EDE 484A
Digitally-Rich Teaching and Learning in K-12 Schools
(12.09.2019)

Spring 2020
Instructor: Dave Miller

Contents:

Instructor's Contact Information and Availability

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Class meeting time: Thursdays, 8:15 pm - 9:45 pm (NOTE: our first meeting on January 18, 2020 is face-to-face at the University of Rochester in LeChase Hall, from 9 am – 2 pm. Our weekly class meetings after that will take place on Thursday evenings, via Zoom, from 8:15 – 9:45 pm, beginning January 23, and will meet each Thursday at the designated time via Zoom, through April 30, 2020.

Abbreviated Course Schedule:

Kickoff Session:	1.18.2020	9:00 am – 2:00 pm	Zoom Session 8:	3.12.2020	8:15 pm – 9:45 pm
Zoom Session 1:	1.23.2020	8:15 pm – 9:45 pm	Zoom Session 9:	3.19.2020	8:15 pm – 9:45 pm
Zoom Session 2:	1.30.2020	8:15 pm – 9:45 pm	Zoom Session 10:	3.26.2020	8:15 pm – 9:45 pm
Zoom Session 3:	2.06.2020	8:15 pm – 9:45 pm	Zoom Session 11:	4.02.2020	8:15 pm – 9:45 pm
Zoom Session 4:	2.13.2020	8:15 pm – 9:45 pm	Zoom Session 12:	4.09.2020	8:15 pm – 9:45 pm
Zoom Session 5:	2.20.2020	8:15 pm – 9:45 pm	Zoom Session 13:	4.16.2020	8:15 pm – 9:45 pm
Zoom Session 6:	2.27.2020	8:15 pm – 9:45 pm	Zoom Session 14:	4.23.2020	8:15 pm – 9:45 pm
Zoom Session 7:	3.05.2020	8:15 pm – 9:45 pm	Zoom Session 15:	4.30.2020	8:15 pm – 9:45 pm

Brief Course Description

This course's main goals are to empower participants to appreciate the transformative potential of digital technologies for learning and teaching, 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* (DRTL 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), a learning management system (LMS), specialized software and apps, and a variety of digital resources.

The course focuses in particular on how digital tools and other resources can be used to enhance teaching practices and students' learning experiences in the following four areas: (a) collaborative learning; (b) assessment; (c) content, and: (d) differentiation. The course also begins to explore the implications for K-12 schools of a coordinated and sustained use of DRTL in the context of district-wide efforts – often contextualized by descriptors such as digital conversion, personalized learning, digital initiative, 1:1, and very likely a host of other descriptive terms.

Throughout the course, students will engage in a series of learning activities including both in-class and online "digitally-rich" components, purposefully designed to enable students to "experience as learners" specific digital tools, resources, and 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. To inform these reflections, students will also revisit some fundamental principles of learning, motivation, assessment, pedagogy, and instructional design, and explore their implications for "digitally-rich" instructional contexts.

Students will also engage in some supported "experiences as teachers," where they can begin to put into practice what they are learning, while benefitting from feedback from their classmates as well as the course instructors and structured reflections on the significance and implications of these experiences for their future teaching.

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 these activites can be integrated with in-class and other face-to-face activities. Blackboard, the LMS adopted by the University of Rochester, will be used as the "class LMS". The time slot of Wednesday 4:50-7:30 pm should be reserved for class activities – although not all of these activities will take place face-to-face in LeChase Hall, and these activities will generally follow the detailed course schedule, linked in Blackboard.

The course is designed to be taken in conjunction with a year-long Practicum on Digitally-Rich Teaching. As such, the course will provide the opportunity to set up for key Practicum activities and share some of the early experiences. However, the Practicum will extend beyond the duration of the course, to provide more flexibility for the implementation of some required DRTL activities that students showcase in the practicum portfolio.

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 mean and what does it take to engage in DRTL successfully in K-12 schools?***

Specific learning modules in the course have been informed by the following more specific questions:

- o *What may DRTL look like in K12 schools, and what value can it add?*
- o *What principles should inform the design and implementation of effective DRTL activities?*
- o *How can we promote and support collaborative learning using digital technologies?*
- o *How can we leverage digital tools to enhance assessment practices?*
- o *How can we leverage multi-media and digital technologies to best work with content?*
- o *How can we leverage digitally-rich instructional practices for differentiation among a multitude of student learning needs?*
- o *How can we design DRTL instructional units that leverage how people learn best?*
- o *What is going on in terms of district-wide K-12 digital initiatives, and what implications could these initiatives have?*
- o *How is your teaching practice going to be affected from what you learn in this course?*

Course Goals and Desired Results

Informed by the previous considerations, the course has been designed to **empower course participants to: (a) come to appreciate the transformative potential of** *Digitally-Rich Teaching and Learning* **(DRTL), and; (b) design and implement more effective "digitally-rich" learning experiences for students in the K-12 classroom**.

More specifically, by the end of the course, course participants will be able to:

1. Appreciate the implications for DRTL of fundamental research-based principles within each of the following areas:
   a) Motivation *(so as to design DRTL 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 DRTL experiences that are informed by worthwhile learning goals and that truly engage students in meaningful and effective ways)*
   c) Instructional design *(so as to be able to design DRTL experiences that can effectively lead to specific desired outcomes)*

2. Appreciate the potential benefits, challenges and implications of engaging in current district-wide K12 Digital initiatives *(so as to be able to better appreciate DRTL's transformative potential and the conditions necessary for that potential to be realized)*

3. Enhance their assessment practices by using selected digital tools to:
   a. elicit students' prior knowledge
   b. provide students with multiple ways to demonstrate their learning
   c. collect and analyze assessment data that can both support student learning and inform future instruction
   d. facilitate grading and reporting of assessment data.
(so as to design more effective DRTL experiences consistent with a UbD approach and constructivist learning principles)

4. Have their students benefit from high-quality and diverse content – both in class and online – by being able to:
   a. Identify, select, and curate appropriate digital content
   b. Create new digital content specific their lessons
   c. Empower students to identify, select, and make the best use of the digital content
(so as to design more effective DRTL experiences by leveraging the potential of multi-media)

5. Better promote and support their students' collaborative learning by being able to use selected digital tools to:
   a. Share student work (both in class and online)
   b. Facilitate discussions (both in class and online)
   c. Structure and support group work
   d. Create a supportive learning community
(so as to design more effective DRTL experiences consistent with social-constructivist learning principles)

6. Appreciate the potential of differentiated instruction by applying digitally-rich design principals to:
   a. connect approaches to assessment, collaboration, working with content, along with approaches to competency-based and mastery-based learning to engage students in their own learning and learning practice.

7. Design DRTL instructional units informed by an Understanding by Design (UbD) approach as well as by the instructional practices about digitally-rich assessment, collaborative learning, working with content, and differentiated instruction *(so as to be able to design high quality DRTL activities for their students that meet ambitious learning goals)*

8. Appreciate the value of an iterative and collaborative approach to instructional design *(so as to continue to improve their design of DRTL experiences and units overtime)*

NOTE: Given these goals, this course addresses to some extent all of the five target competencies of the Advanced Certificate in Digitally-Rich Teaching in K-12 Schools:

1. *Gaining a nuanced appreciation of the potential and limitations of "digitally-rich" learning.*
2. *Developing foundational knowledge in the areas of motivation, learning, teaching and instructional design, as needed to inform the design of high-quality "digitally-rich" learning experiences for diverse learners.*
3. *Achieving awareness of and proficiency in using a rich set of online tools, technologies, resources and best practices for enhancing teaching in K-12 schools.*
4. *Achieving proficiency in designing and implementing high-quality "digitally-rich" learning experiences for K-12 students.*
5. *Learning how to evaluate "digitally-rich" learning experiences to improve future practice.*

Key Assessments and Long-Term Projects

A. **DRTL Concept Mapping Project:** This long-term project, which will be introduced in module 3, will be scaffolded through assignments taking place in each Learning Module (retroactively for Modules 1 and 2) of the course as follows. The purpose is to develop a thematic self-assessment of your work using a concept map to connect course concepts of communicating thinking, assessment, collaboration, working with content, and differentiation, with digital tools and teaching practice.

B. **DRTL Journals and Final Reflection:** At the end of each of the course modules, each participant will be asked to record his/her main takeaways about the *essential question* informing the module. At the end of the course, each participant will also write a Final Reflection Paper, where they will synthesize and 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, and as guided by specific questions and/or headings.

NOTE: *Assessment of some of the course goals will also continue through the K-12 Digitally-Rich Practicum associated with this course, although it will not affect the grade for this course.*

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 DRTL practices that teachers could consider using in their own classes. So, as students in this course will learn about specific issues, principles, and digital tools, we will make full use of many different DRTL activities – both in class and online – and reflect on these experiences afterward. 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 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.

Learning opportunities for "observing expert practice" will be offered in this course in a few complementary ways:

- Through "DRTL experiences as learners" within the course, where the instructors will model the use of specific digital tools, resources or practices in authentic learning experiences for the participants – followed by reflections on those experiences.
- By having teachers who have tried out DRTL activities with their students share their experiences with the class as "virtual guest speakers", joining the class via Zoom.

- By observing classroom teachers engaging in DRTL with their students as part of the Practicum associated with this course – followed by debriefing sessions.

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, as described earlier, we have designed a major "scaffolded experience as teachers" as part of this course – the DRTL Concept Mapping Project described above. Most importantly, some of the experiences conducted as part of the Practicum are intended to play this role.

Course Learning Modules

NOTE: Some of these modules overlap, as shown in a separate "course schedule" document

MODULE 1: Setting the Stage and Communicating Thinking in the Digitally-Rich Classroom *(2 weeks)*
*Essential question: **What might DRTL look like in K12 classrooms, and what value can it add?***
This first module is intended to develop expectations and motivation for the entire course, as well as build the foundations for its "learning community". Before meeting for the first face-to-face class session, participants will engage in a set of online activities designed mainly to elicit prior experiences and conceptions of online and digitally-rich learning and also to introduce information about the course. These preliminary assignments are also meant to provide participants with a fully-online learning experience, as well as a first example of "flipped classroom". To develop more shared images of high-quality DRTL activities, participants will have multiple opportunities to share their experiences with digital learning and review examples of other DRTL lessons; most importantly, however, they will engage together in a first "DRTL experience as learners" – the *Pet Activity* – in their first F2F class. *Understanding by Design (UbD)* as an approach to instructional design will be revisited as the instructors share how they approached the design of this DRTL activity. The SAMR and TPACK models will also be introduced/revisited as a conceptual tool to examine DRTL experiences from the perspective of the use made of technology. Course expectations, major projects, the focus of each learning module, and connections with the concurrent Practicum, will also be introduced in this beginning module, so participants know what to expect and can plan accordingly. This first module (as will be the case for every other module in the course) will conclude with a journal entry where students are asked to synthesize their main takeaways about the essential question(s) informing the module.

MODULE 2: Collaborative Learning in the Digitally-Rich Classroom *(2+ weeks)*
*Essential question: **How can we promote and support collaborative learning using digital technologies?***
Fundamental to social-constructivist theories of learning is the principle that students can learn from each other; therefore, it is important for teachers to design learning activities that not only engage students with content, but also with each other in effective ways as an integral part of the learning process. There are several digital tools that can help doing so in the context of a K-12 classroom. Students will reflect on the activities and digital tools they have experienced as learners in the course, as well as hear from current DRTL teachers as "virtual guest speakers" about how they have used technology to promote and support their K-12 students' collaborative learning – with special attention to leveraging functions built into the learning management system (LMS) adopted by their school. This module will also include a discussion of the values, limitations, and roles that can be played by the software most commonly used in K-12 schools today to serve an LMS function (i.e., Schoology, Google Classroom, Microsoft 365).

MODULE 3: Digitally-rich Assessment Practices *(3 weeks)*
*Essential question: **How can we leverage digital tools to enhance assessment practices?***
Assessment is central to an *Understanding by Design* approach to instructional design as well as a constructivist approach to learning and teaching. Also, at the core of most K12 digital initiatives is data-driven instruction, which builds on the unique capabilities 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 modules, in this module participants will revisit fundamental principles of assessment as well as examine new opportunities offered by a few selected digital assessment tools to: (a) elicit students' prior knowledge; (b) provide students with multiple ways to demonstrate their learning; (c) provide opportunities for formative assessment – along with ways to quickly summarize assessment data to inform instruction; and (d) collect, analyze and report summative assessment data. This module will include both asynchronous and synchronous online components, to enable participants to "experience as learners" both of these modalities. As part of the synchronous session, students will also hear from experienced DRTL teachers about their use of digital tools for assessment and how (and why) they choose the tools that they use. Students will immediately apply what they learned in this module within their concept mapping project while retroactively connecting the work they've done in the previous two modules.

MODULE 4: Sourcing, Conveying, and Engaging with Content in the Digitally-Rich Classroom *(2 weeks)*
*Essential question: **How can we leverage understandings and practices surrounding the sourcing, conveying, and engaging of content to promote student learning in the digitally-rich classroom?***
One of the greatest benefits of DRTL is the ability to move beyond the constraints of a textbook and leverage high quality digital multi-media content that are available from publishers or for free on the Internet (often referred to as "open educational resources" or OER) as well as multi-media materials the teacher can create specifically for his/her own students. As the amount of currently available digital resources can feel overwhelming, teachers will need to develop strategies and skills to both identify relevant digital resources and evaluate which ones will truly be useful given their specific goals and audiences, while at the same time guiding students toward developing understandings of identifying and sourcing content that fits their needs (within an inquiry, research-based approach). Similarly, in order to create high-quality multimedia materials for their students, teachers will also need to be become familiar with some digital tools available to create such materials, as well as research-based principles to inform their development. To develop the necessary knowledge and skills, in this module course participants will examine research and theory about the implications of using different kinds of media and formats to convey content, as well as develop practical skills and strategies to both create high-quality multi-media materials themselves and to identify and select existing ones. Students will also hear from current DRTL teachers as "virtual guest speakers" about how they have identified appropriate OER to use in their classes, and see some of the multi-media contents they themselves created for their students. As part of their Concept Mapping Project, students will continue to reflect on and make connections among the key concepts of the course, tools, and practice.

MODULE 5: Differentiated Learning in the Digitally-Rich Classroom *(3+ weeks)*
Essential question: What does differentiation of instruction and differentiation of learning practice look like in a digitally-rich classroom?
> Developing understandings surrounding what is possible in the digitally-rich classroom, so as to impact individual student learning needs is the key focus of this module. Course participants will address foundational concepts of choice, ability, levels, competency, mastery, along with the potential of collaborative instructional design elements to build in knowledge sharing and the challenging of perspectives across these foundational concepts.

MODULE 6: K12 Digital Initiatives and Pulling it All Together
Essential questions: (1)What is going on in terms of district-wide K-12 digital initiatives, and what implications could these initiatives have?; and (2) How is your teaching practice going to be affected by what you learned?
> Integrating digital technologies in one's teaching takes on a different dimension when it takes place as part of a district-wide initiative – whether it goes under the name of *digital conversion, one-on-one initiatives, personalized learning,* or other. Understanding the promises and challenges of these initiatives is important for both teachers and administrators. Selected readings and accounts of experiences will be introduced and discussed in this module in light of the experiences participants had in the course so far. Most of this work will take place while each student is also working on the final revision of their Concept Mapping Project.

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 takeaways from the course as well as major implications for their teaching practice. 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 course instructors to revise the course for future offerings.

Course Requirements and Expectations

On-going Independent Work

A variety of independent learning tasks (involving reading, writing as well as other kinds of activities) will need to be completed within each module, 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 in the Learning/Class Modules on Blackboard 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, 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).

- *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 Zoom sessions 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 your instructors 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 two "major projects" (as already described in the previous Key Assessments section):

1. *DRTL Concept Mapping Project.*
2. *DRTL 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 Blackboard (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).

In addition to the course kickoff session on January 18, 2020, please make sure you set aside the weekly class-time of 8:15 – 9:45 pm every week.

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 Blackboard.***

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.

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*
- *Optional – bring your iPad or Chromebook to class if you would like to try things with the devices you might be using at your school*

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

Learning Assessment and Grading

Half of your grade in the course will be based on class participation (on Blackboard and during class meetings) and performance on the 2 major projects, and the other half on your performance and engagement with module assignments. More specifically:

- **Class participation: 20%** (based on points assigned to active participation in each face-to-face class/synchronous session attended)
- **Module assignments** (including discussion boards and reflective journal entries)**: 50%** (based on points assigned for completing each assignment on time and satisfactorily, as indicated in the Directions for Independent Work for each learning module)
- **Final Product for DRTL Concept Mapping 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*

Title IX

All members of the University community have the right to learn and work in a safe environment free from all forms of harassment, including harassment on the basis of sex or gender. Students who have been subjected to sexual harassment, including sexual assault, dating/domestic violence or stalking, have the right to receive academic, housing, transportation or other accommodations, to receive counseling and health services and to make a report about such behavior to the University and to law enforcement. For more information please visit www.rochester.edu/sexualmisconduct or contact Brian Brent, Deputy Title IX coordinator (bbrent@warner.rochester.edu); (585) 275-3930; LeChase Hall 318.

Disability Resources

The University of Rochester respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact the Office of Disability Resources. The access coordinators in the Office of Disability Resources can meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations. You can reach the Office of Disability Resources at: disability@rochester.edu; (585) 276-5075; Taylor Hall. You may also contact Mary Judge, Warner's Disability Resource Coordinator at mjudge@warner.rochester.edu; (585) 275-2454; or LeChase Hall 390.