

Mathematics Technology

COMPONENT #: 3-009-318

POINTS TO BE EARNED: 120 MPP

PART I – PLANNING

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

This component is designed to engage the participant in the use of technology in order to enhance productivity and professional practice. Participants will demonstrate a sound understanding of technology operations and concepts. This includes methods and strategies for applying technology in order to maximize student learning.

Upon successful completion of this professional development activity the participant will be able to incorporate the technology infusion principles presented in this workshop into his/her instruction.

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 type="checkbox"/> Learning Communities | <input type="checkbox"/> Learning Designs |
| <input type="checkbox"/> Leadership | <input type="checkbox"/> Implementation |
| <input checked="" 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 checked="" 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 checked="" type="checkbox"/> Learning Environment | <input type="checkbox"/> Professional and Ethical Behaviors |

IPEGS Standards (check all that apply)

- | | |
|--|---|
| <input 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 checked="" 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.

- | | |
|--|--|
| <input checked="" type="checkbox"/> Educator knowledge/skill (content) | <input checked="" type="checkbox"/> Student learning |
| <input type="checkbox"/> Educator (professional growth) | <input type="checkbox"/> 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. Develop an understanding of effective learning environments.
2. Identify curriculum resource materials that are designed and constructed to incorporate technology in mathematics instruction.
3. Identify the activities that utilize technology to allow students to construct mathematical knowledge.
4. Apply technology that supports problem-solving strategies and skills in the mathematics content area.
5. Apply technology to facilitate effective assessment and evaluation strategies.
6. Use the Mathematics Florida Standards as the basis for planning appropriate use of technology for instruction.
7. Facilitate technology-enhanced experiences that address the Common Core Mathematical Practices.
8. Facilitate technology-enhanced experiences that address the National Council of Teachers of Mathematics (NCTM) Process Standards (Communications, Connections, Reasoning and Proofs, Representation, Problem Solving).
9. Promote safe usage of technology resources (e.g., graphing calculators, Calculator-Based Laboratories (CBLs), interactive white boards, online professional development).
10. Gain an understanding of developmentally appropriate ways in which to utilize technology to enhance instructional strategies that support the needs of diverse learners.
11. Demonstrate continual growth in technology and gain knowledge and skills in the use of current and emerging technologies.

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. Utilize technology that enhances mathematics learning (SLO 1 - 3).
2. Utilize technology in the development of strategies for solving real-world problems (SLO 4).
3. Utilize technology resources to facilitate higher-order thinking, complex thinking skills, encouragement of creativity, Mathematical Practices, and NCTM's Process Standards (SLO 2 - 4, 7, & 8).
4. Reflect on learning experiences through the use of a journal and collegial sharing (SLO 9 -11).

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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).

- X Apply newly acquired professional knowledge, skills, dispositions, and behaviors to improve practice.
- X 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 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 mathematics standards and innovative mathematical practices.
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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