
EMERGENT MODELS OF INSTRUCTION

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INTRODUCTORY ESSAY

This course contains a heavy dose of both theoretical (what if) and practical (here and now) aspects. The course could potentially be taught in either graduate or undergraduate programs in curriculum and instruction departments in colleges of education, but it is designed in its current form to be taught at the graduate level. If taught to undergraduates, a few of the readings should be removed and the classroom design project may need tweaking, as pre-service teachers do not have a space of their own to design. Additionally, this class is mathematically bent since my research focus and background are in mathematics education. Activities could potentially be substituted for different content-specific needs.

How does this course connect to systems thinking? As aforementioned, every classroom can be thought of as a system. The way in which teachers create or foster their classroom environment says a lot about what they believe as a teacher. The purpose is for students enrolled in this class to see the interconnected nature that students, teachers and environments play, not only in their classrooms, but also in society as well. Additionally, the questions that drive this class (*What is the purpose of schools? What is the role of the classroom environment? What are the roles of teachers and students? What is the role of assessment?*) are very much interconnected and impact one another. The aim is that students will better understand the ways in which these questions impact their views on teaching and learning. Lastly, the design of this class is inquisitive in nature. My hope is that teachers will use this as an opportunity to begin questioning their teaching practices and be inspired to envision more connected approaches to teaching and learning.

The readings for this course were selected to promote discussion, interpose theory in class, and to provide some practicality to those working in classrooms with students. *Education and Democracy in the 21st Century* (Noddings, 2013) is a fascinating read that sets the stage for the class. Noddings touches on hot-button topics and flips the script on many constructs in teaching that have become normalized in a culture of high-stakes accountability. Her book challenges teachers to think differently about curriculum and to think about students holistically. In systems thinking, there seems to be an underlying theme of treating humans, the environment, and all living things with respect and dignity. Noddings' work embodies this ideal and provides both theoretical and practical applications in education.

Pedagogy of the Oppressed (Freire, 2000) changed the way I looked at teaching and the world around me. Freire's depictions of relationships and the dialectic between oppressor and oppressed caused me to think deeply about why I do the things I do as a teacher and as a person. This text embodies the ideas in systems thinking, specifically the roles teachers' and students' relationships play in an emancipatory curriculum. Issues of oppression, banking education, generative themes, and empowering students can be heavy topics and can start emotional conversations with veteran and novice teachers.

Wormli's (2006) book on assessment, *Fair Isn't Always Equal*, is much more practical in nature. His work calls into question how and why we assess students. He has some interesting ideas on differentiated assessment that can be great conversation pieces and his work is practical enough for teachers to

implement with some pre-planning. This book connects to systems thinking in that assessment is often subjective and evaluating students’ achievement should exist on a continuum. Furthermore, the author advocates for more holistic grading through portfolios, self-assessment, and mastery grades. This text is focused on grading, but through conversation students will be able to pick up on connections to the themes of the class. Assessment is part of the system that exists in schools, so why not consider rethinking why we do it?

Finally, *The Strategic Teacher* (Silver, Strong, & Perini, 2007) provides research-based strategies for teachers. The hope of using this book is twofold. First, I think it is important for teachers to have strategies they can implement right away. The strategies are rooted in research and are designed to show the type of learner they work best with. These tie back to the ideas of how we teach and who we teach. Secondly, the book is worthy of critique. During one class activity, students are asked to see if any of the strategies encourage oppression, promote banking education, suggest teaching to the standards, or inhibit democracy. This activity isn’t designed to bash the authors’ work, as I consider many of the strategies to be excellent, but rather to question why we do the things we do in classrooms.

The articles chosen for this course are assigned for students to think about classroom design and emergent curriculum. While there is not a text that focuses on this issue, I found it imperative to incorporate this into class. Systemic thinking causes us to look at how we interact with the world around us. In schools, classrooms typically are that word. The articles promote discussion and provide insights on the impact classroom environments have on teaching and learning.

It is important to remember that this course is *not* designed to fix something in education that is broken. Instead the hope of this course syllabus is to provide students with opportunities to begin thinking about the interconnectedness of school cultures, classroom environments, relationships between students, and between students and teachers. The design of this class focuses on four main sections, each of which is explored through a lens that utilizes systems thinking: The purpose of schools, classroom environments, roles of teachers and learners, and evaluation of student learning. Classrooms can be viewed as systems, which are “interconnected [sets] of elements that [are] coherently organized in a way that achieve something” (Meadows, 2008). What is the “something” that schools, teachers, and students are trying to achieve? That is what is explored in this semester-long, face-to-face course. This class meets once per week in a three-hour block. Each week focuses on an aspect of progressive education that is driven by the course texts.

SYLLABUS: EMERGENT MODELS OF INSTRUCTION

READINGS TO ANCHOR OUR CLASS (PLEASE PURCHASE):

- 1) Freire, P. (2000). *Pedagogy of the oppressed*. New York, NY: Continuum.
- 2) Noddings, N. (2013). *Education and democracy in the 21st century*. New York, NY: Teachers College Press.
- 3) Silver, H., Strong, R. & Perini, M. (2007). *The strategic teacher: Selecting the right research-based strategy for every lesson*. Alexandria, VA: Thoughtful Education Press.

- 4) Wormeli, R. (2006). *Fair isn't always equal: Assessment & grading in the differentiated classroom*. Portland, ME: Stenhouse.

ARTICLES TO SUPPORT OUR CLASS (AVAILABLE THROUGH CANVAS):

- 1) Amidon, J. & Trevathan, M. (2016). Supporting mathematics instruction through community. *Mathematics Teaching in the Middle School*, 21(5), 288-294.
- 2) Boaler, J. & Greeno, J.G. (2000). Identity, agency, and knowing in mathematics worlds. In J. Boaler (Ed.), *Multiple perspectives on mathematics teaching and learning*. Westgate, CT: Greenwood Publishing.
- 3) Brodhagen, B.L. (1995). *Democratic schools*. Alexandria, VA: Association for Supervision and Curriculum Development.
- 4) Lorenz, J. (1980). Teacher-student interactions in the mathematics classroom: A review. *For the Learning of Mathematics*, 1(2), 14-19.
- 5) Pelo, A. (1997). "Our school's not fair!": A story about emergent curriculum. *Young Children*. 52(7), 57-61.
- 6) Wells, C. (2012). Fostering community in the mathematics classroom. *Oklahoma Journal of School Mathematics*, 4(1), 15-32.

MATERIALS FOR CLASS:

- Textbooks (of course) and a good highlighter.
- Notebook/Laptop for notes and reflections. Notes in class and reflections after class can help keep thoughts organized as the content is deep and moves quickly.
- Google Cardboard and the Google Cardboard app.

PROJECTS AND ASSIGNMENTS:

PROJECTS

1) Lesson Plans (2)

Two times during the semester students are asked to create two lesson plans of their choice. These can be on any topic within any subject you wish. The only stipulations are that the same design should not be used twice and that at least one strategy from *The Strategic Teacher* must be used. Students can choose 5E, SAGE, PBL, or another lesson design they feel fits their lesson the best. After turning in their lesson plan, there is time for in-class revision and resubmission is required (essentially, lessons are graded twice and on a continuum). Lesson plans should have a rationale that addresses the following:

What is being taught? What is the purpose of the lesson? What is the role of teacher within the lesson? What is the role of the student? How will students be evaluated? And, what is the role of the classroom environment?

2) Classroom Environment Project

You can tell a lot about what a teacher values as soon as you step into their classroom. Classroom walls and layout also say a lot about their teaching methods/models and how they view knowledge. The purpose of this project is for students to take an honest look at every element of their classroom design and justify how it connects to the purpose of their classroom; additionally they will better understand how they teach, how students learn, and how students are assessed. This leads to questions of: who has control in the classroom? How are expectations and/or norms discussed? What is the set-up (knowing that it could change day-to-day)? Where do students see the interconnectedness in their views of teaching, learning, evaluation, and environment? How does the layout lend itself to developing positive relationships with students?

REQUIREMENTS:

1. A before and after photo of the classroom using Google Cardboard.
2. A rationale for the design. Everything in the room (within reason) should be documented and justified. Use 5 to 10 citations from class readings and independent research. If it helps, students may consider answers to some or all the questions posed in the project description and from in-class discussions (6-10 pages).
3. Presentation of student classroom design in a poster session format (10-5 minutes).

3) Curriculum/Unit Project

For this unit project, students will be tasked with fully fleshing out the details of an entire unit in their content area. The requirement for this unit project is that it must be interdisciplinary in nature and needs to show the interconnectedness of school and society. Furthermore, the unit needs to address the questions that ground the class. What is the purpose of this unit? What is the role of the teacher? What is the role of the student/learner? How will students be evaluated? And what role will the classroom environment play in the formation of the unit?

REQUIREMENTS:

1. Students will need to provide a rationale for the unit that incorporates class readings and independent research. At least 5 to 10 citations (more is fine) should be used to ground students' thinking in a theoretical lens. There is no page limit for this, but if the rationale is insufficient, one may be asked to provide more details.
2. An overview of the unit that chronicles what will be learned and highlights activities and lessons. If the unit created is five weeks, provide a detailed description of what students will be doing. One does not need to provide details for each lesson as long as there is a brief description.
3. Three fully-fleshed out lesson plans of choice that exemplify the unit. Any format may be implemented as long as the following questions are addressed: What is being taught? What

is the purpose of the lesson? What is the role of teacher within the lesson? What is the role of the student? How will students be evaluated? And, what is the role of the classroom environment?

4. Presentation of classroom design in a poster session format (10-5 minutes).

4) Final Paper

Using notes from class readings, discussions, weekly reflections, and in-class writings, choose a topic of interest. Students will be tasked with writing a paper that focuses on the interconnectedness of each of the major themes discussed in class. This can be a theoretical paper, a practitioner article, or a think piece. Appropriate citations, sources and use of APA format must be used.

IN-CLASS ASSIGNMENTS

1) In-class writes

Each in-class write is an opportunity to demonstrate what you have learned through assigned readings, discussions, activities, and reflections. These writings provide a way for students to articulate their learning as it pertains to the interconnectedness of the issues discussed in class.

- a. What is the purpose of schools?
- b. What is the role of the classroom environment?
- c. What are the roles of teachers and students?
- d. What is the role of assessment?

2) Discussions

The readings for this class are dense and hopefully cause students to move into a state of disequilibrium. Each of these moments is like a bifurcation point where students are evolving and changing as educators. Discussions are designed to help process what students are reading. Collaborating with peers is encouraged to hear other perspectives. Expectations include students adequately preparing for classroom discussions by reading and reflecting on major themes pertinent to this class. Students are expected to engage in discussion by contributing to conversations and considering perspectives of others.

3) Activities

From time to time, different activities will be implemented in the class. These are designed to help model some of what students are learning in readings and to see the interconnectedness of class themes. Many activities are mathematical in nature and are designed to help students think outside the box when it comes to creating lesson plans and unit project.

4) Reflections

Each week students will be asked to reflect on their time in class. Reflections are open for students to think about their learning and to process what was discussed. If students need more structure, using a framework of *What? So what? Now what?* can be utilized. Students can also address what they learned/did/didn't do, how/why it was meaningful, and what they will do with their learning going forward.

GRADING CRITERIA:

GRADING IS PRIMARILY BASED ON THE FOLLOWING:

- Active engagement in classroom discussions in a respectful and meaningful manner.
- Fully engaged in classroom activities throughout the semester.
- Consistently shares ideas, thinking, and practices.
- Assignments are completed thoroughly and thoughtfully.
- Rubrics for each major project are student-generated and are tailored to fit each project. This allows students (who are current/future educators) to collaboratively determine what is important to assess in their work. As students enrolled in this class are involved in different facets of education, including teaching, it makes sense for them to gain valuable experiences creating systems for evaluation. Students will be responsible for identifying and weighting different components of their rubrics based on importance. The instructor reserves the right to amend students' rubrics, but they must present students with an amendment.

GRADING BREAKDOWN:

- | | |
|--------------------------------|-----|
| 1. In-class Assignments ----- | 15% |
| 2. Projects ----- | 85% |
| a. Lesson Plans (15%) | |
| b. Classroom Environment (25%) | |
| c. Curriculum/Unit (25%) | |
| d. Final Paper (20%) | |

STATEMENTS OF ACCOMODATION:

UNIVERSITY'S REASONABLE ACCESS POLICY:

"Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities."

RELIGIOUS OBSERVANCE:

"It is the policy of the university to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required classwork that may fall on religious holidays."

INCLEMENT WEATHER:

In case of inclement weather that would require cancellation of class, you will be contacted via e-mail at no later than 2 hours prior to the start of class time.

COURSE SCHEDULE:

Week	At Home Reading(s)	Assignment Due
Week 1 <i>Systems</i>		
Week 2 <i>Democracy</i>	Noddings pp. 1-39	
Week 3 <i>Purpose</i>	Noddings pp. 40-82 Pelo, A. (1997)	In-class write 1: What is the purpose of schools?
Week 4 <i>Ecology</i>	Noddings pp. 83-115	Lesson Plan 1 Due
Week 5 <i>Gestalt</i>	Noddings pp. 116-158 Wells, C. (2012)	
Week 6 <i>Oppression</i>	Freire pp. 35-70	Revised Lesson Plan 1 Due
Week 7 <i>Banking</i>	Freire pp. 71-86 Brodhagen, B. (1995)	In-class write 2: What is the role of the classroom environment?
Week 8 <i>Dialogue</i>	Freire pp. 87-124	Classroom Design Project (CDP) Due CDP Presentation (night 1)
Week 9 <i>Action</i>	Freire pp. 125-183	CDP Presentation (night 2)
Week 10 <i>Mastery</i>	Wormeli pp. 1-18 Lorenz, J. (1980)	In-class Write 3: What is the role of teachers and students?
Week 11 <i>Assessment</i>	Wormeli pp. 19-54	Lesson Plan 2 Due
Week 12 <i>Testing</i>	Wormeli pp. 55-88 Amidon, J. (2016)	
Week 13 <i>Grading</i>	Wormeli pp. 89-131	Revised Lesson Plan 2 Due
Week 14 <i>Success</i>	Wormeli pp. 132-151 Boaler, J. & Greeno, J. (2000)	In-class Write 4: What is the role of assessment?
Week 15 <i>Differentiation</i>	Wormeli pp. 152-180	Curriculum/Unit Project Presentation (night 1) Curriculum/Unit Project Due
Week 16 <i>Impact</i>	Wormeli 181-198	Curriculum/Unit Project Presentation (night 2)
Finals Week <i>Connecting</i>		Final Paper Due

WEEKLY OVERVIEW/PLAN:

WEEK 1: SYSTEMS THINKING

Introductions: Doodles

Systems Activities:

Students are asked to define and identify problems in schools.

What problems exist? How are these interconnected to other areas of school and society?

Short Read from Stroh (Jigsaw)

What has to change about your/our thinking? What potential solutions do you see?

Discussion

Quick fixes vs. Long-term solutions. What does this look like?

Overview of class and norms construction

WEEK 2: DEMOCRACY

Discussion of Readings

How do we define choice? What is democracy? What does this look like in schools? In classrooms? What is equality?

Activity: Mandalas

Students create a mandala that represents themselves. Along the way, students will be asked to share their reasoning and justification for the mandala and what mathematics were involved.

Reflection

WEEK 3: PURPOSE

In-class Write 1 (30 minutes)

Debrief of in-class write

Discussion of Readings

What is the purpose of schools? What are liberal arts? What do you think about Noddings' notion of education for home life?

Students work in pods to come up with answers to these questions, then share with the group.

Reflection

WEEK 4: ECOLOGY

Discussion of Readings

What is ecological cosmopolitanism? What would it look like to add vocational education to your school/classroom?

Students work in pods to come up with answers to these questions, then share with the group.

Classroom Design Activity 1

In light of reading Noddings, what would a classroom look and feel like to you? How does democracy show up in your classroom? You can use any medium you like to present your answers.

Short Presentations

Reflection

WEEK 5: GESTALT

Discussion of Readings

What would it look like to construct a curriculum that takes into account the whole student? What problems do you see in today's schools? What are your thoughts on what Noddings had to say about Patriotism, Race and Multiculturalism, and Political Education? *Students will break up into four groups, each of which will take a topic from Chapter 10, discuss, come to a consensus and present.*

Feedback on lesson plans and peer collaboration time.

In small groups, students will work through a Charette protocol (about 20 minutes per student) to fine-tune their lesson plans.

Reflection

WEEK 6: OPPRESSION

Discussion of Readings

Thinking about society, what is oppression? Who are the oppressed? Who are the oppressors? Thinking about schools, what is oppression? Who are the oppressed? Who are the oppressors?

Students will work in small groups to answer these questions both for society and for schools. A whole group discussion will follow.

Feedback on lesson plans and peer collaboration time.

In small groups, students will work through a Charette protocol (about 20 minutes per student) to fine-tune their lesson plans.

Reflection

WEEK 7: BANKING

In-class Write 2 (30 minutes)

Discussion of Readings

What is the banking concept? What does this look like? What are teacher-students and student-teachers? Are you comfortable with this?

*Students break up in to small groups to tackle these challenging questions posed by Freire. Afterwards, we will take time to look critically at our book, *The Strategic Teacher*, to see which strategies promote "banking."*

Classroom design activity 2

In light of reading Freire, what would your classroom look like, feel like? What factors would contribute to its design? What is community and how do you build this into your classroom?

Reflection

WEEK 8: DIALOGUE

Discussion of Readings

What is dialogue? What are generative themes? Is what you are doing now dialogical in nature? How does dialogue fit with Freire's definition of oppression?

This reflection is designed to be done as a whole class, sitting in a circle.

Classroom Design Project Presentations

Reflection

WEEK 9: ACTION

Discussion of Readings

What do you do now after reading Freire? Reflect on your teaching practices, classroom design, and your interactions with students. Are you promoting a system of oppression? Where can you change?

This reflection is designed to be done as a whole class, sitting in a circle.

Classroom Design Project Presentations

Reflection

WEEK 10: MASTERY

In-class Write 3 (30 minutes)

Brief Discussion of Readings

What are mastery grades? What would this look like in your classroom or curriculum design?

Activity: Teaching Mathematics for Social Justice

In light of our Freire reading, students will be asked to work with a partner to identify a social injustice in their community. How can they create a lesson that addresses this issue and incorporates mathematics?

Reflection

WEEK 11: ASSESSMENT

Activity: What do you see?

In this short activity, an object is placed at the center of the room and students sit around it in a circle. Students are asked to identify what they see. Answers may be generic at first, but the longer the activity continues, the more interesting the perspectives become. Afterwards students and instructor discuss the value and subjectivity of our perspectives and how this relates to assessment.

Brief Discussion of Readings

How should students be assessed? What is differentiated assessment? Which of Wormeli's proposed assessments did you tend to prefer?

Feedback on lesson plans and peer collaboration time

In small groups, students will work through an abbreviated tuning protocol (about 30 minutes per student) to fine-tune their lesson plans.

WEEK 12: TESTING

Brief Discussion of Readings

Should teachers test students? What does this look like? Is it healthy? How do you go about creating good test questions?

Activity: Mathematics as Metaphor

In this activity, students will be given the choice to select a mathematical topic of their choice and describe how it is a metaphor for their life and how it connects to the world around them. Students will be asked to type a rationale and create an artistic element.

Feedback on lesson plans and peer collaboration time

In small groups, students will work through an abbreviated tuning protocol (about 30 minutes per student) to fine-tune their lesson plans.

WEEK 13: GRADING

Discussion of Readings

What is a grade? Why do we grade?

Activity 1: What is the role of a student/learner? What is Learning? What is the difference between knowing and understanding?

Students work in pairs to tackle these questions.

Activity 2: Sequences and Series Art Project

Students work individually, but in small groups to complete this short art project that involves Fibonacci Sequences, Koch Snowflakes, and Sierpinski's Triangle. After the project, students and instructor discuss how they would assess this.

WEEK 14: SUCCESS

In-class Write 4 (30 minutes)

Discussion of Readings

What does success look like in your classroom? Zero or Sixty? Late work? Grading scales? What do you think about all of this?

Activity 1: Debate

In this activity students are assigned a side: zero or sixty. Working together, students

argue for why that should be the right way to grade. Discussion to follow.

Activity 2: Mathematics Portfolios

Students will be asked to devise a plan to create and implement a portfolio system for their mathematics department in their school. What is a portfolio? What should go into a portfolio? How do students track their learning? What platform (digital or analog)? And what do students do with it when they are about to graduate?

WEEK 15: DIFFERENTIATION

Brief Discussion of Readings

Although not finished with Wormeli, what does evaluation look like in your class? How do you navigate this in today's culture?

Presentations of Unit Plan

Next Steps

Students work together to figure out how they will share what they have learned with their colleagues, students, and administrators

WEEK 16: IMPACT

Brief Discussion of Readings

What have you learned this semester that will resonate with you for the foreseeable future?

Presentations of Unit Plan

Next Steps

Where do you go from here? Reflection on the semester as a whole group