# CEP 810: TEACHING FOR UNDERSTANDING WITH COMPUTERS
## Michigan State University

## COURSE TOPIC

Technology in the Educational Setting
➢ *General productivity software*
> Microsoft Office: Word, PowerPoint, Excel
➢ *Internet and World Wide Web*

Improving Teaching and Learning through Technology
➢ *Avoiding "change without a difference"*
➢ *Understanding and enhancing the effect of technology on student learning*

## COURSE OBJECTIVES

Upon completion of this course, it is expected that students will understand:
➢ *The three models of teaching and learning and which situations are best for each of these models; the didactic or traditional model, the inquiry or project model, and the idea-based model.*
➢ *Ways in which technology both helps and hinders the mission of education based upon how it is used and the educational goals that are the focus.*

Upon completion of this course, it is expected that students will know how to:
➢ *Apply both general productivity software (including word processing, data management, and desktop presentation) and special educational software in the educational environment in support of achieving educational goals.*
➢ *Apply Internet-based tools and resources in the educational environment in support of achieving educational goals.*
➢ *Employ Internet-based tools and resources in support of personal productivity in the educational setting as well as professional development and lifelong learning.*

## IMPORTANT INFORMATION
### MSU Minimum GPA Policy
MSU, the College, the CEPSE Department, and the MAET program all have a policy that requires MA students to maintain a minimum cumulative GPA. "If, upon completion of 18 or more graduate credits, the student has not attained a grade–point average of 3.00 or higher, he or she becomes ineligible to continue work toward the master's degree in the College." - *from Academic Standards, University Graduate Policy - Education, p. 1.*

### MSU Minimum Course Grade Policy
There is also a policy regarding credit and grades for MA courses. According to MSU policy, students cannot receive credit for any course with a grade below 2.0. You will have to take an extra course if you earn below a 2.0 grade on any course. "In particular graduate programs the number of 2.0 grades acceptable for credit may be expressly restricted and/or levels higher than the 2.0 minimum may be established for the fulfillment of degree requirements."  (In the MAET program, no 2.0 grades can be applied toward your degree) - *from MSU General information, policies, procedures, and regulations, p. 22.*

**Academic Honesty Policy**

"The principles of truth and honesty are recognized as fundamental to a community of teachers and scholars. The University expects that both faculty and students will honor these principles and in so doing protect the validity of University grades. This means that all academic work will be done by the student to whom it is assigned, without unauthorized aid of any kind. (See General Student Regulation 1.00, Scholarship and Grades, for specific regulations.) Instructors, for their part, will exercise care in the planning and supervision of academic work, so that honest effort will be positively encouraged." - *from MSU General information, policies, procedures, and regulations, p. 24.*

## LATE WORK POLICY

In an online course it is easy to get behind on your assignments.  In some cases certain assignments build upon others so it is imperative that you complete all the assignments on time.  You have plenty of notice with your assignments, so last minute glitches and minor illnesses are not acceptable excuses. You should anticipate computer troubles. Things like erasing your files, losing your files or media storage, and/or computer problems should be considered possible events when trying to complete your work so give yourself plenty of time to submit an assignment.  All graded assignments will be accepted late for these penalties:

- ➢ 2 days late subtract 10%
- ➢ 3-4 days late subtract 20%
- ➢ 5-7 days late subtract 50%
- ➢ more than 7 days late subtract 100%

## GRADING SCALE

- ➢ All work is submitted to the portfolio website and grading will be based upon successful completion of the course portfolio. Grades for each assignment will be posted on the course portfolio website.
- ➢ Grade percentage totals for work submitted are available at the bottom of the student portfolio page.
- ➢ A 4.0 will be given for a total of 94% or higher (if all assignments have been completed), 3.5 for 87%-93%, and 3.0 for 80-86%.
- ➢ Expectations: All work should be spell-checked, grammar-checked, and proofread BEFORE submission. Again, a reminder that all assignments must be submitted and a total percentage of 94% or higher attained to receive a grade of 4.0.
- ➢ Students may resubmit any assignment ONCE, to improve a grade.

## SESSIONS

### Week 1
- *Introduction to the Course*
- *Teachers as Learners*
- *Analysis of a Technology Innovation*
- *Introduction to Use of Internet in the Course*
- *Submitting documents to the web site*

### Week 2
- *Review and Overview*
- *Introduction to Microsoft Word*
- *Word Outliner/ WordArt*
- *Model lesson plan simulation*

### Week 3
- *Review and Overview*
- *Using the Internet Securely*
- *Maintaining an RSS Reader Page*
- *Research-based teaching practices when using technology*
- *3 Models of Teaching and Learning: Didactic Approach*

### Week 4
- *Review and Overview*
- *Introduction to PowerPoint*
- *3 Models of Teaching and Learning: Constructivist Approach*

### Week 5
- *Review and Overview*
- *3 Models of Teaching and Learning: Idea-Based Approach*
- *When Technology Comes to School*
- *Team Preparation for Presentations*

### Week 6
- *Review and Overview*
- *Origins of the Computer Spreadsheet*
- *Introduction to Excel*

### Week 7
- *Review and Overview*
- *Final Team Preparation for Presentations*

### Week 8
- *Review and Overview*
- *PowerPoint Presentations*
- *Course Evaluation and Wrap Up*

## COURSE READINGS

Brabec, K., Fisher, K., & Pitler, H. (2004). Building better instruction: How technology supports nine research-proven instructional strategies. Learning & Leading with Technology 31 (5). p. 6-11.

Brophy, J, (1999) Teaching. International Academy of Education and International Bureau of Education. Educational Practices Series-1.

Zhao, Y., (2003). What Teachers Need to Know about Technology? Framing the Question. What Should Teachers Know about Technology? Perspectives and Practices. Research Methods for Educational Technology Series. Ed. Yong Zhao. Information Age Publishing: Gre

Burns, M. (2003). Beyond show and tell: Using spreadsheets to solve problems. Learning & Leading with Technology. (31)2. pp. 22.

## REQUIREMENTS AND GRADING FOR CEP 810

### Analysis of Technology Innovation in the Classroom
**General idea**

Many people propose innovations with technology in education with the hopes of making a meaningful improvement in accomplishing the mission of learning. Your task is to select a technological and educational innovation and analyze it.

The emphasis in this assignment is the clear and thoughtful analysis of the innovation. It need not be a *paper* in the traditional sense of the term, but it does need to communicate clearly your ideas. You will still need to cite your sources and include a Citation or Bibliography page.

You should use this suggested outline to guide your thinking for this assignment.

In stating the rationale for the effectiveness of this project, a very important resource will be this review of research by Jere Brophy in which he identified 12 principles that have been demonstrated to improve student learning. Innovations that are built upon these principles give us reason for having greater confidence in the likely impact they will have.

Possible application as a technology leader in your school, you will periodically be in position to have to review a proposed use of technology. This assignment offers you the opportunity to assess an application which may have been adopted recently, is currently being proposed, or may be considered in the near future. The document you create may be used as a brief summary of your findings for other leaders and school staff.

Possible innovations you might consider are:

* Inspiration and Kidspiration

* The Jason Project

* Innovative software such as Geometer's Sketchpad

* Student research using the Internet

Note that you are not limited to these innovations. You are encouraged to consult with your instructor in identifying an appropriate innovation to consider.

Note that while these innovations are identified simply by the technology used, **your analysis must cover the educational need or opportunity** potentially addressed by these innovations.

| **Technical requirements** | **15 points** |
|---|---|

- Demonstrates ability to use Microsoft Word editing and formatting features to enhance the effectiveness of the document

- Demonstrates ability to include Internet links and at least one other advanced Word feature such as advanced tabs (right align, centered, decimal, or leading characters), advanced font or paragraph formatting, or mathematical symbols, or tables

| **Content requirements** | **45 points** |
|---|---|

- Addresses the issue raised in the template document.

- Demonstrates clear understanding of *change with or without a difference* perspective of technology in education

- Clearly explains the purpose, strategies, and effectiveness of the innovation

Your document must also address the issues identified in the suggested outline for this assignment including:

1. Overview

2. The problem of practice

3. The setting

4. The technology-integrated solution

5. Findings (formative and summative)

6. Implications

| **Program:** |
|---|

Microsoft Word

| **Expectations:** |
|---|

3 to 6 pages

## Personal Growth Plan

| **General idea** |
|---|

A major goal of the Certificate courses is that they integrate with your own learning needs and goals well. To help accomplish this task as well as to assess your progress, you are to write a **personal growth plan** that describes how you hope to grow as an educator as a result of this class. In particular, write a brief goal statement for your personal growth goals in each of two areas:

1. Using technology to make a difference in education

2. Increasing your skill in using technology

**Possible application:** It has often been said that if you aim at nothing you're pretty sure to hit it. Furthermore, we know that learner intentionality is very important in learning. This document you are to write may serve as a model for something your students or your colleagues would write at the start of a course unit or school year.

| **Content requirements** | **10 points** |
|---|---|

- Represents goals for making a difference with technology that are thoughtful and reasonable

- Represents goals for learning about technology that are thoughtful and reasonable

**Program:**

Microsoft Word

**Expectations:**

1 page

## Implementing a Model Lesson Plan

**General idea**

For this assignment, you are to implement an Internet-integrated lesson plan as presented in the *Model Lesson Plan* activity during *Week 2*. This lesson should be implemented in as realistic a situation as possible, ideally in your own classroom. If that isn't possible because you aren't currently teaching or your class cannot access the Internet, you can implement it in some creative setting such as tutoring a smaller group of students or adults.

We recommend that you use the *24 Hour Temperature Cycle* lesson plan, **although you can explore alternatives** as long as they effectively integrate the Internet in the lesson itself. Whatever lesson plan you use, the essentials are:

- You integrate the Internet as a central element in the lesson

- You have students use the technology as directly as is practical

- The lesson is focused on meaningful, important content

**Technical requirements**                                                              **5 points**

- Effectively explains the lesson plan, with appropriate Web links, in a clear, attractive, and professional Word document

**Content requirements**                                                              **35 points**

After completing your Internet-Integrated Lesson Plan assignment you need to write a brief (2 page) reflection paper on the lesson. We want you to use this opportunity for a focused reflection to think carefully about a lesson plan that integrates technology.

Your reflection paper should address the following questions:

- What did you do? Give a general description of what you did when teaching the lesson.

    o Did you teach the 24-hour lesson plan (if so, please mention any way that you modified it)

    o If not what lesson plan did you teach?

- What were some of the benefits and challenges?

    o for teaching the lesson

    o for using the Internet in the classroom

- How was technology used to support teaching and learning? (Talk about how it helped you reach your educational goals)

- If you taught this lesson again how would you do it differently?

**Program:**

Microsoft Word

**Expectations:**

2 pages

## Educational Application of Word

**General idea**

This document should demonstrate an application of Microsoft Word to an actual **educational concern** in your own setting. **Educational concern** should be taken very broadly to be anything you might do that would have a defensible direct or indirect impact on student learning. Nevertheless, you must express very clearly how this project is important for student learning.

**Possible application**

Examples may include (but are not limited to)

- An instructional handout for a lesson in class

- A letter or brochure to be given to parents

- Lesson planning document

- Creative signs or materials for the classroom

**Technical requirements**                                                                                    **30points**

- Demonstrate basic understanding of Microsoft Word as a word processor

- Use character formatting (e.g., fonts, font styles, size) in an appropriate manner to enhance the effectiveness of your document  (for example, use formatting controls rather than white space to arrange contents)

- Include a digital photograph

- Demonstrate ability to add voice (audio) to the Word document

- Uses an advanced feature of  Word such as:

    o   Reviewing tools

    o   Mail merge

    o   Tables

**Content requirements**                                                                                   **20 points**

- In a Word document, describe the educational benefit/rationale for this project in the educational setting.

**Program:**

Microsoft Word

**Expectations:**

A rich Word document that addresses a meaningful educational concern may vary a great deal in length. Include about a half-page description of the educational concern and how this document will help address that concern.

## Educational Application of PowerPoint

**General idea**

This presentation should be something you can use yourself to address an **educational concern** in your own setting using PowerPoint. **Educational concern** should be taken very broadly to be anything you might do that would have a defensible direct or indirect impact on student learning.

**Possible application** Examples may include (but are not limited to)

- "Kiosk" stand alone presentation to sit on a computer for parents at parent-teacher conferences or open house

- Lesson in class

- Presentation for parent night

- Presentation for board, other teachers

| Technical requirements | 20 points |
| --- | --- |

- Multiple-slide PowerPoint presentation

- Use *builds* and *transitions* in a way to enhance the effectiveness of the presentation

- Include graphics (e.g., pictures, Word Art, clip art)

- Apply a PowerPoint design for backgrounds

- Include presenter notes for at least several of your slides

| Content requirements | 20 points |
| --- | --- |

- One paragraph on the presenter notes of the first slide that describes

   1. How you will/would use this presentation

   2. How the use of this presentation is beneficial in the educational setting

**Program:**

Microsoft PowerPoint

**Expectations:**

Multiple-slide PowerPoint presentation. The number of slides needed depends upon your application and the richness of what you include on each slide. However, it is likely that 5 slides would be a minimum.

## Educational Application of Excel

**General idea**

As with the *educational application* assignments for Word and PowerPoint, this assignment requires you to use **Microsoft Excel** to address a real educational concern in your own setting. Your work on this assignment can go one of two possible directions.

- **Data Management**
  Use Excel to manage data related to your work as an educator. Examples may include

   o   Grade book in a spreadsheet

   o   Student discipline data

   o   Management of classroom materials, trip, library

- Books read by students

  - Analysis of test scores

- **Learning Tool**
  Use Excel to support or enhance learning in some way. It may be that students will work directly with Excel, either individually or in groups, or you will use Excel yourself in front of the students (which may be particularly appropriate for younger students). Examples may include

  - Learning charts and graphs (e.g., how many boys and girls in the class, or interpretation and misinterpretation of graphs)

  - Learning analysis of data (e.g., survey data)

| Technical requirements | 20 points |
|---|---|

- Organized data arrangement

- Both textual formatting (e.g., font, font style, size) and content formatting (e.g., commas in numbers)

- Computation across rows and computation across columns (beyond basic addition and subtraction)

- At least 2 graphs of data

- Use of an advanced feature such as

  - Sorting of data

  - Filtering of data

  - Subtotaling of data

| Content requirements | 20 points |
|---|---|

- In a text box in the Excel document, describe the educational benefit/rationale for this project in the educational setting.

| Program: |
|---|

Microsoft Excel

| Expectations: |
|---|

This document should include about a half-page description of the educational concern and how this document will address it. You might want to create a separate worksheet with a single large text box for this description. The document should make use of the unique features of Excel such as formulas, sorting and summarizing, the table layout, and so on.


## Group "Point/Counterpoint" on Technology in Education

| General idea |
|---|

You will be assigned to 1 of 4 groups as follows:

|  | Elementary Classroom | Secondary Classroom |
|---|---|---|
| Pro technology | Group 1 | Group 2 |
| Anti technology | Group 3 | Group 4 |

You and your group will be expected to create a presentation using PowerPoint. The presentation will be provided to the rest of the class and it will argue for your assigned position. Please note that you are to make a compelling case for your position, not just rehearse a list of arguments made by others. It has been said that you are not ready to argue for a position until you can make a strong case against it.

You should use research, suggested articles and resources (you may find some useful articles and pointers at http://edutech.msu.edu/archive), and your own experience. On the Internet, you should be able to find plenty of resources and arguments for and against the use of technology in these settings. Remember that the strongest argument for a particular position is made in the light of the arguments made in opposition to that position.

An important element to keep in mind for this project is an emphasis on the Professional Standards for Michigan Teachers. In particular, Standard 7 says:

**7. An ability to use information technology to enhance learning and to enhance personal and professional productivity.**

Point f. under Standard 7 says:

**f. Demonstrate knowledge of equitable, ethical, legal, social, physical, and psychological issues concerning use of information technology;**

Your presentation should address key elements of the issues listed here.

This presentation will consist of PowerPoint slides including audio for your narration of the slides. Everyone in the group must contribute to the audio of this presentation. We expect that in most cases one person in your group will become the *integrator* who merges slides from each person in your group into a single final presentation. **Please review the PowerPoint Part 3 Tutorial, Lesson 3: Advanced Features for instructions on how to add audio and integrate all the slides into one presentation.**

**Possible application** You may want to use the presentation you create, or a variation of it, with other teachers, with parents or students, or perhaps with the school board or community. Your purpose may be to **motivate** or **excite** in terms of the use of technology. For example, you could use it to introduce parents to the ways that you will be using technology for your own class.

Or, your purpose may be to **caution** your audience regarding technology. Research has shown, for example, that parents believe that having a computer in the home will increase student academic performance. Perhaps the more important (and far less expensive) thing is for the parents to take a stronger interest in their child's education. For some, technology is viewed as having the Midas touch, and your presentation may serve as a caution against this.

| Technical Requirements | 10 points |
|---|---|

- The same as for the individual PowerPoint presentation

| Content Requirements | 50 points |
|---|---|

- Thoughtful and persuasive defense of the position you have been assigned

- Effective use of and response to published arguments related to your position, including appropriate citation of that material

| Program |
|---|
Microsoft PowerPoint

| Expectations |
|---|
A 15 minute presentation (Note that a *rule of thumb* is about 1-2 minutes per slide.)


## Maintaining a RSS Reader Page

| General idea |
|---|

The intent of this assignment is to create a RSS Reader page to access frequently up-dated information related to your profession. Your RSS Reader page will display any new postings to blogs and web pages you have added. You will be required to make at least one comment to a blog.

For this assignment, you are to create and follow your own RSS Reader page. You are to turn in a Word document that...

- Includes a screen dump of your RSS Reader page that:

    o   Has at least 4 news feeds including at least one blog

- Describes at least one comment you have added to a blog

- Describes your experience of tracking changes to these pages routinely (for example, check your start page on at least 3 different days and describe the differences in postings across those days)

- Describes what you have learned from the contents of the news feeds you have been tracking

- Describes how you might apply either the content of your RSS Reader page, or the capabilities of a RSS Reader page, in your own setting

| **Technical requirements** | **5 points** |
| --- | --- |

- Added at least 4 news feeds to your RSS Reader page (At least one feed is from a blog)

- Posted at least one comment to a blog

- Shared your RSS Reader page with your instructor via email

| **Content requirements** | **25 points** |
| --- | --- |

- Demonstrates that feeds have been routinely checked for updates.

- Demonstrates ability to participate in and gain from professional online interaction about education as well as from other sites and organizations

- Includes a screen dump of your RSS Reader page

- Addresses what you have learned by following your feeds.

- Indicates how your learning will impact your classroom

| **Program:** |
| --- |

Any web browser in combination with, any web-based RSS Reader application.


## Personal Learning Reflection

| **General idea** |
| --- |

Based on your *personal growth plan*, you will assess your own learning in this class. You will indicate areas of growth and what supported that growth. You will also indicate areas where you would have liked to learn and grow more than you did along with anything that limited your learning and growth.

Specifically, for this assignment you are going to reflect on your work and growth during this course as well as make plans for your future goals for integrating technology. When writing your final reflection paper you will want to address the following:

- What are some things that you have learned about effective teaching strategies when integrating technology?

- How did integrating the Internet help you think about and evaluate uses of technology?

- Which of the educational application assignments that you turned in do you feel really exemplifies good teaching with technology and why?

- How have you met your goals established in your personal goal statement?

- Do you have any new goals? What are your plans for reaching your new goals and your long-term goals after this course is over?

- How would you assess your own contributions to this class?

The grade you receive will be based upon your own assessment as well as your instructor's assessment of you progress in this class.

| Content requirements | 20 points |
|---|---|

- Each person begins this course with a different set of knowledge, skills, and experiences. You are expected to work and progress consistent with the graduate nature of this course.

| Program: |
|---|

Microsoft Word

## Class Participation (first third) (10 points)

| General idea |
|---|

In this course, you are expected to be an active participant in all class interactions on a timely basis.

In order to receive full credit participants must:

- Thoughtfully contribute to ALL of the online class discussions

- Participate  in some of the Sharing Tips and Tricks forums at the start of every other session

- Seek out and provide help among fellow participants

- Contribute to the general class learning environment

This grade is intended to give you an early indication of how your participation is going.

## Class Participation (20 points)

| General idea |
|---|

In this course, you are expected to be an active participant in class discussions and interactions. In addition, you are expected to be active in supporting the general class learning environment.

In order to receive full credit participants must:

- Thoughtfully contribute to ALL of the online class discussions

- Participate  in some of the Sharing Tips and Tricks forums at the start of every other session

- Seek out and provide help among fellow participants

- Contribute to the general class learning environment.

| Content requirements | 20 points |
|---|---|

- Active participation

- Quality participation

- Participation that promotes learning by others