Problem-Based Learning for Responsive and Transformative Teacher Professional Development

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Teacher Professional Development

PBL for Responsive, Transformative PD
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PBL for Responsive, Transformative PD
Teacher Professional Development

- Too often follows “top-down” design
  - Topic selected by administrators
  - One-size-fits-all
  - Limited time on topic
  - Impact is minimal, and short term

- Transformative PD?
  - Teachers as leaders/designers
  - Focus on lasting impact on teaching/learning
  - On-going engagement and support
  - Connected to authentic practice
Professional Learning Communities (PLCs)

- Not a new idea! (Hord, 1997)
- Teacher led investigation of a problem, pedagogy, curriculum
  - Small groups – 4-5
  - Facilitated or unfacilitated
  - Heterogeneous or Homogeneous group of teachers

- Too often used in different way!
  - Administrator-assigned problem to solve
  - Mandatory topic (i.e., Standardized test data analysis)
Problem-Based Learning as PD structure

- PBL – Systematic framework for analyzing problems
- Origins in Medical Education – clinical reasoning/diagnostics
- Adapted for teaching law, nursing, science, history and more!
Problem-Based Learning as PD structure

- **Teacher as Clinician**
  - Diagnose learning and learning problems
  - Understand individual differences
  - Prescribe learning activities to address needs

PBL for Responsive, Transformative PD
Problem-Based Learning

- Authentic, Ill-defined Problem
- Student groups use framework to analyze problem
  - What do we know?
  - What do we need to know?
  - Hypothesis (proposed solution)

- Story in 2 parts
- Cycle of information, analysis
- Open-ended assessments of knowledge and transfer

Figure 1.1: The PBL Analytical Framework. From McConnell, Parker & Eberhardt 2016, p. 4)
Problem-Based Learning for Responsive and Transformative Teacher Professional Development

- Part of the PBL in the Science Classroom Series from NSTA Press
- In preparation – Publication expected in Fall 2019
- Target audience – PD planners and designers

- Two main uses of PBL in PD program
  - Teacher content learning
  - Teacher inquiry about pedagogy
Teacher Content Learning

- Research shows PBL is effective for teaching content to teachers with varying levels of experience, educational backgrounds
- Structure of PBL problems similar to that for students
PBL for Teacher Inquiry – Focus on Practice

![Comparison of PBL Structure for Content and Pedagogical Problems](image)

<table>
<thead>
<tr>
<th>Content PBL Structure</th>
<th>Focus on Practice PBL Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 1 – The Story</td>
<td>Page 1 – The current problem (Generated by teacher participant)</td>
</tr>
<tr>
<td>(Generated by facilitator)</td>
<td>Teacher collects evidence from practice to present to FOP group</td>
</tr>
<tr>
<td>Group PBL Analysis</td>
<td>Group PBL Analysis</td>
</tr>
<tr>
<td>Page 2 – More Information</td>
<td>Page 2 – proposed solutions</td>
</tr>
<tr>
<td>Generated by facilitator</td>
<td></td>
</tr>
<tr>
<td>Group PBL Analysis</td>
<td></td>
</tr>
<tr>
<td>Research for more information</td>
<td>Teacher and FOP group research and test possible solutions</td>
</tr>
<tr>
<td>Construct solutions</td>
<td></td>
</tr>
<tr>
<td>Group discussion of solutions</td>
<td>FOP Group discussion of solutions</td>
</tr>
</tbody>
</table>

**Figure 2. Comparison of PBL Structure for Content and Pedagogical Problems**
PBL for Teacher Inquiry – Focus on Practice

- Groups of 4-5 teachers+ Facilitator
- Monthly Meetings throughout school year
- Each teacher develops a “problem of practice”
- Teachers share their “problem” with group
  - State Problem
  - Context – A lesson taught by teacher
  - Evidence – Student work, Videotape, Journal entries
- Group discussion – PBL Framework
  - What do we know?
  - What do we need to know?
  - Hypothesis
Key Features

- Teacher-selected problem
- Teachers base new ideas on evidence from REAL classroom inquiry
- Year-long collaborations – group supports learning
- Impacts teaching in real time, real classroom

Transformative nature

- Teachers lead/design PD
- Lasting change to teaching or learning
- Ongoing engagement and support
- Connected to authentic practice
Recommendations from Research

- Teachers need to feel they "belong" to the PLC group.
- Teachers must be in charge of identifying problems to examine.
- Analysis and discussion must focus on teaching practice, not the teacher.
- Shared leadership leads to feeling of accountability to group.
- PLC Structure can be flexible!
  - Homogenous vs. Heterogeneous group
  - Facilitated vs. Teacher-Led
  - Face-to-Face vs. “Virtual” PLC

PBL for Responsive, Transformative PD
Recommendations for PD Planners

- PBL is effective structure to support productive transformative teacher PD
- Fidelity to implementation is important!
  - Training Facilitators
  - Training Participants
  - Training Administrators – buy-in and support!

PBL for Responsive, Transformative PD
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