Breakout Session:
Professional Learning Online

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Agenda

• 3:30 - 3:45 I provide kindling (you provide the match)
  – Recap of Fall 2006 breakout session
  – Some oTPD conventional wisdom
  – What’s next?
• 3:45 - 3:55 Pair and Share (small groups)
  – Your (or your project’s) experience with online learning has been…. 
  – Your question (or concern) about online learning is…. 
  – Your reaction to my kindling
• 3:55 - 4:15 Whole group discussion
  – Share something that you discussed with the group or that you’re burning to say
Summary of Fall 2006 Breakout Session

• Few attendees were engaged in online learning; show of hands?

• Online learning definition: Anything from synchronous to asynchronous, face-to-face to distance, solitary to group, differentiated to lockstep, and sequenced to unsequenced. Online learning is convenient for students to use on their own time and at any location; anonymity disallows for pre-judgments, insecurity of failure, and discomfort with face-to-face interaction.

• Challenges: absence of nonverbal communication; misinterpretations for sarcasm, joking, etc.; technical glitches and unreliability; difficulty with experiences, such as labs, and the need for supervision; verifying the identity of a student for assessment purposes; keeping up with multiple conversations; and diversity of tools.
oTPD Design Considerations

• TPD strategic planning
  – Online-only v. blended is not a strategy
  – Cohort v. individual is not a strategy
  – Synchronous v. asynchronous is not a strategy
• Content v. pedagogy focused
• Alignment with teacher population segment: career stage, grade level, content, local culture
• National, regional, local focus
• Capacity and KSAs of facilitators/moderators
• Experience with online pedagogy and social norms (leaders and participants)
• Technology constraints and affordances
oTPD Design Consideration Framework

An organizer for design and implementation of oTPD (Whitehouse et al., in *Online Professional Development for Teachers*; Dede, 2006)

- Desired Educational Improvement
- Enablers of Improvement
- Content and Skills to Be Learned
- How Best to Teach These
  - Delivery
  - Pedagogy
  - Engagement
  - Face-to-Face
  - Hybrid
  - Online

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Will teachers learn online? No doubt!

Ed Week EdTech Trends (subscribe to this newsletter!)
http://enews.edweek.org/Preview-HTML/a15864a158778a399765025a2

Accreditation Makes Virtual Teachers College Real Thing
Dec 6, 2006

- When Western Governors University introduced its teacher-preparation program, there were those who scoffed at the idea that teachers could be trained from scratch virtually. Now, three years later, it has earned the imprimatur of national accreditation while seeing its enrollment multiply from fewer than 100 students to 4,500….
Do teachers learn online? Show me the data!

Bernard et al. (2004) meta-analysis of 232 studies comparing distance and face-to-face courses on achievement, attitude, and retention.

- On achievement, distance learning that includes asynchronous and synchronous communication (via chat, teleconference), fared better than face-to-face classrooms, while synchronous-only (audio, video) courses fared worse.

JASON Academy online professional development for science teachers

- Teachers made statistically significant gains, vs. the control group in content knowledge

TERC/Lesley University online master’s program in science education

- Study comparing online course to equivalent face-to-face course measured understanding of science concepts and found that both groups increased but the online group increased significantly more than the face-to-face group.

TPT’s Ready to Teach: Teaching Fractions project

- Comparison of online workshop, face-to-face version, and a control group showed changes in practice in both treatment groups, and students of both treatment group teachers out-performed their peers in the comparison teachers’ classrooms
What do teachers want to learn online? Depends!

eMentoring for Student Success (eMSS) project

Preliminary evaluation findings from online beginning science teacher mentoring with focus on content/pedagogy:

- Low % of posts pertaining to science content, pedagogical content knowledge in science or thoughtful reflections on general pedagogy
- High % of post requested or provided quick lesson ideas, with little attention to challenges associated with teaching the content.
- After 1 year, mentees rated themselves better prepared with respect to:
  - working online
  - basic teaching and management skills
  - not with respect to their content-specific pedagogical skills.

Conclusions:

- Beginning teachers are not attracted to activities that look like courses
- Need strategies that balance attention to immediate needs and concerns with experiences that support ongoing development as effective science teachers.
oTPD Technologies: Ala cart or prix fixe menu?

Traditional
• Discussion boards, mailing lists
• Course management systems
  – Commercial, open source, home grown
• Audio/video conferencing, screen sharing
• Recorded video
• Digital library portals

Non-traditional
• Virtual environments/communities
  – Tapped In, CLTNet, LearningTimes, Inquiry Learning Forum
  – Second Life, River City, Quest Atlantis
• Blogs, Wikis, Podcasting, Social Bookmarking, Voice/Video over IP
• ePortfolio
• Google Education- writely, spreadsheet
1996-2006: Technology for Teacher Learning Investment
(from Loucks-Horsley et al., 1998)

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<th>Strategies</th>
<th>Technologies</th>
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<td><strong>Training</strong></td>
<td>• Course management</td>
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<td>– Immersion in inquiry about STEM</td>
<td>• Interactive TV</td>
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<td>– Immersion in STEM work</td>
<td>• Video, CD-ROM</td>
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<td>– Workshops, institutes, courses, seminars</td>
<td>• Groupware, Teleconference</td>
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<td>– Case discussions, study groups</td>
<td>• Authoring, Portfolio</td>
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<td>• Learning from practice</td>
<td>• Email servers, chat rooms</td>
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<td>– Action research</td>
<td>• Web sites</td>
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<td>– Coaching and mentoring</td>
<td>• <em>More investment needed here</em></td>
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<td>– Professional networks</td>
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<td>– Examining student work</td>
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<td>– Curriculum development, adaptation, implementation</td>
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What’s next?  
Shift in TPD Paradigm

Breaking free of the canonical paradigm

• F2F Workshop or institute, then…
• periodic online and F2F follow-up

“I think you should be more explicit here…”

Professional Development

Content Knowledge

Teacher Science Content Knowledge

Teacher Pedagogical Content Knowledge

PCK

Curriculum

Improved Classroom Practice

Increased Student Achievement

Increased Student Achievement

Online Community

Professional Development

Center for Technology in Learning

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Myth of the “Online Learning Community”

TPD and reform projects adopt *learning community* as a follow-up strategy

– Attempts to create “community” around new ideas and “infuse” them with “early adopters”
– Extant teaching community is ignored, poached for experts, or positioned as an impediment to infusion of new ideas
– F2F TPD experts need to learn to be online experts
– District is ill-prepared to take ownership of and sustain new ideas
– High cost to ROI ratio is unsustainable, online community is deemed a failure
Problem-focused, data-driven professional learning model

1. Classroom problem solving
2. Educative curriculum materials (ECM)
3. Study group to analyze issue
4. Workshop, seminar, or institute to go deeper

Network Infrastructure for Entire Community
Self-motivated, Self-Organized, AND Collaborative

What we might see, not tomorrow morning, not in five years, but maybe in 15 years is a different pattern of learning, where, while they’re doing other things in their lives, people learn small pieces that provide a foundation. When they’re ready, when they have the foundational parts, that’s when they’ll take a longer period of time at their workstations interacting through media or sitting in a classroom with a group of people, putting those pieces together. And, over time, that will be seen as a very big shift. (Dede, 2006)
What’s next?
Professional Learning Networks

- Intersecting groups of educators from different settings, disciplines, workplaces, and career stages engaging in professional activities
- Multiple teacher education and professional development programs providing structured learning experiences and content
- Shared services and activities create cost efficiencies and facilitate the progression from learning to be online to being a learning professional online
Preparing 21\textsuperscript{CT} Teachers Requires a 21\textsuperscript{CT} Network

Online network infrastructure can enable…

• Equitable access to human support, information resources, training
• Diverse expertise, ideas, participation
• Expression and contribution
• Flow of information, norms, and values
• Alignment, cooperation, and cohesion
• Efficiency, capacity, productivity

Or constrain…

• It’s not about specific technologies.
• It’s not about specific interventions.
• It’s about collective improvement through professional networks.
• \textit{Ignoring online professional networks is no longer an option. Teenage girls know why.}
What will drive this shift?
Teenage girls become teachers!

A new national survey of teenagers conducted by the Pew Internet & American Life Project

– 70% of girls ages 15-17 have used an online social network compared with 54% of older boys, and 70% of older girls have created an online profile.

– 91% of all social networking teens say they use the sites to stay in touch with friends they see frequently, while 82% use the sites to stay in touch with friends they rarely see in person.

We don’t need to create online communities, we just need to leverage and empower them!
The medium is and is not the message…
– People shift paradigms, not technologies
– Technologies reinforce different paradigms
– What message are we sending?

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Panel Session:
Professional Development:
What Is Needed for Genuine Learning?

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Professional Development: What Is Needed for Genuine Learning?

My answer: A dual-paradigm evolution

1. Sustainable teaching improvement systems… not just periodic interventions. MSP projects are one component of a sustainable improvement system.

2. Job-centered, problem-focused TPD cycles… that begin with classroom experimentation and data that teachers, sometimes, bring to workshops and institutes. Rethink the front-loaded summer institute model.
District Dilemma: Supporting the Professional Growth of All Teachers

- How to address the career-long professional support needs of every teacher in the face of…
  - Overstretched budgets
  - Overburdened teachers, high attrition, and turnover
  - Distributed expertise and resources
  - Fragmented, misaligned, disconnected PD
  - [add your favorite obstacle here]

Q: What would you do?
‘Universal’ TPD Principles: A Holy Grail?

Comprehensive teacher development (e.g., Moir & Gless, 2001)

• A career-long, continuous endeavor that is guided by standards, grounded in teachers’ own work, and focused on student achievement

• Its objective is to develop, implement, and share practices, knowledge, and values that address the needs of all students

• It is planned and implemented collaboratively with support from peer networks, local administration, content experts, teacher educators, and research organizations

• Formal school-based and outside programs are aligned with one another and with informal activities across rungs of the teaching career development ladder.

• Integrated face-to-face and online services support effective PD, promote cohesion and continuity, and spread innovation
Policy Literature Argues for Paradigm Shift

McLaughlin & Talbert, 2001
• Reform must move away from models, programs, or top-down solutions to center on increased support for teachers’ learning and adaptation...through shared work and responsibilities
• Incentive systems would expand teaching jobs to include participating in networks beyond the school and reward the accomplishments of teacher communities of practice

• However well they may have been prepared to teach, and whatever knowledge they may have gained in summer institutes, all teachers need continuing, collegial contact, peer reinforcement, and input from experts to sharpen their skills and deepen their subject knowledge.
Partnerships are the backbone of the shift

Feiman-Nemser (2001)
Universities need schools to help them prepare and induct beginning teachers. Schools cannot extend initial preparation…unless they coordinate their efforts with providers of preservice education.

New teachers would experience greater coherence and continuity in learning to teach if their induction into teaching were in the hands of school-based educators who understood and valued what preservice programs were trying to accomplish because they were part of its design and delivery.

Carroll (2005)
Effective induction must incorporate new teachers into a professional learning community; emphasizing from the start relationships with colleagues and establishing support for continued learning and growth….

Teaching and learning through a community of practice can only take root if the seed is planted and nurtured in the programs that prepare teachers.
Project partnerships can lead to Balkanization: Silos, Gaps, Redundancy, Competition, Capacity Drain.
**New paradigm:**
Many programs; 1 teaching improvement network;
• Learners as experts
• Career paths
• Feedback loops

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<th>Math Teacher Leaders</th>
<th>GS, A&amp;S Faculty</th>
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Feedback loops

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Part 2: “Traditional” STEM Teacher Training Paradigm

Professional Development

Content Knowledge

- Teacher Science Content Knowledge
- Teacher Pedagogical Content Knowledge

PCK

Curriculum

Improved Classroom Practice

- Improved Classroom Practice

Increased Student Achievement

“I think you should be more explicit here…”
What if we flipped tradition on its head?

Problem Focused, Data-Driven Professional Learning Model

1. Classroom problem solving to explore problem
2. Educative curriculum materials (ECM) to go the next step
3. Study group to help analyze the issue
4. Workshop, seminar, or institute to go deeper, engage outside ideas
Capacity-Generating Teaching Improvement System Requires Integrated Technology Infrastructure

Induction Engine

University Partners
Teacher Prep, M.A., EdD

Innovation Engine

Teaching Career Continuum

Certification Engine

Leadership Engine

Better-Prepared Novice Teachers

Beginning

Highly Accomplished Teachers

Applying

Integrating

Innovating

Better-Prepared SOE Faculty

Highly-Skilled Leaders

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