ADAPTING THE COLORADO LA PEDAGOGY COURSE FOR YOUR INSTITUTION

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Overview of breakout session

- 20 minutes: LA pedagogy courses at CU and SPU
- 30 minutes: Small group discussions
- 25 minutes: Share-out and Q & A
<table>
<thead>
<tr>
<th>TA’s and LA’s</th>
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<tbody>
<tr>
<td><strong>Trad. Teaching Assistant Model</strong></td>
<td><strong>Learning Assistant Model</strong></td>
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<tr>
<td>Designed to improve the status quo</td>
<td>Designed to challenge the status quo</td>
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<tr>
<td>Program takes for granted knowledge about teaching and learning</td>
<td>Program incorporates deep reflection on teaching and learning</td>
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<td>TA experience is intentionally constructed to have a positive impact on the course</td>
<td>LA experience is intentionally constructed to provide transformative experiences for LA’s</td>
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<td>TA model views teaching as a necessary function of a department.</td>
<td>LA model elevates the task of teaching to a complex problem solving endeavor.</td>
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<td>TA’s offer students the necessary assistance to accomplish specified tasks.</td>
<td>LA’s makes quick, responsive decisions about scaffolding student learning on a case by case basis.</td>
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<td>Assures that the challenge of teaching increases as the grade level increases.</td>
<td>Assumes that the challenge of teaching is independent of the grade level</td>
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<tr>
<td>Makes the learning experience of the students easier</td>
<td>Makes the learning experience of the students more challenging (and better supported😊)</td>
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Essential Challenges

**Coherent Pedagogical Strategies** - There is a strong tendency for content facility to override pedagogical expertise. For example, graduate students with mathematical expertise may overrun undergraduates who are more committed to maintaining effective pedagogical strategies. Faculty not familiar with reformed instruction may be compelled toward telling rather than eliciting.

**Professionalism within an authentic learning community** – An effective LA must have the ability and authority to make quick independent decisions about student learning. It can be difficult to maintain a balance between professionalism, accountability and efforts to nurture a safe, less hierarchical, learning community.

**Personnel Resources** – In addition to student time a successful LA program will require intensive faculty time and expertise. This may be especially true during the initiation period for the program. Effective LA’s require curricular training, pedagogical training and mentoring.

**Financial Resources** – An LA program will likely require a greater number of student employment hours. Where does the money to pay LA’s come from? Short term solutions will vary with institutional context.
The LA Experience

**Practice:** Lead Learning Teams  
Facilitate discourse in group-worthy activities

**Content:** Weekly Prep Meeting
- Reflect on past week
- Prepare for next week
- Work through materials
- Anticipate student ideas; plan strategies/questions
- Examine student work

**Pedagogy:** LA Course
- Questioning strategies
- Promoting discussions
- Formative assessment
- Learning theories
- Weekly teaching reflections
Week 1: Discussion Techniques: Univocal/Dialogic Discourse
Week 2: Questioning Strategies and Question Types
Week 3: Mental Models
Week 4: Student Conceptions and Formative Assessment
Week 5: Teaching Videos and Semester Assignment Consulting
Week 6: Student Conceptions in the Content Areas
Week 7: Motivation and Cooperative Learning
Week 8: Argumentation and Metacognition
Week 9: Learning Theory
Week 10: Student Evaluations and Classroom Observations
Week 11: Scientific Practices and the NGSS
Week 12: Multiple Intelligences and Differentiated Instruction
Week 13: Qualities of Effective Teachers
Week 14: Summary/mini-poster session/other
Week 15: POSTERS
LA Program at SPU

- Two parallel programs: one for LAs who support introductory physics sequence, one for LAs who support special courses for pre-service elementary teachers
- Recruit approximately 20 introductory physics LAs each year; 10 pre-service elementary teacher LAs
- Introductory physics LA Program meets three times a week: pedagogy, instructor-LA meetings, prep
How SPU’s pedagogy course is similar to and different from CU’s

**Similarities:**
- SPU’s pedagogy course is similar structurally, in that our LAs submit weekly teaching and reading reflections and complete quarterly final projects.

**Differences:**
- SPU’s pedagogy course is not a survey course; the curriculum starts with theories of learning, and later topics emerge from LAs’ questions and interests.
- SPU’s pedagogy course includes all current LAs, not only those LAs who are teaching for the first time.
(Some of) my (current) LA pedagogy course goals

- To support LAs in becoming responsive to their students’ ideas
  - “Responsive” = Listening to and understanding where their students are coming from, looking for the “beginnings of science” in their students’ thinking, and building on those “beginnings”

- To support LAs in understanding themselves and others as teachers

- To support LAs in meaning-making about physics teaching and learning
Supporting LAs in becoming responsive

1. I teach the pedagogy course responsively.

   **For example:** Emergent syllabus, Fall 2014

   **Week 1:** Introduction
   **Week 2:** Constructivism
   **Week 3:** More constructivism
   **Week 4:** Therapeutic approach to education, in response to question, “How do you figure out what another person is thinking?,” in Week 3
   **Week 5:** Misconceptions and pieces
   **Week 6:** More misconceptions and pieces
   **Week 7:** Student ideas about energy from two different perspectives, in response to question, “Are students’ ideas misconceptions or pieces, inherently, or is this about how an instructor frames student ideas?”
   **Week 8:** Affect (in response to their request to change gears)
   **Week 9:** More affect
   **Week 10:** Discussion of final projects
Supporting LAs in becoming responsive

1. I teach the pedagogy course responsively.

For example: Pedagogy class discourse often centers on LA questions.
Supporting LAs in becoming responsive

2. I give LAs assignments that encourage sense-making about responsive teaching.

For example:

Reading reflection
This week, we’ll read the paper that accompanies the video we watched last week in class. In this paper, Deborah Ball (the teacher in the video) reflects on the dilemmas she faces as she tries to simultaneously honor her students as mathematical thinkers and be responsible to the discipline. Please read Ball’s “With an Eye on the Mathematical Horizon” and respond to the following questions with 3-5 sentences each. (I’ve also included the transcript from the video we watched this week in the content folder if you are interested in reviewing it.)

1. Choose one of the episodes described in the paper.
   a. Using the transcript and discussion of the episode, write down some “seeds” of mathematical ideas or practices that you see.
   b. What do you see Ball doing to extend, refine, or build on these ideas?

...
Supporting LAs in becoming responsive

3. I give LAs teaching reflections that ask them to pay close attention to student thinking.

For example:

... 

3. Describe in detail one student idea that a student had (that you remember well).

   a. What was the context (help me understand what question was being answered, etc.)?
   b. What was the student’s idea?
   c. Why did that idea make sense to that student? And/or why might someone think that thing?
Supporting LAs in becoming responsive

4. We watch video in pedagogy class and practice making meaning of student thinking.

For example:

- Connecting similar obs → offers explanatory power, looking for patterns & making generaliz.
- Asking scientific qns: If gravity pulls you down, how can your hair go up? Opens door to investigating & try to reconcile inconsis.
- Seeking agreement amongst commun & challenge when disagree.
- Looking for something more than “magic.”

- Noticing diff. b/w electricity & magnetism.
- Gravity always pulls things down.
- In to balancing forces -- “how could, if gravity pulls you down, how could hair go up?”
- Rubbing balloon → hair stands up slide down slide → charging attracting
Supporting LAs in understanding themselves and others as teachers

1. I ask LAs to try on educational theories and research-based practices, and then I ask them to reflect on their experiences.

   **For example:** Trying on Rogerian discourse

   ...

4. What might each of these conditions (congruence, unconditional positive regard, empathic understanding) look like in your practice, in our physics courses? (In other words, say how you might implement the recommendations Rogers makes in this chapter, particularly with respect to these three conditions.)
Supporting LAs in understanding themselves and others as teachers

1. I ask LAs to try on educational theories and research-based practices, and then I ask them to reflect on their experiences.

   **For example:** Trying on attending to students’ mechanistic reasoning

   ...

2. What would it look like, in practice, for you to attend to students’ mechanistic reasoning, over and above its textbook/canonical correctness? How do you anticipate that your teaching practice would change?
Supporting LAs in understanding themselves and others as teachers

1. I ask LAs to try on educational theories and research-based practices, and then I ask them to reflect on their experiences.

For example: Using the lens of affect to reflect on teaching

1. Describe one interaction in which you noticed a student “feeling like a scientist.” Be sure to give me lots of details — I want to know what it was like to be there.

...
Supporting LAs in understanding themselves and others as teachers

2. I encourage LAs to articulate their values – often by reflecting on how certain theories or practices “sat” with them – and to reflect on the alignment between their values and their practice.

For example:
See “Theory of Learning Essay” in your packet
Supporting LAs in understanding themselves and others as teachers

3. I encourage LAs to articulate others’ points of view.

For example:

1. Summarize your ‘take’ on our conversation last week.
   a. What is your current position on the answer to the question, “Is it okay to leave students with the wrong answer?”
   b. Summarize the opposite stance. Why is it a compelling argument, even if it’s not yours?
   c. What are open questions that you have about our conversation?

...
I frame all reading reflection questions in terms of how LAs are understanding the readings, rather than in terms of an absolute standard of understanding.

**For example:** Gleaning the central points from *Discovery Learning and Discovery Teaching*

1. In three to five sentences, write down what you think is David’s view of teaching and curriculum, as presented in the article. Include why this view is important to David, and comment on the extent to which it aligns with your own views on teaching and curriculum.
Supporting LAs in meaning-making about physics teaching and learning

2. I take up the language and terminology that LAs invent to describe their experiences. **For example: “non-misunderstandings”**
Supporting LAs in meaning-making about physics teaching and learning

3. I take notes about our conversation on the board, and I invite them to edit my notes in real time.
4. I invite LAs to reflect on the progression of their thinking at key points in the quarter.

For example:

See “synthesis of building on seeds discussion” in your packet.
Small group discussion

- What are your goals for your local LA pedagogy course?
- What kind of content would support and flesh out those goals, including but not limited to the content of the CU Pedagogy Course?
- What kind of structure would reinforce those goals?
- What questions do you have that we can discuss in the Q & A time, or what ideas would you like to bounce off of others?
Questions?
Something you want to share or receive feedback on?