

Mathematics Instructional Strategies

COMPONENT #: 1-009-320

POINTS TO BE EARNED: 120 MPP

PART I – PLANNING

DESCRIPTION: Write a brief description of content and intent of component.

This component offers the understanding and use of effective instructional strategies that support the improvement of student achievement in mathematics. Participants will integrate theory, research, creativity, problem-solving skills and a variety of instructional tools, applying best practices to student learning when designing and implementing effective learning experiences.

Upon successful completion of this component, participants will design tasks that meet the instructional needs of a diverse population by employing current research-based instructional strategies, supporting active learning and the development of conceptual understanding. They will be able to select appropriate and effective teaching methods, conduct ongoing classroom assessment of students' learning, and make data-based decisions for improvement.

STANDARDS/FOCUS AREAS ADDRESSED BY COMPONENT: Identify the standards, national/state/district imperatives, initiatives or key focus areas this component supports.

Standards for Professional Learning (choose one)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Learning Communities | <input type="checkbox"/> Learning Designs |
| <input type="checkbox"/> Leadership | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Resources | <input type="checkbox"/> Outcomes |
| <input type="checkbox"/> Data | |

Florida Educator Accomplished Practices (check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Instructional Design and Lesson Planning | <input checked="" type="checkbox"/> Assessment |
| <input type="checkbox"/> The Learning Environment | <input checked="" type="checkbox"/> Continuous Professional Improvement |
| <input checked="" type="checkbox"/> Instructional Delivery and Facilitation | <input type="checkbox"/> Professional Responsibility and Ethical Conduct |

Florida Leadership Standards (check all that apply)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Student Learning Results | <input type="checkbox"/> Decision Making |
| <input checked="" type="checkbox"/> Student Learning as a Priority | <input type="checkbox"/> Leadership Development |
| <input checked="" type="checkbox"/> Instructional Plan Implementation | <input type="checkbox"/> School Management |
| <input checked="" type="checkbox"/> Faculty Development | <input type="checkbox"/> Communication |
| <input type="checkbox"/> Learning Environment | <input type="checkbox"/> Professional and Ethical Behaviors |

IPEGS Standards (check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> PS 2 – Knowledge of Learners | <input type="checkbox"/> PS 6 – Communication |
| <input checked="" type="checkbox"/> PS 3 – Instructional Planning | <input type="checkbox"/> PS 7 – Professionalism |
| <input checked="" type="checkbox"/> PS 4 – Instructional Delivery and Engagement | <input type="checkbox"/> PS 8 – Learning Environment |
| <input checked="" type="checkbox"/> PS 5 – Assessment | |

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IMPACT FOCUS AREA(S): Select the intended impact focus area(s) from the choices below. Note that Impact Evaluation procedures should reflect this level of impact.

Educator knowledge/skill (content)

Student learning

Educator (professional growth)

Organizational support and change

SPECIFIC LEARNER OUTCOMES: Identify the intended learner outcomes (number and content of learner outcomes should be reflective of the total points participants will earn as a result of completing this learning).

1. Utilize the Mathematics Florida Standards as the basis for planning instruction in mathematics.
2. Demonstrate competency in engaging students in hands-on, standards-based activities that contribute to the strengthening of mathematical process standards/ mathematical practices and mathematical proficiency.
3. Design brain-compatible lessons that actively engage students, address the needs of diverse learners, and enable students to construct mathematical knowledge.
4. Enhance his/her skills in adapting materials in order to address the needs of all learners.
5. Increase understanding of ways to integrate manipulatives, technology, and effective instructional strategies into classroom practices to increase student achievement.
6. Identify, articulate, and demonstrate the use of research-based instructional strategies designed to improve student achievement.
7. Design and deliver lessons using the appropriate instructional strategies.
8. Identify curriculum resource materials that meet the instructional needs of all mathematics learners.

PART II – LEARNING

LEARNING PROCEDURES: Describe the experiences (the “what”) and formats/methods (the “how”) that will be used to provide participants with the knowledge and skills sufficient to master the intended learner outcome of this component.

1. Participate in activities that design instructional tasks addressing the Mathematics Florida Standards (SLO 1).
2. Engage in hands-on, standards-based activities that contribute to strengthening the learning of students through the use of the NCTM Process Standards and levels of mathematical proficiency (SLO 2).
3. Engage in discussions of research-based instructional strategies and techniques that address all student achievement levels and learning styles (SLO 3-8).

PART III – IMPLEMENTATION

IMPLEMENTATION PROCEDURES: Method(s) and resource(s) that will be provided to support implementation of new learning for participants (check all that apply).

Apply newly acquired professional knowledge, skills, dispositions, and behaviors to improve practice.

Provide sufficient classroom- and school-focused support and assistance by skillful coaches, mentors, or others to the educator to ensure high-fidelity implementation of professional

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learning.

X Provide educators with web-based resources and assistance to support implementation of professional learning.

PART IV – EVALUATION

IMPACT EVALUATION PROCEDURES: Describe the processes that will be used to determine the impact (as identified in previous section titled “Impact Focus Areas”). Description should reflect methods for determining at least ONE of those areas, and will include a specific section for each impact focus area identified for this component.

1. Educator knowledge/skill (content): Will consist of observation of participants actively engaged in professional learning activities and discussions on instructional practices to develop student understanding of assessments.
2. Student learning: Will include evidence (e.g. student sample work, pre and post assessments) verifying that the content impacted student achievement

COMPONENT EVALUATION PROCEDURES: Describe the process(es) that will be used to determine the effectiveness of this component to include design, implementation and impact (check all that apply).

X Evaluate the impact of all professional learning on educator’s practice through reflection, assessment, collaborative protocols for examining educator practice and work samples, peer visits, and/or professional portfolios.

X Determine the degree to which educator’s professional learning contributed to student performance gains as measured by classroom assessment data.

X Use summative and formative data from state or national standardized student achievement measures, when available, or other measures of student learning and behavior such as district achievement tests, progress monitoring, educator-constructed tests, action research results, discipline referrals, and/or portfolios of student work to assess the impact of professional learning.

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Department: Mathematics

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