



## Implementation fidelity affects the degree of change in teacher practice

### WHAT THE STUDY SAYS

School improvement that depends on professional development as a primary means for implementing effective instructional practice requires deliberate attention to implementation fidelity of both the content and process of professional development, the ongoing development of professional developers, and the measurement of implementation over time.

When schools have high-fidelity implementation of the professional development principles of both professional development content and process, teachers have significantly higher frequency of implementation of instructional practices aligned with the reform program than schools that were low in implementation or those that had high levels in one and low levels in another.

#### Study description

In their longitudinal study of fidelity of implementation of principles

**Joellen Killion (joellen.killion@learningforward.org) is senior advisor to Learning Forward. In each issue of *JSD*, Killion explores a recent research study to help practitioners understand the impact of particular professional learning practices on student outcomes.**



### At a glance

Implementation fidelity of principles of professional development content and processes associated with school reform instructional practice improvements positively affects the degree of change in teacher practice.

### THE STUDY

**Kisa, Z. & Correnti, R. (2015).** Examining implementation fidelity in America's Choice schools: A longitudinal analysis of changes in professional development associated with changes in teacher practice. *Educational Evaluation and Policy Analysis*, 37(4), 437-457.

of reform-aligned professional development content and process, Kisa and Correnti examine teacher reform-aligned teaching practices at the end of the fourth year of implementation of writing instruction improvements in 31 America's Choice schools. America's Choice is a comprehensive school reform program focused on helping students achieve global benchmarks in English language arts. Some of the 31 schools had been implementing some aspects of America's Choice before the beginning of this longitudinal study.

The study's design is based on five propositions:

1. Traditional workshop-style professional development is insufficient for inspiring change in teacher practice.
2. Scaling reforms beyond boutique studies opens up greater possibility for variation in implementing professional development.
3. The more ambitious the instructional practices are, the more likely variation in implementation

### WHAT THIS MEANS FOR PRACTITIONERS

**W**hole-school improvement depends on teachers' capacity to implement associated instructional practices. Such reform requires professional learning to align teaching with the reform being implemented. The principles driving America's Choice professional development content and process are drawn from the same research that undergirds Learning Forward's Standards for Professional Learning (Learning Forward, 2011).

This study demonstrates that attention to both the content and process of professional learning is equally important in supporting teachers' implementation of new instructional practices and that the professional learning is sufficiently sustained over time to achieve high levels of implementation.

The study also illuminates the complexity of measuring implementation of content and process and expected changes. Researchers stress that specifying the theory of change and a clearly delineated logic model to operationalize the content, process, and expected changes as well as the expected content and process and how they might change over time requires reform leaders to

will be large both because it is hard to communicate abstract principles associated with ambitious instruction and because those responsible for implementing reforms will need to learn as well as teach the reforms.

4. It is important to measure implementation fidelity, but its operationalization is difficult.
5. Examining change longitudinally and focusing on specific teaching practices targeted by the reform are important for demonstrating effects of professional development

describe with explicitly measurable specificity what those changes are.

These findings are strongly aligned with the **Outcomes** (content), **Learning Designs** (process), and **Data** (evaluation) standards of Learning Forward's Standards for Professional Learning (Learning Forward, 2011).

When the outcomes of professional learning are clearly delineated and aligned to research- and evidence-based practices and students' expected learning outcomes, and when the learning designs employ powerful strategies for both developing content knowledge and supporting transfer to practice — including training, coaching, and other forms of personalized, classroom-based supports, access to appropriate curriculum, and opportunities to plan instruction — the level of implementation of the desired change in practice is higher.

In addition, being able to measure the rate of change and the consistency of the professional learning treatment provides important data to adjust its implementation to achieve greater effects in changes in teacher practice.

### Reference

**Learning Forward. (2011).** *Standards for Professional Learning*. Oxford, OH: Author.

programs as well as for reinforcing an important principle for professional development research (p. 439).

Using survey data of teacher perceptions collected from teachers more than a decade ago, the researchers measured changes in implementation fidelity of professional development content and process as well as frequency of teacher implementation of reform-aligned instructional practice.

### Questions

Researchers sought to answer three

questions:

1. To what extent do schools differ in their rate of change in implementation fidelity of professional development content over four years?
2. To what extent do schools differ in their rate of change in implementation fidelity of professional development process over four years?
3. To what extent do changes in providing reform-aligned professional development content and process predict teachers' reform-aligned instructional practices in the last year of the study and the growth rate in reform-aligned teaching practice over the course of the study?

### Methodology

Researchers tapped extant data from 1,722 literacy teachers in 31 schools from previous studies (2000-04) of America's Choice to answer the three research questions. Subjects responded to at least one survey annually for four years, thereby permitting longitudinal analyses.

Researchers selected these schools because they held constant for the duration of the study a desire to implement instructional practices associated with the writing process and chose to use America's Choice professional development theory of change and principles as the primary vehicle for making the changes in English language arts instructional practice.

Constructs included three distinct variables. The first, reform-aligned professional development content marker, assessed the degree to which teachers perceived that the content of both formal and informal professional development improved their knowledge of the writing process. Researchers drew a mean score from four survey questions whose range was 1 (never) to 5 (more than 10 times).

The second construct is reform-aligned professional development process marker, which assessed teachers' perceptions about how often:

1. They observed the instructional leader (coach, professional developer, facilitator, etc.) modeling the instructional practices;
2. The leader observed them teaching and provided feedback about ways to improve their instruction;
3. The leader observed them and gave them feedback about their use of the curriculum materials; and
4. The leader examined student work and commented on ways to improve it.

The third construct researchers measured was reform-aligned teaching practices. Using four questions, the survey asked teachers' perceptions about how often they employed practices aligned with reform-aligned writing instruction, how often written composition was the primary focus of their instruction, how often students integrated writing into reading, and how often students wrote an individual paragraph or connected piece of two or more paragraphs.

Researchers controlled for several teacher-level (gender, experience, etc.) and school-level (socioeconomic status, school achievement, etc.) covariates to examine their effects on the outcomes.

### Analysis

Researchers applied two distinct three-level hierarchical linear models to answer the first two research questions about teachers' perceptions of changes in their professional development over time. Teachers' individual scores were nested inside school scores, and school scores were aggregated among participating schools. The models examined the variability in change in adherence to the content and process principles of professional development.

To answer the third research question, researchers clustered schools into four groups based on the

conditional empirical Bayes residuals for schools from the linear growth parameters. The groups were high growth in both content and process (high-high); high growth in content and low in process (high-low); low growth in content and high in process (low-high); and low growth in both content and process (low-low).

To determine if changes in professional development resulted in changes in teaching practice, researchers applied dummy variables based on the four clusters of schools in a three-level hierarchical linear growth model in which reform-aligned teaching practice was the outcome. This model allowed researchers to examine the relationship among teachers' change in practice with schools' level of fidelity to professional development content and process principles.

### Results

The research findings provide insight into the effects of level of fidelity of professional development content and process on teaching practices. There was statistically significant variability in participating America's Choice schools' level of adherence to reform-aligned professional development content ( $p < .001$ ) and reform-aligned professional development process ( $p < .001$ ) principles.

This means that some schools provided higher levels of reform-aligned content and adhered more consistently with process at the end of the study. Over the duration of the study, the content of all professional development decreased in all schools at various rates, some declining more slowly than others.

This finding suggests that the earliest years — in this study, the first year — was the year in which teachers had greatest opportunity to improve their content knowledge about writing. The decrease in adherence to process principles was not as dramatic as the decrease in content, suggesting that

the process of professional learning — including training, coaching, and focus on implementation of curriculum — is sustained for a longer period of time.

Overall, participating schools implemented the professional development content and process reforms at differing levels of fidelity, which influenced the degree of change in reform-aligned teaching practice.

High-level adherence to professional development content and process principles is related to significantly higher frequency enactment of reform-aligned instructional practices at the end of the study. Teachers in high-high schools had significantly higher frequency use of the instructional practices than teachers in high-low, low-high, and low-low schools. This suggests that adherence to content or process without adherence to the other influences changes in teacher practice.

Results also suggest that when the professional development content and process adhere to the reform principles for content, the rate of change in the frequency of implementing reform-aligned teaching practices is greater. The rate of decrease in adherence is not significantly related to the change in

teaching practices.

The model accounted for 61% of the variance in reform-aligned teaching practice among schools in their last year of the study. Researchers also tested for the effects of other school and teacher covariates, such as prior achievement, number of years of implementing the reform, and teacher knowledge and efficacy. Adding the covariates to the model accounted for 84% of the variance.

The study concludes that only high-high schools were successful in increasing the frequency of teachers' enactment of reform-aligned teaching practices over the course of the study's four years, while all other schools experienced consistent tapering off of reform-aligned teaching practices over the course of the study.

#### Limitations

Researchers identify a number of limitations of the study.

1. The study relies on self-report data from teachers using specified survey questions for professional development content and process without examining other variables of professional development that

may influence implementation of teacher practice.

2. The study lacks baseline data about teacher practice. The study focuses on schools that had already initiated the reform intervention, with several having multiple years of implementation before the beginning of this study.
3. Because the study examines only one comprehensive school reform program (America's Choice) that uses professional development as the primary vehicle for change, the results are narrowly generalizable to schoolwide reform efforts that seek to improve instructional practice as a means to improve student achievement.
4. The study's design permits only findings of association rather than causation.
5. The study provides no evidence of impact on student achievement. Given that change in teacher practice is a precursor to improvement in student achievement, it would be helpful to examine longitudinally the effects on student learning. ■

## elearning In-depth learning — on your schedule!

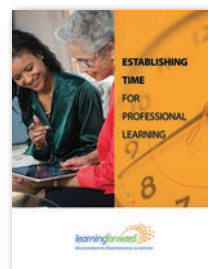


### Establishing Time for Collaborative Professional Learning

A new online course from Learning Forward

[www.learningforward.org/online](http://www.learningforward.org/online)

LEARN HOW TO BUILD TIME INTO THE SCHOOL DAY SO TEACHERS CAN LEARN AND WORK TOGETHER TO IMPROVE THEIR PRACTICE.



Participants receive a digital copy of *Establishing Time for Professional Learning*.