

**EDIS 7076: Technology, Learning Systems and Culture** 3 Credit Hours

Curriculum, Instruction, and Special Education Spring, 2017

January 18 – May 2, 2017

“Weeks” will run from Wednesday-Tuesday

**Instructor**

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**Description**

*University record description:*

Technology is among one of the most important contemporary social features inviting the need for reflective practice, yet we rarely have time to reflect on the nature of our work and impacts we have through technology or are experiencing. This course is designed to develop “reflective practice” around technology’s impact on learning and learning organizations. We will explore how systems theory and cultural studies help us evaluate educational technologies and their impact, how systems behave to influence technological adoption, how culture and context shape technologies and learning, what the ethical considerations are, then translate these insights into design, selection, and implementation of educational innovations.

*Elaborated course description:*

While the projects in this course emphasize application of the readings and concepts through evaluations and analyses, it is also designed to be a reflective course. Tracey, Hutchinson, and Grzebyk (2014) discuss the idea of the “reflective practitioner.” Often in our studies and in our work and daily lives, we may not have time to pause and truly be reflective about the nature of our work and the rather complex interactions and impacts that we have on others or are experiencing. And perhaps nothing in our contemporary society invites more need for reflective practice than technology – a thing so ubiquitous that it can fade to the backdrop without critical examination or feel completely overwhelming. The readings, discussions, and assignments in this course are designed to create a space where we can slow things down, critically evaluate technology and its consequences, identify specific behaviors at play in various systems, examine ethical considerations, translate big ideas into specific examples and practices, and hopefully at the end of the day re-orient our relationship with technology in a way that emphasizes our agency in design, selection, and adaptation of innovations. To get there, we’ll explore concepts like “mutual shaping” and how culture plays a role in learning and technology through the processes of design of instruction, adoption of technologies, and adaptation of innovations. We’ll borrow ideas from systems thinking, diffusion of innovations, and socio-technical systems to translate them to learning and educational contexts. We’ll analyze technologies not as things but as complex socio-technical systems to highlight the role of the people in the system, the culture surrounding the system, features of a given system, and other influences that shape both how a technology is designed and how it is implemented. By doing so, we will highlight and explore ethical implications that arise when technologies are introduced into human systems and diverse cultures to better inform design, decision making, and implementation. Like the special effects in movies or television where “invisible” elements are made visible with graphical overlays, by the end of this class you should be able to see the invisible relationships between people, technology, and culture and have well-developed language to describe your observations and insights – thus supporting you to become a reflective practitioner on a daily basis.

**Learning Objectives**

* Describe how technology *is* change
* Discuss when “educational innovation” is progress and when it may not be (and why)
* Describe how technology design and development is a social process (technology as a socio-technical system)
* Examine the role of culture and context in adoption and adaptation
* Generate and examples and explanations of systems principles in educational context, including examples where technology plays a role
  + How systems behave, why they surprise us, common system traps, and how they change
* Explore ethical considerations of technology in social systems, learning systems, and the learning process
* Analyze a socio-technical system (including cultural, organizational, and technological aspects) in an educational/learning context
* Generate recommendations for practice (design, implementation, and leadership) based on these analyses

**Instructional Methods**

This course is delivered in a fully online, asynchronous format which you access via Collab. We will have weekly readings, weekly discussions and Forum activities in Collab, along with several application assignments (see schedule below for details). In order to participate successfully, you should have a reliable internet connection, ability to download videos and files to watch or read, and ability to log in several times throughout each week to participate in discussions as expected. Technical difficulties will not be an acceptable explanation for late submissions, delayed participation, etc.

**Course Texts**

*Required*

Meadows, D. (2008). *Thinking in systems: A primer*. White River Junction, VT: Chelsea Green Publishing.

Weekly readings are also assigned and will be provided in Collab. You are expected to read these as assigned (see schedule below / on Collab).

*CHOOSE ONE (Required): In Week 10, you will choose one of the following to read during the last third of class and participate in small group discussions with others reading the same text. Once you select one of the following, you must stick with it for Weeks 10-14, so you should skim the suggested texts or take a look at excerpts online in advance of Week 10.*

* Ellsworth, J. (2000). *Surviving change: A survey of educational change models.*   
  Available at <http://eric.ed.gov/?id=ED443417>. (a really good review of the major evidence-based models of change and change facilitation with practical tips for leaders)
* Reigeluth, C. & Karnopp, R. (2013). Reinventing schools: It’s time to break the mold. Rowman & Littlefield Publishers: Lanham, MD. ([e-book available through Google Play](https://play.google.com/store/books/details/Charles_M_Reigeluth_Reinventing_Schools?id=Bs0sXG3H9-EC))
* Five selected articles (I will select and provide) that further explore the role of culture, learning and technology (e.g. science education across different cultures, math education across different cultures, interventions for keeping girls in the science pipeline, closing the achievement gap with culturally relevant technology-based learning environments, and international case studies that highlight the role of culture in instructional design and technology).
  + I will make the full list available via Collab. If, however, a different work looks interesting to this group and you would like to advocate to swap out a reading, you can propose a specific alternative for a given week during Weeks 10-14.
* If an additional text looks interesting to several students in the class, you may propose an alternative to me. This should be something multiple people are interested in so that you can discuss your readings and thoughts with others (this is not a purely independent reading exercise). Any proposed alternatives should be sent to me no later than Week 8 for discussion and planning.

**Course Outline**

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| --- | --- | --- | --- |
| **Week – Dates** | **Topic(s)** | **Readings** | **Activities, Assignments, and Discussions** |
| Week 1 – Jan. 18-24 | Socio-technical systems  TOC Model  What is progress? | Marx, “Does Improved Technology Mean Progress?”  Neeley, "Towards an Integrated View of Technology"  [Gustafson & Branch](http://files.eric.ed.gov/fulltext/ED477517.pdf), Preface & Ch. 1  Meadows, “Introduction: The Systems Lens”  Tracey & Baaki, “Design, Designers, and Reflection-in-Action” | Design Café (w/Discussion Leaders: student-led small-group reflections via the Forums) – what is progress, and what on earth do all these other readings have to do with that question? |
| Week 2 – Jan. 25-31 | Socio-technical systems – SCOT model | Pinch & Bijker, “The Social Construction of Facts and Artifacts”   * Johnson, “The Sociotechnical Systems Perspective”   Rheingold, “[Look Who’s Talking](https://www.wired.com/1999/01/amish/)”  [Gustafson & Branch](http://files.eric.ed.gov/fulltext/ED477517.pdf), Ch. 2  Video: Systematic and Systemic Thinking | Design Café (w/Discussion Leaders) – how is design and innovation systemic and social? |
| Week 3 – Feb. 1-7 | Interaction Effects: Culture and Technology, Culture and Learning | * Carlson, “Diversity and Progress: How Might We Picture Technology across Cultures?”   Young, “The Presence of Culture in Learning”  Homik & Tupchiy, “Culture’s impact on technology mediated learning” | Design Café (w/Discussion Leaders)  **Brief Presentation on socio-technical analysis of an educational technology due Feb. 7, 11:59 p.m.** ***(load to Assignments AND load to Forum discussion for Week 4)*** |
| Week 4 – Feb. 8-14 | Instructional design for diverse cultures | Amiel et. al., “Four strategies for designing instruction for diverse cultures”  Leonard, “Culturally specific pedagogy in the mathematics classroom”  [Gustafson & Branch](http://files.eric.ed.gov/fulltext/ED477517.pdf), Ch. 3 | Design Café: Small group discussions on your Brief Presentations (socio-technical analyses); application of Carlson to analyses and discussion |
| Week 5 – Feb. 15-21 | Incorporating culture and diversity into instructional design models and practices  The cultural features of attributes of innovations | Igoche & Branch, “Incorporating cultural values into the ADDIE approach to instructional design”  Kinuthia, “Instructional Design and technology implications for indigenous knowledge: Africa’s introspective”  Rogers, “Attributes of Innovations,” from *Diffusion of Innovations* | Design Café: Small group discussions organized around Attributes of Innovations |
| Week 6 – Feb. 22-28 | Consequences and Impact: Mutual shaping between culture, diversity, and educational technologies | Heemsmerk et. al., “Inclusiveness and ICT in education: A focus on gender, ethnicity, and social class”  Frederick et. al., “Culturally responsive applications of computer technologies in education”  Rogers, “Consequences of Innovations,” from *Diffusion of Innovations* | Design Café: Tell Us a Story (small group discussions) |
| Week 7 – March 1-7 | Ethical Considerations  Spring Break is March 4-12; these weeks are combined into one to accommodate SB  Begin readings and discussions before SB; wrap up readings and discussions after SB (feel free to post during SB if you so desire) | Moore & Ellsworth – Ethics of Educational Technology   * Barbour – excerpts from *Ethics in an Age of Technology*- three views of technology | Design Café (w/Discussion Leaders) – implications of what we’ve learned so far for design, selection and implementation |
| Week 8 – March 8-14 |
| Week 9 – March 15-21 | Ethical Considerations | Whitbeck – Ethics as design  Moore – Ethics and Design: Rethinking Professional Ethics as part of the Design Domain  [Gustafson & Branch](http://files.eric.ed.gov/fulltext/ED477517.pdf), Ch. 4, Conclusion | Design Café (w/Discussion Leaders) – ethical implications and how we can address these *through* design and practice |
| Week 10 – March 22-28 | Systems Theory and Translation to Educational Contexts and Examples | Meadows, Ch. 1  Select a reading to read between now and the end of the semester to dive deeper. Options:   * Ellsworth – Surviving Change * Reigeluth – Systemic Thinking in Education * Five selected articles * Proposed (and approved) alternative | Activity: Thinking in Systems, Education Edition (a co-constructed open education resource we are going to create as a class)  Small groups around selected readings |
| Week 11 – March 29 – April 4 | Systems Theory and Translation to Educational Contexts and Examples | Meadows, Ch. 2  Continue selected reading | Activity: Thinking in Systems, Education Edition Assignment  Small groups around selected readings |
| Week 12 – April 5-11 | Systems Theory and Translation to Educational Contexts and Examples | Meadows, Ch. 3  Continue Selected Reading | Activity: Thinking in Systems, Education Edition Assignment  Small groups around selected readings |
| Week 13 – April 12-18 | Systems Theory and Translation to Educational Contexts and Examples | Meadows, Ch. 4  Continue Selected Reading | Activity: Thinking in Systems, Education Edition Assignment  Small groups around selected readings |
| Week 14 – April 19 – 25 | Systems Theory and Translation to Educational Contexts and Examples | Meadows, Ch. 4  Continue Selected Reading | Activity: Thinking in Systems, Education Edition Assignment  Small groups around selected readings |
| Week 15 – April 26 – May 2 | Reflecting Forward | Review Tracey & Baaki, “Design, Designers, and Reflection-in-Action”  Meadows, Ch. 6 and 7 | Activity: Thinking in Systems, Education Edition (Meadows Ch. 6 only) Assignment  Design Café: What does it mean to you to be a reflective practitioner?  Final paper on socio-technical analysis of an educational technology due May 2, 11:59 p.m. |

**Grading**

Students in this course are expected to complete all assignments and will be graded according to the following scale:

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| --- | --- | --- | --- |
| A+ | 100 | C+ | 77 |
| A | 95 | C | 73 |
| A- | 90 | C- | 70 |
| B+ | 87 | D+ | 67 |
| B | 83 | D | 63 |
| B- | 80 | D- | 60 |
|  |  | F | < 60 |

For graduate studies, a grade of B- or higher is considered passing. Anything below a B- is not a passing grade.

**Assessments**

Brief Presentation – socio-technical analysis of an educational technology 15%

*Due last day of Week 3*

Open Educational Resource – Thinking in Systems: Education Edition 30%

*Work on and complete during Weeks 10-14*

Participation in Weekly Discussions (Design Cafés & Small Groups) 25%

*Due weekly, each week; participation required throughout each week  
Some weeks, the discussions are more open and student-led; other weeks I have specific questions I want you to discuss in small groups – see schedule*

Final Paper – detailed socio-technical analysis of an educational technology 30%

*Due official last day of classes, by midnight (work on throughout semester)*

**Assignment Details**

See handouts and rubrics for further details and expectations for each assignment in this class.

**University Email Policy**

Students are expected to activate and then check their official U.Va. email addresses on a frequent and consistent basis to remain informed of University communications, as certain communications may be time sensitive. Students who fail to check their email on a regular basis are responsible for any resulting consequences.

**University of Virginia Honor System**

All work should be pledged in the spirit of the Honor System of the University of Virginia.The instructor will indicate which assignments and activities are to be done individually and which permit collaboration. The following pledge should be written out at the end of all quizzes, examinations, individual assignments and papers: “I pledge that I have neither given nor received help on this examination (quiz, assignment, etc.)”. The pledge must be signed by the student. For more information please visit <http://www.virginia.edu/honor/>.

**Special Needs**

It is the policy of the University of Virginia to accommodate students with disabilities in accordance with federal and state laws. Any student with a disability who needs accommodation (e.g., in arrangements for seating, extended time for examinations, or note taking, etc.),should contact the Student Disability Access Center (SDAC) and provide them with appropriate medical or psychological documentation of his/her condition. Once accommodations are approved, it is the student’s responsibility to follow up with the instructor about logistics and implementation of accommodations.

If students have difficulty accessing any part of the course materials or activities for this class, they should contact the instructor immediately. Accommodations for test taking should be arranged at least 14 business days in advance of the date of the test(s). Students with disabilities are encouraged to contact the SDAC*:* 434-243-5180 (Fax - 434-243-5188);   Email:  [SDAC@Virginia.edu](mailto:SDAC@Virginia.edu); Website: <http://www.virginia.edu/studenthealth/sdac/sdac.html>.

**Class Attendance and Excused Absences**

Regular attendance in all classes is expected. Absences traditionally excused are those that occur because of death in a student's family, important religious holidays, or authorized University activities. Students who anticipate absence for cause should obtain permission from the instructor in advance of the absence. Unforeseen absences resulting from sickness, or from other circumstances considered to be emergencies, may be excused by the instructor and arrangements may be made with the instructor to complete the assignments missed.

**Students in Distress**

Services for students in various forms of distress are offered by Counseling and Psychological Services (<http://www.virginia.edu/studenthealth/caps.html>) in the Elson Student Health Center. During evenings and weekends, emergency crisis assistance (**434-972-7004)** is available. In addition, if you are concerned about another student, call 434-**243-5150** during business hours, and request the consulting clinician.

**Classroom Civility Statement**

Students are asked to refrain from conversations that deviate from class topics in class settings, and are requested to use appropriate language and behavior that are not demeaning or disruptive to either the instructor or the other members of the class. See <http://www.virginia.edu/president/speeches/12/message120621.html>

**Student Safety**

As members of the Curry School of Education faculty, we are concerned for your safety and support a caring and violent-free environment on Grounds. We concur with the University’s intolerance of power-based violence and encourage all of us to maintain a safe community.

We care about your well being. If you or someone you know is feeling overwhelmed, stressed, or isolated, there are many individuals who want to provide help. You can make an appointment to talk with any of your instructors. Or the Student Health Center also offers Counseling and Psychological Services (CAPS) for all students. Call 434-243-5150 or the after hours number at 434-972-7004 to schedule an appointment. If you prefer to speak anonymously and confidentially over the phone, call Madison House’s HELP line any time of the day at 434-295-8255.

There is also support if you or someone you know experiences stalking, partner violence or sexual assault. Resources can be found at <http://www.virginia.edu/sexualviolence> and [www.virginia.edu/justreportit/confidential\_resources.pdf](http://www.virginia.edu/justreportit/confidential_resources.pdf). We believe everyone in our community plays a role in preventing violence and isolation. We all need to make choices to reach out to others.