

Association for Childhood Education International
Elementary Education Standards and Supporting Explanation
2007

DEVELOPMENT, LEARNING AND MOTIVATION

1.0 Development, Learning, and Motivation--Candidates know, understand, and use the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students' development, acquisition of knowledge, and motivation.

CURRICULUM

2.1 Reading, Writing, and Oral Language—Candidates demonstrate a high level of competence in use of English language arts and they know, understand, and use concepts from reading, language and child development, to teach reading, writing, speaking, viewing, listening, and thinking skills and to help students successfully apply their developing skills to many different situations, materials, and ideas;

2.2 Science—Candidates know, understand, and use fundamental concepts of physical, life, and earth/space sciences. Candidates can design and implement age-appropriate inquiry lessons to teach science, to build student understanding for personal and social applications, and to convey the nature of science;

2.3 Mathematics—Candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so they consistently engage problem solving, reasoning and proof, communication, connections, and representation;

2.4 Social studies—Candidates know, understand, and use the major concepts and modes of inquiry from the social studies—the integrated study of history, geography, the social sciences, and other related areas—to promote elementary students' abilities to make informed decisions as citizens of a culturally diverse democratic society and interdependent world;

2.5 The arts—Candidates know, understand, and use—as appropriate to their own understanding and skills—the content, functions, and achievements of the performing arts (dance, music, theater) and the visual arts as primary media for communication, inquiry, and engagement among elementary students;

2.6 Health education—Candidates know, understand, and use the major concepts in the subject matter of health education to create opportunities for student development and practice of skills that contribute to good health;

2.7 Physical education—Candidates know, understand, and use—as appropriate to their own understanding and skills—human movement and physical activity as central elements to foster active, healthy life styles and enhanced quality of life for elementary students.

INSTRUCTION

3.1 Integrating and applying knowledge for instruction—Candidates plan and implement instruction based on knowledge of students, learning theory, connections across the curriculum, curricular goals, and community;

3.2 Adaptation to diverse students—Candidates understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students;

3.3 Development of critical thinking and problem solving—Candidates understand and use a variety of teaching strategies that encourage elementary students' development of critical thinking and problem solving;

3.4 Active engagement in learning—Candidates use their knowledge and understanding of individual and group motivation and behavior among students at the K-6 level to foster active engagement in learning, self motivation, and positive social interaction and to create supportive learning environments;

3.5 Communication to foster collaboration—Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the elementary classroom.

ASSESSMENT

4.0 Assessment for instruction—Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.

PROFESSIONALISM

5.1 Professional growth, reflection, and evaluation—Candidates are aware of and reflect on their practice in light of research on teaching, professional ethics, and resources available for professional learning; they continually evaluate the effects of their professional decisions and actions on students, families and other professionals in the learning community and actively seek out opportunities to grow professionally.

5.2 Collaboration with families, colleagues, and community agencies—Candidates know the importance of establishing and maintaining a positive collaborative relationship with families, school colleagues, and agencies in the

larger community to promote the intellectual, social, emotional, physical growth and well-being of children.

Standard 1. Development, Learning, and Motivation—Candidates know, understand, and use the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students' development, acquisition of knowledge, and motivation.

Supporting explanation

Candidates for elementary teaching base their teaching and related professional responsibilities on a thorough understanding of developmental periods of childhood and early adolescence. In curriculum planning, instruction, and assessment of student learning, they consider, accommodate, and integrate the physical, social, emotional, cognitive, and linguistic developmental characteristics of children and young adolescents. Candidates draw on developmental knowledge to plan curriculum that is achievable but also challenging for children at various developmental levels. They draw upon an in-depth knowledge of child and young adolescent development and learning to understand students' abilities, interests, individual aspirations, and values, and they adapt curriculum and teaching to motivate and support student learning and development. Candidates for elementary teaching understand that the ways in which cultures and social groups differ are important and affect learning. They recognize when an individual student's development differs from typical developmental patterns and collaborate with specialists to plan and implement appropriate learning experiences that address individual needs. Candidates know that all children can learn when developmental factors are recognized, respected, and accommodated, and they demonstrate that knowledge in their practice. They consider diversity an asset and respond positively to it.

Source documents for Development, Learning, and Motivation

Elias, M. J. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.

Manning, J. L. 2002. *Developmentally appropriate middle level education* (2nd ed.). Olney, MD: ACEI Publications

NAEYC. (2001). *NAEYC standards for early childhood professional preparation, initial licensure programs*. Washington, DC: Authors.

NAEYC. (1997). *NAEYC position statement on developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: Authors.

National Middle School Association. (2001). *Middle level teacher preparation standards*. Westerville, OH: National Middle School Association.

National Middle School Association. (1997). *Curriculum guidelines handbook* (approved by NCATE). Westerville, OH: National Middle School Association.

CURRICULUM

Standard 2.1 Reading, Writing, and Oral Language—Candidates demonstrate a high level of competence in use of English language arts and they know, understand, and use concepts from reading, language and child development, to teach reading, writing, speaking, viewing, listening, and thinking skills and to help students successfully apply their developing skills to many different situations, materials, and ideas;

Supporting explanation

Candidates are adept at teaching the fundamentals of the English Language Arts. They model effective use of English, including its syntax, lexicon, history, varieties, literature, and oral and written composing processes. Candidates understand how elementary children develop and learn to read, write, speak, view, and listen effectively. They use their knowledge and understanding of language, first and second language development, and the language arts to design instructional programs and strategies that build on students' experiences and existing language skills and result in their students becoming competent, effective users of language.

They teach students to read competently and encourage students' enjoyment of reading through multiple instructional strategies, technologies, and a variety of language activities. Candidates teach children to read with a balanced instructional program that includes an emphasis on use of letter/sound relationships (phonics), context (semantic and syntactic), and text that has meaning for students. In addition, candidates teach students a variety of strategies to monitor their own reading comprehension. They are also familiar with, able to use, and recommend to students many reading materials based on different topics, themes, and a variety of situations and consisting of different types, including stories, poems, biography, non-fiction, many categories of literature written for children, and texts from various subject areas. As a part of teaching students how to read, candidates encourage elementary students' understanding of their individual responses to what they read and sharing those responses. They help students think critically about what they read.

Candidates provide both instruction in and opportunities for elementary students to develop effective writing and speaking skills so that they can communicate their knowledge, ideas, understanding, insights, feelings, and experiences to other students and to parents, teachers, and other adults. They provide their students

with many different writing and speaking experiences in order to teach the skills of writing and speaking. They enable students to explore the uses of different types of writing and speaking with different audiences and in different situations. Candidates help students develop their capacities to listen so that they understand, consider, respond to, and discuss spoken material, including non-fiction, stories, and poems.

Candidates know what preconceptions, error patterns, and misconceptions they may expect to find in students' understanding of how language functions in communication, and they are able to help students correct their misunderstandings of the development and uses of language. Candidates use formative and summative assessment to determine the level of students' competence in their understanding of and use of language. They use the results of such assessment to plan further instruction.

Source documents for Reading, Writing, and Oral Language

Barr, R., Kamil, M. L., Mosenthal, P., & Pearson, P. D. (Eds.). (1991). *Handbook of reading research* (Vol. 2). White Plains, NY: Longman.

Elliott, E. (Ed.). (2003). *Assessing education candidate performance: A look at changing practices*. Washington, DC: National Council for Accreditation of Teacher Education.

Farstrup, A. E., & Samuels, S. J. (Eds.). (2002). *What research has to say about reading instruction* (3rd ed.). Newark, DE: International Reading Association.

Kamil, M. L., Mosenthal, P. B., Pearson, P. D., & Barr, R. (Eds.). (2000). *Handbook of reading research* (Vol. 3). Mahwah, NJ: Erlbaum.

National Council for Teachers of English. (1996). *Guidelines for the preparation of teachers of English language arts*. Urbana, IL: National Council of Teachers of English: Authors.

National Council for Teachers of English, & National Council for the Accreditation of Teacher Education. (2003). *NCTE/NCATE Program standards for the English language arts*. Urbana, IL: Authors.

National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Pearson, P. D. (Ed.). (1984). *Handbook of reading research*. New York: Longman.

Ruddell, R. B., Ruddell, M. R., & Singer, H. (1994). *Theoretical models and processes of reading* (4th ed.). Newark, DE: International Reading Association.

Singer, H., & Ruddell, R. B. (1976). *Theoretical models and processes of reading* (2nd ed.). Newark, DE: International Reading Association.

Singer, H., & Ruddell, R. B. (1985). *Theoretical models and processes of reading* (3rd ed.). Newark, DE: International Reading Association.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: N

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). 1998. *Preventing reading difficulties in young children* (Committee on the Prevention of Reading Difficulties in Young Children, National Research Council). Washington, DC: National Academy of Sciences.

Standard 2.2 Science—Candidates know, understand, and use fundamental concepts of physical, life, and earth/ space sciences. Candidates can design and implement age-appropriate inquiry lessons to teach science, to build student understanding for personal and social applications, and to convey the nature of science;

Supporting explanation

Candidates have a broad general understanding of science and they teach elementary students the nature of science, and the content and fundamentals of physical, life, earth and space sciences, and their interrelationships. They are familiar with, and teach, the major concepts and principles that unify all scientific effort and that are used in each of the science disciplines: (1) systems, order, and organization; (2) evidence, models, and explanation; (3) change, constancy, and measurement; (4) evolution and equilibrium; and (5) form and function. Candidates engage elementary students in the science inquiry process that involves asking questions, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, constructing and analyzing alternative explanations, and communicating scientific arguments and explanations. They introduce students to understandings about science and technology and to distinctions between natural objects and objects made by humans by creating experiences in making models of useful things, and by developing students' abilities to identify and communicate a problem, and to design, implement, and evaluate a solution. They know naive theories and misconceptions most children have about scientific and technological phenomena and help children build understanding. Candidates understand the use of assessment through diverse data-collection methods as ways to inform their

teaching and to help students learn scientific inquiry, scientific understanding of the natural world, and the nature and utility of science.

Source documents for Science

Abd-El-Khalick, F., & Lederman, N. G. (2000). Improving science teachers' conceptions of the nature of science: A critical review of the literature. *International Journal of Science Education*, 22(7), 655-701.

American Association for the Advancement of Science. (1997). The science curriculum: Evaluating what and how we teach. *2061 Today*, 7(1), 1-2.

American Chemical Society. (2003). *Safety in academic chemistry laboratories* (7th. ed). Washington DC: Author. Retrieved March 25, 2007, from http://membership.acs.org/c/ccs/pubs/SACL_Students.pdf

American Psychological Association. (1995). *Learner-centered psychological principles: A framework for school redesign and reform (Revised)*. Washington, DC: Author.

Atwater, M. M., Crockett, D., & Kilpatrick, W. J. (1996), Constructing multicultural science classrooms: Quality science for all. In J. Rhoton & P. Bowers (Eds.), *Issues in Science Education* (pp. 167-176). Arlington, VA: National Science Teachers Association.

Biological Sciences Curriculum Study. (1995). *Decisions in teaching elementary school science* (2nd ed.). Colorado Springs, CO: Author.

Carin, A. A. (1997). *Teaching science through discovery* (8th edition). Upper Saddle River, NJ: Merrill.

Center for Science, Mathematics, and Engineering Education. (1996). *National science education standards* [see chapters on Science Teaching Standards, Standards for Professional Development for Teachers of Science, and Science Content Standards]. Washington, DC: National Academy Press.

Hart, D. (1994). *Authentic assessment: A handbook for educators*. Menlo Park, CA: Addison-Wesley Publishing Company.

Hellman, H. (1998). *Great feuds in science*. New York, NY: John Wiley & Sons, Inc.

International Technology Education Association. (1996). *Technology for all Americans: A rationale and structure for the study of technology*. Reston, VA: Authors.

International Technology Education Association. (1999). *Standards for*

technology: Content for the study of technology. Reston, VA: Authors.

Khishfe, R., & Abd-El-Khalick, F. (2002). Influence of explicit and reflective versus implicit inquiry-oriented instruction on sixth graders' views of nature of science. *Journal of Research in Science Teaching*, 39(7), 551-578.

Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159-165.

Lederman, N. G., & Niess, M. L. (1997). The nature of science: Naturally? *School Science and Mathematics*, 97(1), 1-2.

Lederman, N. G., Schwartz, R. S., Abd-El-Khalick, F., & Bell, R. L. (2001). Preservice teachers' understanding and teaching of the nature of science: An intervention study. *Canadian Journal of Science, Mathematics, and Technology Education*, 1(2), 135-160.

Lowery, L. (1997). *Pathways to the science standards: Elementary school edition*. Arlington, VA: National Science Teachers Association.

Marion, R., Hewson, P. W., Tabachnick, B. R. & Blomker, K. B. (1999). Teaching for conceptual change in elementary and secondary science methods courses. *Science Education*, 83(2), 275-308

McComas, W. (1996). Ten myths of science: Reexamining what we think we know about the nature of science. *School Science and Mathematics*, 96, 10-16.

National Board for Professional Teaching Standards. (1996). *Proposition #3: Teachers responsible for managing and monitoring student learning*. Washington, DC: Author.

National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.

National Science Teachers Association. (2003). *Standards for science teacher preparation* [NCATE approved through 2010]. Arlington, VA: Authors.

Orlich, D., Harder, R., Callahan, R. & Gibson, H. (1998). *Teaching strategies: A guide to better instruction* (5th ed). Boston MA: Houghton-Mifflin.

Socketed, H. (1996). Teachers for the 21st century: Redefining professionalism. *NASSP Bulletin*, 80(580), 22-29.

Stalheim-Smith, A. & Scharmann, L. C. (1996). General biology: Creating a positive learning environment for elementary education majors. *Journal of Science Teacher Education*, 7(3), 169-178.

Webb, N. L. (1997). Determining alignment of expectations and assessments in mathematics and science education. *National Institute for Science Education Brief*, 1(2), 1-8.

Zeidler, D. L. (1997). The central role of fallacious thinking in science education. *Science Education*, 81(3), 483-496.

Standard 2.3 Mathematics—Candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so they consistently engage problem solving, reasoning and proof, communication, connections, and representation;

Supporting explanation

Candidates are able to teach elementary students to explore, conjecture, and reason logically using various methods of proof; to solve non-routine problems; to communicate about and through mathematics by writing and orally using everyday language and mathematical language, including symbols; to represent mathematical situations and relationships; and to connect ideas within mathematics and between mathematics and other intellectual activity. They help students understand and use measurement systems (including time, money, temperature, two and three dimensional objects using non-standard and standard customary and metric units); explore pre-numeration concepts, whole numbers, fractions, decimals, percents and their relationships; apply the four basic operations (addition, subtraction, multiplication, and division) with symbols and variables to solve problems and to model, explain, and develop computational algorithms; use geometric concepts and relationships to describe and model mathematical ideas and real-world constructs; as well as formulate questions, and collect, organize, represent, analyze, and interpret data by use of tables, graphs, and charts. They also help elementary students identify and apply number sequences and proportional reasoning, predict outcomes and conduct experiments to test predictions in real-world situations; compute fluently; make estimations and check the reasonableness of results; select and use appropriate problem-solving tools, including mental arithmetic, pencil-and-paper computation, a variety of manipulative and visual materials, calculators, computers, electronic information resources, and a variety of other appropriate technologies to support the learning of mathematics. Candidates know and are able to help students understand the history of mathematics and contributions of diverse cultures to that history. They know what mathematical preconceptions, misconceptions, and error patterns to look for in elementary student work as a basis to improve understanding and construct appropriate learning experiences and assessments.

Source documents for Mathematics

Conference Board of the Mathematical Sciences. (2001). *The mathematical education of teachers* (pp 15-25; 55-99). Providence, RI: American Mathematics Society.

National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics*. Arlington, VA: Authors.

National Council for Teachers of Mathematics. (1995) *Assessment standards for school mathematics*. Arlington, VA: Authors.

National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics*. Reston, VA: Authors.

National Council of Teachers of Mathematics. (2006). *Curriculum focal points for kindergarten through grade 8 mathematics: A quest for coherence*. Reston, VA: Authors.

National Council of Teachers of Mathematics. (2003). *NCATE/NCTM program standards (2003): Programs for initial preparation of mathematics teachers* [NCATE approved through 2012]. Arlington, VA: Authors.

National Research Council (2001) *Adding it up* (pp. 31; 51-54; 428-431). Washington, D.C.: National Academy Press.

Standard 2.4 Social studies—Candidates know, understand, and use the major concepts and modes of inquiry from the social studies—the integrated study of history, geography, the social sciences, and other related areas—to promote elementary students’ abilities to make informed decisions as citizens of a culturally diverse democratic society and interdependent world;

Supporting explanation

The social studies include history, geography, the social sciences (such as anthropology, archaeology, economics, political science, psychology, and sociology) and other related areas (such as humanities, law, philosophy, religion, mathematics, science and technology). Candidates are able to use knowledge, skills, and dispositions from social studies to organize and provide integrated instruction in grades K-6 for the study of major themes, concepts and modes of inquiry drawn from academic fields that address: (1) culture; (2) time, continuity, and change; (3) people, places, and environment; (4) individual development and identity; (5) individuals, groups, and institutions; (6) power, governance, and authority; (7) production, distribution, and consumption; (8) science, technology, and society; (9) global connections; and (10) civic ideals and practices. Candidates use their knowledge of social studies to help students learn about academic fields of knowledge, as well as major themes that integrate knowledge

across academic fields. They develop experiences to help elementary students learn about the historical development of democratic values; the basic principles of government and citizenship in a democratic republic; the past, present, and future; spatial relations; the development of nations, institutions, economic systems, culture, and cultural diversity; the influences of belief systems; and the humanities. Candidates are able to help students read, write, listen, discuss, speak, and research to build background knowledge; examine a variety of sources (e.g., primary and secondary sources, maps, statistical data, and electronic technology-based information); acquire and manipulate data; analyze points of view; formulate well-supported oral and written arguments, policies, and positions; construct new knowledge and apply knowledge in new settings. They use formative and summative assessments in planning and implementing instruction.

Source documents for Social Studies

Center for Civic Education. (1994). *National standards for civics and government*. Retrieved March 25, 2007, from <http://www.civiced.org/index.php?page=stds>

National Center for History in the Schools. (1996). *National standards for history*. Los Angeles, CA: Authors

National Council for the Social Studies. (1994). *Expectations of excellence: Curriculum standards for social studies*. Silver Springs, MD: Authors.

National Council for the Social Studies. (2004). *NCSS standards for social studies teachers*, Silver Springs, MD: Authors.

National Geographic Society. (1994). *Geography for life: National geography standards*. Washington, DC: Authors.

The National Council on Economic Education. (1997). *Voluntary national content standards in economics*. New York, NY: Authors.

Standard 2.5 The arts—Candidates know, understand, and use—as appropriate to their own understanding and skills—the content, functions, and achievements of the performing arts (dance, music, theater) and the visual arts as primary media for communication, inquiry, and engagement among elementary students;

Supporting explanation

Candidates understand distinctions and connections between arts study and arts experiences. They recognize that arts instruction must be sequential. Candidates encourage the kind of study and active participation that leads to competence and

appreciation. Consistent with their own knowledge and skills in the arts disciplines, they work alone, with arts specialist teachers, and/or with other qualified arts professionals enabling students: (1) to communicate at a basic level in the four arts disciplines--dance, music, theater, and the visual arts-- including knowledge and skills in the use of basic vocabularies, materials, traditional and technology-based tools, techniques, and thinking processes of each arts discipline; (2) to develop and present basic analyses of works of art from structural, historical, and cultural perspectives; (3) to have an informed acquaintance with exemplary works of art from a variety of cultures and historical periods; and (4) to relate basic types of arts knowledge and skills within and across the arts disciplines, and to make connections with other disciplines. Candidates understand that student competence at a basic level serves as the foundation for more advanced work. They understand that there are many routes to competence, that elementary students may work in different arts at different times, that their study may take a variety of approaches, and that their abilities may develop at different rates.

Source document for The Arts

Consortium of National Arts Education Associations (American Alliance for Theatre & Education, Music Educators National Conference, National Art Education Association, and National Dance Association). (1994). *National standards for arts education; What every young American should now and be able to do in the arts*. Searchable database available online: <http://www.artsedge.kennedy-center.org/>

Standard 2.6 Health education—Candidates know, understand, and use the major concepts in the subject matter of health education to create opportunities for student development and practice of skills that contribute to good health;

Supporting explanation

Candidates understand the foundations of good health, including the structure and function of the body and its systems and the importance of physical fitness and sound nutrition. They help students understand the benefits of a healthy lifestyle for themselves and others as well as the dangers of diseases and activities that may contribute to disease. Teacher candidates are alert to major health issues concerning children and the social forces that affect them, and of the need to impart information on these issues sensitively. They address issues in ways that help students recognize potentially dangerous situations, clarify misconceptions, and find reliable sources of information.

Source documents for Health Education

AAHPERD/AAHE. (2001). *Standards for health education programs*. Reston, VA: Authors.

Joint Committee on National Health Education Standards (Association for the Advancement of Health Education, American School Health Association, American Public Health Association), American Cancer Society. (1995). *National health education standards*. Retrieved March 25, 2007, from http://www.aahperd.org/aahe/pdf_files/standards.pdf

Standard 2.7 Physical education—Candidates know, understand, and use—as appropriate to their own understanding and skills—human movement and physical activity as central elements to foster active, healthy life styles and enhanced quality of life for elementary students.

Supporting explanation

Candidates understand physical education content relevant to the development of physically educated individuals. They structure learning activities to ensure that students demonstrate competence in many movement forms, and can apply movement concepts and principles to the learning and development of motor skills. Teacher candidates know that physical inactivity is a major health risk factor in our society and recognize the critical importance of physically active life styles for all students. They help students develop knowledge and skills necessary to achieve and maintain a health-enhancing level of physical fitness. Teacher candidates appreciate the intrinsic values and benefits associated with physical activity. They are able to structure movement experiences that foster opportunities for enjoyment, challenge, self-expression, and social interaction, and that elicit responsible personal and social behavior and respect for individual differences among people in physical activity.

Source documents for Physical Education

American Alliance for Health, Physical Education, Recreation and Dance. (1999). *Physical best: Activity guide (Elementary level) (2nd ed.)*. Reston, VA: National Association for Sport and Physical Education. Retrieved May 7, 2007, from <http://www.aahperd.org/naspe/>.

Beginning Teacher Standards Task Force of the National Association for Sport and Physical Education, the American Alliance for Health, Physical Education, Recreation and Dance National Association for Sport and Physical Education. (1995). *National standards for beginning physical education teachers*. Reston, VA: NASPE.

National Association for Sport and Physical Education. (1995). *Moving into the future: National standards for physical education*, Reston, VA: Authors.

National Association for Sport and Physical Education. (2000). *Appropriate practices for elementary school physical education*. Reston, VA: Authors.

National Association for Sport and Physical Education. (2001) *NASPE standards*. Retrieved May 7, 2007, from <http://www.aahperd.org/naspe/>.

INSTRUCTION

Standard 3.1 Integrating and applying knowledge for instruction—Candidates plan and implement instruction based on knowledge of students, learning theory, connections across the curriculum, curricular goals, and community;

Supporting explanation

Candidates understand learning theory, subjects taught in elementary schools, curriculum development, and student development and know how to use this understanding in planning instruction to meet curriculum goals while making connections across the disciplines. They are able to motivate students to appreciate and be engaged in the subject matter. Candidates select and create learning experiences that are appropriate for curriculum goals, meaningful to elementary students, and based upon principles of effective teaching (e.g. that activate students' prior knowledge, anticipate preconceptions, encourage exploration and problem-solving, and build new skills on those previously acquired). They use a variety of resources, including technology and textbooks, and look beyond their classroom to determine how numerous information resources in both print and electronic form might benefit their students. Candidates understand and use appropriate technology to help students become capable technology users through communication; through access, management, analysis and problem solving with information; and through collaborative and self-directed learning. They collaborate with specialists to promote learning in all areas of the curriculum for all elementary students.

Source documents for Integrating and Applying Knowledge for Instruction

ACEI. (1997). *Preparation of elementary teachers* [Position Paper, No. 3922]. Olney, MD: ACEI Publications.

American Library Association and American Association of School Librarians. (2003). *Program standards for school library media specialist preparation* [Approved by NCATE 2003]. Retrieved March 25, 2007, from http://www.ala.org/ala/aasl/aasleducation/schoollibrarymed/ala-aasl_slms2003.pdf

Earle, R. (Ed.) (2000). *Standards for the accreditation of school media specialist and educational technology specialist* (4th ed.). Bloomington, IN: AECT.

International Society for Technology in Education. (2002). *National educational technology standards for teachers*. Eugene, OR: Authors.

International Society for Technology in Education. (2002). *National educational technology standards for students*. Eugene, OR: Authors.

National Middle School Association. (2001). *Program standards for middle level teacher preparation*. Westerville, OH: National Middle School Association.

Standard 3.2 Adaptation to diverse students—Candidates understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students;

Supporting explanation

Candidates understand and can identify differences in approaches to learning and performance, including different learning styles, and ways students demonstrate learning. They understand how elementary students' learning is influenced by individual experiences, talents, disabilities, and prior learning, as well as language, culture, family, and community values. Candidates know how to seek assistance and guidance from specialists and other resources to address elementary students' exceptional learning needs and understand the importance of collaboration with specialists and families. They identify and design instruction appropriate to K-6 students' levels of development, learning styles, strengths, and needs, using teaching approaches that are sensitive to the multiple experiences of students. Candidates plan instructional tasks and activities appropriate to the needs of students who are culturally diverse and those with exceptional learning needs in elementary schools. They are able to apply knowledge of the richness of contributions from diverse cultures to each content area studied by elementary students.

Source documents for Adaptation for Diverse Learners

Byrnes, D. A. (2002). *Common bonds*. Olney, MD: ACEI Publications.

Council for Exceptional Children. (2002). *NCATE/CEC program standards, preparation of special education teachers*. Arlington, VA: Authors.

Lessow-Hurley, J. (2003). *Meeting the needs of second language learners: An educator's guide*. Alexandria, VA: Association of Supervision and Curriculum Development.

McIntyre, D. J., & Quisenberry, N. (1999) *Healing racism*. Olney, MD: ACEI Publications.

National Association for the Education of Young Children. (2001). *NAEYC standards for early childhood professional preparation, initial licensure programs*. Washington, DC: Authors.

National Association for the Education of Young Children. (2001). *NAEYC position statement on developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: Authors.

National Middle School Association. (2001). *NMSA middle level teacher preparation standards*. Westerville, OH: Authors.

Teachers of English to Speakers of Other Languages. (2002). *TESOL/NCATE standards for accreditation of initial program teachers of English to speakers of other languages, p-12*. Alexandria, VA: Authors.

Tomlinson, C. A. (2003). *Fulfilling the promise of the differentiated classroom: Strategies and tools for responsive teaching*. Alexandria, VA: Association of Supervision and Curriculum Development.

3.3 Development of critical thinking and problem solving—Candidates understand and use a variety of teaching strategies that encourage elementary students' development of critical thinking and problem solving.

Supporting explanation

Candidates understand cognitive processes associated with various kinds of learning and how these processes can be stimulated. They also understand principles and techniques, advantages and limitations, associated with appropriate teaching strategies (e.g. cooperative learning, direct instruction, inquiry, whole group discussion, independent study, interdisciplinary instruction). Candidates know how to enhance learning through use of a wide variety of materials as well as collaboration with specialists, other colleagues, and technological resources, and through multiple teaching and learning strategies that will promote development of critical thinking, problem solving, and performance capabilities.

Source documents for Development of Critical Thinking and Problem Solving

Costa, A. L. (2001). *Developing minds: A resource book for teaching thinking* (3rd ed). Alexandria, VA: Association of Supervision and Curriculum Development.

International Technology Education Association/Council on Technology Teacher Education. (1997). *ITEA/CTTE/NCATE curriculum guidelines*. Reston, VA: Authors.

National Council for Teachers of Mathematics. (2003). *NCATE/NCTM program standards for initial preparation of mathematics teachers*. Reston, VA: Authors.

National Council for the Social Studies. (2004). *NCSS standards for the social studies teachers*. Silver Spring, MD: Authors.

National Science Teachers Association. (2003). *NCATE program standards: Programs for initial preparation of teachers of science*. Arlington, VA: Authors.

Standard 3.4 Active engagement in learning—Candidates use their knowledge and understanding of individual and group motivation and behavior among students at the K-6 level to foster active engagement in learning, self motivation, and positive social interaction and to create supportive learning environments;

Supporting explanation

Teacher candidates understand principles of effective classroom management as well as human motivation and behavior from the foundational sciences of psychology, anthropology, and sociology. They use a range of strategies and can collaborate with specialists to promote positive relationships, cooperation, conflict resolution, and purposeful learning in the classroom. They create learning communities in which elementary students assume responsibility for themselves and one another, participate in decision making, work collaboratively and independently, and engage in purposeful learning activities. They understand and use appropriate and effective interpersonal and small group communication techniques to create an effective learning environment.

Source documents for Active Engagement in Learning

Harmin, M., & Toth, M. (2006). *Inspiring active learning: A complete handbook for today's teachers*. Alexandria, VA: Association of Supervision and Curriculum Development.

National Association for the Education of Young Children. (2001). *NAEYC position statement on developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: Authors.

National Association for the Education of Young Children. (2001). *NAEYC standards for early childhood professional preparation, initial licensure programs*. Washington, DC: Authors.

National Middle School Association. (2001). *NMSA middle level teacher preparation standards*. Westerville, OH: Authors.

Standard 3.5 Communication to foster collaboration—Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the elementary classroom.

Supporting explanation

Candidates understand communication theory, language development, and the role of language in learning among elementary students, and they also understand how cultural and gender differences can affect communication in the classroom. They model effective communication strategies in conveying ideas and information and in asking questions (e.g. monitoring the effects of messages; restating ideas and drawing connections; using visual, aural, and kinesthetic cues; being sensitive to nonverbal cues given and received). They use oral and written discourse between themselves and their students, and among students, to develop and extend elementary students' understanding of subject matter. Candidates know how to use a variety of media communication tools, including audio-visual aids and computer-based technologies, to enrich learning opportunities.

Source documents for Communication to Foster Collaboration

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association of Supervision and Curriculum Development.

Erwin, J. C. (2004). *The classroom of choice: Giving students what they need and getting what you want*. Alexandria, VA: Association of Supervision and Curriculum Development.

ASSESSMENT

Standard 4. Assessment for instruction—Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.

Supporting explanation

Candidates know that assessment is an essential and integral part of instruction. It defines the beginning point; helps identify objectives, materials and effective teaching methods or techniques; and informs the need to re-teach or adapt instruction. They understand the characteristics, uses, advantages, and limitations of different types of assessment appropriate for evaluating how K-6 students learn, what they know, and what they are able to do in each subject area. Candidates recognize that many different assessment tools and strategies,

accurately and systematically used, are necessary for monitoring and promoting learning for each student. Elementary teacher candidates appropriately use a variety of formal and informal assessment techniques (e.g. observation, portfolios of elementary student work, teacher-made tests, performance tasks, projects, student self-assessments, peer assessment, and standardized tests) to enhance their knowledge of individual students, evaluate students' progress and performances, modify teaching and learning strategies, and collaborate with specialists on accommodating the needs of students with exceptionalities. Candidates use formative and summative assessments to determine student understanding of each subject area and take care to align assessments with instructional practice. They are aware that technology can facilitate appropriate forms of assessment and provide evidence across multiple dimensions of student performance. They use technology to improve the efficiency and effectiveness of assessment processes and in management of instruction. Candidates also monitor their own teaching strategies and behavior in relation to student success, modifying plans and instructional approaches accordingly.

Source documents for Assessment

American Federation of Teachers, National Council on Measurement in Education, and National Education Association. (1990). *Standards for teacher competence in educational assessment of students*. Washington, DC: Authors. Retrieved, March 25, 2007, from <http://www.unl.edu/buros/bimm/html/article3.html>

Wiggins, G. P. (1998) *Educative assessment: Designing assessments to inform and improve student performance*. San Francisco: Jossey-Bass.

PROFESSIONALISM

Standard 5.1 Professional growth, reflection and evaluation—Candidates are aware of and reflect on their practice in light of research on teaching, professional ethics, and resources available for professional learning; they continually evaluate the effects of their professional decisions and actions on students, families and other professionals in the learning community and actively seek out opportunities to grow professionally;

Supporting explanation

While synthesis of knowledge is a lifetime process for a professional, by the end of teacher preparation candidates ready to enter the classroom as elementary generalist teachers should be: [1] working independently on a variety of disciplinary and pedagogical problems and responsibilities by combining as appropriate their knowledge and skills in (a) child development; (b) English language arts, science, mathematics, social studies, the arts, health and physical education, (c) instructional technique and learning technologies, and (d)

assessment; [2] focusing and defending independent analyses and value judgments about disciplinary content and teaching methodologies, their various potential relationships, and their applications to specific circumstances; [3] acquiring the intellectual tools to work with evolving issues and conditions as time and situations change, including the ability to make wise decisions according to time, place, and population; [4] identifying, accessing, and using technology-based resources in support of their continuing professional development; [5] demonstrating awareness of and commitment to the profession's codes of ethical conduct; and [6] understanding basic interrelationships and interdependencies among the various professions and activities that constitute the disciplines, content, and processes of elementary education.

They know major areas of research on teaching and of resources available for professional learning (e.g. professional literature, colleagues, professional associations, professional development activities). They use classroom observation, information about students, and research as sources for evaluating the outcomes of teaching and learning and as a basis for experimenting with, reflecting on, and revising practice.

Source documents for Professional Growth, Reflection, and Evaluation

AFT. (1971). *Code of ethics* Washington, DC: Authors.

Feeney, S., & Kipnis. K. (1992). *Code of ethical conduct and statement of commitment*. Washington, DC: NAEYC. Retrieved March 25, 2007, from <http://www.naeyc.org/about/positions/PSETH98.asp>

NEA. (1975). *Code of ethics of the education profession*, National Education Association Representative Assembly. Retrieved March 25, 2007, from <http://www.nea.org/aboutnea/code.html>

Standard 5.2 Collaboration with families, colleagues, and community agencies— Candidates know the importance of establishing and maintaining a positive collaborative relationship with families, school colleagues, and agencies in the larger community to promote the intellectual, social, emotional, physical growth and well-being of children;

Supporting explanation

Candidates understand different family beliefs, traditions, values, and practices across cultures and within society and use their knowledge effectively. They involve families as partners in supporting the school both inside and outside the classrooms. They involve families in assessing and planning for individual children, including children with disabilities, developmental delays, or special abilities. Candidates understand schools as organizations within the larger community context and the operations of relevant aspects of the systems in which

they work. They also understand how factors in the elementary students' environments outside of school may influence the students' cognitive, emotional, social, and physical well being and, consequently, their lives and learning. Candidates participate in collegial activities designed to make the entire school a productive learning environment and develop effective collaborations with specialists.

Source documents for Collaboration with Families, Colleagues, and Community

Elias, M. J. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.

National PTA. (1998). *National standards for parent/family programs*. Retrieved March 25, 2007, from http://www.pta.org/archive_article_details_1118251710359.html

National PTA. (n.d.) *Parent involvement*. Retrieved March 25, 2007, from http://www.pta.org/ia_pta_positions_1116959239593.html

Umansky, Warren (1983) *On families and revaluing childhood*, ACEI Publications, No. 3830.