

PCMAS Basic Knowledge and Professional Skills Alignment with InTASC

PCMAS Basic Knowledge Exam

This part of the exam covers the basic general education knowledge that teacher candidates should have mastered in the social sciences, the humanities, the natural sciences, math, Spanish, and English. A significant innovation for this exam, compared with prior exams, is the way written Spanish skills will be assessed. Outlining a composition has been replaced by indirectly evaluating editing skills via multiple-choice exercises in which the thought logic behind the ideas is measured to assess the candidate’s ability to construct coherent, consistent text.

Topic outline	InTASC
<p>A. Social Sciences</p> <ol style="list-style-type: none"> 1. Personal dimensions <ul style="list-style-type: none"> • Dimensions of the human body: sexuality and gender within cultural and social contexts • Psychological elements that define personal identity 2. Interpersonal dimensions <ul style="list-style-type: none"> • Social consequences of solidarity and conflict • Social value of work 3. Social organization dimensions <ul style="list-style-type: none"> • Social stratification systems: relationships between individuals, state and nation • Citizen participation forms (Government, Justice) • Characteristics of neo-liberalism and globalization in contemporary society and its impact on economic reality, development, and social awareness 4. The environment and social life <ul style="list-style-type: none"> • Culture’s influence on the individual and society (ideas, language, traditions, and beliefs) • Social science methods 	<p>The Learner and Learning</p> <p>Standard #1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.</p>
<p>B. Humanities</p> <ol style="list-style-type: none"> 1. Classic Antiquity: Greece and Rome <ul style="list-style-type: none"> • The difference between democracy, Hellenism and empire 2. The Christian world <ul style="list-style-type: none"> • Fundamentals of Christian thinking • Religions and invasions in the Middle Ages • Elements of art, ethics, education, and religions in the Middle Ages 3. The modern world modern and the supremacy of reason <ul style="list-style-type: none"> • Birth of City-States and the modern Renaissance 	<p>The Learner and Learning</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.</p> <p>Content</p> <p>Standard #4: Content Knowledge. The</p>

<ul style="list-style-type: none"> • Colonization, culture and human rights in America <ol style="list-style-type: none"> 4. The contemporary world and the current reality <ul style="list-style-type: none"> • Factors and consequences of European and U. S. colonial imperialism (Puerto Rico, the Caribbean and Latin America) • Consequences of the world wars • Puerto Rico’s modernization and its <i>free associated</i> status 5. Art and music <ul style="list-style-type: none"> • Functions and features of architecture, sculpture, painting, and music 6. Literature <ul style="list-style-type: none"> • Different contexts or perspectives of literary works as expressive means <p>C. Natural Sciences</p> <ol style="list-style-type: none"> 1. Nature of science <ul style="list-style-type: none"> • Scientific method • Science and technology 2. Development and preservation of life and the environment <ul style="list-style-type: none"> • Origin of life and evolution • Value of health: nutrition, preventive and curative methods • Responsible human sexuality and prevention • Human body as a system • Interaction of human beings with their environment and the importance of conservation • Environmental impact of energy production and use (with emphasis on Puerto Rico) • Various energy sources and their implications for the development of future life • Biotechnology development and its ethical implications 3. Matter and energy <ul style="list-style-type: none"> • Structure of matter, its properties and practical value for human beings 4. Earth and space science <ul style="list-style-type: none"> • Weather phenomena and its impact on daily life (with emphasis on Puerto Rico) 	<p>teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.</p> <p>Standard #5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.</p>
<p>D. Mathematics</p> <ol style="list-style-type: none"> 1. Numbers <ul style="list-style-type: none"> • Problem solving using proportional reasoning 2. Operations 	<p>Content</p> <p>Standard #4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures</p>

<ul style="list-style-type: none"> • Calculate percentages for day to day applications <p>3. Analyze and interpret data</p> <ul style="list-style-type: none"> • Analysis of data sets • Represent empirical data in chart form (histograms, pie charts and graphs linear) • Interpret graphs that describe social or natural phenomenon • Calculate the mean, the median, and the mode for a data set and description tendencies <p>4. Spatial sense</p> <ul style="list-style-type: none"> • Calculate the area, volume, and perimeter of geometric figures 	<p>of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.</p> <p>Standard #5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.</p>
<p>E. Spanish (not literary discourse)</p> <p>1. Editing: coherence and consistency (internal thinking logic)</p> <ul style="list-style-type: none"> • Discursive digressions • Conjunctive and paragraph connectors • Expressions with variable meanings • paragraph organization (number, sequence, comparison, contrast, conceptual development, wording and problem solution, cause and effect logic) • relationship between ideas in the context (topic sentences, principal and secondary sentences; introduction, development, and conclusion) <p>2. Discourse analysis</p> <ul style="list-style-type: none"> • Vocabulary in context • Implied and explicit ideas • Content thematic macrostructure: hypothesis, facts, opinions, beliefs, fallacies • Discourse types: narrative, descriptive, expository, argumentative • Inferences 	<p>Content</p> <p>Standard #4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.</p> <p>Standard #5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.</p>
<p>F. English</p> <p>1. Managing and using language</p> <ul style="list-style-type: none"> • Correct preposition and pronoun usage • Correct verbal time usage • Subject and predicate agreement in sentence construction <p>2. Understanding and analyzing reading</p> <ul style="list-style-type: none"> • Vocabulary in context 	<p>Content</p> <p>Standard #4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful</p>

<ul style="list-style-type: none"> • Recognizing ideas in context (topic sentences, principal and secondary sentences; introduction, development, and conclusion) • Discursive techniques: definition, illustration, comparison, contrast, cause and effect • Hypothesis identification, facts, opinions, beliefs, fallacies and arguments • Types of speech: narrative, descriptive, expository, argumentative 	<p>for learners to assure mastery of the content.</p> <p>Standard #5: Application of Content. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.</p>
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PCMAS Professional Skills Exam

This part of the test examines core human development aspects, educational psychology, the sociological and philosophical foundations of education, methodology, assessment and research. The test includes the core content of human development and educational psychology. In the philosophical and social foundations portion the implications of these on the educational process are taken into account. In addition, examinees will demonstrate competency in methodological aspects related to curriculum, instruction design, the teaching and learning planning process and learning assessment (formative and summative). It also includes applying concepts to different types of research.

The pedagogical situation requires the candidate to analyze and answer various discussion exercises. University professors from various public and private institutions will use rubrics to evaluate the answers.

Topic outline	InTASC
<p>A. Human development</p> <ol style="list-style-type: none"> 1. Fundamental concepts of human development theories for the teaching and learning process <ul style="list-style-type: none"> • Nature, function, importance and influence of genetic and environmental factors • Theoretical perspectives • Moral development theories • Theories about language acquisition and development • Physical, intellectual, social, and personality development 2. Research findings about human development 3. Aspects that influence human development <ul style="list-style-type: none"> • Parenting styles and their relationship with development • Relationship between school environment and educational practices and human development • Specific situations that influence human development 	<p>The Learner and Learning</p> <p>Standard #1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each</p>

<p>4. Diagnostic categories of student exceptionalities (causes, characteristics, and needs)</p> <ul style="list-style-type: none"> • Disability • Physical and health disorders • Communication problems • Hearing and visual problems • Emotional and behavioral problems • Specific learning problems • Autism spectrum • Attention deficit disorder with or without hyperactivity • Gifted and talented 	<p>learner to meet high standards.</p>
<p>B. Educational psychology</p> <p>1. Learning theories</p> <ul style="list-style-type: none"> • Nature, function and importance • Historical background • Educational theorists principle contributions <p>2. Theoretical foundations of how students learn</p> <ul style="list-style-type: none"> • How knowledge is constructed • Ways to acquire skills and attitudes (values) <p>3. Psychological theories to address individual differences</p> <ul style="list-style-type: none"> • Genetic and environmental, social and cultural factors • Intelligence: theories and measurement^[SEP] • Learning styles • Multiple intelligences • Emotional intelligence <p>4. Psychological theories for classroom management and behavior modification</p> <ul style="list-style-type: none"> • School environment influence on self-esteem and self-realization <p>5. Perspectives on motivation for promoting improvements in learning</p> <ul style="list-style-type: none"> • Different theoretical perspectives on motivation • Relationship between motivation and learning: needs, goals, and attributes <p>6. Neuro-education contributions to the teaching learning process</p> <ul style="list-style-type: none"> • Brain research implications about the teaching learning process 	<p>The Learner and Learning</p> <p>Standard #1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.</p> <p>Standard #3: Learning Environments. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation.</p>
<p>C. Social foundations</p> <p>1. Sociological perspectives that influence the field education</p> <ul style="list-style-type: none"> • Theoretical perspectives <p>2. Nature and goals of education according to different sociological perspectives</p> <ul style="list-style-type: none"> • basic concepts relating to the social background of education 	<p>The Learner and Learning</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each</p>

<p>3. Educational implications of the different sociological perspectives</p> <ul style="list-style-type: none"> • Culture’s influence in education (traditions, customs, means of information massive, subcultures) • Demographic, social, cultural, economic, political, legal and technological changes and their educational implications • Influence of social groups (family, pairs, socio-economic class, community, Church, and ethnicity) on the educational process • School in the face of social problems <p>4. Regulations, standards, and professional ethics</p> <ul style="list-style-type: none"> • History of education in Puerto Rico • Education laws and regulations related to school administration, the rights and duties of teachers, students, and exceptional individuals <p>5. Leadership and collaboration aspects in their interaction with the school community promoting student and professional growth</p> <ul style="list-style-type: none"> • The teacher’s social function (educator, model, facilitator, change agent, civic leader) • Relationship between education and the work world • Teacher, student, parent, and community participation in the educational experience • Globalization, technological advancements, and multiculturalism 	<p>learner to meet high standards.</p> <p>Standard #3: Learning Environments. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation.</p> <p>Professional Responsibility</p> <p>Standard #9: Professional Learning and Ethical Practice. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.</p> <p>Standard #10: Leadership and Collaboration. The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.</p>
<p>D. Philosophical foundations</p> <p>1. Philosophical perspectives influencing the educational field</p> <ul style="list-style-type: none"> • historical background • nature and role of educational philosophy • educational philosophy perspectives: essentialism, perennialism, and progressivism • educational philosophy positions: idealism, realism, pragmatism, existentialism, reconstructionism, postmodernism . . . • philosophical concepts influencing the educational field: metaphysics, epistemology, anthropology, ethics, esthetics and axiology <p>2. Education’s nature and purpose according to different philosophical perspectives</p> <ul style="list-style-type: none"> • concepts of different philosophical postures 	<p>The Learner and Learning</p> <p>Standard #1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.</p> <p>Standard #2: Learning Differences. The teacher uses understanding of individual</p>

<p>related to:</p> <ul style="list-style-type: none"> - education as a human development process (self-determination, self-realization, problem solving, authenticity-introspection, transformation) - education as a social development and value transmission process (search for a society ideal, socialization and inculturation, democratization, empathic interaction and experiencing values, rebuilding social structure) <p>3. Educational implications of different philosophical perspectives</p> <ul style="list-style-type: none"> • curriculum (liberal, practical . . .) • methodology (Socratic, syllogistic . . .) • teacher’s role (model, guide . . .) • student’s role (passive agent, active . . .) • discipline (intrinsic, extrinsic . . .) • assessment (objective, subjective . . .) • model of citizen to be formed (philosophical, authentic . . .) 	<p>differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.</p> <p>Instructional Practice</p> <p>Standard #7: Planning for Instruction. The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.</p>
<p>E. Methodology</p> <p>1. Educational objectives</p> <ul style="list-style-type: none"> • operational objectives (taxonomies, classification by taxonomy category: cognitive, affective, and psychomotor) • content standards and grade-level expectations • general curriculum aspects <p>2. Teaching and learning methods and techniques</p> <ul style="list-style-type: none"> • teaching and learning processes (taking into consideration individual differences, selecting and organizing the content, strategies, techniques and instructional resources, teaching resources complements — including multimedia and computer —, assessment criteria) <p>3. Teaching strategies to meet specific situations and students’ special needs</p> <ul style="list-style-type: none"> • internal and external factors affecting the experience educational • student needs • strategies associated with learning <p>4. Using technology effectively for teaching</p> <ul style="list-style-type: none"> • technology assisted learning • educational innovations <p>5. Enriched learning environments</p> <ul style="list-style-type: none"> • creating enriched learning environments 	<p>Instructional Practice</p> <p>Standard #6: Assessment. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher’s and learner’s decision making.</p> <p>Standard #7: Planning for Instruction. The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.</p> <p>Standard #8: Instructional Strategies. The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.</p>
<p>F. Evaluation and research</p> <p>1. Evaluation and assessment techniques</p> <ul style="list-style-type: none"> • general concepts^[SEP] • evaluation instruments^[SEP] 	<p>Professional Responsibility</p> <p>Standard #9: Professional Learning and</p>

<ul style="list-style-type: none"> • assessment techniques and instruments <p>2. Findings from classroom research</p> <ul style="list-style-type: none"> • resources for accessing teaching practice research, ideas, and discussions ^[1-1]_[SEP] <p>3. Established standards and expectations for evaluating teaching effectiveness</p> <ul style="list-style-type: none"> • alignment between standards, objectives, and evaluation ^[1-1]_[SEP] <p>4. Basic statistics concepts and item analysis</p> <ul style="list-style-type: none"> • difficulty index ^[1-1]_[SEP] • discrimination index ^[1-1]_[SEP] • central tendency measures (average, mode, median) • dispersion or variability measures (standard deviation, variance) • rankings (percentiles) ^[1-1]_[SEP] <p>5. Different research types and designs</p> <ul style="list-style-type: none"> • general principles ^[1-1]_[SEP] • research types: quantitative and qualitative ^[1-1]_[SEP] • research designs: descriptive and experimental • classroom research ^[1-1]_[SEP] • the teacher as researcher • the teacher as a research consumer ^[1-1]_[SEP] 	<p>Ethical Practice. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.</p>
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PCMAS Pedagogical Situation

The pedagogical situation or "*pedagogical scenario*" strengthens the alignment between the PCMAS – General Exam and the InTASC standards. The pedagogical situation has three parts. The first part requires teacher candidates to select a standard or an educational objective and develop a topic appropriate to their teaching level, elementary (K-6) or secondary (7-12). In the second part, teacher candidates must develop an instructional plan complete with objectives, strategies, and assessment. This measures the candidate's ability to address the needs of a student population in a contextualized scenario. Finally, the pedagogical situation asks candidates to justify their plan and strategies based on theoretical foundations, whether philosophical, psychological, or sociological.