

## 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 that 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
<p>I: Students as Learners</p> <ul style="list-style-type: none"> <li>A. Student Development and the Learning Process</li> <li>B. Students as Diverse Learners</li> <li>C. Student Motivation and the Learning Environment</li> </ul>	<p>Domain 1: Instructional Design            Domain 2: Effective Instructional Delivery            Domain 3: Classroom Management and Organization</p>
<p>II: Instructional Process</p> <ul style="list-style-type: none"> <li>A. Planning Instruction</li> <li>B. Instructional Strategies</li> <li>C. Questioning and Communication Skills</li> </ul>	<p>Domain 1: Instructional Design            Domain 2: Effective Instructional Delivery            Domain 3: Classroom Management and Organization            Domain 4: Assessment            Domain 5: Professional Learning and Leadership</p>
<p>III: Assessment</p> <ul style="list-style-type: none"> <li>A. Assessment and Evaluation Strategies</li> <li>B. Assessment Tools</li> </ul>	<p>Domain 3: Classroom Management and Organization            Domain 4: Assessment</p>
<p>IV: Professional Development, Leadership, and Community</p> <ul style="list-style-type: none"> <li>A. Professional Development</li> <li>B. Leadership and Community</li> </ul>	<p>Domain 1: Instructional Design            Domain 2: Effective Instructional Delivery            Domain 3: Classroom Management and Organization            Domain 5: Professional Learning and Leadership</p>



## 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 #
<b>I. Students as Learners</b>			
<b>A. Student Development and the Learning Process</b>		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 <ul style="list-style-type: none"> <li>2a: Relates the work of theorists to educational context (Bandura, Bruner, Dewey, Piaget, Vygotsky, Kohlberg, Bloom)</li> </ul>	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) <ul style="list-style-type: none"> <li>4a: Describes the characteristics of a typical child in each stage and each domain</li> <li>4b: Recognizes typical and atypical variance within each stage and each domain</li> </ul>	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 <ul style="list-style-type: none"> <li>5a: Defines the relationship between learning theory and human development</li> <li>5b: Provides examples of how learning theory is impacted by human development</li> <li>5c: Uses knowledge of learning theory to solve educational problems</li> <li>5d: Uses knowledge of human development to solve educational problems</li> </ul>	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	
<p>1. Understands that a number of variables affect how individual students learn and perform</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• 1B: Provides examples of how variables might affect how students learn and perform</li> </ul>	4-5	<p>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.</p>	3
<p>2. Recognizes areas of exceptionality and their potential impact on student learning</p> <ul style="list-style-type: none"> <li>• 2A: Identifies areas of exceptionality Cognitive (Auditory, Visual, Motor/physical, Speech/language, Behavioral)</li> <li>• 2B: Explains a variety of ways exceptionalities may impact student learning</li> </ul>	5	<p>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.</p>	12-13
<p>3. Understands the implications and application of legislation relating to students with exceptionalities on classroom practice</p> <ul style="list-style-type: none"> <li>• 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)</li> <li>• 3B: Explains how the provisions of legislation relating to students with exceptionalities affect classroom practice</li> </ul>	5	<p>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.</p>	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. <b>Suggest separating gifted from SPED.</b>	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 <ul style="list-style-type: none"> <li>• 6A: Recognizes students with exceptionalities require particular accommodations.</li> <li>• 6B: Knows how to modify instruction, assessment, and communication methods to meet a recognized need</li> </ul>	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	
<p>1. Knows the major contributions of foundational behavioral theorists to education</p> <ul style="list-style-type: none"> <li>1A: Relates the work of behavioral theorists to educational contexts (e.g., Thorndike, Watson, Maslow, Skinner, Erikson)</li> </ul>	5	Not specifically stated	
<p>2. Understands the implications of foundational motivation theories for instruction, learning, and classroom management</p> <ul style="list-style-type: none"> <li>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)</li> <li>2B: Relates motivation theory to instruction, learning, and classroom management</li> </ul>	6	<p>3. 1: Establishes Smooth, Efficient Classroom Routines</p> <p>3.1.11 Encourage student effort by focusing on the positive aspects of students' performance.</p> <p>3.2: Sets Clear Standards for Classroom Conduct and Applies Them Fairly and Consistently</p> <p>3.2.03 Provides positive feedback that is specific, descriptive, accurate, and meaningful.</p> <p>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</p> <p>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</p> <p>3.2.06 Determines educational reasons for chronic student misbehavior.</p>	9-10

**TABLE 2.1: Praxis® Domain I (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization	
<p>3. Knows principles and strategies for classroom management</p> <ul style="list-style-type: none"> <li>• 3A: Knows how to develop classroom routines and procedures</li> <li>• 3B: Knows how to maintain accurate records</li> <li>• 3C: Knows how to establish standards of conduct</li> <li>• 3D: Knows how to arrange classroom space</li> <li>• 3E: Recognizes ways of promoting a positive learning environment</li> </ul>	6	<p>3.1: Establishes Smooth, Efficient, Classroom Routines</p> <p>3.1.01 Develops/teaches clear class rules during the first week of school.</p> <p>3.1.02 Enforces rules/re-teaches as needed.</p> <p>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.</p> <p>3.1.04 Presents clear expectations concerning classroom behavior.</p> <p>3.1.05 Presents expectations regarding participation in lessons &amp; learning activities such as teacher-directed instruction, cooperative learning and independent work (class/homework).</p> <p>3.1.06 Enforces expectations re: class behavior in a consistent manner.</p> <p>3.1.07 Begins promptly/purposefully.</p> <p>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.</p> <p>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.</p> <p>3.1.10 Provides explicit instruction (e.g., modeling and practice -- about listening, sharing, &amp; integrating ideas of others and handling disagreements constructively).</p> <p>3.2: Sets Clear Standards for Classroom Conduct. Applies Fairly and Consistently</p> <p>3.2.07 Once the educational reason for the misbehavior is known, designs plan to help meet students' needs in positive ways.</p> <p>3.2.08 Chooses corrective techniques for chronic misbehavior and implements them calmly, consistently, immediately, and respectfully.</p>	9-10

**TABLE 2.1: Praxis® Domain I (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization	
<p>4. Knows a variety of strategies for helping students develop self-motivation</p> <ul style="list-style-type: none"> <li>• 4A: Assigning valuable tasks</li> <li>• 4B: Providing frequent positive feedback</li> <li>• 4C: Including students in instructional decisions</li> <li>• 4D: De-emphasizing grades</li> </ul>	6	<p>3.1: Establishes Smooth, Efficient, Classroom Routines</p> <p>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</p> <p>3.1.11 Encourage student effort by focusing on the positive aspects of students' performance.</p> <p>3.3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress</p> <p>3.3.08 Provides feedback that is meaningful (e.g., specific, accurate, and important).</p> <p>3.3.09 Avoids embarrassing, insulting, or demeaning students when providing feedback.</p>	9, 11

**TABLE 2.2: Praxis® Domain II**

Praxis® PLT	Page #	American Board PTK	Page #
<b>II. Instructional Process</b>			
<b>A. Planning Instruction</b>			
<p>1. Understands the role of district, state, and national standards and frameworks in instructional planning</p> <ul style="list-style-type: none"> <li>• 1A: Understands the theoretical basis of standards-based education</li> <li>• 1B: Knows resources for accessing district, state, and national standards and frameworks</li> <li>• 1C: Understands how standards and frameworks apply to instructional planning</li> </ul>	7	<p>Domain 1: Instructional Design Domain 5: Professional learning and Leadership</p> <p>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</p>	2, 14
<p>2. Knows how to apply the basic concepts of predominant educational theories</p> <ul style="list-style-type: none"> <li>• 2A: Understands the basic concepts of cognitivism (Schema, Information processing, Mapping)</li> <li>• 2B: Understands the basic concepts of social learning theory (Modeling, Reciprocal determinism, Vicarious learning)</li> <li>• 2C: Understands the basic concepts of constructivism (Learning as experience, Problem-based learning, Zone of proximal development, Scaffolding, Inquiry/discovery learning)</li> <li>• 2D: Understands the basic concepts of behaviorism (Conditioning, Intrinsic and extrinsic rewards, Reinforcement, Punishment)</li> <li>• 2E: Knows how to apply the basic concepts of behaviorism, constructivism, social learning theory, and cognitivism to instructional contexts</li> </ul>	7	<p>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)</p>	1-2





**TABLE 2.2: Praxis® Domain II (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design Domain 4: Assessment	
<p>5. Knows how to develop observable and measurable instructional cognitive, affective, and psychomotor domains</p> <ul style="list-style-type: none"> <li>• 5A: objectives in the different learning domains</li> <li>• 5B: Knows how to apply Bloom’s taxonomy to the development of instructional objectives</li> <li>• 5C: Knows how to describe observable behavior</li> <li>• 5D: Knows how to describe measurable outcomes</li> </ul>	7-8	<p>1.1: Selects, Organizes, Plans, and Designs Content</p> <p>1.1.01 Writes measurable objectives for both individual/classroom performance based on data and subject matter.</p> <p>1.1.08 Uses routines, presentations, practice, review, memorization, application and homework, as appropriate, to organize instruction into clearly defined segments.</p> <p>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, &amp; applied levels of comprehension, Concept guides that link new information &amp; 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</p>	1
<p>6. Is aware of the need for and is able to identify various resources for planning enrichment and remediation</p> <ul style="list-style-type: none"> <li>• 6A: Identifies when remediation is appropriate</li> <li>• 6B: Identifies when enrichment is appropriate</li> <li>• 6C: Identifies a variety of resources for locating, adapting, or creating enrichment and remediation activities</li> </ul>	8	<p>4.1: Monitors Student Progress Closely</p> <p>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, &amp; 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.</p> <p>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.</p>	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 <ul style="list-style-type: none"> <li>• 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)</li> </ul>	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 <ul style="list-style-type: none"> <li>• 8A: Understands the basic concepts of thematic instruction</li> <li>• 8B: Understands the components of thematic units (Selecting a theme, Designing integrated learning activities, Selecting resources, Designing assessments)</li> <li>• 8C: Understands the basic concepts of interdisciplinary instruction</li> <li>• 8D: Understands the components of interdisciplinary units (Collaborating, Generating applicable topics, Developing an integrative framework, Planning instruction for each discipline, Designing integrative assessment)</li> </ul>	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 <ul style="list-style-type: none"> <li>• 9A: Identifies a variety of instructional planning partners (Special education teachers, School Librarian, Teachers of the gifted and talented, IEP team members)</li> <li>• 9B: Describes the roles each partner plays in collaborative activities</li> </ul>	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	
<p>1. Understands the cognitive processes associated with learning</p> <ul style="list-style-type: none"> <li>• 1A: Critical thinking</li> <li>• 1B: Creative thinking</li> <li>• 1C: Questioning</li> <li>• 1D: Inductive and deductive reasoning</li> <li>• 1E: Problem solving</li> <li>• 1F: Planning</li> <li>• 1G: Memory</li> <li>• 1H: Recall</li> </ul>	9	<p>2.1: Communicates Effectively</p> <p>2.1.03 When introducing new concepts, previews major ideas or questions to be covered in the lesson to stimulate students' thinking about topic.</p> <p>2.1.04 States what will be taught in the lesson in the form of verbal associations, concepts, principles, or cognitive strategies.</p> <p>2.2: Provides Clear &amp; Focused Instruction</p> <p>2.2.04 Demonstrates the steps for defining concepts, applying rules, and solving problems.</p>	3
<p>2. Understands the distinguishing features of different instructional models</p> <ul style="list-style-type: none"> <li>• 2A: Describes a variety of instructional models (Direct, Indirect, Independent, Experiential, Interactive)</li> </ul>	9	<p>2. 2: Provides Clear &amp; Focused Instruction</p> <p>2.2.25 The teacher develops instruction that values individuals' experiences and perspectives and that recognizes their influence on how individuals construct knowledge.</p>	6
<p>3. Knows a variety of instructional strategies associated with each instructional model</p> <ul style="list-style-type: none"> <li>• 3A: Identifies instructional strategies associated with direct instruction (e.g., Explicit teaching, Drill and practice, Lecture, Demonstrations, Guides for reading, listening, viewing)</li> <li>• 3B: Identifies instructional strategies associated with indirect instruction (e.g., Problem solving, Inquiry, Case studies, Concept mapping, Reading for meaning, Cloze procedures)</li> <li>• 3C: Identifies instructional strategies associated with independent instruction (e.g., Learning contracts, Research projects, Learning centers, Computer mediated instruction, Distance learning)</li> <li>• 3D: Identifies instructional strategies associated with experiential and virtual instruction (e.g., Field trips, Experiments, Simulations, Role play, Games, Observations)</li> <li>• 3E: Identifies instructional strategies associated with interactive instruction (e.g., Brainstorming, Cooperative learning groups, Interviews, Discussions, Peer practice, Debates)</li> </ul>	9	<p>2.2: Provides Clear &amp; Focused Instruction</p> <p>2.2.09 Identifies mistake patterns or knowledge gaps in student responses.</p> <p>2.2.10 Systematically reduces or withdraws assistance as students become proficient.</p> <p>2.2.12 Provides frequent and varied opportunities for students to practice new skills, apply new knowledge, or both.</p> <p>2.2.13 Provides students with ample opportunities to solve similar problems.</p> <p>2.2.17 Provides closure to lesson.</p> <p>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.</p> <p>2.2.19 When using whole class instruction, implements its design principles.</p> <p>2.2.20 When using small-groups, implements principles of design.</p> <p>2.2.31 The teacher provides instruction using various evidence based inst strategies to advance learning.</p>	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	
<p>4. Knows a variety of strategies for encouraging complex cognitive processes</p> <ul style="list-style-type: none"> <li>• 4A: Identifies complex cognitive processes               <ul style="list-style-type: none"> <li>○ Concept learning</li> <li>○ Problem solving</li> <li>○ Metacognition</li> <li>○ Critical thinking</li> <li>○ Transfer</li> </ul> </li> <li>• 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)</li> </ul>	9-10	<p>2.2: Provides Clear &amp; Focused Instruction</p> <p>2.2.11 Utilizes metaphors and analogies to communicate key ideas.</p> <p>2.2.14 Uses both examples and non-examples, (e.g., of concepts) so those students can induce the defining features.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	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	
<p>5. Knows a variety of strategies for supporting student learning</p> <ul style="list-style-type: none"> <li>• 5A: Identifies and explains uses of strategies for supporting student learning               <ul style="list-style-type: none"> <li>○ Modeling</li> <li>○ Developing self-regulation skills</li> <li>○ Scaffolding</li> <li>○ Differentiating instruction</li> <li>○ Guided practice</li> <li>○ Coaching</li> </ul> </li> </ul>	10	<p>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 &amp; 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.</p>	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	
<p>6. Knows basic strategies for promoting students' development of self-regulatory skills</p> <ul style="list-style-type: none"> <li>• 6A: Knows how to supports students in               <ul style="list-style-type: none"> <li>○ Setting goals</li> <li>○ Managing time</li> <li>○ Organizing information</li> <li>○ Monitoring progress</li> <li>○ Reflecting on outcomes</li> <li>○ Establishing a productive work environment</li> </ul> </li> </ul>	10	<p>2.4: Makes Efficient Use of Learning Time</p> <p>2.4.02 Arranges schedule to maximize engagement of all students (e.g., teacher-directed, independent work, group work).</p> <p>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.</p> <p>2.4.05 Extends learning through homework assignments that are relevant to the lessons being learned.</p> <p>2.4.06 Extends learning time through homework that is appropriate in length and difficulty.</p> <p>3.3: Routinely Provides Students Feedback and Reinforcement Regarding Their Learning Progress</p> <p>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.</p> <p>3.3.07 Provides incentives to students.</p> <p>3.4: Expects Students to Learn</p> <p>3.4.01 Holds high achievement expectations for student learning.</p> <p>3.4.02 Communicates to students the measurements and criteria for attaining learning objectives.</p> <p>3.4.03 Sets goals for meeting standards, gains in learning, or both.</p> <p>3.4.04 Holds all students accountable for participating in learning activities and attaining goals.</p> <p>3.4.05 Holds all students accountable for completing high quality work (class work or homework).</p> <p>3.4.06 Teaches that effort is necessary for success in attaining rigorous standards.</p>	7, 10, 11

**TABLE 2.2: Praxis® Domain II (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 2: Effective Instructional Delivery	
<p>7. Understands the design of different group configurations for learning</p> <ul style="list-style-type: none"> <li>• 7A: Describes different group configurations               <ul style="list-style-type: none"> <li>○ Whole-class</li> <li>○ Small-group</li> <li>○ Independent learning</li> <li>○ One-on-one</li> <li>○ Pair/share</li> </ul> </li> </ul>	10	<p>2.2: Provides Clear &amp; Focused Instruction</p> <p>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</p> <p>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.</p>	5
<p>8. Understands the use and implications of different grouping techniques and strategies</p> <ul style="list-style-type: none"> <li>• 8A: Explains the uses, strengths and limitations of a variety of grouping techniques               <ul style="list-style-type: none"> <li>○ Cooperative learning</li> <li>○ Collaborative learning</li> <li>○ Heterogeneous grouping</li> <li>○ Homogeneous grouping</li> <li>○ Multi-age grouping</li> </ul> </li> </ul>	10	<p>2.2: Provides Clear &amp; Focused Instruction</p> <p>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.</p> <p>2.2.20 When using small-groups, implements principles of design.</p> <p>2.2.21 Holds members of cooperative work groups or small groups individually responsible for performance.</p>	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 <ul style="list-style-type: none"> <li>10A: Explains the instructional purposes of monitoring and adjusting instruction</li> <li>10B: Knows strategies for monitoring and adjusting instruction</li> </ul>	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 <ul style="list-style-type: none"> <li>12A: Distinguishes among the different types of memory (Short-term versus Long-term)</li> <li>12B: Considers the characteristics and effects of memory on student learning when planning instruction</li> </ul>	11	2.5: Builds Students' Study Skills 2.5.01 Instructs students about when and how to use study skills such as: <ul style="list-style-type: none"> <li>Repeating material to remember it more effectively</li> <li>Outline material to structure and remember it</li> <li>Self-monitoring and self-regulating to maintain concentration and task focus</li> <li>Minimizing performance anxiety and fear of failure</li> </ul> <p>Consider adding material specifically addressing types of memory</p>	7

**TABLE 2.2: Praxis® Domain II (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 1: Instructional Design	
<p>13. Recognizes the role of teachable moments in instruction</p> <ul style="list-style-type: none"> <li>13A: Defines and provides examples of a teachable moment</li> <li>13B: Understands the uses of the teachable moment</li> </ul>	11	<p>1.1: Topic 1: Selects, Organizes, Plans, and Designs Content</p> <p>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.</p>	1
C. Questioning and Communication Techniques		Domain 2: Effective Instructional Delivery	
<p>1. Knows the components of effective questioning</p> <ul style="list-style-type: none"> <li>1A: Allowing think/wait time</li> <li>1B: Helping students articulate their ideas</li> <li>1C: Respecting student answers</li> <li>1D: Handling incorrect answers</li> <li>1E: Encouraging participation</li> <li>1F: Establishing a non-critical classroom environment</li> <li>1G: Promoting active listening</li> <li>1H: Varying the types of questions</li> </ul>	11	<p>2.3: Uses Effective Questioning Tech</p> <p>2.3.01 Suits questions to the knowledge and skill of students.</p> <p>2.3.02 Uses factual and higher order questions to further student learning.</p> <p>2.3.03 Uses open-ended higher-cognitive questions that call for students to apply, analyze, synthesize or evaluate what they are learning.</p> <p>2.3.04 Provides appropriate wait-time when asking higher order questions.</p> <p>2.3.05 Promotes discussion on a range of possible correct answers.</p> <p>2.3.06 Requires students to clarify or justify their assertions to improve the quality of student responses.</p> <p>2.3.07 When asking questions with a short and specific correct answer, orchestrates chorale responses to involve all students.</p>	6
<p>2. Understands the uses of questioning</p> <ul style="list-style-type: none"> <li>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)</li> </ul>	11	<p>2.1: Communicates Effectively</p> <p>2.1.01 Stimulates student interest by connecting prior knowledge and students' personal experience to larger concepts.</p> <p>2.1.02 Explains how current lessons build upon previously learned knowledge.</p> <p>2.3: Uses Effective Questioning Tech</p> <p>2.3.01 Suits questions to the knowledge and skill of students.</p> <p>2.3.02 Uses factual and higher order questions to further student learning.</p> <p>2.3.07 When asking questions with a short &amp; specific correct answer, orchestrates chorale responses to involve all students.</p>	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	
<p>3. Knows strategies for supporting students in articulating their ideas</p> <ul style="list-style-type: none"> <li>• 3A: Explains and provides examples of strategies for supporting students in articulating their ideas               <ul style="list-style-type: none"> <li>○ Verbal and non-verbal prompting</li> <li>○ Restatement</li> <li>○ Reflective listening statements</li> <li>○ Wait time</li> </ul> </li> </ul>	11	<p>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</p>	6, 10
<p>4. Knows methods for encouraging higher levels of thinking</p> <ul style="list-style-type: none"> <li>• 4A: Explains and provides examples of methods for encouraging students' higher levels of thinking Guiding students to               <ul style="list-style-type: none"> <li>○ Reflect</li> <li>○ Challenge assumptions</li> <li>○ Find relationships</li> <li>○ Determine relevancy and validity of information</li> <li>○ Design alternate solutions</li> <li>○ Draw conclusions</li> <li>○ Transfer knowledge</li> </ul> </li> </ul>	12	<p>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 &amp; 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.</p>	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	
<p>5. Knows strategies for promoting a safe and open forum for discussion</p> <ul style="list-style-type: none"> <li>• 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)</li> </ul>	12	<p>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.</p>	3
<p>6. Understands various verbal and nonverbal communication modes</p> <ul style="list-style-type: none"> <li>• 6A: Explains and provides examples of <ul style="list-style-type: none"> <li>○ Body language</li> <li>○ Gesture</li> <li>○ Tone, stress, and inflection</li> <li>○ Eye contact</li> <li>○ Facial expression</li> <li>○ Personal space</li> </ul> </li> </ul>	12	<p>2.2: Provides Clear &amp; Focused Instruction 2.2.19 When using whole class instruction, implements its design principles by:</p> <ul style="list-style-type: none"> <li>• Establishing whole class instruction based on lesson objective</li> <li>• Establishing seating arrangements so all students can see and hear instruction</li> <li>• Monitoring student attention during instruction such as: using teacher eye contact, proximity or questions</li> <li>• Ensuring that students receive the assistance they need to learn successfully</li> </ul> <p>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:</p> <ul style="list-style-type: none"> <li>• Using proximity (i.e., moving closer to the student)</li> <li>• Using reprimand (i.e., brief, proximate, state positive expectation, avoids asking a question, emotionally supportive or neutral)</li> <li>• Using eye contact and/or discussion</li> <li>• Using humor</li> </ul>	5, 9-10
<p>7. Is aware of how culture and gender can affect communication</p>	12	<p>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.</p>	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 <ul style="list-style-type: none"> <li>• 8A: Audio and visual aids</li> <li>• 8B: Text and digital resources</li> <li>• 8C: Internet and other computer-based tools</li> </ul>	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 <ul style="list-style-type: none"> <li>• 9A: Explains and provides examples of active listening strategies                             <ul style="list-style-type: none"> <li>○ Attending to the speaker</li> <li>○ Restating key points</li> <li>○ Asking questions</li> <li>○ Interpreting information</li> <li>○ Providing supportive feedback</li> <li>○ Being respectful</li> </ul> </li> </ul>	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 #
<b>III. Assessment</b>			
A. Assessment and evaluation strategies		Domain 4: Assessment	
<p>1. Understands the role of formal and informal assessment in informing the instructional process</p> <ul style="list-style-type: none"> <li>• 1A: Defines and provides uses and examples of formal and informal assessment modes</li> <li>• 1B: Explains a variety of ways the results of formal and informal assessment are used to make educational decisions</li> </ul>	13	<p>4.1: Monitors Student Progress Closely</p> <p>4.1.01 Aligns assessments to taught objectives and lesson content.</p> <p>4.1.02 Uses ongoing assessment to monitor and guide student learning aligned with curriculum goals.</p> <p>4.1.03 Monitors procedures to check on student progress during cooperative work groups or lab activities, uses informal or formal</p> <p>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</p>	11
<p>2. Understands the distinctions among the different types of assessment</p> <ul style="list-style-type: none"> <li>• 2A: Defines and provides uses and examples of formative, summative, and diagnostic assessment</li> </ul>	13	<p>4.2: Understands Testing Concepts</p> <p>4.2.01 Understands the purpose and use of educational tests (e.g., norm referenced, criterion referenced, performance assessments, and portfolios).</p>	12
<p>3. Knows how to create and select an appropriate assessment format to meet instructional objectives</p> <ul style="list-style-type: none"> <li>• 3A: Knows how to create assessments in a variety of formats</li> <li>• 3B: Is able to select an assessment format to meet a specific instructional objective</li> </ul>	13	<p>4.1: Monitors Student Progress Closely</p> <p>4.1.01 Aligns assessments to taught objectives and lesson content.</p>	11
<p>4. Knows how to select from a variety of assessment tools to evaluate students’ performance</p> <ul style="list-style-type: none"> <li>• 4A: Knows a variety of assessment tools, their uses, strengths and limitations <ul style="list-style-type: none"> <li>○ Rubrics</li> <li>○ Analytical checklists</li> <li>○ Scoring guides</li> <li>○ Anecdotal notes</li> <li>○ Continuums</li> </ul> </li> <li>4B: Is able to select an assessment tool appropriate for quantifying the results of a specific assessment</li> </ul>	13	<p>4.2: Understands Testing Concepts</p> <p>4.2.03 Can apply general testing concepts (e.g., reliability, validity and standard error of measurement).</p> <p>4.2.04 Understands and uses general statistical concepts (e.g., mean, mode, median and standard deviation).</p> <p>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.</p>	12

**TABLE 2.3: Praxis® Domain III (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 4: Assessment	
<p>5. Understands the rationale behind and the uses of students' self and peer assessment</p> <ul style="list-style-type: none"> <li>• 5A: Defines and provides uses and examples of student self-assessment modes</li> <li>• 5B: Defines and provides uses and examples of peer assessment modes</li> <li>• 5C: Explains the strengths and limitations of self and peer assessment modes</li> </ul>	13	<p>4.1: Monitors Student Progress Closely</p> <p>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.</p>	12
<p>6. Knows how to use a variety of assessment formats</p> <ul style="list-style-type: none"> <li>• 6A: Describes and provides uses, strengths, and limitations of a variety of assessment formats (e.g., Essay, Selected response, Portfolio, Conference, Observation, Performance)</li> <li>6B: Is able to select an assessment format appropriate to a specific educational context</li> </ul>	14	<p>4.2: Understands Testing Concepts</p> <p>4.2.02 Understands the purposes and uses of different item types (e.g., multiple-choice, constructed response format).</p>	12
<b>B. Assessment Tools</b>			
<p>1. Understands the types and purposes of standardized tests</p> <ul style="list-style-type: none"> <li>• 1A: Explains the uses of the different types of standardized test <ul style="list-style-type: none"> <li>○ Achievement</li> <li>○ Aptitude</li> <li>○ Ability</li> </ul> </li> <li>1B: Recognizes the data provided by the different types of standardized tests</li> </ul>	14	<p>4.2: Understanding Testing Concepts</p> <p>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.</p> <p><i>Standardized testing is not specifically mentioned but all content points to it. Consider adding specific reference.</i></p>	12
<p>2. Understands the distinction between norm-referenced and criterion-referenced scoring</p> <ul style="list-style-type: none"> <li>• 2A: Explains the uses of norm-referenced and criterion-referenced tests</li> <li>• 2B: Explains data provided by a norm-referenced and a criterion-referenced test</li> </ul>	14	<p>4.2: Understanding Testing Concepts</p> <p>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.</p>	12

**TABLE 2.3: Praxis® Domain III (Continued)**

Praxis® PLT	Page #	American Board PTK	Page #
		Domain 3: Classroom Management and Organization Domain 4: Assessment	
<p>3. Understands terminology related to testing and scoring</p> <ul style="list-style-type: none"> <li>• 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)</li> </ul>	14	<p>4.2: Understanding Testing Concepts</p> <p>4.2.03 Can apply general testing concepts (e.g., reliability, validity and standard error of measurement).</p> <p>4.2.04 Understands and uses general statistical concepts (e.g., mean, mode, median and standard deviation).</p>	12
<p>4. Understands the distinction between holistic and analytical scoring</p> <ul style="list-style-type: none"> <li>• 4A: Describes holistic scoring and analytical scoring</li> <li>• 4B: Identifies an educational context for each</li> </ul>	14	<p>4.2: Understanding Testing Concepts</p> <p>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.</p>	12
<p>5. Knows how to interpret assessment results and communicate the meaning of those results to students, parents/caregiver, and school personnel</p> <ul style="list-style-type: none"> <li>• 5A: Understands what scores and testing data indicate about a student’s ability, aptitude, or performance</li> <li>• 5B: Is able to explain results of assessments using language appropriate for the audience</li> </ul>	14	<p>3.5: Involves Parents and Guardians in Supporting the Instructional Program</p> <p>3.5.01 Involves parents and guardians in monitoring their child’s academic progress and homework.</p> <p>3.5.02 Alerts parents and guardians to the educational benefits of leisure reading.</p> <p>3.5.03 The teacher involves parents and other stakeholders to gather pertinent information related to student success.</p>	11



**TABLE 2.4: Praxis® Domain IV**

Praxis® PLT	Page #	American Board PTK	Page #
<b>IV. Professional Development, Leadership and Community</b>			
A. Professional Development		Domain 1: Instructional Design Domain 5: Professional Learning and Leadership	
<p>1. Is aware of a variety of professional development practices and resources</p> <ul style="list-style-type: none"> <li>• 1A: Profession literature</li> <li>• 1B: Professional associations</li> <li>• 1C: Workshops</li> <li>• 1D: Conferences</li> <li>• 1E: Learning communities</li> <li>• 1F: Graduate courses</li> <li>• 1G: Independent research</li> <li>• 1H: Internships</li> <li>• 1I: Mentors</li> <li>• 1J: Study groups</li> </ul>	15	<p>1.1: Selects, Organizes, and Designs Content</p> <p>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.</p> <p>5.1: Professional Learning</p> <p>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.</p> <p>5.1.02 Participates in professional learning communities.</p> <p>5.1.04 Develops learning communities with all stakeholders using available commonly accessible technology and communication methods.</p>	2, 14
<p>2. Understands the implications of research, views, ideas and debates on teaching practices</p> <ul style="list-style-type: none"> <li>• 2A: Knows resources for accessing research, views, ideas and debates on teaching practices</li> <li>• 2B: Interprets data, results, and conclusions from research on teaching practices</li> <li>• 2C: Is able to relate data, results, conclusions from research and/or views, ideas and debates to a variety of educational situations</li> </ul>	15	<p>5.1: Professional Learning</p> <p>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.</p>	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	
<p>3. Recognizes the role of reflective practice for professional growth</p> <ul style="list-style-type: none"> <li>• 3A: Defines the purposes of reflective practice               <ul style="list-style-type: none"> <li>○ Knows a variety of activities that support reflective practice</li> <li>○ Reflective Journal</li> <li>○ Self and peer assessment</li> <li>○ Incident analysis</li> <li>○ Portfolio</li> <li>○ Peer observation</li> <li>○ Critical friend</li> </ul> </li> </ul>	15	<p>1.1: Selects, Organizes, Plans, and Designs Content</p> <p>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.</p> <p>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.</p> <p>5.1: Professional Learning</p> <p>5.1.05 Provides and receives feedback on analyzing student work, professional practice, data, assessing need for, planning, and leading professional learning experiences.</p> <p>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.</p> <p>5.1.07 Practices cultural competency and routinely reflects on issues of culture, ethnicity, race, gender, and learning differences in their practice.</p>	2, 14
C. Leadership and Community		Domain 5: Professional Learning and Leadership	
<p>1. Is aware of school support personnel who assist students, teachers, and families</p> <ul style="list-style-type: none"> <li>• 1A: Guidance counselors</li> <li>• 1B: IEP team members</li> <li>• 1C: Special education teachers</li> <li>• 1D: Speech, physical and occupational therapists</li> <li>• 1E: School Librarians</li> <li>• 1F: Teachers of the gifted and talented</li> <li>• 1G: Paraeducators</li> </ul>	15	<p>5.2: Leadership</p> <p>5.2.01 Develops relationships and collaborates with students, parents, and community members to develop and implement clear expectations for student support and success.</p>	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 <ul style="list-style-type: none"> <li>• 2A: Role of teachers in shaping and advocating for the profession</li> <li>• 2B: Perceptions of teachers</li> <li>• 2C: Partnerships with parents and family members</li> <li>• 2D: Partnerships with the community</li> </ul>	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 <ul style="list-style-type: none"> <li>• 3A: Knows the elements of successful collaboration                             <ul style="list-style-type: none"> <li>○ Developing an action plan</li> <li>○ Identifying the stakeholders</li> <li>○ Identifying the purpose of the collaboration</li> <li>○ Supporting effective communication</li> <li>○ Seeking support</li> </ul> </li> </ul>	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 <ul style="list-style-type: none"> <li>• 4A: Equal access</li> <li>• 4B: Privacy and confidentiality</li> <li>• 4C: First Amendment issues</li> <li>• 4D: Intellectual freedom</li> <li>• 4E: Mandated reporting of child neglect/abuse</li> <li>• 4F: Due process</li> <li>• 4G: Liability</li> <li>• 4H: Licensing and tenure</li> <li>• 4I: Copyright</li> </ul>	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.

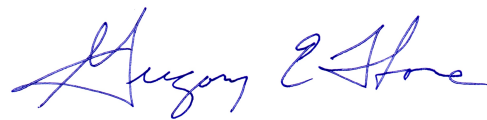
Domain 3, Topic B.1: While concepts of standardized examinations are addressed, the term “standardized test” is not used. It is suggested this can easily be added because the content is present.

**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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CEO, MetriKs Amérique LLC

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