Connecting Teachers’ Buy-Into Professional Development with Classroom Habits and Practices

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While professional development (PD) provides an opportunity for teachers to cultivate skills that are consistent with best practices in the field, it is their buy-in into the PD that ultimately determines the effectiveness of the PD. We examined how teacher buy-in affected the classroom habits and practice of four elementary teachers who took part in a district wide PD. Using baseline and first-year implementation video recordings, in conjunction with frameworks for discourse analysis, cognitive demand, and tools built specifically to measure PD implementation, we found that varying combinations of teachers’ beliefs served as a mitigating factor for PD implementation.

Keywords: Teacher Education-Inservice/Professional Development, Teacher Beliefs

In this report, we explore the effect of teachers’ buy-in for a high-quality, sustained, district-wide professional development (PD), Mathematics Studio PD (Foreman, 2013), on improving their classroom habits and practices. Systematic change requires coordination and cooperation between the system (school and PD program) and the participants (teachers). Without high buy-in, teachers will likely implement little of what they learn in even the strongest of PD programs. We present four divergent cases to illustrate the relationship between the exhibited level of buy-in and how it affected their mathematics teaching practice in their elementary classrooms.

**Background and Theoretical Framing**

Field-endorsed best practices for PD often exist at the program level with recommendations like “intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other school initiatives; and builds strong working relationships among teachers” (Darling-Hammond et. al, 2009, p. 5). We challenge that program level recommendations are insufficient without looking at individual participating teachers. As PD represents an appeal to change, the inclination of a teacher to making said changes in their teaching practice is an important factor in the success of the PD. We capture this inclination using the construct of buy-in from the management and leadership field (Thomson et al., 1999). We adopt Thomson et al.’s two types of buy-in: intellectual and emotional, where intellectual captures the degree of understanding and emotional the degree of commitment. We treat belief alignment between teacher and PD as an (intellectual) indicator of buy-in, and seeing a need for change as an (emotional) indicator of buy-in.

**Teacher Beliefs and Classroom Practice**

To address belief alignment, we both identified teacher beliefs from their discussion contributions in PD sessions and explored related factors of their classroom practice. In this context, our focus is on beliefs about mathematics, teaching, and learning. The principles underlying the PD focus on mathematics as a sense-making activity where are all students are capable of deep engagement in meaning-making via justifying and generalizing. To explore belief relationships and their classroom practice we used cognitive demand and patterns of discourse. Henningsen and Stein

Table 1: Degree of Implementation Growth and PD Buy-In for Case Study Teachers

<table>
<thead>
<tr>
<th>Case Teacher</th>
<th>John (Low)</th>
<th>Nina (Mid)</th>
<th>Kim (Mid)</th>
<th>Cora (High)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief Alignment with PD</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Need to Grow in Practice</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Beliefs Aligned with Classroom Practice</td>
<td>Yes</td>
<td>Yes</td>
<td>Inconsistent</td>
<td>No</td>
</tr>
<tr>
<td>PD Implementation</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Case 1 & 4: John (Low-level buy-in) & Cora (High Buy-In)

Cora and John were at opposite end of their careers. John was preparing to retire while Cora was in her second year of teaching. During the PD, Cora displayed indicators of high-level emotional and intellectual buy-in while John displayed low levels of both.

Baseline lessons. Prior to involvement with our PD, Cora’s classes had a high number of student contributions, but the tasks were often low-demand (see Table 2). Her lessons tended to include majority authoritative discussions. In John’s baseline lessons, his class had minimal student interaction with most interaction consisting of pro forma call and response leaning heavily authoritative. The task demand was low with heavy focus on procedures (see Table 2). John’s traditional beliefs aligned with his classroom practice. In contrast, Cora’s beliefs that students are capable and that mathematics is a rich subject was reflected only in her students having opportunities to contribute while the mathematics remained procedural.

Table 2: Cora & John’s Lessons in Terms of Cognitive Demand and Discourse

<table>
<thead>
<tr>
<th>Lesson / Teacher</th>
<th>Cognitive Demand (% of time High)</th>
<th>Authority (% of time Dialogic)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cora</td>
<td>John</td>
</tr>
<tr>
<td>Baseline 1</td>
<td>Varied (40%)</td>
<td>Low (0%)</td>
</tr>
<tr>
<td>Baseline 2</td>
<td>Low (12%)</td>
<td>Low (12%)</td>
</tr>
<tr>
<td>Post-PD 1</td>
<td>Varied (40%)</td>
<td>Low (0%)</td>
</tr>
<tr>
<td>Post-PD 2</td>
<td>High (85%)</td>
<td>Low (13%)</td>
</tr>
</tbody>
</table>

After one year of PD. After involvement with the PD, Cora’s classroom came into closer alignment with her beliefs. The level of cognitive demand increased. The discourse moved from authoritative to largely dialogic reflecting the acceptance and discussion of multiple strategies and viewpoints. The nature of John’s class changed little after the PD. His lessons remained predominately low cognitive demand and authoritative in nature (see Table 2). Cora’s implementation of the PD rose after a year of sustained support. This growth reflects her students engaging in mathematical habits of mind and interaction and her use of teaching habits and teaching routines. The tools provided through the PD may have allowed Cora’s beliefs and classroom actions to more closely align. As John had low buy-in for the PD, and had beliefs that may limit growth both in terms of his own need to grow, student capabilities, and the nature of mathematics, his degree of implementation score did not rise despite a year of PD.

Conclusion

A teacher’s beliefs and disposition towards the subject area, learning, and their own practice play an important factor promoting teacher change through PD. We use the buy-in construct to explore alignment or misalignment of these beliefs and the PD’s principles. The literature has established that teacher beliefs and classroom actions are related, but the relationship is often complex. Our cases illustrate some of the complexities. Cora’s case is particularly compelling as she has aligned beliefs (and subsequently high buy-in to the PD), but prior to the PD intervention, the beliefs alone were insufficient to promote high level reasoning in her mathematics classroom. When provided with the

tools, Cora’s classroom became more in-line with her beliefs. John, who did not perceive a need to
grow, implemented little work from the PD into his teaching. Cora and John each represent very
different types of teachers that may participate in PD. As providers of development and researchers
on innovation, attending to beliefs and belief-alignment in classroom actions, may provide a starting
ground for addressing the variance in individual PD participants.

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