Coherence and Assignments in Teacher Education (CATE) study

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Indicators of Quality in Teacher Education: Examining opportunities to enact practice

CATE project
Examining teacher education in different contexts

• Policymakers around the world embraced the importance of teaching
  – Concerns about preparing and sustaining teachers remain

• However, researchers have rarely looked into the ‘black box’ of teacher preparation
  – Classroom practices of teacher educators

• Enduring challenge of linking theory and practice
  – Emerging research suggests that providing teachers opportunities to learn that are grounded in practice is a key feature
Enduring Challenge of Linking Theory and Practice

- Enduring challenge of fragmentation in teacher education
  
  - We know linking theory and practice is critical; yet programs around the world struggle to bridge the two

- Carnegie Study findings have underscored the point that TE offers few opportunities to enact practice in coursework

  - We are particularly interested in the ways in which enactment of practice might occur at the university
The Cate study aims to...

- **Illuminate features of teacher preparation that link theory and practice; specifically, examining opportunities to enact practice**
  - By analyzing program features; classroom practices in methods courses; interviews/surveys and specific assignment practices within teacher education
- **Develop a conceptual framework / set of indicators for analyzing how TE programs link theory and practice**
Conceptual framework

- **Vision** - A shared vision of teaching and learning
- **Coherence** - Consistent messages about good teaching across courses; student teaching sites; coursework, reading lists etc.
- **Theory linked to practice** - Opportunities to *enact teaching*; coursework intimately connected with clinical work
Study Design
**Research Questions and Data Sources**

- To what degree are the programs designed around a common vision of good teaching and learning?
- What program features (such as curriculum, syllabi, assignments) contribute to program coherence?
- In what ways does each program address the relationship between theory and classroom practice?
- In what ways do particular program assignments support new teachers to see the connections between pedagogical/subject matter theories and actual teaching practice?

- Program documents
  - syllabi, reading lists, main assignments
- Classroom observation
  - 3 weeks in each course
- Copies of student work
- Interviews with pair of students
- Interviews with faculty
- Surveys of students
- Interview with program leaders
Participants

- 2 programs each in Norway, Finland, and U.S.; 1 program each in Chile, Cuba and Sweden
  - University-based programs
    - Programs vary (5 year vs. 1 year )
  - Secondary teacher preparation (grades 8-13)
    - In U.S. chose programs in California to address size and political context
- Chose contexts that have made investments in TE, but vary in important ways
  - Norway in midst of major reform; U.S. and Finland exploring new policy approaches but not substantial change
  - Cuba and Chile undergoing some developments
  - Level of student performance on international tests differs
  - Fruitful comparisons
How did we define and examine opportunities to enact practice?
Examining ways of linking theory and practice in teacher education

Looking into ways of linking theory and practice in terms of:

- Linkage to practice: opportunities to enact practice
- Linkage to theory: opportunities to read theory
The opportunities to enact practice we looked for were....

1. Plan for teaching & teacher role;
2. Enact teaching & teacher role;
3. Analyze student learning;
4. Examine Teaching Materials, Artifacts, Resources;
5. Talk about field placement/student teaching Experience;
6. Take pupil’s perspective
7. See models of teaching
The opportunities to read theory we looked for included....

8. Learn about “grand theory”
9. Learn about applied research
10. Learn about disciplinary/subject matter theory
11. Learn about research methods
The opportunities to experience coherence we looked for included...

12. Link theory and practice

13. Connect to program vision

14. Connect to other coursework

15. Connect to National, state, or local context or curriculum
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Opportunities to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linkage to</td>
<td>1. plan for teaching &amp; teacher role(s)</td>
</tr>
<tr>
<td>practice</td>
<td>2. enact teaching &amp; teacher role(s)</td>
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<tr>
<td></td>
<td>3. analyze pupil learning</td>
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<td></td>
<td>4. include teaching materials, artifacts, and resources</td>
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<td></td>
<td>5. talk about field placement/student teaching experiences</td>
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<td>6. take pupil’s perspective.</td>
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<td>7. see models of teaching</td>
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<tr>
<td>Linkage to</td>
<td>8. learn about grand theory</td>
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<tr>
<td>theory</td>
<td>9. learn about applied research</td>
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<td></td>
<td>10. learn about disciplinary/subject matter theory</td>
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<td></td>
<td>11. learn about research methods</td>
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<tr>
<td>Experience</td>
<td>12. link theory and practice</td>
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<tr>
<td>Coherence</td>
<td>13. see reference to program vision</td>
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<td></td>
<td>14. see connection to other coursework</td>
</tr>
<tr>
<td></td>
<td>15. see connection to national, state or local context or curriculum</td>
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</tbody>
</table>
We used these dimensions to...

- Develop observation rubrics
- Develop survey instruments
- Develop interview protocols
Illustrative tentative findings
Tentative findings: Program level

• Great similarities on a structural level
• Differences when it comes to:
  – The amount and organisation of field placement
  – Admission requirements
  – Courses required
  – Main assignments
  – Reading lists

• *Nordic versus a Californian pattern?*
Tentative findings: Student Teacher Education Survey

Survey consisted of 34 questions grouped into:

- Course content (17 questions)
- Program (vision) (5 questions)
- Coherence between the different elements in the program (12 questions)

Answering options for the students:

1. None
2. Touched on briefly
3. Explored in some depth
4. Extensive opportunity
# Student Survey

Thinking back over this particular course, how much opportunity did you have to do the following?

<table>
<thead>
<tr>
<th></th>
<th>Plan for teaching (develop unit plans, or lesson plans, develop instructional materials)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Practice or rehearse something you planned to do in your own classroom, in this course (i.e. role play or practice an introduction to a lesson you plan to teach; practice giving feedback to a student)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c.</td>
<td>Examine samples of real student work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d.</td>
<td>Examine samples of your own students’ work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e.</td>
<td>Examine actual teaching materials (sample curriculum, units, lessons, from real teachers)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>f.</td>
<td>Examine the national curriculum/standards/guidelines</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>g.</td>
<td>Examine transcripts of real classroom talk or student discussions in schools</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>h.</td>
<td>Watch or analyze videos of classroom teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>University</td>
<td>Mathematics</td>
<td>Language Art</td>
<td>Total</td>
<td></td>
<td></td>
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<tr>
<td>------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>University of Helsinki</td>
<td>18</td>
<td>20</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Oslo</td>
<td>9</td>
<td>19</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NTNU, Trondheim</td>
<td>9</td>
<td>10</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stanford University</td>
<td>14</td>
<td>15</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Santa Barbara</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISP Jose Enrique Varona</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic students: 85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Californian/Cub students: 44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60</td>
<td>69</td>
<td>129</td>
<td></td>
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</tr>
</tbody>
</table>
Preliminary analysis of survey data: Highest mean value

- Curriculum/Standards
- Plan for Teaching

followed by:
- Modeling
- Pupils perspective
- Teaching Materials
- Talk about Field placement
- Enact teaching
Preliminary Analysis of Survey Data: Lowest Mean Value

- Analyze student learning
- Analyze Classroom Talk
- Watch Analyze Videos
Nordic vs. California – differences in profiles

- Grouped the nordic universities and the Californian + Cuba universities together
- Sample
  - about 80 + students in the Nordic group
  - about 50 students in Californian group
Nordic vs. California – differences in profiles

The graph compares the profiles of Nordic and California + Cuba. The x-axis represents different categories (1A to 1Q), while the y-axis ranges from 1 to 4. The red line represents California + Cuba, and the blue line represents NORDIC. The differences in profiles are evident across various categories, with fluctuations indicating varying degrees of comparison.
# Tentative findings - Observation data

<table>
<thead>
<tr>
<th>Program</th>
<th>Period of observation</th>
<th>Weeks of observation</th>
<th>Hours of observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Oslo</td>
<td>November 2012 and February 2013</td>
<td>3 2</td>
<td>6 4,5</td>
</tr>
<tr>
<td>Norwegian University of Science and Technology</td>
<td>January 2013</td>
<td>2 2</td>
<td>4,5 4,5</td>
</tr>
<tr>
<td>Stanford University</td>
<td>January 2013</td>
<td>3 3</td>
<td>8,5 9</td>
</tr>
<tr>
<td>University of California Santa Barbara</td>
<td>October-December 2012</td>
<td>3 3</td>
<td>15,5 13,5</td>
</tr>
<tr>
<td>University of Helsinki</td>
<td>September – November 2012</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Aabo Akademi University</td>
<td>March - April 2013</td>
<td>3 3</td>
<td>6 8</td>
</tr>
</tbody>
</table>
Methods and analysis

- Data collected by trained research assistants at each site
- Data coded by me, using HyperRESEARCH, version 3.5
  - Coding for each of the dimensions in our analytical framework
  - Scoring the extensiveness of the dimensions in each observation
  - Will double code 20%
Initial findings:
Extensiveness of enactment of teaching across programs

Dimensions of OTP in Teacher Education:
1. Plan for teaching
2. Enact teaching
3. Analyze pupil learning
4. Inclusion of teaching materials
5. Talk about field placement
6. Take pupils' perspective
7. See models of teaching
15. Connection to national, state, local curriculum
Initial findings:
Extensiveness of OTP in the methods courses of Language Arts and Mathematics

Dimensions of OTP in Teacher Education

- 1. Plan for teaching
- 2. Enact teaching
- 3. Analyze pupil learning
- 4. Inclusion of teaching materials
- 5. Talk about field placement
- 6. Take pupils' perspective
- 7. See models of teaching
- 15. Connection to national, state, local curriculum

Total, Language Arts
Total, Mathematics
Initial findings:
Extensiveness of enactment of teaching across programs

| Extensive | - Inclusion of artifacts  
|           | - Take the pupils’ perspective  
|           | - Link to national/state/local curricula  
| Some      | - Talk about field placement  
|           | - Plan for teaching  
| Few       | - Enactment  
|           | - Analyze pupil learning  
|           | - Modeling |
Talk about field placement

- Extensiveness of OTP
  - Nordic programs: 1.5
  - Californian programs: 3

Department of Teacher Education and School Research
University of Oslo
Initial findings:
Extensiveness of enactment of teaching in individual programs
1. Plan for teaching  
2. Enact teaching  
3. Analyze pupil learning  
4. Inclusion of teaching materials  
5. Talk about field placement  
6. Take pupils' perspective  
7. See models of teaching  
15. Connection to national, state, local curriculum

Dimensions of OTP in Teacher Education

Extensiveness of OTP

Total, Language Arts
Total, Mathematics
1. Plan for teaching
2. Enact teaching
3. Analyze pupil learning
4. Inclusion of teaching materials
5. Talk about field placement
6. Take pupils' perspective
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15. Connection to national, state, local curriculum

Dimensions of OTP in Teacher Education

UCSB

Extensiveness of OTP

Total Language Arts
Total Mathematics
University of Oslo

Dimensions of OTP in Teacher Education

- Plan for teaching
- Enact teaching
- Analyze pupil learning
- Inclusion of teaching materials
- Talk about field placement
- Take pupils' perspective
- See models of teaching
- Connection to national, state, local curriculum

Extensiveness of OTP

- Total, Language Arts
- Total, Mathematics
Dimensions of OTP in Teacher Education

1. Plan for teaching
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Extensiveness of OTP

- Total Language Arts
- Total Mathematics
Dimension 2: Enact teaching
Dimension 3: Analyze pupil learning
Dimension 4: Inclusion of artifacts
Dimension 6: Taking pupils' perspective
Dimension 7: Modeling
<table>
<thead>
<tr>
<th></th>
<th>Observation data</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extensive</strong></td>
<td><strong>Teaching Materials</strong>&lt;br&gt;Pupils’ perspective&lt;br&gt;Curriculum/Standards</td>
<td><strong>Curriculum/Standards</strong>&lt;br&gt;Plan for Teaching</td>
</tr>
<tr>
<td><strong>Some</strong></td>
<td><strong>Talk about F. Placement</strong>&lt;br&gt;Plan for Teaching</td>
<td><strong>Talk about Field placement</strong>&lt;br&gt;Modeling&lt;br&gt;Pupils perspective&lt;br&gt;Teaching Materials&lt;br&gt;Enact teaching</td>
</tr>
<tr>
<td><strong>Few</strong></td>
<td><strong>Analyze student learning</strong>&lt;br&gt;Enact teaching&lt;br&gt;Modeling</td>
<td><strong>Analyze student learning</strong>&lt;br&gt;Analyze Classroom Talk&lt;br&gt;Watch Analyze Videos</td>
</tr>
</tbody>
</table>
Benefits and drawbacks

• Each instrument affords important insights into coherence
  – Observation protocol helps us get close to practice
  – Survey gets us student perspectives
  – Interviews get to faculty and student perspectives and highlight conflicts or confluences

• Triangulation across observations, survey, and interviews
  – We are seeing patterns that echo, repeat and support

• One challenge: harder to operationalize linking theory and practice
  – It is “embedded” in the practice items
  – Require targeted analyses covering a longer time segment
  – There may be more items we could use to get at this
Contributions

- **Empirical research on the nature of TE classroom practice**
  - International perspective
  - Help provide evidence that could guide policy decisions

- **Methodological**
  - Methods for looking at classroom practice in TE
  - Methods for examining theory and practice

- **Insight into the ways that theory and practice are treated and linked in powerful programs**
Thanks for listening!

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