Evaluation Across Contexts: Evaluating the Impact of Technology Integration Professional Development Partnerships

Louanne Smolin
National Louis University

Kimberly A. Lawless
University of Illinois at Chicago

Abstract

Professional development is a necessary component for effectively integrating technology into classrooms. Unfortunately, the evaluation of technology integration professional development (TIPD) rarely moves beyond participation satisfaction surveys, nor does it reflect the concerns of the multiple stakeholders participating in technology integration efforts. In this article, the authors discuss collaborative models that hold potential for evaluating TIPD partnerships. They advocate for TIPD partners to define a collaborative and holistic vision of success that can guide the evaluation process. The authors discuss three specific collaborative evaluation models, examine key issues associated with implementing them, and analyze how each model has the potential to strengthen and sustain professional development partnerships. (Keywords: Technology integration, professional development, program evaluation)

In his informative work on program evaluation, Patton maintains "that social science has proven especially inept at offering solutions for the great problems of our time…. There is a pressing need to make headway with these large challenges and push the boundaries of social innovation to make real progress" (Patton, 2006, p. 28). One arena where there is great potential for pushing the boundaries of social innovation forward is integrating technology in schools. Students are already well versed and facile with using technology to shape their worlds outside of school (Jones, Johnson-Yale, Perez, & Schuler, 2007). The potential for technology to impact students in school should be realized as well. Teach-ers can use technology to transform the teaching and learning context in a way that will position their students for future opportunities in the global context, preparing them for the flattened world that technology has helped to make possible. Through technology, teachers and students can soften the boundaries between life in schools and in communities as well as between their present and future lives. Technology has the potential to expand learning in ways that a traditional curriculum cannot.

Yet the evaluation of technology integration, including professional development for technology integration, has done little to define what constitutes effective practices for realizing such potential. So although the images of our classrooms have significantly changed due to the ubiquity of technology, and many teachers are incorporating technology in their learning environments, these changes have done little to truly reform education. In essence, the "more things change, the more they remain the same" (Sarason, 1996, p. 338).

This article explores the possibilities for collaborative evaluation of technology integration professional development (TIPD) to transform technology practices in schools. To achieve this transformation, we need to shift and expand the research and evaluation processes we use to learn about how TIPD impacts classroom practices and student learning.

Expanding Current Evaluation Models of Technology Integration Professional Development (TIPD)

In their provocative review of research, "Professional Development in Integrating Technology into Teaching and Learning," Lawless and Pellegrino (2007) advocate that the evaluation of TIPD can facilitate changes to teaching and learning in schools. They maintain that although there is a strong perceived need for action in terms of TIPD, the knowledge base derived through research does not guide it. In particular, they advocate for more careful and more systematic approaches for documenting how technology integration occurs within schools, what increases its adoption by teachers, and the long-term impacts that these investments have on teachers and students. Based on this, they propose a sequential three-phase evaluation design that includes evaluation of (1) program characteristics, (2) teacher outcomes, and (3) sustained teacher change and student achievement effects. They maintain that these phases should be sequential. They contend that more needs to be known about the varieties of program structures, such as mentoring or train the trainers' models, before student and teacher outcomes can be evaluated. With this sequence, causal links between specific program variables and outcomes can be substantiated. Within each of these phases, they raise key questions that should underscore the design of evaluation and possible outcomes of such an evaluation.

Desimone (2009) proposes a similar, outcomes-based professional development evaluation model. She states that the goal when evaluating professional development is to move beyond participant satisfaction surveys and to systematically measure its impact on teachers and students in a coherent way. However, rather than a sequential model, she advocates for a connected model in which the evaluation of program characteristics, teacher practice, and student outcomes are recursive. Such analysis can help

evaluators examine relationships among what is taught in professional development, what occurs in classrooms, and how it affects students.

Both models underscore the necessity of analyzing the impact of professional development program activities on both teacher learning and student achievement. They are noteworthy in their attempts to create connected evaluations that link program inputs to teacher and student outcomes. Yet they are incomplete. Both models leave out the importance of the number of stakeholders involved in technology integration, as well as the impact of the stakeholders' collaborative relationships on the meaningful integration of technology in today's schools. They focus on what is to be evaluated rather than how. We must build on these models, incorporating aspects of partnership, to deepen and sustain the impact of TIPD. In our evaluations, we must take into account how to foster long-term partnerships where all partners benefit.

A myriad of stakeholders is involved in the integration of technology in schools, including funders, teachers, school administrators, ICT personnel, higher education institutions, parents, and community members. Working together, these collaborators can garner sustained funding. They can engage in joint planning that benefits a continuum of learners from preservice teachers and inservice teachers to K–12 students. Through collaborative exchanges, university-based content area experts and classroom-based teacher practitioners can maintain a focus on integrated academic content rather than decontextualized technology skill building. Therefore, in a professional development partnership, a balance of learning occurs. As such, teachers have the benefit of working closely with content area experts, and university content area experts have the benefit of learning about pedagogical practice situated in local contexts. In this way, professional development approaches can be tailored and individualized to participants' needs. Teachers have greater potential to apply what they are learning in professional development programs to

their specific classrooms, and teacher educators can tailor their methods courses to better prepare teacher candidates for classroom-based pedagogies.

Yet often the evaluation of TIPD is not a collaborative endeavor. Of the stakeholders described above, we have been concerned with three primary groups: funders, institutions of higher education, and teachers. From their vantage points, each of these stakeholders has defined their own vision for what constitutes effective TIPD, which lacks a holistic view.

For example, funders often deem TIPD successful if it affects student learning. Technology integration is a costly, ongoing expense. External sources of funding are necessary to maintain not only meaningful technology integration, but also functional technology-infused learning environments. Funders have a stake in knowing whether and how their support affects teacher and student learning. Funders want to know whether the benefits of their technology funding outweigh the costs (Kleiman, 2004; Lemke & Coughlin, 1998). Yet often the outcomes of collaborative teacher professional development are difficult to measure because they do not tend to provide tangible and immediate evidence (Lieberman & Grolnick, 1996). Therefore, they might not reflect what funders are interested in knowing. Specifically, a funder's vision of successful TIPD is one that quantifies the difference that their funds have made with respect to student learning, and without tangible evidence this could be difficult to establish.

Institutions of higher education play two important roles: They have the potential to create new frontiers for transforming teaching and learning environments with the use of technology, and they provide a pipeline of technology-proficient inservice and preservice teachers who can implement these transformations and become leader advocates for technology integration across university and school contexts (Strudler & Weitzel, 1999). Their vision of successful TIPD is the extent to which participants use the transformative technology-infused practices they

teach, the quality of the participants' technology-integration practices, and the resulting student outcomes.

Teachers are "frontline" stakeholders. Through their roles, they can adjust and fine-tune what they have learned in professional development sessions to their unique contexts and students. For them, success is inextricably bound to their teaching and classroom culture. Teachers deem professional development successful if it deepens their teaching of a particular concept, helps them create instructional conditions conducive to student engagement, and fostering student learning of content (Mumtaz, 2000). So it is through their direct work with students that they can incorporate what they have learned within their teaching practice and implement transformative technology practices within their classrooms. Ironically, teachers' roles in evaluation are typically as limited, passive respondents.

These individualistically derived notions of success have resulted in short-term changes and have hampered long-term improvements in teaching and learning. Teachers have difficulty sustaining the transformative practices they learn in professional development without ongoing support and mentorship. As such, their potential for affecting their students' learning, as well as their mentorship of new teachers, is difficult to achieve. Higher education partners lose an important laboratory of innovation as well as placements for their students. When success cannot be sustained long-term, funders are hesitant to continue their support. As a result, teaching and learning may revert back to the status quo.

Lack of collaboration also impacts the evaluation of TIPD. The traditional program evaluation scenario is one in which an external "expert" evaluator carefully collects information about a program or some aspect of a program to make necessary decisions about the program. This approach does not highlight the relationships evaluators must develop to collect data and information, nor does it detail who should be making decisions related to the evaluation,

Table 1. Collaborative Evaluation Models

Evaluation Model	Focus of Evaluation	Key Processes
Developmental Evaluation	Continuous program growth and progress	Dialogic, facilitating emergent evaluation designs that nurture program growth
Responsive Evaluation	Providing assistance to educators/participants that is situated in their classroom contexts	Collaborative, gaining the multiple perspectives of all stakeholders concerning data collection strategies and interpretations of findings
Layered Research	Expanding the knowledge base concerning effective classroom practice based on participant's inquiries and contexts	Action research/teacher inquiry, including participant-driven documentation

who should have access to the results, and how they should implement recommendations. Absent these considerations, a danger exists that evaluation outcomes will be irrelevant or impractical for all stakeholders.

We advocate collaborative and holistic visions of success rather than separate visions characteristic of traditional approaches to evaluation. Through collaboration stakeholders can arrive at a shared vision of success through evaluation. In so doing, stakeholders can change and enlarge the lenses through which they evaluate success.

Collaborative evaluation involves all stakeholders asking common questions such as "What is it that teachers need to have to successfully integrate technology?" "What do higher education partners need for success?" and "What demonstrative proof do funders need?" Stakeholders must also explore what evaluation processes foster collaboration, how information should be gathered, and how it should be shared. Evaluations grounded in shared questioning ensure that all stakeholders' needs are met and that the definitions of success are mutually valued and collaboratively derived.

When evaluation becomes a collaborative endeavor, boundaries between the various stakeholders can be crossed. For example, technology integration is a field-based process, and the contextual realities surrounding technology-integration efforts may be unique from participant to participant. Evaluation of TIPD can uncover the contextual realities surrounding a program as it is being implemented in the field. Stakeholders can then arrive at a shared understanding of what is going on in the field and

draw upon the field when designing instruments, analyzing results, and offering recommendations that are feasible to integrate in practice.

Collaborative Approaches that Can Inform TIPD Evaluation

How can collaborative evaluation be achieved when it is "more often messy, not orderly, emergent, not controlled" (Patten, 2006, p. 33)? TIPD evaluation must provide feedback and information that is useful for all stakeholders in their roles. The evaluation should be nested in the contextual realities in which the technology is integrated. It should take into account the dynamic nature of technology development. To accommodate such demands, many researchers are advocating for collaborative evaluation approaches that are participant oriented. For such approaches, the evaluation methods are "iterative and characterized by a process of experimentation, learning, and adaptation" (Patten, 2006, p. 33). Collaborative evaluation should build long-term relationships rather than short-term encounters.

As stakeholders enlarge their evaluation lenses through collaborative evaluation, there will be an impact on professional development. Through collaboration, we can move beyond "inoculation" or "dump truck" models of professional development and focus our efforts on enhancing the success of ongoing long-term professional development strategies such as mentoring and situated modeling. In this way we will be providing support and feedback to teachers as they attain new knowledge, develop resiliency in the face of challenges, and apply what they have learned on a long-term basis.

Collaborative approaches to program evaluation emphasize emergent and participant-oriented designs. These designs are ideally suited for TIPD evaluations because they are more closely aligned with the unique characteristics of successful technology integration, including collaboration between multiple professionals; the importance that contexts play in successful technology integration; and the ever changing nature of technology equipment and resources. This paper will discuss three closely related methodological approaches (summarized in Table 1): developmental evaluation, responsive evaluation, and layered research.

Developmental Evaluation

Developmental program evaluations are designed to support program growth, continuous progress, and change. They potentially provide "rapid response to complex dynamic situations" (Patten, 2006, p. 33) and are therefore "ideally suited for ongoing adaptation and rapid responsiveness" (Patton, 2006, p. 31) that leads to a reasoned program evolution. The goals of developmental evaluations are not generalization or exact replication of a program model, but to "discover and articulate principles of intervention and development" (Patten, 2006, p. 31) that program developers can apply to their respective programs. There are methodological and interactional differences with traditional models of evaluation. For example, in a traditional evaluation, goals and outcomes are routinely identified prior to implementing the evaluation. In a developmental evaluation, rather than being preset, goals and outcomes emerge through the learning process. This emergent nature affects the relationships between program evaluators and implementers. In developmental evaluation, the evaluator is often an integral member of the program design team, not only varying the evaluation methodology with the problem to be solved, but helping those involved in program design and implementation to "think evaluatively." As such, developmental evaluation is tailored to the needs of all partners and is "designed to be congruent with and nurture developmen-

tal, emergent, innovative, and transformative processes" among all those involved (Patton, 2006, p. 28).

Dialogic processes facilitate the collaborative, emergent nature of developmental evaluations. Through dialog, evaluation participants make adjustments to evaluation design based on what is possible and what is desirable for the program being evaluated. This necessitates an "open-ended approach to data gathering, where the questions and concerns are emergent, and where trial and error is carefully mined for learning" (Patton, 2006, p. 33).

Responsive Evaluation

Whereas developmental evaluations emphasize emergent design of evaluation to support the evolution of a program, responsive evaluation approaches (Stake, 1973) emphasize collaboration. Responsive evaluation reflects a "participatory democracy among stakeholders in evaluation settings" (Schubert, 2008, p. 403) and focus on "the settings where learning occurs, teaching transactions, judgment data, holistic reporting, and giving assistance to educators" (Stake, 1973, p. 3). Like developmental evaluation, responsive evaluation does not begin with a preordinate approach. Rather, "it is evaluation based on what people do naturally to evaluate things: they observe and react" (Stake, 1975, p. 4). An educational evaluation is a responsive evaluation if: (a) it orients more directly to program activities than to program intents, (b) it responds to audience requirements for information, and (c) the different value-perspectives of the people at hand are referred to in reporting the success and failure of the program. In these three separate ways, an evaluation plan can be responsive. Due to the responsive nature, data collection methods are naturalistic and built on the perspectives of those involved. As such, ongoing observations, interviews, and document analysis are important components of responsive evaluations, as are the interpretations and meanings that collaborators make of the various forms of data collected.

Table 2. Collaborative Evaluation Affects Professional Development and Partnership Relationships

Evaluation Model	How Model Influences Recursive Professional Development	How Model Contributes to Sustained, Long-Term Relationships
Developmental Evaluation	Because evaluation is emergent and dialogic, new processes and topics for professional development can be implemented during the course of professional development rather than for future, new programs with new participants.	Partners become co-designers. Ownership of and commitment to the professional development process can be sustained. Relationships can nurture new professional development opportunities within the partnership.
Responsive Evaluation	As evaluation focuses on the settings where learning occurs (i.e., both professional development and classroom contexts), evaluations can be accomplished across boundaries and focus on how teachers learn, regardless of the setting. There is greater potential for professional development to emphasize how participants learn.	Partners become co-learners, serving as resources to one another both within and outside of the professional development context.
Layered Research	Participants and evaluators develop evaluation inquiries and data collection tools. Because participants' inquiries inform the evaluation, professional development content can become authentic to participants' work.	Partners become co-researchers, focusing their relationship on developing new knowledge that can inform both classroom practice and the field as a whole.

Layered Research

Another evolution of collaborative evaluation, layered research (Burnaford, 2006), explores how teacher participation in research and evaluation informs the instructional decisions they make in their classrooms. As such, the evaluation and classroom contexts of a program are inextricably bound. In layered research, as teachers engage in program implementation, they are "also engaged in documenting and investigating their work with respect to student learning and their own professional development" (Burnaford, 2006, p. 2). In traditional evaluation, the "agenda for evaluation is typically set by the stakeholders, which includes funders, board members, and consumers. The agenda shifts when participants in the implementation contribute as data gatherers and analysts to that agenda" (Burnaford, 2006, p. 3). This creates a milieu in which practitioners inform the knowledge base about what constitutes an effective classroom practice "while still requiring the evaluative procedures that provide them with direction for future planning" of professional development activities (Burnaford, 2006, p. 3). As such, an evaluation can be situated in classroom contexts and therefore has great potential to inform professional development programs that affect teacher and student learning. The core procedures for such an evaluation

are documentation and action research (Burnaford, 2006). Through layered research, teachers frame their own research questions and engage in action research, documenting evidence related to their inquiries as a part of the action research process. Their action research inquiries are incorporated into the overall program evaluation. As such, teachers are "involved in continuous professional development" (Schubert, 2008, p. 403).

These three collaborative approaches shift the processes used for program evaluation: from identifying inputs and measuring outcomes toward a contextually bound approach that is inclusive of the multiple perspectives of all stakeholders. These approaches are therefore ideally suited for TIPD. They expand the number of stakeholders involved in the evaluation and value dialogic processes, so they foster multiple definitions of success. The core processes for data collection, synthesis, and analysis are naturalistic and emergent and can therefore be derived from the unique dynamic contexts in which technology is integrated. Finally, the evaluation methodologies are designed to make teaching and learning visible in both professional development and classroom contexts. Therefore, the outcomes of professional development can be relevant to all involved stakeholders.

Each of these models of collaborative evaluation fosters unique opportunities for the growth of professional development as well as benefits to the partnership relationships. Table 2 (p. 95) summarizes these aspects.

Each of the collaborative evaluation models affirms qualities advocated by the National Staff Development Council (NSDC). Each model seeks information and feedback from multiple audiences and incorporates multiple sources of evidence so that findings can be relevant for all participants. Findings are made available during the course of professional development so participants know the impact of their professional development experiences and act on those findings rather than waiting for the results of yearly testing. Finally, the NSDC maintains that audiences should have the "prerequisite knowledge and skills to interpret and use the information" (National Staff Development Council, n.d.).

TIPD Evaluation Field Example

How might these approaches look when grounded in a real evaluation? To explore this question, we draw from our own experiences developing, implementing, and evaluating a TIPD partnership and share our lessons learned. Through a Preparing Tomorrow's Teachers to Use Technology (PT3) grant program between a large urban university and a large urban public school system, we implemented integrated professional development and curriculum development with teachers in the public school system and teacher educators in the university setting. Our program consisted of a multi-week institute, ongoing professional development throughout the academic year, and a Web infrastructure that supported teachers and teacher educators as they created Web-based classroom curriculum materials. As program implementers, our evaluation goals were to:

- Provide feedback to program developers and implementers that could be used to modify programs based on participants' needs.

- Assess change in participants' knowledge, attitudes, behaviors of technology integration
- Document impact on teacher practice

Our evaluation model included pre/post surveys, observations, expert reviews, and artifact analysis. Professional development participants completed surveys prior to and following professional development summer institutes. Through their responses, we learned that teachers increased their knowledge of classroom-based technology integration practices, their attitudes toward the benefits of technology integration, and their (self-reported) behaviors toward integrating technology in their classrooms. Through this documentation, we learned that a given professional development activity was successful because it increased learners' knowledge of the content, "heightened the value or importance they placed on integrating these new techniques, and increased the number of classroom-related behaviors related to these new practices" (Cunningham et al., p. 157). The results also provided feedback that was useful for adapting professional development sessions based on our program goals.

Experts evaluated the materials that teams of teacher educators and classroom teachers created. This document analysis ensured that the modules created could be applicable and educationally relevant in both teacher education classes and K–12 classrooms. In this way, document analysis served to secure connections between professional development and classroom contexts.

Observations also helped situate the professional development sessions within classroom environments. To evaluate the quality of the lessons created during professional development, the researchers developed and implemented an observation protocol in participants' classrooms. Using the protocol, we evaluated lessons along a four-level continuum, from non-technology use to technology innovation. Results of these observations indicated that teachers were creating lessons that employed more sophisticated

uses of technology, a goal of the professional development program.

Through our evaluation methods, we learned that our professional development program increased teachers' knowledge, attitudes, and behaviors toward technology integration. The quality of the lessons and materials used in both teacher education and K–12 classrooms also improved. These outcomes affected approximately 1,500 students, 300 teachers, and 35 teacher educators.

Even though our professional development program was a collaborative that brought together stakeholders for professional development and curriculum design, the evaluation approaches discussed above were traditional and expert oriented. We did not evaluate the partnerships themselves, nor did we engage in collaborative evaluation processes. We never evaluated the collaboration between schools administrators, teachers, and teacher educators. We did not evaluate the relationships between each of these stakeholders and us as project implementers. Therefore, we do not know what nor how each of these groups learned from each other. Although the relationships between school and university partners were supportive, we often had difficulty integrating our various perspectives beyond the program activities. As such, it was challenging to implement practices outside of the professional development context.

We did not take a close look at the scaffolds we put in place for collaboration, such as the Web-based support materials, technical support, and ongoing mentoring. Therefore, we were not able to learn how we could solidify longer-term relationships.

Our evaluation enabled us to learn about the benefits of the various pieces of our program, but we lacked a holistic view because we drew upon limited perspectives to guide the evaluation. We did not include all the stakeholders as agents of the evaluation rather than passive respondents. As such, we missed the opportunity to guide our participants to become the sources of their own and each others' professional development. Because of this missed

opportunity, four years later, we see that our relationships were not sustained, and without continued funding, long-term gains were not realized.

How could the collaborative processes discussed above foster long-term success? We will examine some possibilities by synthesizing big ideas contained in the three approaches to collaborative evaluations discussed above.

Big Idea #1: Collaborative evaluations build on the benefits of partnership; as such, collaborative evaluations can be guided by similar principles.

The literature on partnerships indicates that those that are successful share certain features. For example, stakeholders should jointly conceive and agree upon program goals; teachers should be actively involved in the implementation process; each stakeholder must develop an appreciation of the others' contributions; and all should mutually understand and own the outcomes of a program (Cole & Knowles, 1993; Ravid & Handler, 2001). These features can be fostered when evaluating a program as well. When sharing joint responsibility for program goals, participants can jointly define visions for what constitutes success and can drive the evaluation. As stakeholders become knowledgeable about the goals and processes of evaluation, program goals become more transparent to them and they can become invested in program outcomes.

Collaboration creates the conditions for all stakeholders to be equally valued, and therefore all involved can achieve parity. If our program had incorporated the perspectives of our stakeholders early on, similar to developmental evaluations, we would have been able to build stronger relationships with our participants, and our program could have developed in ways that reflected the needs of our participants. The outcomes of our program, including participants' increased understanding and application of technological pedagogical content knowledge, could have been sustained over the long term.

Big Idea #2: Collaborative evaluation can provide information useful for adjusting the program as it is being implemented.

Through the process of implementation, ongoing interpretation of evaluation data can create a culture of problem posing between all of the stakeholders. In our PT3 evaluation, had we periodically created opportunities for our stakeholders to look over observational data, we might have been able to discuss patterns emerging through the data and problemetize these patterns in ways that could have informed our professional development sessions. Our professional development activities might have become more meaningful and authentic to a larger population of our participants. In turn, this could have eased participants' abilities to incorporate what they learned in the professional development context with their students, leading to higher-level technology integration in the classroom.

Big Idea #3: Participants are involved in developing evaluation instruments and interpreting findings.

Instruments used for evaluation data collection must be based on what constitutes success. When all stakeholders' perspectives are brought to bear, the outcomes are relevant for them. When participants have input into the construction of data collection instruments, there is a greater potential for them to have clarity about the purposes for professional development. Because participants are a part of the data collection process, a feedback loop is created that maximizes the likelihood that the evaluation can be responsive to their needs. Therefore, all stakeholders mutually value and own outcomes. If we had framed the findings of our surveys and evaluations through the perspectives of all involved, stakeholders could have established learning relationships that would last despite changes in funding.

Big Idea #4: Teachers frame their own inquiry questions related to the overall evaluation, and their data collection informs findings of the overall evaluation.

Had we involved our participants in framing their own inquiries concerning

their own professional growth, documenting their efforts, and analyzing student artifacts, as layered approaches advocate, there would have been greater potential for them to become sources of their own professional development as well as mentors to one another. By sharing observation tools with participants and gathering their feedback, we would have been able to develop a shared understanding of what successful technology integration means. We would be getting more feedback from the field, enabling us to garner multiple perspectives useful for ongoing program modifications as well as more holistic views of success.

Conclusion

Collaborative evaluations foster working relationships and shared understandings. They shift and expand the focus from the evaluation of outcomes only to the evaluation of processes and outcomes. By engaging stakeholders in both the processes and the outcomes of evaluation, professional development can be dynamic, responsive to the needs of a greater number of stakeholders, and sustainable over the long term. To be sure, funding must support collaborative evaluation. Traditionally funders support approximately 10% toward evaluation of a professional development program. This is only sufficient for inoculation forms of professional development and rarely leads to insights helpful for sustaining transformations in classrooms. When funders provide increased resources for broader and more inclusive evaluations, we will be able to create ongoing professional development partnerships that transform teaching and learning, better positioning students to engage in a technology-infused, flattened world.

Author Notes

Louanne Smolin is an independent education consultant. Prior to that, she was clinical associate professor of curriculum and instruction in the Department of Education at the University of Illinois at Chicago. She specializes in curriculum development and evaluation, particularly with respect to multimedia and technology integration in public school classrooms. She has developed professional development partnerships with numerous Chicago

public schools. She currently serves as a research and evaluation consultant for organizations devoted to curriculum reform in urban schools. She has published journal articles and book chapters related to technology professional development and has presented her work at numerous national and international conferences. Please address correspondence to Louanne Smolin, 1443 Dartmouth Lane, Deerfield, IL 60015. E-mail: louanne.smolin@nl.edu

Kimberly A. Lawless is a professor and chair of educational psychology at the University of Illinois at Chicago. Her research interests involve understanding how individuals search for, evaluate, and integrate information across multiple sources of information, particularly those that are found in digital, networked environments. Here work in these areas has been published in more than 100 book chapters and articles. She is currently a principal investigator on two grants funded through the Institute of Educational Science in the Department of Education examining these and related issues. Please address correspondence to Kimberly Lawless, 1040 West Harrison Street UMC 147, University of Illinois at Chicago, Chicago, IL 60607. E-mail: klawless@uic.edu

References

Burnaford, G. (2006). *Moving toward a culture of evidence: Documentation and action research inside CAPE's veteran partnerships.* Program Report, Chicago Arts Partnerships in Education.

Cole, A., & Knowles, G. (1993). Teacher development partnership research: A focus on methods and issues. *American Educational Research Journal, 30*(3), 473–495.

Cunningham, C. A., McPherson, S., Lawless, K. A., Radinsky, J., Brown, S. W., & Zumpano, N. (2008). In A. Borthwick & M. Pierson (Eds.), *Transforming classroom practice: Professional development strategies in educational technology* (pp. 149–167). Eugene, OR: International Society for Technology in Education.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38*, 181–199.

Handler, M., & Ravid, R. (2001). *The many faces of school-university collaboration: Characteristics of successful partnerships.* Santa Barbara, CA: Teacher Ideas Press.

Jones, S., Johnson-Yale, C., Perez, F., & Schuler, J. (2007). The internet landscape in college. (p. 39–51). In L. Smolin, K. Lawless, & N. Burbules (Eds.), *Information and communication technologies: Considerations of practice for teachers and teacher educators.* Malden, MA. Blackwell Publishing.

Kleiman, G. M. (2004). Myths and realities about technology in K–12 schools: Five years later. *Contemporary Issues in Technology and Teacher Education, 4*(2), 248–253.

Lawless, K. A., & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research, 77*(4), 575–614.

Lemke, C., & Coughlin, E. (1998). *Technology in American schools: Seven dimensions for gauging progress.* Santa Monica, CA: Milken Exchange on Education Technology.

Lieberman, A., & Grolnick, M. (1996). Networks and reform in American education. *Teachers College Record, 98*, pp. 7–45.

Mumatz, A. (2000). Factors affecting teachers' use of information and communications technology: A review of the literature. *Journal of Information Technology for Teacher Education, 9*(3), pp. 319–342.

National Staff Development Council Standards: Evaluation. (n.d.). Retrieved from http://www.learningforward.org/standards/evaluation.cfm

Patten, M. (2006). Evaluation for the way we work. *The Nonprofit Quarterly, 12*(1), 28–33.

Sarason, S. (1996). *Revisiting "The culture of the school and the problem of change."* New York, NY: Teachers College Press.

Schubert, W. (2008). Curriculum inquiry. In M. Connelly, M. He, & J. Phillon (Eds.), *The Sage handbook of curriculum and instruction* (pp. 399–419). Thousand Oaks: Sage Publications.

Stake, R. (1973). *Program evaluation, particularly responsive evaluation.* Paper presented at New Trends in Evaluation, Goteborg, Sweden.

Strudler, N., & Wetzel, K. (1999). Lessons from exemplary colleges of education: Factors affecting technology integration in preservice programs. *Educational Technology Research and Development, 47*(4), 63–81.