EDE 484A
Digitally-Rich Teaching and Learning in K-12 Schools
(DRAFT - revised as of 11/04/16)

Spring 2017
Instructor: Dave Miller

Contents:

Lead Instructors' Contact Information and Availability

Dave Miller's e-mail: dmiller@warner.rochester.edu
Dave Miller's phone #: (585) 340-7557
Dave Miller's virtual office hours: by appointment

Class meeting time: Thurdays, 4:50-7:30 pm (NOTE: several of these class meetings will be substituted with a synchronous online session or asynchronous online work – see Course Schedule for details)

Brief Course Description

This course's main goals are to empower participants to appreciate the transformative potential of *digitally-rich teaching and learning* and to use that potential to design and implement effective "digitally-rich" learning experiences for their K-12 students. We have operationally defined *digitally-rich teaching and learning* (DTL hereafter) as creating student-centered learning activities that take full advantage of the learning opportunities offered by a combination of technologies leveraging digital learning, including most notably the use of personal computing devices (such as tablets and laptops), learning management systems (LMS), specialized software and apps, and a variety of digital resources. The course will also begin to explore the implications for K-12 schools of a coordinated and sustained use of DTL in the context of district-wide efforts towards "digital conversion."

In the first part of the course, students will revisit some fundamental principles of learning, motivation, assessment, pedagogy, and instructional design, as they apply to

"digitally-rich" learning experiences, by engaging in a carefully designed series of learning activities including both in-class and online components. These experiences have been designed to also enable students to "experience as learners" a number of online instructional tools, digital resources, and DTL practices. Explicit reflections on these experiences (both in class and online) will take place in parallel to enable students to generalize from these concrete experiences and consider possible applications for their own teaching practice.

In the second part of the course, students will mostly engage in supported "experiences as teachers" – while also exploring in more depth specific aspects of DTL and Digital Conversion. First, as part of a group and with significant support from the instructors, the students will design and deliver to the rest of the class an online learning module on content related to the course – as a way to experience digitally-rich teaching in an authentic yet highly supported and "low stakes" context. Then, building on what learned in the course up to this point as well as the group project experience, each student will individually design a "digitally-rich" lesson for one of their own current K-12 classes.

This course is offered as a hybrid-online course, so as to enable students to personally experience several different types of synchronous and online learning activities outside of class, and how they can be integrated with in-class and other face-to-face activities. The time slot of Thursday 4:50-7:30 pm should still be reserved for class activities – although they will not all occur face-to-face in LeChase Hall.

No prior experience with online learning or instructional technology, either as a student or a teacher, is required to participate in this course.

Essential Questions Informing the Course

The course is informed by the following overarching essential question: *What does it take to engage in DTL and Digital Conversion successfully?*

Specific learning modules in the course have been informed by the following more specific essential questions:
- *What is involved in Digital Conversion, and why does it matter?*
- *How can we create DTL activities that leverage how people learn best?*
- *How can digital tools be used to design more powerful assessments and to better use assessment data to inform instruction?*
- *What design approaches and principles should inform the planning of DTL activities?*
- *What "high-impact practices" should be used to most affect the success of DTL experiences?*
- *How can appropriate digital resources be effectively selected from the overwhelming number now available?*

Course Goals and Desired Results

Informed by the previous considerations, the course has been designed to **empower students to (a) come to appreciate the transformative potential of *digitally-rich***

***teaching and learning* (DTL) and (b) design and implement effective "digitally-rich" learning experiences for their K-12 students using a specific LMS**.

More specifically, by the end of the course, students will:

1. Have gained a deeper understanding of fundamental research-based principles, and their implications for DTL, within the following areas:
   a) Motivation *(so as to design DTL experiences that can support students' sustained attention and engagement in a technology-rich classroom environment as well as when they work independently online)*
   b) How people learn best, and implications for teaching *(so as to be able to design DTL experiences that truly engage students in meaningful and effective ways)*
   c) Student assessment *(so as to be able to better measure what students learn as the result of DTL experiences and use this information to inform future instruction)*
   d) Instructional design *(so as to be able to design DTL experiences that can effective lead to specific desired outcomes)*

2. Learn to use (as an instructor as well as a student) a select number of digital tools and technologies, strategically-chosen to engage in valuable DTL activities, including:
   a) Creating multi-media documents
   b) Posting and accessing multi-media documents
   c) Making use of assignments, journals, quizzes, surveys, discussion boards, and update messaging within a Learning Management System (LMS)
   d) Using formative assessment that leverages digital tools
   e) Communicating synchronous online
   f) Enabling students to communicate with each other in the class LMS
   g) Doing Internet searches
   (so as to be able to design creative DTL experiences that require only a minimum number of digital tools)

3. Become aware of key decision points, options and "instructional tips" for the following common "DTL practices":
   a. Introducing new digital tools
   b. Providing directions for independent work
   c. Eliciting and building on student prior knowledge
   d. Conveying content in the class LMS
   e. Sharing students' work in the class LMS
   f. Orchestrating discussions in the class LMS
   g. Synthesizing learning
   h. Providing feedback to student work in the class LMS
   (so as to be able to design DTL experiences that take full advantage of these practices, as most appropriate given the established learning goals)

4. Engage in scaffolded experiences of designing and implementing "digitally-rich" in-class and out-of-class learning experiences.

(so as to be able to design and facilitate a variety of high quality DTL activities by the end of the course)

5. Become aware of potential benefits, challenges and implications of engaging in Digital Conversion for K-12 Schools in light of current research and thought leadership

(so as to be able to appreciate DTL's transformative potential and the conditions necessary for that potential to be realized)

Key Assessments and Long-Term Projects

A. **DTL Group Project** (1-4)**:** As their first major "DTL experience as teachers", participants will be assigned to groups of 3-5 and given the task to design and implement a DTL module for the rest of the class on an assigned topic related to DTL and/or Digital Conversion – which will become an integral part of the course learning experience. This teaching experience will be supported by the instructors in various concrete ways, including some direct participation in the planning as well as providing "just in time instruction" about relevant LMS or other digital tools as needed. Students will also participate as learners in at least two of these learning modules and provide thoughtful feedback to the "teachers" (in a combination of LMS and face-to-face communications). The group that originally designs each learning module will then be expected to revise the design of their module taking this feedback into consideration.

B. **DTL Independent Project** (1-4)**:** As their second major "DTL experience as teachers," and a culminating performance assessment for the course, each student will design a full DTL lesson for one of their current classes on a topic of their choice. With the help of a "thinking partner", each student will create a detailed "lesson plan" (using a format informed by *Understanding by Design,* and also including the rationale for key instructional decisions made) and also prepare all the materials needed to implement the lesson. Other participants will also have the opportunity to review the final plan and provide feedback. As part of DTL practice development for the classroom, participants will be expected to eventually implement their DTL lesson in at least one of their classes, collect data on this implementation, evaluate this experience, and report back to their classmates.

C. **DTL Journals and Final Reflection** (goals 1-5)**:** At the end of each module, each participant will be asked to record their main takeaways about the *essential question* informing the module in a journal in the course LMS. At the end of the course, each participant will also write a Final Reflection Paper, where they will reflect on what they learned in the course as a whole, using their journals both as evidence and as a means to help their reflection.

Key Design Elements

As mentioned earlier, we believe it is important to engage teachers in "experiences as learners" of any innovative instructional approach they are asked to adopt. Therefore, this course was purposefully designed to "model" a variety of DTL experiences that teachers could consider using in their own practice. So, as students in this course will learn about principles of learning, motivation, instructional design, digital conversion, etc., we will make full use of many different DTL activities – both in class and online – and reflect on these experiences afterwards. These reflections will aim to identify not only the extent to which these activities were successful in promoting learning, but also the diverse reactions of individual learners to the experience and some key instructional decisions involved in designing the experience.

The literature on learning complex skills/practices (such as teaching – whether face-to-face, online, or in technology-rich environments) suggests that individuals can learn such skills best by engaging in the following scaffolded sequence of experiences:
a. Observing an expert engaged in the practice (possibly with the opportunity to ask questions about what is taking place and why).
b. Participating in limited ways ("legitimate peripheral participation") in the performance of the targeted practice in authentic contexts under the guidance of an expert.
c. Engaging in the targeted practice independently, yet still benefiting from some support and feedback.

The "DTL experiences as learners" developed in the course, together with the critical analysis of other examples of DTL activities, will play the role of engaging our students in the observation of expert practice identified as the first critical step of this process. Given the constraints of a semester-long course, we are limited with respect to the extent we will be able to implement the other two components of this model. However, we have designed two "scaffolded experiences as teachers" as part of this course, with different degrees of support. In the first of these experiences, students will work in groups in designing and implementing an online learning module for other students in the course, with significant support from the instructors. In the second experience, each student will design a DTL lesson for one of their current classes independently, making their own decisions with respect to the topic, scope, and goals for the lesson, while the instructors will act as "consultants" providing feedback and suggestions for improvement at a few key points in the process.

Course Learning Modules (besides the long-term projects)

NOTE: Some of these modules overlap, as shown in the course schedule document

MODULE 1: Setting the Stage *(3+weeks)*
Essential question: **What is involved in Digital Conversion, and why does it matter?**
This first module is intended to develop expectations and motivation for the course, as well as build the foundations for its learning community. Participants will engage in a first set of multimedia readings and discussions about digital conversion, focusing on the

demonstrated outcomes of well-implemented digital conversions and the conditions that contributed to that success; the readings will purposely be selected to model how "conveying content online" can take different forms, thus providing an opportunity to introduce the concept of "DTL high-leverage practices" and to show how these practices will be modeled and examined throughout the course. To begin to develop shared images of high-quality DTL activities, participants will read about some examples, and most importantly engage together in a first "DTL experience as learners" – the *Pet Activity*. In this activity, participants will be asked in groups to choose a pet, gather information about its care on the Internet, estimate the costs to be incurred for the pet's lifetime, and finally create and post a "video pitch" where they make the case to another stakeholder for why they should or should not get that pet; digital tools needed to complete this activity will be introduced by the instructors as needed. The SAMR model will be introduced as a conceptual tool to examine these first shared DTL examples from the perspective of the use made of technology. The course long-term projects will also be introduced in this beginning module, so participants know what to expect and can plan accordingly. Participants will also begin to contribute to an on-going online discussion on DTL and Digital Conversion as a Group within Schoology – as a way to create a more open-ended and student-center space for their reflections and online interactions, and also to enable them to experience a more "social media like" way to engage online. At the end of the module, participants will be asked to identify their own <u>personal</u> goals for the course, as well as what they would like to learn more about to achieve those goals (also as a way to direct the instructor's choice of topics for the Group Project).

MODULE 2: Learning & Motivation *(2+ weeks)*
Essential question: ***How can we create DTL activities that leverage how people learn best?***
The potential impact of a DTL activity on student learning is influenced not only by its level in the SAMR model, but even more importantly by the overall approach to learning and instruction that informs it. High-quality DTL activities need to be student-centered, involve activities at the high end of Bloom taxonomy, focus on "big ideas" in a field, and be meaningful and engaging for the specific group of students involved. In this module participants will re-examine the shared examples of DTL activities developed in Module 1 from the perspective of motivation and learning theories. This will done mostly by engaging in an online asynchronous module carefully designed to revisit fundamental principles about motivation, learning and pedagogy, and applying these principles to the DTL examples introduced in the course so far – thus also providing an opportunity to "experience as learners" an online asynchronous module and then reflecting on this experience.

MODULE 3: Instructional Design *(2+ weeks)*
Essential question: ***What design approaches and principles should inform the planning of DTL activities?***
While in the previous modules participants were mostly asked to take on the *learner* role, focusing on the nature of DTL experiences and what makes them most effective, in this module they will begin to question what it takes for a *teacher* to create such experiences. Just as quality DTL experiences need to reflect how people learn best, the planning of

these activities must be informed by sound principles of instructional design. Participants will first examine the planning process behind the learning experiences they themselves experienced in the course so far, so as to become aware of key instructional decisions the course instructors had to make and how they approached these decisions.   Participants will then revisit *Understanding by Design* as an approach that is particularly powerful for designing DTL learning lessons and units, as well as a few other seminal readings about instructional design.   Their independent work on these topics will involve designing a first DTL lesson for one of their classes (which could potentially serve as the starting point for their Individual Project).

MODULE 4: Assessment *(1+ week)*
Essential question: ***How can digital tools be used to design more powerful assessments and to better use assessment data to inform instruction?***
Assessment is central to an *Understanding by Design* approach. Also, at the core of Digital Conversion is data-driven instruction, which builds on the capacity of digital assessment tools to collect and report student assessment data in real time. Digital tools can also open up new and more authentic ways for students to demonstrate their learning besides traditional paper-and-pencil tests and papers. Building on the experiences and insights developed in the previous module, participants will now engage in another asynchnous online module focused on revisiting fundamental principles of assessment as well as examining new opportunities offered by digital assessment tools. In the face-to-face sessions related to this module, participants will also "experience as learners" a few digital assessments tools they could consider using in their classes, and reflect on the assessments used in the course so far. This module will also include a synchronous online session, to enable participants to "experience as learners" this modality – which they may want to use to invite in "virtual guest speaker" in their classes, or to communicate with colleagues in planning instruction.

MODULE 5: High-Leverage Practices *(2+ week)*
Essential question: ***What High-Leverage Teaching Practices should be used to most affect the success of DTL experiences?***
The *Learning to Teach* literature has begun to recognize the importance for novice teachers to focus on developing a (relatively small) set of "high-leverage practices," strategically chosen among those most likely to affect their success in the classroom according to research. As part of the previous four modules, participants will have "experienced as learners" a number of these practices specific to digitally-rich learning activities. These *DTL practices* will have included at a minimum: (a) Introducing new digital tools; (b) Providing directions for independent work; (c) Conveying content in the class LMS; (d) Sharing students' work in the class LMS; (e) Orchestrating discussions in the class LMS; and (f) Providing feedback to student work in the class LMS. To empower participants to learn how to set up for and effectively implement these DTL practices in their own teaching, they will engage in a systematic analysis of key decision points, options and "instructional tips" related to each practice – building on the process modeled earlier in the course. The insights resulting from this analysis will be recorded by the participants themselves in "synthesis documents" that all students in the class can

later "personalize" for their use after the course ends. DTL Portfolio tasks related to this module will focus on applying some of these practices in their classes.

MODULE 6: Managing Digital Resources *(1+ weeks)*
*Essential question: **How can appropriate digital resources be effectively selected from the overwhelming number now available?***
One of the greatest benefits of DTL is the ability to move beyond the constraints of a textbook, and leverage high quality digital resources that are available from publishers or for free on the Internet. At the same time, the amount of currently available digital resources can feel overwhelming to an instructor. To make effective use of digital resources in their teaching, teachers will need to develop strategies and skills to both identify relevant digital resources, and then evaluate which ones will truly be useful given their specific goals and audiences. In this module, in preparation for the design of their own DTL unit as part of their Independent Project, participants will be introduced to some sites and search engines that can help them identify worthwhile digital resources for specific topics and grade levels, and also engage in a systematic evaluation of a few of these these digital resources with the ultimate goal of developing a checklist that will help them evaluate other resources on their own.

MODULE 7: DTL and Digital Conversion Revisited *(1+ weeks)*
*Essential question: **What does it take to engage in DTL and Digital Conversion successfully?***
A number of key readings about DTL and Digital Conversion will be revisited in this module in light of the experiences participants had in the course so far. Participants will also be given the opportunity to revise the design of their DTL unit for future implementations, taking advantage of insights generated from these discussions as well as their own individual analysis of the experience.

MODULE 8: Taking Stock *(1+ week)*
*Essential question: **What have learned from the course and how it is going to affect your practice?***
At the end of each module each participant will have recorded highlights of what they learned in that module in their private journal. At the end of the course, each participant will be asked to review their journals, and then write a personal narrative identifying their key take-aways from the course as well as their learning goals about DTL and Digital Conversion moving forward. A final face-to-face session will provide the opportunity to share some of these highlights, as well as their overall feedback on the course – so as to enable the instructors to revise it for future offerings.

Course Requirements and Expectations

Weekly Independent Work

A variety of independent learning tasks (involving reading, writing as well as other kinds of activities) will need to be completed each week, with specific intermediate deadlines,

as articulated in detail in the "Directions for Independent Work" posted at the beginning of each Learning Module in the course Blackboard site. These tasks must be completed on time, as the following class session and/or subsequent tasks will often assume and make use of them.

These tasks will be organized every week (or couple of weeks) in a "Learning Module" posted on BB, and will usually involve a combination of:

• *"Readings"* – where the documents to be read are not only traditional texts, but could also include videos, narrated PowerPoints, Panopto files, websites, etc. All required readings will be accessible online in Blackboard.

• *Assignments* – these may involve writing as well as other kinds of tasks (including applications in their own classes), and often result in a product that needs to be submitted online on Blackboard – either privately as an *assignment* that will be accessible only to the instructor, or publicly by posting them in a specific *discussion board*, as directed in each case by the instructor. Unless they are part of one of the major projects (as described earlier), these assignments are not intended to result in finished nor polished reports. Therefore, students will not receive a letter grade for most assignments, although they will be assigned points for satisfactory completion that will affect the final grade in the course (as explained later in the Course Assessment section of this syllabus).

• *Unstructured conversations in the class LMS* – students will also be expected to engage online with classmates on an on-going basis on issues related to DTL and Digital Conversion, by spontaneously contributing their reflections and insights in a more unstructured and student-centered way using a Schoology Group.

• *Reflective Journal entries* – at the end of each learning module, students will also be asked to synthesize the key learning and insights gained from that module's readings and other learning activities in a private journal, in response to an "essential question" posed by the instructor (although students are always encouraged to add additional observations and insights). Unlike contributions posted in Discussion Boards and social media, these journal entries will be accessible only to the student and the instructor. Students are expected to take advantage of and build on these journal entries in preparing their Final Reflection Paper at the end of the course.

Class Participation

The success of this course, and the extent of each student's learning, will depend on his/her full and timely participation. Thus, we expect that students will attend all the synchronous as well as face-to-face class sessions, actively participate in discussion boards and other types on interactive online spaces, and meet the established deadlines for each assignment. In case you are unable to do so in a specific week, please let Dave Miller know in advance and as soon as possible. Lack of participation in face-to-face classes, synchronous sessions, discussion boards or other interactive online assignments will result in missing class participation points, unless particular make-up arrangements have been made with the instructor ahead of time. Most importantly, it will take away not only from your own learning in the course, but also from that of your classmates!

Major Projects

As culminating learning experiences and summative assessments, you will be expected to complete the following three "major projects" (as already described in the previous Key Assessments section):

1. ***DTL Group Project***

2. ***DTL Independent Project.***

3. ***DTL Final Reflection.***

Detailed directions for each of these projects can be found in the General Information Folder on Blackboard.

Each of the "major projects" should show the student's "best work" and will be graded according to a rubric, provided along with the detailed description of the assignment.

Course Schedule/Timeline

An agenda for each class session and a list of key tasks to be completed independently in-between each class session can be found in the Course Schedule section of BB *(directly accessible on the left-side Menu). This document will be continuously updated to reflect any scheduling changes that may occur in the course of the semester (although we expect these changes, if any, to be minor and rare).*

Workload expectations

According to New York State Education Department, a 3-credit course should include a total of about 35 "contact" hours, plus at least about twice as many hours of independent work on the part of each student, for a total commitment of over 100 hours on the part of each student.   Although this course will not have the same number of face-to-face meetings, it is our expectation that it will require students the same effort as a traditional course and, thus, total number of hours overall. Therefore, it is important that students set aside a total of at least 8 hours each week for a combination of class time and independent work.

Additional considerations about online learning

Taking a course with online components requires somewhat different practices than traditional face-to-face courses in order to achieve the same learning goals and outcomes. Especially if you have never taken an online course before, we recommend that you read the "***Considerations for Student Success in Online Courses" available within the General Information Folder on BB.***

One thing in particular that we would like students in this course to keep in mind is that, in order to ensure interactions among students as required by specific tasks assigned as part of their independent work each week, there may be multiple deadlines to submit assignments each week. To help you organize your time, we have tried to make these deadlines predictable throughout the semester, by using the following guidelines (with only a few exceptions):

- **Sat**urday deadlines: *For first posts on Discussion Boards (or any other activity requiring other class members to respond)*
- **M**onday deadlines: *For responses on Discussion Boards or other assignments that require instructors' and/or classmates' review before next class*
- **W**ednesday deadlines**:** *Synthesis journal and other "independent" activities that do not require review from others before class*

Technology Requirements

To make sure students have all the necessary technology to actively participate in all aspects of this hybrid-online course, we have identified below all the hardware and software needed to fully participate in both synchronous and asynchronous course activities:

- *Access to Mac or PC-based Computer with:*
  - *High Speed Internet capability*
  - *Speakers, microphone and a video cam*
  - *Adobe Reader*
  - *Plug-ins for your preferred browser to play videos*
  - *Latest version of Java installed for your preferred browser*
- *Tablet and/or laptop with internet connection to be taken to each class session*

Please verify that you meet all these technology requirements (and test them to make sure they work) before our first class meeting.

Learning Assessment and Grading

Half of your grade in the course will be based on class participation and weekly assignments, and the other half on your performance on the three major projects. More specifically:

- **Class participation: 10%** (based on points assigned to active participation in each face-to-face class/synchronous session attended, as well as to the on-going contributions to the "open" online conversations occurring through Schoology)
- **Weekly assignments** (including discussion boards and reflective journal entries)**: 40%** (based on points assigned for completing each assignment on time and satisfactorily, as indicated in the Directions for Independent Work for each learning module)
- **Group Project: 20%** (based on quality of the product, rubrics-based)
- **Individual Project: 20%** (based on quality of the product, rubrics-based)
- **Final Reflection: 10%** (based on quality of the product, rubrics-based)

For a complete and updated list of the maximum number of points associated to specific assignments and other components of the course, see the "Course grading scheme" document posted within the General Information Folder on Blackboard.

Grading scheme:
A: *95-100%;* **A-:** *90-94%;* **B+:** *87-89%;* **B:** *83-86%;* **B-:** *80-82%;***C:** *70-79%;* **E:** *<70*