WHAT ARE WE LEARNING ABOUT HOW WE LEARN?

By Bruce Joyce and Emily Calhoun

Remarkably, although today's world teems with pundits and policymakers telling us how to run schools and classrooms, they supply little support for research on what educators are actually like, how we learn, or how we can generate schools where the least likely kids thrive and their neighborhoods get better.

New — and very good — curriculums and technologies (i.e. Common Core State Standards; science, technology, engineering, and math; and information and communication technologies) are ready for implementation, but states and school districts have few places to get help in designing the amounts and types of professional development that will enable them to fulfill the promise of those advances.

For 35 years, our colleagues and we have struggled to put a few teaspoons of information into the nearly empty bucket of studies on professional development and school renewal. We have tried to find out how people can learn to use new curriculums and ways of teaching — not just polishing the old, comfy stuff.

We have done some studies that would meet high standards of design, learned from peering at correlations, and stumbled on important things while teaching kids and teachers and talking to the folks next door. Our best idea last year drew on something the vet said while Bruce was trying to hold the cat still for a shot. Research and life experience actually do feed each other.

A LINE OF RESEARCH

Our group of teacher-researchers has been compelled to learn how to describe teaching styles and measure teaching skills, how to track transfer from the workshop to the classroom, and has at times nearly obsessed over the difference between short-term and long-term effects. The members have to be conversant with curriculums old and new and, when necessary, help the folks they are studying decipher the symbols on the whiteboard menu. (Beverly Showers was a major partner in developing and implementing the early studies. See Joyce & Showers, 2003.)

In addition to our focus on education and psychology, we have hunted for relevant work from organizational development, school renewal, cooperative learning, group therapy, and military training. The folks who design training for elite Navy pilots known as Top Guns know quite a lot about educating people. Trying to design professional learning seems puny by comparison, or it may seem that way because their work is done up in the air. Or, perhaps calamity evolves differently. In the sky, a small error can have immediate and sometimes lethal consequences. In a classroom, not teaching a child to read has catastrophic consequences, but they evolve over time — although just as surely.

WHAT WE DISCOVERED WHILE REACHING AN IMPORTANT MILESTONE AND BEING BROUGHT UP SHORT.

Let's fast-forward to a point where we felt confident about the learning capability of teachers (which is very

RELATED READING

Joyce, B. & Calhoun, E. (2010). *Models of professional development.* Thousand Oaks, CA: Corwin Press.

Joyce, B. & Showers, B. (2003). *Student achievement through staff development.* Alexandria, VA: ASCD.

Joyce, B., Weil, M., & Calhoun, E. (2015). *Models of teaching.* Boston, MA: Pearson.

good) and the design of professional development that would enable just about every educator to develop skill in models of teaching and curriculum new to them — including very complex practices.

The following components, implemented well and not rushed, enable educators to reach that goal:

1. Opportunities to study the rationale of a new practice, its purposes, evidence supporting it, and its application to school curriculum areas — *the basic and applied knowledge base.*
2. Opportunities to see it in action. The study of the knowledge base is interwoven with modeling. Video has been a boon. Complex processes can be captured with students of varying characteristics and in several curriculum areas.
3. Opportunities to plan for practice. Participants develop lessons tailored to their own students and curriculum. Essentially, they leave the workshop setting ready to practice. Without studying the rationale, studying demonstrations, and preparing to practice, participants will not have the skill to implement.

A PROBLEM EMERGES

Given those three components, almost everybody built the knowledge and skill to use those lessons — and they implemented the ones they planned during the workshops. However, when they were observed and interviewed a few weeks down the road, only a handful of teachers had created their own new lessons and units and were using them.

We were stymied. This type of professional development is much more elaborate than most staff development offerings. What to do next?

HOW DESIGN AFFECTS IMPLEMENTATION			
COMPONENTS	EFFECT ON KNOWLEDGE	SHORT-TERM USE: % IMPLEMENTING	LONG-TERM USE: % IMPLEMENTING
Rationale	+++	5%-10%	5%
Rationale plus demonstrations	++++	5%-10%	5%-10%
Rationale plus demonstrations and preparation time	++++++	80% and higher	5%-10%
All of the above plus peer coaching	++++++	90% and higher	90% and higher

The teachers knew all along!

Teachers had long complained that after they complete a course or set of workshops, it is rare that anyone follows up, visiting and providing support and encouragement.

It made good sense to pay attention to those folks, so we instituted follow-up by workshop providers in our next set of studies. Every few weeks, teachers participated in meetings that included more demonstrations, discussions, *and preparation of lessons.* The providers dropped in every couple of weeks to discuss progress and offer help.

The duration and frequency of practice rose dramatically — 90% of participants used the additions to their repertoire until they became a normal part of practice. (Our longest follow-up study has lasted 10 years.)

Importantly, teachers told providers that most of their needs had to do with weaving the new approach into the curriculum and the flow of their normal practice. They were fine with the interactive skills needed to use the new models but needed help in planning.

Our next question: Can teachers help each other?

FOLLOW-UP WORKS, BUT …

The problem with provider follow-up is that it is not practical. A pair of providers can work with groups of 50, 60, even 100, but visiting that many people on a regular basis is not feasible. We needed to learn whether the educators could follow themselves.

So we added to the design a monthly follow-up workshop and asked participants to get together on a weekly basis to discuss how to make the curricular or instructional model work. Even better, they could plan lessons that they each teach so they could share the results and solve common problems together.

With this arrangement, implementation was very high. (See results above.) And, as we discovered, teachers do not need special training to be able to work effectively with partners. Nor do they need any special skills to relate over common content and goals.

Caveat: These findings are when new repertoire is the object.

Where a practice fits easily into the repertoire, understanding it and just seeing it a couple of times may enable someone to acquire it. However, some new practices are trickier to learn than we expect. Learning to use overhead projectors was a problem in the past. Learning to integrate an interactive whiteboard has turned out to be a trial for many as is the integration of the internet and other computer-related practices.

ASK TEACHERS WHAT THEY NEED

We suggest that those planning professional development ask participants what they need to learn certain things — for instance, survey the Common Core/STEM/information and communications technologies complex and try to figure out what will be easy and what requires serious additions to repertoire. If teachers need new knowledge and skills, the information we have summarized can come in handy.

A caution: Because of the dramatic effects of peer coaching, sometimes workshop providers give little attention to the other components. We come across workshops, and even courses, that omit the demonstrations or the preparation for practice, or the study of rationale, or deal with them too quickly. Without those, there is insufficient content for the peers to implement! If time is short, focus the workshop on a specific practice, but use all the components.

We also find that sometimes coaches are taught that feedback is their major tool. That may be the case when polishing already established practices. New practices require the other components: The coach needs to learn to help colleagues study rationale, model, help with preparation of lessons and units, and find a partner — or not much will happen.

We favor placing coaches in classrooms as teams. They can try things out, invite teachers to observe, and free each other to help colleagues in situ.

Until we learn better ways to get the job done.

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