to ongoing professional development. Also, the teacher knows how to turn feedback into actionable plans for growth. 5.1: Professional Learning 5.1.01 Engages in meaningful learning experiences. Selects learning experiences based on, Student needs, Teacher needs (identified by colleague, supervisor, and reflective feedback), Local and district school improvement initiatives, Engaging students in activities aligned with State and local standards. 5.1.02 Participates in professional learning communities. 5.1.04 Develops learning communities with all stakeholders using available commonly accessible technology and communication methods.	2, 14
2. Understands the implications of research, views, ideas and debates on teaching practices • 2A: Knows resources for accessing research, views, ideas and debates on teaching practices • 2B: Interprets data, results, and conclusions from research on teaching practices 2C: Is able to relate data, results, conclusions from research and/or views, ideas and debates to a variety of educational situations	15	5.1: Professional Learning 5.1.03 Independently and with colleagues utilizes a variety of data sources, including examination of student work and data analysis, to assess teaching and learning results, inform future lesson plans and teaching practice, and to identify and develop professional learning activities.	14

TABLE 2.4: Praxis© Domain IV (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 5: Professional Learning and Leadership	
3. Recognizes the role of reflective practice for professional growth • 3A: Defines the purposes of reflective practice o Knows a variety of activities that support reflective practice o Reflective Journal o Self and peer assessment o Incident analysis o Portfolio o Peer observation o Critical friend	15	1.1: Selects, Organizes, Plans, and Designs Content 1.1.15 The teacher is reflective in his/her practice, considering the impact of instructional decisions, assessment outcomes, and interactions with all stakeholder groups on the teacher's work. 1.1.17 The teacher understands how his/her personal identity, philosophies, and background affect perceptions and expectations and recognizes how they may bias behaviors and interactions with others. 5.1: Professional Learning 5.1.05 Provides and receives feedback on analyzing student work, professional practice, data, assessing need for, planning, and leading professional learning experiences. 5.1.06 Participates in the school improvement process addressing the vision and mission of the school, positive school climate, setting school goals, and monitoring the progress toward those goals. 5.1.07 Practices cultural competency and routinely reflects on issues of culture, ethnicity, race, gender, and learning differences in their practice.	2, 14
C. Leadership and Community		Domain 5: Professional Learning and Leadership	
1. Is aware of school support personnel who assist students, teachers, and families • 1A: Guidance counselors • 1B: IEP team members • 1C: Special education teachers • 1D: Speech, physical and occupational therapists • 1E: School Librarians • 1F: Teachers of the gifted and talented • 1G: Paraeducators	15	5.2: Leadership 5.2.01 Develops relationships and collaborates with students, parents, and community members to develop and implement clear expectations for student support andsuccess.	14

TABLE 2.4: Praxis© Domain IV (Continued)

Praxis© PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 2: Effective Instructional Delivery Domain 3: Classroom Management and Organization Domain 5: Professional Learning and Leadership	
2. Understands the role of teachers and schools as educational leaders in the greater community • 2A: Role of teachers in shaping and advocating for the profession • 2B: Perceptions of teachers • 2C: Partnerships with parents and family members • 2D: Partnerships with the community	16	2.1: Communicates Effectively 2.1.10 The teacher takes on appropriate leadership roles. 3.5: Involves Parents and Guardians in Supporting the Instructional Program 3.5.03 The teacher involves parents and other stakeholders to gather pertinent information related to student success. 5.2: Leadership 5.2.04 Contributes to the advancement of the profession through research. 5.2.06 Seeks out and utilizes technological resources to support data analysis and school improvement initiatives.	3, 11, 15
3. Knows basic strategies for developing collaborative relationships with colleagues, administrators, other school personnel, parents/caregivers, and the community to support the educational process • 3A: Knows the elements of successful collaboration o Developing an action plan o Identifying the stakeholders o Identifying the purpose of the collaboration o Supporting effective communication o Seeking support	16	2.1: Communicates Effectively 2.1.07 The teacher is committed to collaboration and communicates effectively with all stakeholders through various conduits, platforms, and in appropriate contexts. 2.1.08 The teacher is an advocate for student success. 5.2: Leadership 5.2.03 Seeks opportunities to lead others in improving the school community. 5.2.05 Advocates for the needs of the students and the school community.	3, 14-15
4. Understands the implications of major legislation and court decisions relating to students and teachers • 4A: Equal access • 4B: Privacy and confidentiality • 4C: First Amendment issues • 4D: Intellectual freedom • 4E: Mandated reporting of child neglect/abuse • 4F: Due process • 4G: Liability • 4H: Licensing and tenure • 4I: Copyright	16	1.1: Selects, Organizes, Plans, and Designs Content 1.1.16 The teacher complies with all laws and state regulations governing classroom practice, curriculum, interactions with students, parents, and all other stakeholders. 5.2: Leadership 5.2.02 Models and provides clear expectations for the safe and ethical use of social media, information and technology.	2, 14

Conclusions and Recommendations

This study was undertaken with a single fundamental goal in mind: to assess the alignment between the content standards used to construct the PRAXIS© Principles of Learning and Teaching (PLT) Examination with those used to develop the American Board Professional Teaching Knowledge (PTK) Examination. To establish convergent validity evidence (and subsequently construct validity evidence) it was essential that the standards were reasonably aligned. This was, largely, a test of consequential validity evidence, which suggests that if test preparers utilize the American Board designed materials and pass the American Board designed assessment they *should* have a reasonable expectation of performing similarly on the PRAXIS designed assessment and subsequently performing well in the classroom. While no data were available to directly compare scores between the two assessments, the present study has demonstrated clearly that the alignment between programs is strong. Domains were **Very Strongly Aligned** at 100% and Specific Objectives were **Very Strongly Aligned** at 98%. Such evidence supports the convergent validity of the American Board Examination. Coupled with semi-annual psychometric analyses which maintain the construct validity of the assessment, convergent and consequential validity evidences of the materials is suggested. A triangulated review with earlier routine studies supports the criterion validity evidence (content-examination-standards alignment) of the assessment and process on a national level.

To improve alignment, consider adding/modifying the following content:

> Domain 1, Topic B.4: Specifically address gifted education here rather than combining it with SPED.
>
> Domain 1, Topic C. 1. [Knows the major contributions of foundational behavioral theorists to education 1A: Relates the work of behavioral theorists to educational contexts (e.g., Thorndike, Watson, Maslow, Skinner, Erikson)] is not included in the PTK exam at all.
>
> Domain 3, Topic B.1: While concepts of standardized examinations are addressed, the term "standardized test" is not used. It is suggested this can easily be added because the content is present.

Final Conclusion: It is evident that the American Board PTK Examination is well-aligned (100% across domains; 98% across specific objectives) with its PRAXIS© counterpart.

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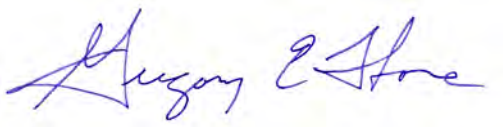

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