



Making Technology Count for K-8 Mathematics

PRDV 71918

Online: 1.0 Credit

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Technology integration is the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools. Technology resources are computers and specialized software, network-based communication systems, and other equipment and infrastructure. Practices include collaborative work and communication, Internet-based research, remote access to instrumentation, network-based transmission and retrieval of data, and other methods.

Course Description

In this course, participants will learn how to integrate technology directly into their mathematics instruction, creating technology-integrated projects that are aligned with the Common Core State Standards Initiative for mathematics. Participants will gain a better understanding of some key issues surrounding technology integration, such as how to meet technology standards and which types of technology are best for which purposes. During the course participants will be working with a variety of technology, such as computers, gaming systems, recording devices, and smart phones. Participants will identify potential lessons in their mathematics classrooms that may benefit from technological enhancement, and then devise a plan for integrating technology into their mathematics lessons. In addition, participants will learn how to differentiate products based on students' interests, strengths, and available technology.

Course Goals

By the end of this course each participant will have created a unit that integrates multiple technological components and effectively disseminate the unit in his/her math instruction. Upon completion of their unit in their classroom, educators will reconvene to discuss the positive and negative aspects of their experience, focusing on construction models that increase student motivation and learning, while utilizing resources effectively and efficiently.

Upon Completion of the course the professional educator should have acquired:

- Review and utilize research regarding the impact of technology in the math classroom;
- Maintain a critical perspective towards the use of instructional technology in math education;
- Recognize the capabilities of a variety of instructional technologies for use in the math classroom;
- Use resources and materials available to assist in designing, delivering, and assessing technology-enhanced instruction;
- Design and implement technology-enhanced math lessons;
- Evaluate the effectiveness of technology-enhanced math lessons.

Course Objectives

Course participants are immersed into the generational characteristics, which define their own, and their students' learning preferences. Participants are teachers of K-8 students who use their specific teaching and learning styles to engage the digital student. Participants will participate in a learning community to share best practices, create a math-learning unit using a variety of technologies and reflect on the experience. By the end of the course all participants are expected:

- Identify potential mathematic lessons or common core standards that may benefit from technology integration
- Devise a plan for integrating technology into new and existing lesson plans.
- Identify and evaluate different types of technology.
- Determine which considerations concerning technology use apply to the classrooms.

Course Requirements

The course is designed as a collaborative four-week online learning experience. Course material is arranged in modules and should be viewed in the order listed. There is no textbook to buy. All material is posted on the University eLearning platform - Blackboard. The first two modules are open when the course begins. The last two will be made available after the second week. Students may expect to spend three hours each week participating on the discussion board, posting to a private Journal or class collaboration space, and reviewing course material.

Essential Question

- Why should we make the effort to connect students to math through the technology integration?
- How can technology be used in the math classroom to increase student conceptual understanding and performance?
- What technology tools are specifically designed for the math classroom and instruction?
- What technology tools could be used in the math classroom and instruction?

Grading Criteria

Grades are recorded in the course grade book on a weighted points system. Students may view their progress using the My Grades Tool listed under Student Tools. The orientation activity, posts to the discussion board and class collaboration are all included in the Participation grade. Students are also expected to post weekly private reflections to a Blog and submit a written assignment as the final grade.

Course Expectations

Participation in all assignments and course discussions is required. If you anticipate being away during any part of this course, make plans to have access to a computer connected to the Internet. Late work is not accepted.

Participants are also expected to have basic computer skills, know how to search the web, understand how to send an email and attach a file, and have basic file management skills. A fairly new computer connected to the Internet works best with Blackboard and familiarity with the learning management tool is also advised.

If you are new to Blackboard or online courses, please review the Blackboard [student tutorial](#) or [download the PDF file](#) before you begin the course. By logging into Blackboard, you agree to the university [Acceptable Use Policy](#), which also covers academic honesty. To become more familiar with this policy [click here](#).

Course Schedule

Module 1: What does Technology Integration look like in the Math Classroom?

Objective: Explore the meaning of technology integration. How to infuse technology in math classroom instruction seamlessly?

Quiz: Edutopia: Tech Integration Quiz: Tech Savvy Teaching: How Do You Rank?

Discussion Board: How do I approach technology integration?

Assignment:

- Technology Integration Matrix
 - Lesson Review
 - Review and determine how the NETS can integrate with state and local standards.
- Explore the SAMR Model and what it means for the Math Classroom
- Setup a Diigo Social Bookmarking site (<http://www.diigo.com/education>). Share your link with the class in the discuss forum

Discuss Board:

- What principles should guide your approach for integrating technology into instruction?

Optional Reading: [Technology Integration from George Lucas Foundation: Edutopia](#) A site with technology integration examples, video, lessons, and many useful links. If you click on the Teaching Modules link you will find subject area specific integration resources.

Module 2 & 3: Technology in the Math Classroom

Objective: Explore online Math Resources, Apps and ways to incorporate technology in the math curriculum.

Readings:

- [Common Core in Action: Math in the Middle School Classroom](#)
- [How to Integrate Technology](#)
- [Technology in Math Education: The iPad a Game Changer](#)

Assignment:

- Design a Technology enriched lesson
(Instructions on how to get started can be found within the Blackboard Course assignment section)

Discuss Board:

- How can technology be used in the math classroom to increase student conceptual understanding and performance?
- How are technologies best used in math to help students achieve, think critically, and prepare for the world outside of school?

** Resources to explore are locate under course resources in Blackboard

Module 4: Final Assignment: Write a lesson for your class, which incorporates [21st-century](#) literacies, aligns with the unit goals and objectives and supports your personal teaching preferences. Include in your introduction, how this lesson will be received in your classroom. Is this a shift from your normal mode of teaching.

Questions

If you have general questions or need assistance, post your comments to the Class Café discussion board of the course. You may also send an email to jnajarian@framingham.edu. Questions will be answered within 24 to 48 hours. Office hours are by appointment.

About your instructor: Joanne Najarian is the Director of Digital Learning for Andover Public Schools.

Accommodations

Framingham State University offers equal opportunities to all qualified students, including those with disabilities and impairments. The University is committed to making reasonable accommodations as are necessary to ensure that its programs and activities do not discriminate, or have the effect of discriminating, on the basis of disability. Academic Support serves students with learning and psychiatric disabilities as well as students with visual, mobility and hearing impairments.

For further information about this, please visit the website at: <http://www.framingham.edu/center-for-academic-support-and-advising/disability-services/index.html> or contact Ms. LaDonna Bridges, Director of Academic Support/Disability Services, in the Center for Academic Support and Advising (CASA) at 508-626-4906 or lbridges@framingham.edu.

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