**Technology Integration Matrix**

**Introduction**

The goal is to promote technology integration that is seamless and that adds significant value to students’ learning of core curriculum (language arts, math, social studies, and science content). You will investigate theoretical and practical issues surrounding the use of multimedia, email, Internet resources, educational software, and hardware within K-12 classrooms. The Technology Integration Matrix is to assist preservice educators in making connections between theories, resources, content, and pedagogy.

**Learning Objective**

Students will analyze projects completed in class on the Technology Integration Matrix to demonstrate the relationships between theories, content, technology, and pedagogy.

**Course Objectives**

Instruction

1. Integrate technology into curriculum and pedagogy for ALL students.

Issues

1. Describe appropriate uses of technologies (Internet, multimedia, communication tools, etc.) in learning environments.

Skills Development

1. Apply information literacy skills (including searching and evaluation strategies) while using electronic resources.
2. Locate, analyze, and contribute to information from Web 2.0 sources.

Teaching with Technology

1. Research, teach, and publish ways to use innovative technology in education.

**Directions**

1. Read all information (introduction, objectives, explanations, the matrix)
2. Compare the concept, project, or method to the matrix.
3. Fill in how and why the concept, project, or method applies to the theory and standard and provide suggestions for use.
4. Write a five sentence reflection describing more detail or providing clarification for the information you filled in on the matrix.
5. Load the matrix to the appropriate dropbox in BlackBoard and post it to the matrix page on your ePortfolio.

**Explanation of Standards**[www.cde.state.co.us](http://www.cde.state.co.us)

Colorado Academic Standards were created by the Colorado Department of Education to increase student performance in K-12 education and success post high school. The standards create accountability and are a topical organization of material in multiple content areas. Every grade level has several standards for each content area designed to provide clarity and direction.

The standard elements include:

* Prepared Graduate Competencies
* Standard
* Grade Level Expectations or High School Expectations
* Evidence Outcomes
* 21st Century Skills and Readiness Competencies

**Explanation of ISTE, NETS-S, and NETS-T**  
[www.iste.org](http://www.iste.org)

ISTE is The International Society for Technology in Education. ISTE created the national educational technology standards for teachers and students in K-12 education to assist learning in a digital society, because technology has forever changed the way teaching and learning occur.

The benefits of using the ISTE Standards include:

* Improving higher-order thinking skills, such as problem solving, critical thinking and creativity
* Preparing students for their future in a competitive global job market
* Designing student-centered, project-based and online learning environments
* Guiding systemic change in our schools to create digital places of learning
* Inspiring digital age professional models for working, collaborating and decision making

**Explanation of Educational Theories**

“Education theory is the theory of the purpose, application and interpretation of education and learning. It largely an umbrella term, being comprised of a number of theories, rather than a single explanation of how we learn, and how we should teach. Rather, it is affected by several factors, including theoretical perspective and epistemological position.

There is no one, clear, universal explanation of how we learn and subsequent guidebook as to how we should teach. Rather, there are a range of theories, each with their background in a different psychological and epistemological tradition. To understand learning then, we have to understand the theories, and the rationale behind them.” <http://www.ucdoer.ie/index.php/Education_Theory>

You may agree or disagree with theories presented, but knowing and understanding if they have any value to add to your pedagogy, and if they are in alignment with your teaching and technology integration philosophies, is vital to your preparation for becoming an educator. If you are unfamiliar with the concepts and theories presented, please take the time to follow the links for further information.

**Explanation of Differentiation**

Technology can be the great equalizer. In a classroom of 30 students, how will you meet the diverse needs of students? Technology is one method to assist you in making this process a bit easier. Differentiation is modifying instruction to help students with diverse academic needs and learning styles to master the same academic content using engaging techniques and methods. As you complete projects for this class, you need to think of how they can be adjusted for gifted and talented students, students with physical disabilities, and students with learning disabilities.

**Mobile Integration Matrix**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**Colorado Academic Standards**](http://www.cde.state.co.us/standardsandinstruction) | [**NETS – T**](http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf) | [**NETS – S**](http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-S_PDF.pdf) | [**Bloom’s Taxonomy**](http://www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/) | [**Constructivism**](http://www.thirteen.org/edonline/concept2class/constructivism/) | [**Student Use**](http://www.edudemic.com/students-using-technology/) | [**Direct Instruction**](http://www.nifdi.org/) | [**Flipped Classroom**](http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/) | [**Instructionism**](http://files.eric.ed.gov/fulltext/ED490726.pdf) | [**Behaviorism**](http://education-portal.com/academy/lesson/behaviorism-overview-practical-teaching-examples.html#lesson) |
| [**Mathematics**](http://www.cde.state.co.us/sites/default/files/documents/comath/documents/math_standards_2010.pdf) | | | | | | | | | |
| 1. Number Sense, Properties, and Operations | 1,3, 2,5, | 1, 3, 4,2, |  |  | Students will use a practice math app that allows them to trace their answer to various math questions |  |  |  | Postive Reinforcement: Allow students to create a product of their choosing connected to this standard  Negative: |
| 2. Patterns, Functions, and Algebraic Structures |  |  |  |  |  |  |  |  |  |
| 3. Analysis, Statistics, and Probability |  |  |  |  |  |  |  |  |  |
| 4. Shape, Dimension, and Geometric Relationships |  |  |  |  |  |  |  |  |  |
| [**Reading, Writing, and Communicating**](http://www.cde.state.co.us/sites/default/files/documents/coreadingwriting/documents/rwc_standards_2010.pdf) | | | | | | | | | |
| 1. Oral Expression and Listening |  |  |  |  | Students will listen to an audio book and record audio reflections about the book. |  |  |  |  |
| 2. Reading for All Purposes |  |  |  |  | Students will look at various texts across the genres that describe the same subject |  |  |  |  |
| 3. Writing and Composition |  |  |  |  | Students will create digital word clouds using words that they would use to describe a picture book we read aloud as a class |  |  |  |  |
| 4. Research and Reasoning |  |  |  |  | Students will research their favorite authors and create storybirds /imovies or their chosen mode of technological creative tool on their iPads. |  |  |  |  |
| [**Social Studies**](http://www.cde.state.co.us/cosocialstudies/cas-socialstudies-p12-pdf) | | | | | | | | | |
| 1. History |  |  |  |  | Students will complete a QR journey that will allow them to research famous women in U.S. revolutionary history. |  |  |  |  |
| 2. Geography |  |  |  |  | Students will create a google trek using goolgle maps on their devices. |  |  |  |  |
| 3. Economics |  |  |  |  |  |  |  |  |  |
| 4. Civics |  |  |  |  |  |  |  |  |  |
| [**Science**](http://www.cde.state.co.us/sites/default/files/documents/coscience/documents/science_standards_adopted_2009.pdf) | | | | | | | | | |
| 1. Physical Science |  |  |  |  |  |  |  |  |  |
| 2. Life Science |  |  |  |  |  |  |  |  |  |
| 3. Earth Systems Science |  |  |  |  | Students will watch various weather maps and track patterns and create a way to organize the information their devices using their iPads. |  |  |  |  |
| **Differentiation** | | | | | | | | | |
| Learning Disabilities - [EEOs](http://www.cde.state.co.us/coextendedeo/statestandards) |  |  |  |  |  |  |  |  |  |
| Gifted/ Talented |  |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |  |

Reflection:

3. **Summarize** your application of mobile learning in the reflection section. This is where you may express your opinion of the tool(s)/ concept, describe how you feel about the usefulness of the tool(s)/ concept, and reflect on how the tool(s)/ concept could impact your TPACK. This should be approximately one paragraph (5-8 sentences).

Mobile learning is extremely powerful. There are various ways to create on mobile learning devices that can be individualized. I find Matrices to be a bit confusing but I think I was able to come up with solid ideas that can be used in the classroom using mobile learning.