EDU 315

Learner Development and Numeracy

Evidence-based practices and strategies for teaching childhood numeracy will be researched and analyzed. Opportunities to develop and practice educational skills and techniques as they relate to the

DTGSS

: CCSS

Global citizens must be well-versed in problem solving and cooperative learning. Mathematics instruction provides the opportunity to expose students to relevant and authentic real-world global learning experiences. Mathematics helps students to understand the world around them; The Common Core Standards and Mathematical Practices encourage students to make sense of problems and persevere in solving them; reason abstractly and quantitatively; construct viable arguments and critique the reasoning of others; model with mathematics; use appropriate tools strategically; attend to precision; look for and make use of structure; and look for and express regularity in repeated reasoning.

Knowledge production in mathematics is enhanced by attention to cultural diversity, specifically diversity of strategies and methods in problem solving. Recognizing the cultural nature of mathematical practices provides a new perspective on the engagement with and learning of mathematics. When underrepresented minorities see their own orientations and practices recognized and supported as relevant to the practices of mathematics, the field of mathematics seems attractive, accessible, and attainable. The key is that you are not teaching specifically to a particular ethnicity or group, but are incorporating different perspectives and creating an inclusive, relevant, and supportive environment for learners from various backgrounds.

A variety of teaching methods including inquiry–based learning, game-based learning, personalized learning, differentiated instruction, collaborative projects, and class participation will be used in a student-centered approach to learning. Candidates will engage in observation, reflection and analysis of teacher practice. Candidates will utilize reflective practices in planning for and evaluating instruction. Candidates are encouraged to move from passive receivers of information to active participants in their own learning, where creativity and innovation are encouraged. Candidates will review mathematics lessons via video in order to analyze, reflect and make suggestions for revision. The purposeful integration of technology is required.

To address this, we will consider these four related questions:

What are the key shifts outlined in CCSS and Standards for Mathematical Practice?
What does an inclusive and nurturing learning environment look like?
What does coherency in instruction look like?
What methods can I use to support all students?

Candidates make informed decisions about instruction guided by knowledge of children and assessment of children's learning that result in the use of a variety of effective instructional practices that employ print, and digital appropriate resources. Instruction is delivered using a cohesive sequence of lessons and employing effective instructional practices.

Learning Activities/Performance Tasks:

1. Candidates will review and analyze recorded lessons for evidence of high-quality instructional materials reflecting on coherence and appropriateness.
2. Candidates will evaluate various lessons utilizing the DTGSS guidelines for teaching as a focus.
3. Candidates will design various lessons to support instructional goals to engage students in meaningful learning.
4. Candidates will analyze coherence across the CCSS and within various high-quality instructional materials .
5. Candidates will align lesson sequences with both formative and summative assessment plans.

Candidates will evaluate existing teacher lessons, design and submit lesson plans, and create formative and summative assessments within the lesson.

Candidates use their understanding of child growth and development, individual differences, and diverse families, cultures and communities to plan and implement inclusive learning environments that provide each child with equitable access to high quality learning experiences that engage and create learning opportunities for them to meet high standards.

Learning Activities/Performance Tasks:

1. Candidates will develop pedagogy within the context of teaching mathematics through observation,

1. Candidates will demonstrate their understanding within the mathematical domains of number and operations in base ten, number and operations with fractions, operations and algebraic thinking, measurement and data, and geometry.
2. Candidates will design instruction with an understanding that the mathematical practices are processes in which students must engage in every day as their mathematical maturity develops.
3. Candidates will integrate differentiated mathematics instruction into planning to meet the needs of all learners.
4. Candidates will analyze high-quality mathematics instructional materials and discuss how to implement them based on students' prior knowledge, world experiences, and interests.

Candidates will apply their knowledge of the mathematical practices and CCSS to analyze coherency of instruction within high-quality instructional materials.

1	How can educators use the CCSS and standards of mathematical practices to guide instructional planning to improve mathematics achievement for all students?
2	What does focus, rigor, and coherency in instruction look like?
3	How can educators utilize high-leverage practices to facilitate meaningful mathematical experience for all learners?
4	How can educators use high-quality instructional materials to guide instructional planning to improve mathematics achievement for all students?
5	How can educators pose meaningful problems and questions to position diverse learners to advance their mathematical understanding?
6	How can formative and summative assessments be used to guide instructional planning to improve mathematics achievement for all students?
7	How can educators foster student engagement based on student individual differences, community, school, and classroom characteristics that may affect learning in a diverse classroom?

1. Class Discussions/ Debate (20%)

SEA Rubric

K-6 Teacher Preparation	Novice	Emerging

Standard 2.b –How does the candidate demonstrate and apply understandings of major mathematics concepts, algorithms, procedures, applications and mathematical practices in varied contexts, and connections within and among mathematical domains.				

instructional plans to meet the needs of every student in the classroom.	limited consideration to meet the needs of subsets of students, or individual students in the classroom.
