LEARNING TO DO THE WORK OF TEACHING: PRACTICE-BASED TEACHER EDUCATION

Deborah Loewenberg Ball and Amber T. Willis
May 2, 2019 • CSU Sacramento College of Education
WHY IS TEACHER EDUCATION SO IMPORTANT?

1. What is the responsibility of professional education for teaching?
2. What is the “work of teaching”?
3. What is involved in “practice-based” teacher education?
4. What are the challenges in improving teachers’ preparation?
TEACHING AFFECTS THE DEVELOPMENT OF HUMAN BEINGS, AND SHAPES OUR COUNTRY

- Large scale (4 million teachers in U.S.)
- Teaching is the only occupation that works with every person in the country
- School profoundly shapes people’s opportunities and futures
WHAT SHOULD TEACHER EDUCATION DO?

- Prepare teachers with the theory and knowledge of the profession
- Prepare teachers to be lifelong learners
- Prepare teachers for the responsibilities they will have from the first day, such as:
  - Explaining so that students can understand
  - Disrupting patterns that reproduce racism and oppression
  - Establishing a positive learning environment
  - Designing interesting and useful lessons
  - Assessing students’ progress
  - Working with families and communities
How do other professions and occupations think about the preparation of novices?
WHAT DO THESE PROFESSIONS HAVE IN COMMON?

1. Identified the most important skills, knowledge, and requirements necessary for the practice
2. Developed ways of teaching novices to learn the practice
3. Required each person to pass performance assessments before they are “licensed” to practice

This is not true for teaching.
WHAT DO WE KNOW ABOUT TEACHING?

1. Teaching is powerful.
TEACHING EFFECTS

COMPOUND EFFECTS

- Teacher sequence can affect student achievement by up to 50 percentile points after only three years.
- Low achieving students have the most to gain from an effective teacher.
- The top quintile of teachers facilitate appropriate to excellent gains for students of all achievement levels.

Sanders & Rivers (1996)

VARIATION IN TEACHER QUALITY

- The most important in-school factor affecting student learning is the teacher.
- There is wide variation in effectiveness among teachers.

Wright, Horn, & Sanders (1997)

LONG-TERM IMPACT

- Children who do not read proficiently by the end of third grade are four times more likely to drop out.
- Workers with a bachelor’s degree or more earned almost twice as much as workers with only a high school diploma.

Fiester (2013)

DISCIPLINE

- Latinx, Black, and Native/Indigenous students are punished more often and more harshly than other groups.
- Black girls are disproportionately subjected to exclusionary discipline practices.
- Students with disabilities are punished more often and more harshly than other groups.
- Discipline disparities for Black students, boys, and students with disabilities are observed as early as pre-K.

Gregory, Skiba, & Noguera (2010)
Skiba, Horner, Chung, Rausch, May, & Tobin (2011)
Blake, Butler, Lewis, & Daresbourg (2011)
Morris (2016)
Noltemeyer & Moloughlin (2010)

10 May 2, 2019
TEACHING EFFECTS

COMPOUND EFFECTS

- Teacher sequence can affect student achievement by up to 50 percentile points after only three years.
- Low achieving students have the most to gain from an effective teacher.
- The top quintile of teachers facilitate appropriate to excellent gains for students of all achievement levels.

Sanders & Rivers (1996)

VARIATION IN TEACHER QUALITY

- The most important in-school factor affecting student learning is the teacher.
- There is wide variation in effectiveness among teachers.

Wright, Horn, & Sanders (1997)

LONG-TERM IMPACT

- Children who do not read proficiently by the end of third grade are four times more likely to drop out.
- Workers with a bachelor’s degree or more earned almost twice as much as workers with only a high school diploma.

Fiester (2013)

DISCIPLINE

- Latinx, Black, and Native/Indigenous students are punished more often and more harshly than other groups.
- Black girls are disproportionately subjected to exclusionary discipline practices.
- Students with disabilities are punished more often and more harshly than other groups.
- Discipline disparities for Black students, boys, and students with disabilities are observed as early as pre-K.

Gregory, Skiba, & Noguera (2010)
Skiba, Horner, Chung, Rausch, May, & Tobin (2011)
Blake, Butler, Lewis, & Daresbourg (2011)
Morris (2016)
Noltemeyer & Moloughlin (2010)
TEACHING EFFECTS

COMPOUND EFFECTS
- Teacher sequence can affect student achievement by up to 50 percentile points after only three years.
- Low achieving students have the most to gain from an effective teacher.
- The top quintile of teachers facilitate appropriate to excellent gains for students of all achievement levels.

 Sanders & Rivers (1996)

VARIATION IN TEACHER QUALITY
- The most important in-school factor affecting student learning is the teacher.
- There is wide variation in effectiveness among teachers.

 Wright, Horn, & Sanders (1997)

DISCIPLINE
- Latinx, Black, and Native/Indigenous students are punished more often and more harshly than other groups.
- Black girls are disproportionately subjected to exclusionary discipline practices.
- Students with disabilities are punished more often and more harshly than other groups.
- Discipline disparities for Black students, boys, and students with disabilities are observed as early as pre-K.

 Gregory, Skiba, & Noguera (2010)
 Skiba, Horner, Chung, Rausch, May, & Tobin (2011)
 Blake, Butler, Lewis, & Darenbourg (2011)
 Morris (2016)
 Noltemeyer & Moloughlin (2010)

LONG-TERM IMPACT
- Children who do not read proficiently by the end of third grade are four times more likely to drop out.
- Workers with a bachelor’s degree or more earned almost twice as much as workers with only a high school diploma.

 Fiester (2013)
WHAT MORE DO WE KNOW ABOUT TEACHING?

2. Teaching involves enormous discretion.

3. How that discretion is exercised can either reproduce oppression and inequity—or it can disrupt it.
What number does the orange arrow point to? Explain how you figured it out.
ANIYAH AND TONI

ANIYAH

TONI
This video and additional supporting materials are available online here.
<table>
<thead>
<tr>
<th>Speaker</th>
<th>Talk</th>
<th>Disciplinary space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Who would like to try to explain what you think the answer is? And show us your reasoning by coming up to the board? What would you like to come up to the board and try to tell? And you know, it might not be right. That's okay because we're learning something new. I'd like someone to come up and sort of be the teacher and explain how you are thinking about it. Who'd like to try that this morning?</td>
<td>1. Deciding when to open up group discussion 2. Deciding what to do to open discussion 3. Framing the expectation for presenting 4. Framing what it means to &quot;come to the board&quot; strategies</td>
</tr>
<tr>
<td>Teacher</td>
<td>Okay, Angie?</td>
<td>5. Selecting a student to present</td>
</tr>
<tr>
<td>Learn other children</td>
<td>Playing with hair</td>
<td>6. Inviting whether to comment</td>
</tr>
<tr>
<td>Teacher</td>
<td>When someone's presenting at the board, what should you be doing?</td>
<td>7. Inviting whether to comment</td>
</tr>
<tr>
<td>Students in class</td>
<td>Looking at them.</td>
<td>8. Setting rules for what to do while student is presenting</td>
</tr>
<tr>
<td>Teacher</td>
<td>Looking at that person</td>
<td>9. Setting task for the other students</td>
</tr>
<tr>
<td>Angie</td>
<td>You want me to write it?</td>
<td>10. Setting task for the other students</td>
</tr>
<tr>
<td>Teacher</td>
<td>You're trying to mark what you think the number is and explain how you figured it out.</td>
<td>11. Clarifying task</td>
</tr>
<tr>
<td>Teacher</td>
<td>Listen closely and see what you think about her reasoning and her answer. (Angie writes 1 in the orange box.)</td>
<td>12. Setting task for the other students</td>
</tr>
<tr>
<td>Angie</td>
<td>I put one seventh because there's...</td>
<td>13. Responding to students</td>
</tr>
<tr>
<td>Ian</td>
<td>Still the way one seventh?</td>
<td>14. Responding to students</td>
</tr>
<tr>
<td>Angie</td>
<td>(Turns to Todd.) Todd, (continues to close) Because there's seven equal parts, lets one, two, three, four, five, six, and seven. (Gives her fingers to count the parts of the number one). Before you agree or disagree, I want you to ask questions if there's something you don't understand about what she did. No agreeing and disagreeing. Just, all you can do right now is ask Angie questions. Who has a question for her?</td>
<td>15. Setting task for responding to student explanation</td>
</tr>
<tr>
<td>Teacher</td>
<td>Okay. Todd, what's your question for her?</td>
<td>16. Resisting student to speak</td>
</tr>
<tr>
<td>Learn other children</td>
<td>You did not!</td>
<td>17. Resisting student to speak</td>
</tr>
<tr>
<td>Ian</td>
<td>Why did? (laugh at another student who says something to her from across the room)</td>
<td>18. Responding to student laughing</td>
</tr>
<tr>
<td>Teacher</td>
<td>Go ahead, it's your turn.</td>
<td>19. Responding to student laughing</td>
</tr>
<tr>
<td>Ian</td>
<td>Why did you pick one-seventh?</td>
<td>20. Responding to student</td>
</tr>
<tr>
<td>Angie</td>
<td>You did not!</td>
<td>21. Responding to student</td>
</tr>
<tr>
<td>Teacher</td>
<td>Let's listen to her answer now. That was a very good question.</td>
<td>22. Setting task for class</td>
</tr>
</tbody>
</table>

This work is licensed under a Creative Commons Attribution-Noncommercial-NoDerivatives 4.0 International License: https://creativecommons.org/licenses/by-nc-nd/4.0/
© 2019 Deborah Loewenberg Ball • School of Education • University of Michigan • Ann Arbor, MI 48109 • dball@umich.edu
TEACHING IS DENSE WITH “DISCRETIONARY SPACES”
VIDEO: RE-VIEW AND RE-LISTEN TO THESE DISCRETIONARY SPACES

These videos and additional supporting materials are available online [here](#).
IN THIS MOMENT, A MOVE CAN REPRODUCE PATTERNS OF MARGINALIZATION OF BLACK GIRLS AND OF REDUCTIONIST VIEWS OF MATH

NORMALIZED NEXT MOVES

- “Nice job, Aniyah. Can someone help Aniyah out and show what we call the whole on the number line?”
- “Thumbs up if you agree with Aniyah; thumbs down if you disagree.”
- “What do others think?”

RESULTS

- Aniyah’s answer is signaled to be incorrect and she is positioned as not having contributed to the work.
- Aniyah’s solution is “voted” on by her classmates.
- Aniyah is excluded and her mathematical point is sidelined.
IN THIS MOMENT, TOO

NORMALIZED NEXT MOVES

- “Toni, when you’re ready to participate appropriately by not playing with your hair and laughing, and have a question to ask, I will come back to you.”

- “You need to be a better listener, Toni. Aniyah already explained why she picked one-seventh. Who else has a real question for Aniyah?”

- “What do others think?”

RESULTS

- Toni is publicly excluded from the discussion.

- Toni is judged to not be listening, her question is judged as not good, and she is excluded from the discussion.

- Toni is excluded and her mathematical point is sidelined.

24 May 2, 2019
WHAT REGULARLY FILLS THE DISCRETIONARY SPACES IN TEACHING?

1. Teachers’ experiences in a society filled with racism and oppression.
2. Normalized practices in schools that institutionalize dominant values and habits.

Lortie (1975), Banks, Grant and Koskela, Moll
Anyon (1981), Heath, Martin, Tuck
Ball (2018)
WHAT REGULARLY FILLS THE DISCRETIONARY SPACES IN TEACHING?

1. Teachers’ experiences in a society filled with racism and oppression.
2. Normalized practices in schools that institutionalize dominant values and habits.

Professional education and teaching experience often teach these.

Professional education does not effectively intervene on these.

Lortie (1975), Banks, Grant and Koskela, Moll
Anyon (1981), Heath, Martin, Tuck
Ball (2018)
WHAT DOES IT TAKE TO DISRUPT THESE PATTERNS?

- Seeing Aniyah’s solution and Toni’s question as mathematically sophisticated and key to the class’s work
- Taking as axiomatic the brilliance of Black girls, and thus Aniyah and Toni
- . . . And having something different to do

(Gholson & Martin, 2014; Joseph, Viesca, Bianco, 2016; Martin, 2012; Leonard & Martin, 2013)
SO WHAT ABOUT TEACHER EDUCATION?

4. It’s necessary. Managing the personal and the professional in practice is not natural. It is most likely to reproduce oppression.

5. Teacher education can be a force to shape the just exercise of professional discretion—or it can reproduce normalized practice.
HOW DO WE GET THERE?

6. The work to make teacher education a force for justice is collective work of our profession, across contexts and settings. This, too, is not the norm:

- *What* to work on and support beginning teachers to learn and to learn to DO
- *How*: Our own pedagogy – the teaching of teaching
WHAT IS THE “WORK OF TEACHING”?
A GLIMPSE OF THE “WORK OF TEACHING”: CHOOSING A TASK FOR A LEARNING GOAL

What part of the rectangle below is shaded gray?

What part of the rectangle below is shaded gray?
A GLIMPSE OF THE “WORK OF TEACHING”: CHOOSING A TASK FOR A LEARNING GOAL

1. Understanding the mathematics
2. Understanding the mathematical point of the task
3. Understanding common patterns of student thinking about these ideas

What part of the rectangle below is shaded gray?

What part of the rectangle below is shaded gray?
VIDEO: A GLIMPSE OF THE “WORK OF TEACHING”

Antar: I think it's not a fraction because all the parts are not equally the same.
What does the video show about the work of teaching, both visible and invisible?
TEACHING: INVISIBLE AND VISIBLE

INVISIBLE WORK

- Selecting a specific student to present and to position as competent
- Working to disrupt patterns that marginalize groups of students
- Trusting the children to think, be engaged, try to learn
- Caring for students
- Making choices about how to interpret students’ behavior and answers

VISIBLE WORK

- Supporting students to present
- Honoring different students’ ideas
- Focusing on concepts and reasoning
- Expecting students to listen to one another
- Highlighting particular children displaying specific forms of competence
TEACHING: INVISIBLE AND VISIBLE

INVISIBLE WORK
- Selecting a specific student to present and to position as competent
- Working to disrupt patterns that marginalize groups of students
- Trusting the children to think, be engaged, try to learn
- Caring for students
- Making choices about how to interpret students' behavior and answers

VISIBLE WORK
- Supporting students to present
- Honoring different students' ideas
- Focusing on concepts and reasoning
- Expecting students to listen to one another
- Highlighting particular children displaying specific forms of competence
- Explaining and modeling content
- Leading a group discussion
- Implementing norms and routines
- Constructing positive relationships with children

Eliciting and interpreting student thinking

36 May 2, 2019
WHAT IS INVOLVED IN “PRACTICE-BASED” TEACHER EDUCATION?
ORIENTING TEACHER EDUCATION TO FOCUS ON TEACHING PRACTICE

- This is not simply about **how much time** teachers spend in fieldwork or in schools.
- It is about whether their program focuses on preparing teachers for the work of teaching:
  1. What is taught
  2. How it is taught
  3. How it is assessed
FOCUSING THE TEACHER EDUCATION CURRICULUM TO PREPARE BEGINNING TEACHERS FOR THE WORK OF TEACHING
COMPONENTS OF THE PRACTICE-BASED TEACHER EDUCATION CURRICULUM

- Knowing content for teaching others
- Understanding structural oppression and having a commitment to and skills for advancing justice and disrupting injustice
- Enacting high-leverage practices of teaching
EXAMPLES OF HIGH-LEVERAGE PRACTICES

- Leading a group discussion
- Explaining and modeling content, practices, and strategies
- Eliciting and interpreting individual students’ thinking
- Diagnosing particular common patterns of student thinking and development
- Implementing norms and routines for classroom discourse and work
- Learning about students’ cultural, religious, family, intellectual, and personal experiences and resources for use in instruction
- Setting up and managing small group work
- Building respectful relationships with students
- Checking student understanding during and at the conclusion of lessons
- Providing oral and written feedback to students
- Setting long- and short-term learning goals for students
- Talking about a student with parents or caregivers

1TeachingWorks and the University of Michigan School of Education
Listening to and interpreting

Formulating questions designed to elicit and probe student thinking

Posing questions

Children

Developing additional questions

Making sense of what students know and can do

May 2, 2019
Children

Formulating questions designed to elicit and probe student thinking

• Developing general, open ended questions
• Choosing a focus
• Developing hypotheses to test

Listening to and interpreting

Posing questions

Developing additional questions

Making sense of what students know and can do

May 2, 2019
Children

Formulating questions designed to elicit and probe student thinking

Listening to and interpreting

Posing questions

Developing additional questions

Making sense of what students know and can do

• Delivering questions in ways that are sensitive to how students might hear and respond to the question
• Giving students time to speak
• Paying close attention to what the student says
• Noticing features of the student’s thinking

Formulating questions designed to elicit and probe student thinking

Listening to and interpreting

Children

Posing questions

Developing additional questions

Making sense of what students know and can do
Listening to and interpreting

Formulating questions designed to elicit and probe student thinking

Posing questions

Children

Developing additional questions

Making sense of what students know and can do

- Identifying elements that the student has said little about
- Identifying interesting aspects
- Focusing on a strategic aspect of student thinking
- Using this information to formulate questions

Children

- Identifying elements that the student has said little about
- Identifying interesting aspects
- Focusing on a strategic aspect of student thinking
- Using this information to formulate questions

Formulating questions designed to elicit and probe student thinking
Listening to and interpreting

- Identifying evidence of student understanding

Children

Formulating questions designed to elicit and probe student thinking

Posing questions

Developing additional questions

Making sense of what students know and can do

47 May 2, 2019
TEACHER EDUCATION PEDAGOGIES

Specific methods and approaches for teaching high-leverage practices and content knowledge for teaching:

- Rehearsals
- Simulated student interactions
- Modeling
- Using video to practice (not just analyze)

1 Grossman, McDonald, Kazemi, Franke, Lampert
VIDEO: LOOKING CLOSELY AT ELICITING AND INTERPRETING STUDENT THINKING

Teacher: What part of the fraction is unshaded?
Student: Two-thirds of the fraction is unshaded.
LEARNING TO ELICIT AND INTERPRET
STUDENT THINKING

Two friends equally share \( \frac{3}{8} \) of a ball of yarn. How much of the yarn does each friend get?

\[
\frac{2}{1} \times \frac{3}{8} = \frac{6}{8} = 5 \frac{1}{3} \text{ fraction}
\]

\[
\frac{16}{8} \div \frac{3}{8} = 5 \frac{1}{3} \text{ multiplying}
\]

Division is just like flipping the second fraction and then multiplying.
SIMULATED STUDENT INTERACTION

To practice and get close coaching and feedback on:

- eliciting student thinking
- probing student understanding
VIDEO: ASSESSING BEGINNING TEACHERS LEARNING TO ELICIT AND INTERPRET STUDENT THINKING

@practice (Meghan Shaugnessy and Tim Boerst)

52 May 2, 2019
### Simulation

**Initial elicitation**
- Asks the student what he or she did or thought about when solving the problem. (The question must be focused on student thinking and/or process for solving the problem and must not assume information about the student's thinking that should be elicited)

**Follow-ups to the initial elicitation (these do not need to be in this order)**
- Elicits where the 6 comes from (2 tens + 3 tens + 1 ten)
- Elicits where the 23 comes from (9 + 6 + 8)
- Elicits the sequence of adding tens first and then adding ones
- Elicits a description of the combining/regrouping

**Probes the student's understanding of the value of components of the 623**
- 6 is 6 tens
- 23 is 23 ones
- 2 is 20 ones
- 3 is 3 ones

**Probes the student's understanding of why combining is necessary** (e.g., because the 6 and the 2 are both tens)

**Asks the student to write**

**Attends to student's ideas in follow-up questions**
- Asks questions tied to specific things that the student did (i.e., questions about the student's writing)
  - Asks specific questions about the original written work (e.g., "Where did the 8 come from?"
  - Asks the student describe/explain aloud what he or she writes down during the simulation

*Comments:*
- Posed an additional task for the student to solve
  - Task is useful for confirming the student's complete process (i.e., posed an addition task that involves combining)
  - Implementation of task elicits student thinking

*Task(s) posed:*

*Fills in* student thinking at least once (e.g., a contribution that provides information that should have been elicited or probed for)
- "Fills in" parts of the process
- "Fills in" parts of the student's understanding

---

@practice (Meghan Shaugnessy and Tim Boerst)
VIDEO: AT END OF PROGRAM

Intern: So, when you started to do this problem, what did you do first?

@practice (Meghan Shaugnessy and Tim Boerst)
WHAT IS THE PROBLEM FOR TEACHER EDUCATION?
THE PURPOSE OF HAVING SOME SHARED EXPERIENCES WITH TEACHING TODAY

1. To clarify and name what the *work of teaching* involves

2. To identify and specify the tasks that beginning teachers must be able to do

3. To challenge and change common beliefs about learning to teach, and teacher education
COMMON BELIEFS ABOUT TEACHING

- Teaching is not difficult.
- Teaching is best learned through experience.
- Teaching depends on creativity and improvisation.
- Teaching is a natural talent—some people are just born teachers.
SOBERING REALITIES ABOUT TEACHING

- Teaching is complex work that requires a special blend of knowledge and skill.
- Teaching involves substantial skill, reasoning, and technique.

Therefore:

- Relying on individual creativity, experience on the job, or innate talent puts our most vulnerable groups at risk.
CHALLENGES TO DEVELOPING PRACTICE-BASED TEACHER EDUCATION

- Lack of common language and resistance to specification of teaching ("too technical")
- "Academic freedom" and complexity of higher education (professors and supervisors are independent)
- Connections to schools and developing partnerships for field placements
“Teaching is a revolutionary act.”

Dr. Marcelle Haddix

Reaching for the possibilities and the power must be our collective work.
¡GRACIAS!

dball@umich.edu

Slides will be posted.
deborahloewenbergball.com
(Google Deborah Ball)
CREDITS

Image on slide 6:
“Haircut” by Flickr user JasonUnbound
Licensed under a Creative Commons Attribution-NonCommercial 2.0 Generic License
https://creativecommons.org/licenses/by-nc/2.0/

Image on slide 6:
“AOC Pipefitters” by Architect of the Capitol
Used without restriction as a work of the U.S. Government
https://www.usa.gov/government-works

Image on slide 6:
“Best Shoes for Nurses” by Flickr user Esther Max
Licensed under a Creative Commons Attribution 2.0 Generic License
https://creativecommons.org/licenses/by/2.0/
CREDITS

Image on slide 6:
“almost forbidden territory....” by Flickr user Esthr
Licensed under a Creative Commons Attribution-NonCommercial 2.0 Generic License
https://creativecommons.org/licenses/by-nc/2.0/

Image on slide 6:
“Marielle Carving Francinaldo's Ear” by Flickr user ReSurge International
Licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 2.0 Generic License
https://creativecommons.org/licenses/by-nc-nd/2.0/

Image on slide 60:
Photo of Marcelle Haddix. Retrieved from
https://soe.syr.edu/about/directory/marcelle-haddix/