

One Size Doesn't Fit All

Customizing Educational Technology Professional Development

By Judi Harris

Part Two: Choosing ETPD Models

The previous article reviewed the range of educational technology professional development session and program goals. In this installment, we present and explain ETPD models. In future articles, we will address how to combine goals and models to fit particular teachers' characteristics, then assess the efficacy of those designs.

Educational technology-related professional development (ETPD) takes many forms. It varies by:

- general purposes and goals
- the specific learning objectives that ETPD sessions and programs address
- the curriculum content areas to which they are related
- the student grade levels for which the strategies and tools presented are appropriate
- the professional development models used to structure ETPD sessions
- the ways in which differing teacher characteristics are addressed, and
- the ways in which the professional development is evaluated and teacher learning is assessed.

Providers can ensure the effectiveness of technology-related professional development by considering these seven aspects during planning, so that ETPD sessions and programs align with participating teachers' professional learning needs, interests, and contextual realities.

This article series can help you to become familiar with the full range of possibilities for the four items in this list with which most ETPD providers have worked the least:

- ETPD goals
- ETPD models
- Choosing and combining ETPD goals, models, and methods according to teacher characteristics
- Assessing the efficacy of ETPD designs

Once the full range of possibilities for each of these aspects of ETPD design is known, you can make optimal choices for each professional development session and program, so that participating teachers learn as much as possible that can be applied directly to their professional practice.

Last month's article reviewed the range of ETPD session and program goals. This month, I will present and explain ETPD models, and in Parts

Three and Four I will address the combination of goals and models to fit particular teachers' characteristics and how to assess the efficacy of those designs.

A Models Approach to Designing ETPD

The work of Joyce and Weil suggests that teachers' planning for instruction is greatly facilitated by using *instructional models*. A model, according to these authors, is a "pattern or plan used to guide design." With this approach, teachers consciously choose from a variety of pedagogies (e.g., direct instruction, Socratic inquiry, class



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sional learning needs and preferences. Then the ways professional development is offered can change over time, as teachers' learning needs change.

The Range of ETPD Models

ETPD models can be classified into five general types of professional development, according to the kinds of professional learning that characterize each:

1. Instructor-organized sessions (6 models)
2. Individualized learning (4 models)
3. Collaborative learning (5 models)
4. Data-based inquiry (3 models)
5. Development of materials and approaches (2 models)

Types and models are described below.

1. Instructor-organized sessions are the most commonly used type of ETPD. The six models begin with *demonstration or awareness sessions*, in which the presenter introduces or overviews new tools, techniques, or approaches. These sessions are usually brief in duration, and can be used quite effectively at regularly scheduled faculty meetings to help teachers to become aware of new and recommended possibilities for technology use in their classrooms.

Instructors also lead *hands-on workshops*, but participants play more active roles in these classes than in demonstration sessions. Most educational technology conferences offer hands-on workshops, such as the plethora of offerings each year at ISTE's National Educational Computing Conference.

Large-group and small-group interaction sessions are instructor-facilitated, rather than instructor-led. These types of sessions use a more constructivist

discussion, or cooperative learning) the type of activity that, given the learning needs and preferences of a particular group of students, will best help them to accomplish specified educational goals. An important assumption of this approach is that there is no one "best" model for any student, teacher, or group. Rather, a variety of models—a "cafeteria of alternatives," carefully selected and consciously applied—will help to create optimal learning environments.

full range of possible instructional models so that they can select among and combine them to best educational advantage.

You can use a similar models-based approach to design effective ETPD sessions, sequences, and programs. Once ETPD goals have been identified, you can select among 20 models according to teachers' current profes-

This suggests that teachers should be aware of the



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Individualized learning is the most common way that PK–12 teachers learn to use educational technologies, though research has shown it not always to be the most efficient and effective type of ETPD.

approach to learning, and though the topics for the sessions are typically chosen in advance, the specific content of the session is determined in large part by the interests and interactions of the participants. iEARN, the International Education and Resource Network, provides online, asynchronous, discussion-based professional development courses for teachers that use this approach. Teachers explore how to integrate telecollaborative learning, sharing reflections, experiences, and suggestions as they each learn to integrate their classrooms with online global project work.

Large-group and small-group problem-solving sessions are also instructor-facilitated, but they are typically more local or regional in scope, and even more constructivist in nature. In these sessions, participants define the parameters of an educational technology-related problem to solve (e.g., how to best structure and facilitate interaction in online discussion groups to help students extend face-to-face classroom discussions) and brainstorm, then refine and make plans to implement collaboratively generated solutions.

School districts, states, and provinces often provide ETPD as instructor-organized sessions, as do not-for-profit organizations. These larger-scale ETPD programs are usually organized in a “cascading” or “train-the-trainer” model, in which teacher-leaders participate, then provide ETPD for their peers. Notable examples of such programs are 2Learn.ca, the Intel Teach Program, PBS TeacherLine, and Thinkfinity/Marco Polo.

2. Individualized learning is the most common way that PK–12 teachers learn to use educational technologies, though research has shown it not always to be the most efficient and effective type of ETPD.

Most teachers periodically do some *unassisted independent exploration* of educational technology tools, resources, and techniques, using, for example, Web-based resources such as GEM, the Gateway to Educational Materials, or books such as ISTE’s *National Educational Technology Standards for Teachers*.

Independent exploration can also be *assisted*, either by a local educational technology coach or resource teacher, or online. This can happen informally and serendipitously, or more formally, with the creation of an *individualized learning plan* that a participating teacher individually designs, implements, and self-evaluates. Opportunities to create educational technology-related individualized learning plans are available on Indiana University’s Inquiry Learning Forum. ETPD can also take the form of *individualized prescribed and managed instruction*, which the coach or resource teacher—rather than the teacher-learner—designs, facilitates, and evaluates on behalf of the client.

Individualized ETPD can be particularly powerful because it is completely customized to participating teachers’ individual learning needs and preferences. Unfortunately, this is also a very resource-intensive type of ETPD, so it is not commonly implemented in formal ways on a larger scale.

3. Collaborative learning is a promising type of professional development for teachers that has a growing research base demonstrating its effectiveness. The most desired—but unfortunately, also one of the least frequently practiced—collaborative learning model is one in which teachers engage in *classroom visits*. These can happen both face-to-face and virtually. The Inquiry Learning Forum (mentioned above) provides oppor-

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tunities for teachers to virtually visit other teachers' classrooms via videos that demonstrate inquiry-based teaching and learning. Participants are also encouraged to interact with each other online and to share instructional materials related to their virtual visits.

Collaborative learning ETPD also can take the form of *mentoring*, in which someone knowledgeable in a particular content area or instructional approach works with individuals or small groups of teachers wishing to learn more in the mentor's area of expertise. *Peer coaching*, also with either individuals or groups, can similarly occur either face-to-face or online. PBS TeacherLine has recently released its Peer Connection resources that help to prepare and support peer coaches as this approach to professional development becomes more widespread in schools.

One of the most popular forms of collaborative learning ETPD is *sharing best practices*. This can be done face-to-face or online, and in multiple formats, such as study groups, conference SIG (special interest group) or birds-of-a-feather meetings, and online communities of teachers. One of the most extensively used set of professional learning communities is offered freely through Tapped In, which allows educators to set up and maintain virtual spaces for professional collaboration of many types. The annual K12 Online Conference is another venue in which teachers can share best practices. The conference posts virtual sessions and participants' commentary free of charge during a two-week period each fall. All of the resources stay online until the next year's virtual conference.

A comparatively new (and quite promising) form of professional development is *lesson study*, which origi-

nated in Japan. With this approach, small groups of teachers provide and receive constructive feedback on particular pedagogical approaches, observing, then analyzing and evaluating, their peers' instruction, in depth and together. Lesson study's evaluation components are similar to *critical friends group* work. The Teacher Leaders Network offers an excellent set of lesson study resources for teachers seeking to learn to use this powerful professional learning model.

4. Data-based inquiry models for ETPD involve systematic data collection and analysis by teachers in their own classrooms. With these three models, teachers conduct action research, either independently, collaboratively with other teachers investigating similar phenomena in their classrooms, or assisted by external researchers—usually educational researchers interested in the same phenomena that the teachers have decided to investigate. Data-based inquiry goes beyond professional reflection on practice in that teachers analyze data generated in their own classrooms to solve pedagogical problems and improve practice. Texas Instruments sponsors teachers doing educational technology-related teacher action research relative to TI's many digital educational tools, such as graphing calculators.

5. Materials and approaches development. Some models for ETPD focus on developing and sharing specific educational materials and approaches. Gen YES, for example, pioneered a unique and very successful *collaborative materials creation* model in 1996 that teaches elementary, middle, and high school students to support their teachers' integration of digital technologies by creating and implementing curricu-

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Data-based inquiry goes beyond professional reflection on practice in that teachers analyze data generated in their own classrooms to solve pedagogical problems and improve practice.

lum-based units together. The students serve as the “tech support” for their teachers when the units are taught.

There are also *online spaces* for teachers to create materials and approaches together, such as Harvard University’s Education with New Technologies Networked Learning Community, in which participating teachers develop and constructively critique curriculum-based materials according to the design principles of Teaching for Understanding.

Other online spaces are set up for teachers who want to share *materials and approaches developed individually*. The Apple Learning Interchange offers a venue for K–12 teachers with this purpose, as does SchoolForge, a collaboration among multiple organizations that “advocate, use, and develop open resources for education.”

Selecting ETPD Models

I hope the range of ETPD models described above makes clear how very differently ETPD sessions need to be designed, depending on the session and program goals that providers intend them to meet, which in turn are determined by participating teachers’ learning needs and preferences. Descriptions of professional development programs and projects that were structured according to the models described in this article are available online at <http://etpd.wm.edu>.

At this point, you may be wondering, “How do I best select among the 20 ETPD models to match my teachers’ learning needs and preferences?” Answers to this question will serve as the focus of the next article in this four-part series on customizing ETPD.

Resources

2Learn.ca: <http://www.2learn.ca/mapset/tlcpd/pdprogrammenu.html>

Apple Learning Interchange: <http://education.apple.com/ali/k12community>
Education with New Technologies Networked Learning Community: <http://learnweb.harvard.edu/ent/home/index.cfm>
GEM—Gateway to Educational Materials: <http://www.thegateway.org>
GenYES (Youth and Educators Succeeding): <http://www.genyes.org>
iEARN’s Professional Development Workshops and Courses: <http://www.iearn.org/professional/index.html>
The Inquiry Learning Forum: <http://ilf.crlt.indiana.edu>
Intel Teach Program: <http://www.intel.com/education/teach/index.htm>
ISTE’s NETS for Teachers book: http://cnets.iste.org/teachers/t_book.html
Joyce, B., & Weil, M. (1972). *Models of teaching*. Englewood Cliffs, NJ: Prentice-Hall.
Joyce, B., Weil, M., & Calhoun, E. (2004). *Models of teaching* (7th ed.). Upper Saddle River, NJ: Pearson/Allyn & Bacon.
K12 Online Conference: <http://k12online.conference.org>
National Educational Computing Conference (NECC) hands-on workshops: <http://www.iste.org/neccc/program/>
PBS TeacherLine: <http://www.pbs.org/teacherline/>
PBS TeacherLine Peer Connection: <http://www.pbs.org/teacherline/peerconnection/>
SchoolForge: <http://www.schoolforge.net>
Tapped In: <http://tappedin.org>
Teacher Leaders Network—Lesson Study Resources: http://www.teacherleaders.org/old_site/Resources/lessonstudy.html
Texas Instruments Teacher Action Research: http://education.ti.com/educationportal/sites/US/nonProductSingle/research_teacher_action.html
Thinkfinity/Marco Polo: http://www.marco-polo-education.org/pd/pd_index.aspx



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