

E-LEARNING FOR EDUCATORS:



IMPLEMENTING THE STANDARDS FOR STAFF DEVELOPMENT



Mission

NSDC Mission:

ensuring success for all students by serving as the international network for those who improve schools and by advancing individual and organization development.

NICI Mission:

to foster local economic and social well-being through educational innovation, especially in economically distressed communities.

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Foreword

"I am my office," an ad for a high tech company proclaims. And over the past decade, that statement has come to apply to my work life. My laptop computer, personal digital assistant, mobile phone, and digital cameras are my constant companions when I travel. They are tools that I use to communicate, create, collaborate, and stay in touch with colleagues and friends as I spend large amounts of my time away from my home and office. As a result, I don't need to be convinced of the benefits of technology as a tool that improves communication and productivity.

But I remain a skeptical friend to those who say that e-learning will transform professional learning in schools. To quote a much older advertisement, I say, "Show me the beef." I want evidence that e-learning improves practice, boosts student learning, and contributes to the development of high-performing schools.

I am confident that the Internet will help individual teachers and administrators gain knowledge, form networks with like-minded colleagues, and improve their professional performance. But I fear that school systems will view electronic learning as a convenient means of meeting state or district professional development requirements while avoiding their most challenging task—the development of a culture that promotes the types of professional learning and collaboration that are essential if schools are to meet their student learning goals.

I also fear that electronic learning will provide an easily administered, high-tech excuse for returning to the not-so-good-old days in which the primary form of professional learning was university courses, which too often acted as a centrifugal force that tossed teachers and administrators in many directions as they completed their degree requirements. Anything that adds to the fragmentation and incoherence that continues to plague current school improvement efforts cries for elimination, not celebration.

That said, I certainly am not a Luddite when it comes to electronic learning. I encourage thoughtful experimentation with both its content and delivery systems. I also encourage careful study of how its use may contribute to the formation of professional learning communities in schools that lead to effective teaching in every classroom for the benefit of all students.

Quality professional development is an essential ingredient in standards-based reform, and all of us who care about it are eager to find ways to incorporate electronic learning into the mix of professional learning activities that improve student learning. This publication gives its readers a running start in considering how e-learning may be helpful to their schools and the questions they may pose to make certain that it is aligned with *NSDC's Standards for Staff Development*. For that, we can all be grateful to the Online Task Force and Joellen Killion, NSDC's director of special projects, who led this effort and produced this helpful and ground-breaking document.

Dennis Sparks
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Foreword

The young field of e-learning provides K-12 educators with significant professional development and instructional resources. Through sustained online discussion about student work and instructional practice, isolated educators can develop consensus about quality student work in their discipline and can share effective instructional strategies for generating it. Current and future teachers can develop multimedia evidence of their teaching ability in electronic portfolios. Through the virtual library technology, educators and students can access high quality full-text content for instruction, professional development, and research at a very small cost. Through online seminars, educators in isolated rural communities and economically distressed inner cities can access high quality professional development resources that might otherwise remain inaccessible to them. New understandings generated in face-to-face workshops can be deepened and sustained through continued online interaction with professional developers who assist educators to implement new concepts and skills in their classrooms. Indeed, as one engaged in designing online professional development, I increasingly believe e-learning is most effective when used in conjunction with onsite professional development and the creation of a supportive face-to-face learning community.

While e-learning holds great promise, several developments imperil it. Schools, experiencing tremendous pressure to become "technologically fluent," are spending great sums to put technological "stuff" in classrooms that few educators know how to employ to educate their students or themselves. The powerful stress of high stakes student and teacher testing inhibits educators from experimenting with new technologies that are not yet proven to enhance learning. Some professional development vendors, who see potential profit in this new market, are offering questionable content using even more dubious professional development pedagogy, wrapped up in attractive graphical packages. We already possess compelling evidence that one-shot, lecture-based workshops that fail to produce results face-to-face are even less effective online. Online professional development requires the same effective practices that NSDC's research and standards have identified for face-to-face professional learning and further requirements unique to e-learning venues – e.g., prompt user support, easy to navigate user interfaces, equitable access to hardware and software, and rapid, personalized and pertinent online faculty/mentor feedback. Effective e-learning can have great payoffs, but it has to be approached thoughtfully.

In order to realize e-learning's promise, educators, especially those who regard themselves as least technology-savvy, must actively participate in technology-related discussions and decisions. I have seen countless educators silence themselves in technology conversations because they didn't feel qualified to comment. Yet, educators skilled in educating should speak up about the purpose of technology investments--to enhance student learning. Educators, regardless of their comfort or familiarity with technology, need to ask developers of e-learning how their products enhance students' learning and educators' ability to serve students.

The National Institute for Community Innovations is pleased to collaborate with NSDC in providing this guide to encourage and assist educators in asking the tough, important questions about e-learning to ensure that it benefits both educators and their students.

Robert McLaughlin
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Purpose of This Guide

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With financial support from the National Institute for Community Innovations and in collaboration with a variety of professional associations, individuals, and companies, this resource was developed to provide assistance to staff development leaders in the review, selection, and development of e-learning products and services. Using the internationally known *National Staff Development Council's Standards for Staff Development, Revised Edition*, this document provides a framework of guiding questions to facilitate decision making regarding technology-mediated staff development. Our assertion is simple: Quality staff development, regardless of its delivery media, must meet the same high standards.

To date, most staff development is provided in face-to-face settings. Schools and districts may be appropriately reluctant to make the transition to other delivery media and structures made possible with technology without further evidence of their effectiveness. They may actively seek more evidence about the impact of e-learning before investing in it. Yet, districts, especially as they are challenged to increase staff development opportunities, may wish to consider the potential of e-learning and carefully monitor its benefits and effects to

- provide more just-in-time professional learning;
- create job-embedded learning opportunities;
- ensure content-rich learning opportunities;
- expand personalized professional development;
- increase access to professional learning experiences; and
- potentially reduce the costs of professional development programs.

“National Staff Development Council’s goal is to ensure that all professional learning for educators meets the highest standards of quality.”

The National Staff Development Council’s goal is to ensure that all professional learning for educators meets the highest standards of quality. In addition, the Web-Based Education Commission encouraged the education community to develop standards for high quality online courses (2000). This resource guide will assist staff development leaders to organize, review, study, and evaluate e-learning products, services, and programs and determine the value they add to a comprehensive staff development program. This guide identifies criteria for high quality professional e-learning for educators.

Overview

Advances in technology have changed virtually every aspect of our lives. These changes have dramatically impacted how we communicate, manage information, use our time, and complete simple and complex daily tasks. Technology is also reforming how information is accessed and processed. Students are able to access and manage information and interact with others in ways barely thought possible just a few short years ago. Electronically they can visit museums and other countries, participate in lessons taught by teachers conducting research in Antarctica, interact with scientists in space and under the ocean, view original historic documents, and participate first-hand in research with others across town, across the country, or around the world. They can even engage in virtual simulations of surgery to study anatomy or physiology. Almost every day new applications for technology emerge, usually enhancing both life and learning.

Not only do advances in technology influence how teaching and learning occur for students, they may also influence how educators learn. Teachers and principals have opportunities, via e-learning, to participate in multiple professional and personal learning experiences. Teachers can exchange ideas with leading experts in their content areas, visit classrooms of exemplary teachers, receive coaching from their mentors via web conferencing, and access online virtual libraries full of instructional resources and research. Teacher and principal certification and advanced certificate programs are available online nationally and at state universities. Most institutes of higher education offer some online courses, and many now offer bachelor's, master's, and other specialist's degree programs online.

“Not only do advances in technology influence how teaching and learning occur for students, they may influence how educators learn as well.”

All educators will face constant change as students, schools, and communities increase demands on schools. Change of this magnitude requires ongoing professional learning. The field of professional development will explode as more and more educators strive to keep abreast of current research and best practice in teaching and learning to meet student and community educational needs.

Despite the increased demand for ongoing professional learning, education may continue to struggle with external forces shaping its direction unless educators themselves begin to take responsibility for shaping the learning communities within which they work and learn. To do this, it is important that they not only become informed consumers of e-learning products and services, but co-constructors of them. Their learning needs and preferences along with the needs of their students and their schools must become the driving forces in the design of professional e-learning products and services. If educators identify and voice their needs by demanding high quality professional learning related to student learning needs, those who produce such products and services will respond by developing results-driven, needs-based products that meet the market demand.

In business and industry, the trend toward instructor-led, face-to-face training is decreasing, and professional learning is quickly moving to a just-in-time, technology-mediated environment (Berge, 2001). Online training in the private sector not only addresses the more traditional information technology skills, but recently has widened its scope to include leadership, collaboration, and management skills, and the development of job-specific knowledge and skills. As the need for learning increases in a rapidly changing knowledge-based economy, many businesses are rethinking their approach to workforce development. Online training is projected to increase to 55 percent of all training and development by 2002, up from 21 percent in 1998 (Bassi & Van Buren, 1998). Web-based training alone, a form of technology-based training and development, is expected to grow 95 percent, from \$197 million in 1997 to \$5.5 billion in 2002 (More, Bailey, & Lau, 1999).

Overview

These changes in business and industry will influence two aspects of education. One is how schools prepare graduates to learn on-the-job. The second is how continuing education for adults, both at their workplace and beyond, will be designed and distributed. Companies such as Qualcomm, Ford Motor Company, Hewlett Packard, U.S. Army Intelligence Center, and the American Red Cross, to name just a few, have increased their use of online training and the numbers grow daily. In a survey of attendees at the Training 2001 Conference & Expo, 78 percent of respondents agreed that e-learning is an essential part of their company's blended learning strategy, and over 80 percent expected their organizations to invest in e-learning this year (Future Vibes, 2001).

We cannot ignore the potential impact e-learning will have on the development of both preservice and inservice educators. Integrated seamlessly with high quality face-to-face staff development, e-learning can enhance learning opportunities for adults in schools. Further, educators who act early in this trend can shape the quality and use of e-learning for staff development so that it embodies the characteristics of powerful professional learning that sustains growth over time, builds productive learning communities and, most importantly – improves student learning. Educators now more than ever can take an active role in co-producing knowledge, shaping the structure of their own learning experiences, and influencing producers of e-learning to develop programs, products, and services that are responsive to the needs of educators and their students. Without the active participation of educators themselves, e-learning may not develop to its full potential. Instead of becoming a dynamic tool to construct knowledge, technology may be used only for information and resource management.

The National Staff Development Council seeks to guarantee that real learning for educators and results for students become the trademark of this new era of staff development.

The National Staff Development Council (NSDC), the National Institute for Community Innovations (NICI), and others who contributed to this work want to ensure that e-learning for educators meets rigorous standards of quality. To hold developers, vendors, and other providers to such high standards increases the likelihood that results – not only for educators but also for students – will be realized.

At this turning point in implementing new environments for learning through technology, standards for quality are even more crucial. Technology allows providers to offer the consumer a learning package that may be attractive rather than substantive. Yet, all the bells and whistles made possible with technology will not produce results for students or educators unless the technology supports high quality learning for educators. Successful e-learning programs, products, and services meet rigorous standards, are integrated into a comprehensive staff development program, and are supported within a learning community by systemic structures necessary to encourage and sustain them. These structures include careful planning, supportive leadership, and data-driven decision making. The National Staff Development Council seeks to guarantee that real learning for educators and results for students become the trademark of this new era of staff development.

Increased Learning Opportunities

Increased Learning Opportunities

A steady stream of new companies provides online staff development products and services tailored for the educator market. Market demand for e-learning in education is expanding dramatically, and both private and public agencies are striving to meet an expanding consumer demand for this new form of staff development.

The education field is fertile territory for e-learning for several reasons.

- Most states require teachers and principals to earn continuing education units (CEUs) to renew their teaching and administrative licenses or certificates.
- The call for continued professional learning among educators is increasing as states increase their accountability for schools and districts.
- The importance of staff development as a key process to improve student achievement is more widely accepted.
- Schools and districts are increasing their professional development opportunities – and especially those that are flexible, convenient, cost effective, and that use the newly installed technology infrastructure in schools.
- Ninety-five percent of the U.S. public schools have Internet connections (Lessons of a Virtual Timeframe, 2001).
- The total education spending last year reached \$800 billion (Lessons of a Virtual Timeframe, 2001).
- Education and training is the second largest sector of the U.S. economy and represents the second largest expenditure behind healthcare (Web-based Commission on Education, 2000).
- The e-learning market in K-12 education is expected to grow to \$6.9 billion in 2003 (Moe & Blodgett, 2000).
- The number of students in post-secondary education enrolled in distance education is projected to triple to 15 percent from five percent in 2002 (Web-based Commission on Education, 2000).
- Teachers report a significant lack of training and preparation in technology use (Technology Counts 2001).

As a result of technology-based staff development, teachers who have traditionally driven to a local university or across town to a staff development center to participate in courses for salary advancement, recertification, or advanced degrees may now participate when and where they want. They can set their own schedules, log on after school, during planning time, or after their own children have gone to bed, for an hour, two hours, or 15 minutes. Because courses are available from universities, colleges, corporations, and associations worldwide, educators have access to far more opportunities for professional development than they would in their own school, district, or region.

Increased Learning Opportunities

	Current Realities of Most Face-to-Face Staff Development Realities	E-learning Possibilities
Time for Learning	Time for formal staff development such as courses, workshops, seminars, etc., is determined by a set schedule.	Time for learning is flexible and available to learners twenty-four hours a day, seven days a week (24/7).
Place for Learning	Participants and/or consultants travel to designated learning site.	Learning occurs anywhere access is available and when the learning is desired.
Opportunities for Learning	Opportunities for learning are predominantly determined by geographic region.	Learning opportunities are available worldwide.
Design for Learning	Most learning occurs in formal structures where one-size-fits-all.	The learning experiences is customizable and supports "just-in-time" learning.

Such exponential growth in access to information and learning opportunities may hold promise for the field of staff development. While it is still too soon to know the effectiveness of e-learning initiatives, nonetheless, virtually every day, businesses, program developers, staff developers, community-based agencies, professional associations, and universities are creating new courses, programs, services, seminars, and other forms of technology-mediated learning for educators. Faced with these opportunities, individual educators, schools, districts, and other agencies are eager to explore the potential of e-learning and avoid whatever pitfalls may exist. With the increased access to professional learning for educators available through e-learning, it is even more important to ensure that all professional learning supports educators in gaining the knowledge and skills necessary to increase student learning.

Educator Learning and Student Achievement

Educator Learning and Student Achievement

What teachers know and do influences student learning. In order to maintain and extend teachers' and principals' practice, it is important that ongoing professional development be a regular part of the school day. When teachers have access to high quality, results-driven, content-specific staff development, their students' academic achievement increases (Killion, 1999; National Commission on Teaching and America's Future, 1996; WestEd, 2000). For example, an investment in professional development produces greater increases in student achievement than comparable investments in reducing class size, increasing salaries, and hiring more experienced teachers (National Commission on Teaching & America's Future, 1996).

When teachers have access to high quality, results-driven, content-specific staff development, their students' academic achievement increases.

Increased demands on educators for accountability and challenging differences in student learning needs require more and higher quality professional learning for educators. States, in response to increased public accountability for student achievement, are establishing stronger policies regarding educator certification and licensure renewal. Many states have enacted policies to require ongoing professional learning for practicing educators. As a result, educators themselves are seeking more opportunities for professional learning and are demanding that these experiences be more closely related to their specific responsibilities and their students' learning needs. For example, district leaders, principals, and teacher leaders have responsibilities to build, support, and maintain healthy learning communities.

High quality professional learning on an ongoing basis is one way schools and districts can leverage improvement in professional practice and increased student achievement.

High quality professional learning on an ongoing basis is one way schools and districts can leverage improvement in professional practice and increased student achievement. When educators focus their learning on specific needs of students they serve, they are able to exponentially increase the results of their learning.

Standards For Staff Development

Because most e-learning experiences for educators fall within the arena of staff development, NSDC and NICI want to assist staff development leaders become savvy consumers of the products and services available today and of those that will emerge. This guide is intended to provide a framework for making sound decisions about the selection, implementation, and development of e-learning designed to improve educator practice and student achievement. It can also assist educators in taking an active role in shaping the responsible application of e-learning in professional development by giving them information and criteria for advocating about e-learning.

Guiding the development of this resource guide are the *NSDC's Standards for Staff Development, Revised Edition (2001)*. During the last six years the standards have served as the foundation for the design, implementation, and evaluation of staff development in schools and districts throughout the world. Over 100,000 copies of the standards have been distributed and serve to help schools and districts benchmark their current staff development practices.

Regardless of its delivery media, staff development designed to increase student achievement meets high standards to achieve its intended results. The *NSDC's Standards for Staff Development, Revised Edition* synthesizes several decades of research in the field and builds on numerous examples of successful practice. The standards provide exemplars of successful practice for both face-to-face and technology-mediated staff development. As standards, they serve as benchmarks of the highest quality staff development programs. The standards identify the context, processes, and content that research identifies as necessary to improve student achievement through staff development.

NSDC's Standards for Staff Development, Revised Edition is the foundation upon which to make decisions about technology-mediated staff development. Because staff development available through electronic resources serves the same function as face-to-face staff development, the context necessary to support adult learning, the processes by which they learn, and the content they need to increase student achievement are the same. E-learning has the potential to expand and enrich learning opportunities for educators employing alternative learning processes not available in the face-to-face arena. However, in order to be as effective as face-to-face staff development in deepening understanding and improving performance of both educators and their students, e-learning for educators will need to meet the same high standards as those for face-to-face professional learning.

It may seem that we hold e-learning to a higher set of standards than face-to-face staff development. The fact is we do not. Because the practice of face-to-face staff development has been slow to fully implement these standards does not suggest that e-learning will have the same timeframe to conform. As awareness and implementation of the standards grows, so do leaders' expectations that available products, programs, and services will meet the standards. Just as face-to-face staff development is being scrutinized for its adherence to the standards, so too is e-learning. Very possibly because e-learning is relatively new, consumers may have higher expectations of it than they currently have of their existing face-to-face staff development programs.

Context Standards

The context into which e-learning is introduced enhances or inhibits its ability to impact student achievement. The National Staff Development Council believes that the primary purpose of staff development is to increase the achievement of all students. In any professional development provided either face-to-face or electronically, the emphasis must move beyond educators' acquisition of knowledge and skills to implementation in the school and the classroom for the purpose of improving student learning.

If educators are to introduce new practices into their work and to deepen their understanding of content, their students, and teaching, the environment in which they work must support their learning – through adequate resources, strong supportive leadership, and a community that encourages collaboration and application of new learning.

Standards For Staff Development

Context Standards

Staff development that improves the learning of all students	Essential Elements
organizes adults into learning communities whose goals are aligned with those of the district and school.	Shared vision and goals Expectation for collaboration Learning time
requires skillful school and district leaders who guide continuous instructional improvement.	Role of leaders Distributed leadership Policies and structures
requires resources to support adult learning and collaboration.	Financial and other support Time Access to learning opportunities

To be successful, e-learning requires specialized resources in addition to those necessary in face-to-face staff development. E-learning requires an investment in the technology infrastructure including hardware, connectivity, and the software that supports learning. It also requires ongoing and planned maintenance and upgrading and access to technical support to minimize technical problems, which interrupt learning and decrease learners' motivation and capacity to learn. Human resources include faculty with specialized training in designing, teaching, and facilitating e-learning. Sufficient faculty is needed to ensure that students have immediate feedback and support to prevent depersonalization within the e-learning environment.

E-Learning Infrastructure Requirements
Hardware Software High-speed connectivity Regular maintenance Planned upgrades Specially prepared faculty Appropriate participant-instructor ratio

Without a high level of support, even the best learning opportunities – either online or off – will remain unused. To fully realize the potential of e-learning, the context in which it is implemented must reflect the critical elements of a supportive learning environment. This includes creating a learning community that encourages collaboration and shared inquiry, providing the necessary resources, and ensuring strong leadership to sustain the effort.

Process Standards

In addition to a supportive context, the processes used to facilitate learning determine its success. This holds true in both face-to-face and e-learning environments. If the learning processes involve learners only as receptacles for deposited information, learning will be shallow. Early forms of online learning were largely text-based and offered few, if any, interaction opportunities beyond email. Today's technology allows far more active engagement for the purpose of deepening understanding and making application in real-life contexts. Ongoing teamwork, discussions, product and project development, research, reflection, demonstrations, and modeling are just some of the ways technology facilitates active engagement of the learner.

The processes that guide the development, implementation, and evaluation of e-learning – as in face-to-face staff development – ensure that several essential factors are present in learning experiences.

Standards For Staff Development

Process Standards

Staff development that improves the learning of all students	Essential Elements
uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.	Data disaggregation Need analysis Continuous improvement
uses multiple sources of information to guide the improvement and demonstrate its impact.	Evaluation design Learner evaluation Student results
prepares educators to apply research to decision making.	Access to research Application of research Action research
uses learning strategies appropriate to the intended goal.	Delivery options Learning strategies Follow-up support
applies knowledge about human learning and change.	Supporting change Adult learning needs Educators' professional goals
provides educators with the knowledge and skills to collaborate.	Collaborative climate Interactivity Group development

These learning processes increase learner's success with both face-to-face and e-learning experiences, decrease the relatively high dropout rate among e-learners, and maintain learner engagement and motivation.

Content Standards

Both face-to-face and electronic staff development require that aligning the content of the professional learning with student learning needs and school or district goals. It is important that those making decisions about the selection, design, purchase, or implementation of technology-mediated learning ensure that the content aligns with the local, district, state, and national content standards for students and with performance standards for teachers, administrators, and others. The content of staff development that advances student achievement addresses three areas that support alignment with district and school improvement goals and educators' individual professional goals.

Content Standards

Staff development that improves the learning of all students	Essential Elements
prepares educators to understand and appreciate all students, create safe, orderly, and supportive learning environment, and hold high expectations for their academic achievement.	Demonstrating respect and understanding Student learning needs High expectations for all students
deepens educators' knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to appropriately use various types of classroom assessments.	Alignment of curriculum, instruction, and assessment Meeting individual student needs Deepen content knowledge
provides educators with knowledge and skills to appropriately involve families and other stakeholders.	Communication with families Cultural understanding and respect Community commitment

Because technology makes so much content available, the selection of programs and services that align with the intended results of the school or district requires thoughtful analysis. Just as that of its face-to-face counterpart, it is important that the content of online staff development products and services reflects national, state, and local content standards and aligns with educators' level of experience and competence.

E-Learning

E-Learning

E-learning includes learning experiences enabled or enhanced by technological resources that support the development, exchange, and application of knowledge, skills, attitudes, aspirations, or behaviors for the purpose of improving teaching and increasing student achievement. *Knowledge* includes information, theories, principles, and research. *Skills* are the strategies and processes to apply knowledge. *Attitude* are beliefs about the value of particular information or strategies. *Aspirations* are the desires or internal motivation to engage in a particular practice. *Behaviors* are the consistent application of knowledge and skills.

For example, teachers who use performance-based assessment with students know about various assessment types and when each is appropriate (*knowledge*). Teachers would have the skills to analyze curriculum to determine critical benchmarks for assessment, design various types of performance assessments, and implement both assessments and scoring guides (*skills*). Teachers would also value the use of performance assessment over other forms of assessment to demonstrate students' deep understanding of the content (*attitude*). In addition, they would desire to use performance assessment (*aspiration*). Teachers would frequently use performance assessments and apply the results of various assessments to inform instructional decisions (*behavior*). Staff development that addresses all five of these elements is more likely to cause deep change in practice and improved student results.

“Technology brings the world of learning to educators,
rather than requiring educators to go to the learning.”

Technology as a vehicle for staff development:

- alters the learning environment;
- provides new structures and media for reflecting, communicating, and acting;
- facilitates modeling and visualization;
- allows for construction and discovery of knowledge;
- expands access to information, networks, people, and ideas;
- increases the flexibility of time and places for learning; and
- provides significant resources.

E-learning includes multiple uses of technology to facilitate learning. The uses range from the simple to more sophisticated. Videotape and audiotape are simpler forms of technology-mediated learning. Computer-based learning such as computer-aided instruction and tutorials represent different forms of e-learning. Internet-based learning such as online courses and web-based videoconferencing represent still other forms of e-learning. For the purpose of this guide, *e-learning* serves as the umbrella term for all forms of electronically-assisted or technology-mediated learning.

Although technology-mediated staff development offers far more diverse learning experiences, its core purpose and function are the same as its face-to-face counterpart. As such, it is a prominent reform intervention, capable of improving learning and teaching. When schools want to improve student performance, they provide staff development opportunities to enhance educator effectiveness: the pathway to student achievement.

The similarities between traditional face-to-face staff development and technology-mediated staff development are significant. They require the same level of support and resources to ensure effectiveness. They use many of the same learning processes, including collaboration, inquiry, dialogue, and reflection. And, they both seek the same result – to increase student achievement.

Examples of Professional E-Learning

The examples of technology-mediated staff development presented represent a broad range of probable applications of e-learning. They illustrate various components of comprehensive staff development plans that depict where and how e-learning might be infused to enhance educator learning and student achievement. All of the examples have several commonalities. They all focus on increasing student achievement and creating and supporting networks for collaboration among educators.

Personalizing Learning Content and Time

Instead of traveling across town after school to attend a workshop, teachers now stay in their own schools or classrooms and participate in an online course related to their individual professional development plans. Rather than wait until the courses are offered by the district's staff development department or at the local college, teachers now access courses anytime, anywhere to fit their individualized needs. Or, if teachers wish to complete a course of study in a shorter or longer block of time, they can design their own learning experience by accessing only a portion of a course or combining a number of courses into their own unique learning program.

Increasing Content Knowledge and Pedagogy

Aprincipal, who wants to develop a novice teacher's ability to teach reading, can log on to the teacher's classroom computer and together they can view a videostreamed lesson clip that provides an example of best practice. They then discuss how the teaching in the video might be used in the teacher's classroom and work toward creating a joint plan for remodeling the teacher's lesson to incorporate the practices modeled in the video. The novice teacher can follow-up by emailing the teacher on the video to seek additional clarification on his behaviors, ask questions to help the novice teacher understand the learning principles integrated into the lesson, and read a commentary written by the videotaped teacher about this lesson.

Differentiating Instruction

When middle grade teachers want to provide extensions or remediation to accommodate individual student differences, they can search numerous web sites for lessons and recommendations for differentiating lessons. They might study the model lesson plans, determine which strategies might be most appropriate for their students, remodel posted lesson plans, or ask an expert in instructional design, curriculum, or young adolescents to review and comment on their remodeled lesson before they teaching it.

Building Content Knowledge

Teachers gather electronically with colleagues from five regions within the state to discuss fourth grade mathematics curriculum, instruction and assessment. After-school seminars, chats, and expert-facilitated discussions are available and tailored to specific topics. Once a month, a mathematician from a state university hosts seminars to extend the participants' content knowledge. She engages the teachers as learners as they complete math problems that students are likely to encounter on the state assessment. Teachers and the mathematician discuss how teachers solved the problems, the concepts underlying the problem, how the problems relate to national standards in mathematics, and how to use similar strategies in their classrooms. On the intervening weeks, teachers post comments to a threaded discussion, including reflections about applying the strategies, questions that arise, successes, and frustrations as they implement the strategies in their own classrooms. A skilled online facilitator continuously monitors the discussion and coordinates interaction among the teachers and the mathematician.

Examples of Professional E-Learning

Planning for School Improvement

A school improvement team meets together to create a survey to collect data from all staff members and the community to evaluate and refine the school's improvement plan. The survey is posted to the school's web site. Staff and community members respond to the survey online within a given timeframe. A software package automatically updates the responses and provides means, medians, and modes for each question. Additional comments and feedback are posted to a threaded discussion. The team reviews the survey responses and comments and uses these data to revise their plan. As parts of the plan are revised, they are posted to the web site for the community to review. Throughout the year, the team can review the plan, collect additional data from the school community, and use the information to refine and document their progress.

Examining Student Work

Practicing musicians and artists are able to examine student art pieces and musical compositions online. Teachers join with the professionals to provide feedback to students on pieces of posted work. Teachers analyze the feedback provided by the experts to strengthen their own understanding of technique, learn how their students' work compares with work of other students, analyze their instruction, and thus can strengthen the feedback they give students in the future.

Developing Instruction and Assessment

Teachers in one school work in small grade level or course peer network groups to design units, construct performance assessments, and conduct scoring conferences with their colleagues. Their units are developed and refined through ongoing discussion among team members. They explore ideas for assessments and rubrics in threaded conversations and contribute to posted templates. After all teach the unit, they comment on their work and examine student work that has been scanned to validate their assessment and rubric. Once they are all satisfied with their work, they post their unit, performance assessment, rubric, and exemplars of student work for other teachers to access or use as models. Preservice teacher educators also access the teachers' work to share with their students.

Mentoring Novice Teachers

A mentor teacher watches her protégé's lesson in another school via web-based videostreaming and then conducts a reflection conference with the teacher via web conferencing – without either one leaving his classroom. To identify specific sections of the lesson he wishes to discuss in depth with his mentor, the novice teacher reviews and annotates sections of his lesson before sending it to the mentor to watch. The novice teacher also maintains an electronic portfolio of text, video, and graphic files demonstrating his increased mastery of the teaching performance standards and his professional development goals. Quarterly the mentor reviews the portfolio with the novice teacher. He also submits his portfolio electronically as evidence of his professional growth twice a year to his principal.

Orienting New Employee

The content of the new employees' orientation program is available online for new employees to review within the first three months on the job. The online testing and records management systems provide data to the director of human resources about who has been online to review the materials, how long each employee has stayed on line, and the assessment scores of each employee. The director then assigns each new employee a mentor who uses the assessment data to design appropriate follow-up support for their assigned employee.

Examples of Professional E-Learning

Applying New Learning

After teachers and principals complete a summer institute in project-based learning, they post their required assignments on the district's Intranet for the instructor and curriculum specialists to provide feedback. After the instructor and specialist provide personalized feedback to each participant on his or her assignment, noting both strengths and suggestions for improvement, participants alter their assignment and add reflective comments and a self-assessment. Other teachers may access the revised assignments and use them to improve their work.

Conducting Lesson Study

Six high school biology teachers and a university biologist jointly prepare a lesson in group space. While teaching the lesson, each teacher uses a handheld computer or personal data assistant (PDA) to record student questions and comments during the lesson. Teachers upload the questions and comments, analyze them using an agreed upon process, and post their comments. They also post suggestions for altering the lesson. Together they modify the lesson, reteach it, videotape it, and make another revision. Once they are satisfied with the lesson plan, they post it along with their individual comments about the lesson and suggested adaptations for various situations. Together the teachers and the biologist choose one video of the lesson to include in the lesson archive.

"Technology-mediated staff development makes learning for educators an anytime, anywhere reality."

Web-Cast Conference

Principals and school safety managers participate in a web cast conference to explore issues related to school safety. The synchronous web cast offers a panel presentation of a leading law enforcement officer, psychologist, school safety expert, teacher, parent, and student. After the two-hour web cast, participants e-mail questions to the panelist and over the next six weeks, each panelist moderates a week-long discussion of topics related to his or her particular area of expertise.

Visualizing and Modeling

Teachers participating in a summer institute designed to deepen their content knowledge about science have opportunities to explore the nanoworld, the world of atoms. Through application on a newly designed web site they explore tools that let them "see" atoms, manipulate them, and create nano-architectural models. They investigate frontiers of the nanoworld by learning how materials are customized to create everything from metal that remembers its shape, to fiber optics that carry light, to semiconductors that give off red light. In addition to developing their own understanding of atoms, they learn ways to assist their students visualize and model atomic structures to facilitate their students' understanding of atoms.

The opportunities and possibilities for professional e-learning are endless. Technology increases access to timely and personalized learning for all educators. It offers capability to tailor learning experiences to what educators need to know now to increase their effectiveness and their students' learning. Technology-mediated staff development makes learning for educators an anytime, anywhere reality.

Considering E-Learning

Considering E-Learning

Because technology increases access to and availability of professional learning opportunities and can reform the way educators learn, many staff development leaders are raising questions and asking for support in selecting and implementing e-learning for educators. To make sound decisions about e-learning, individuals, groups, committees, and organizations will want to consider each of the following areas before investing in or implementing e-learning products or related services.

- Results
- Quality Professional Learning Experiences
- Content Quality
- Flexible Time
- Content Flexibility
- Learner Readiness
- Meeting Educators' Specialized Learning Needs
- Follow-up Support
- Skilled Instruction and Facilitation
- Strengthening Networks
- Appropriate Use of Technology
- Graphically Appealing
- Technical Support
- Interactivity
- Platform-Independence
- Places to Learn
- Awarding Credit for Technology-Mediated Staff Development
- Professional Learning Plans
- Cost

Results

As with all staff development, it is essential to ensure that results are measured in terms of increased student achievement. Increased demand for accountability in education is challenging policy makers, funders, and staff development leaders to determine if investments made in staff development produce gains in student learning. Decisions about where to invest limited fiscal and human resources and time often depend on evidence about the link between staff development and student learning. This same accountability faces those involved in e-learning. Even though some forms of e-learning are still in early stages of development and implementation, it is important that designers and providers evaluate their products and make those results available to potential customers.

Both providers and leaders of professional e-learning are obligated to contribute to the limited knowledge base about its effectiveness. Many colleges where the push for e-learning really began claim only modest results from their efforts (*Lessons of a Virtual Timetable*, 2001). It is imperative that measures of the effectiveness of e-learning for educators reach beyond the number of participants, completion rates, or preference for e-learning over face-to-face staff development to application of learning and results for students.

Considering E-Learning

Quality Professional Learning Experiences

Learning opportunities that align with *NSDC's Standards for Staff Development* are of high quality. To further refine the quality of e-learning, designers and providers will use NSDC's standards to guide their work. Those implementing e-learning will ensure that it is integrated into a comprehensive staff development plan at the district and school level. A comprehensive plan contains a vision for professional development, is based on data about student achievement, offers multiple formats for learning to accommodate adults' learning preferences, and is subjected to rigorous evaluation and ongoing improvement. Professional learning that builds on the best that both face-to-face and e-learning have to offer is more likely to produce results for students and their educators.

Content Quality

Much is available online; however, not all that is online is of the same quality. Course content and program design vary significantly from product to product. Just because a course may be available from a leading university or provider does not necessarily mean that it makes the best use of available technology, provides appropriate content, alters practice, or improves student learning.

Content is most effective or appropriate for staff development when it is linked to school, district, state, and national standards. Yet, even this alignment can potentially limit content quality. It may reflect a limited emphasis on inquiry learning, project-based activities, or collaborative learning models in favor of "drill and kill" learning models as was characteristic of early models of computer-assisted learning.

Technology should enhance and support the content, not limit it. Decision makers will want to be certain that programs and products under consideration offer substantial content related to their identified professional learning needs for educators and have the flexibility for adjusting content to meet the unique needs of their schools, districts, and individual educators.

It is important that the majority of the program content aligns with the content standards specified within the school's or district's curriculum. Deepening teachers' content knowledge and their content-specific pedagogy are important in improving student achievement (Killion, 1999). When teachers, for example, understand the content, they can adjust their instruction to ensure that all students meet the standards. When they have only strategies without an underlying understanding of the research to support the use of those strategies, they may make inappropriate instructional decisions. Programs that align closely with the approved curriculum and with the appropriate instructional strategies designed to assist students in reaching high standards are likely to improve teaching and learning.

Content Flexibility

E-learning provides the flexibility to design or select the specific content learners need at the moment. If a teacher wants assistance with developing a rubric for a performance task in social studies, she does not have to sit through an entire course on performance assessment to receive the specific assistance she needs. Using technology, she can zero in to the course module, exemplars, samples, or guidelines on developing rubrics to access just what she wants to meet her individual learning wants.

Flexibility in format that allows for multiple entry points into and out of the program increases learners' sense of control over their own learning. If the program supports customizable content, learners can easily tailor their own learning to align with their personal and professional learning goals, their schools' goals, and the districts' goals. Content flexibility allows learners to determine areas in which they want to spend additional time, seek alternative resources, and choose to deepen their own learning in areas of interest or

Considering E-Learning

need. This ability to tailor learning processes and content to the needs of adult learners allows for "just-in-time" learning for educators.

Flexible Time

Traditional formal face-to-face staff development - conferences, courses, seminars, meetings, consultant presentations, and training sessions, for example - happens when it is scheduled. Time for learning usually occurs on inservice days, during after-school or faculty meetings, or in the summer. If participants are unavailable at the scheduled time, the opportunity for learning is lost. However, technology makes it possible to extend the opportunity for learning beyond scheduled time. Participants can interact with learning 24/7 and revisit particular learning experiences multiple times for their own benefit. In the past, finding a suitable professional development schedule has been a dilemma; inevitably, the schedule has been one convenient for the provider or one designated by the school or district. With e-learning, educators are no longer restricted to scheduled time.

The NSDC recommends that 25 percent of educators' work time be devoted to learning and collaborating with others. However, districts and schools that develop or purchase online staff development programs for educators to use on their own time will not realize the full potential of staff development to improve schools. Educators, unlike most other professionals, already are expected to commit significant personal time for preparation, professional learning, and service on various leadership teams that contribute to the school's management and improvement. Extending learning into educators' personal time increases the likelihood that learning will be isolated from the needs of the whole learning community, focus on individual rather than collaborative needs, and fail to contribute to the improvement of the whole community.

Because the purpose of staff development, either online or off, is to improve student achievement, then time for learning, revising practice, and implementing new knowledge and skill is essential within the educators' workday. Because technology makes it possible for educators to access learning for brief periods of time, they will have increased flexibility during their workday to use time more productively. However, larger blocks of time are also necessary for interacting with e-learning resources and colleagues, constructing understanding, applying new knowledge, and assessing the impact of their reforms. Regular time to learn - within educators' workday - is necessary to encourage and support ongoing learning and development.

Learner Readiness

Learners' needs and preferences for learning media, structures, and processes differ. Not all learners will be comfortable and successful with e-learning, just as not all learners are successful in a lecture setting. E-learning requires self-directed, motivated, and independent learners with some competence and comfort in computer literacy and navigation. In addition, learners who have limited or no experience with e-learning may be reticent to jump in until they have confidence that they have the skills necessary to be successful. Other learners who are unfamiliar with e-learning may also not be eager to change the delivery media of their learning from face-to-face to online.

To increase success with e-learning, schools and districts might consider some options for increasing learners' comfort and skills with learning online. A number of programs provide either face-to-face or electronic orientation sessions to familiarize learners with the program's platform and navigational tools. Others support e-learners with technical support and onsite or online assistance. Because the dropout rate for online learning is higher than in face-to-face learning situations, it is critical to participants to be comfortable and engaged in the learning. It may even be necessary to develop re-entry processes and management systems for e-learners who drop out and want to rejoin the program at a later date. E-learners who have a supportive learning community will be motivated and committed to learning.

Considering E-Learning

Meeting Educators' Specialized Learning Needs

In some schools and districts, educators with unique roles rarely have opportunities for expanding their job-specific or content-specific knowledge and skills. When there is only one chemistry teacher, counselor, or health educator in a school, deepening the individual's content knowledge and skills is difficult. This challenge is heightened in small and rural districts where there may be only one high school science teacher in the entire district. Similarly, other educators with unique roles within a district may find access to staff development available only at national conferences or through professional publications. E-learning provides opportunities to meet these unique needs by connecting these educators with others throughout the world in electronic networks, courses, online seminars, or other forms of electronic learning.

In addition to providing opportunities for educators to tailor their learning and access specialized learning, e-learning makes it possible to provide "just-in-time" learning. When a principal wants to review case law on freedom of the press as related to high school journalism, he can access that information through a brief online learning module that is designed to provide a synthesis of essential information for educators and that includes summaries of key cases. Or, if a teacher wants to learn more about how to meet the needs of a student with disabilities, he can participate in a learning module that provides him with information about the disability, suggests various strategies for accommodating the student's learning needs in the classroom, and provides links to other sites and resources related to the disability.

Follow-up Support

Ongoing support and follow-up ensures that staff development, delivered in either a face-to-face or online environment, will effect long-term changes in educator practice and produce results for students. Ensuring transfer of knowledge or skills into the classroom or school requires follow-up support. When long-term support either electronically or face-to-face, access to experts, and opportunities to receive feedback, coaching, and assistance in applying new strategies or knowledge are integrated and applied on a regular basis, learners are more successful in using new learning effectively (NSDC, 2001).

Schools and districts have struggled to find the best ways of ensuring long-term, consistent support to help educators use what they have learned. This problem may be exacerbated in an e-learning environment. Learners working independently without long-term support for implementing new practices may lack the assistance and even motivation to apply new practices.

Technology offers expanded ways of providing ongoing support. Discussions groups, ongoing seminars, online newsletters, study groups, learning groups, easy access to experts, chats, threaded discussions, streamed video, and listservs are just a few of the ways technology continues to link learners and help them implement new learning. Technology facilitates the ways educators can extend their own learning, seek help from others, solve problems associated with implementation, and receive feedback and support from both experts and colleagues. With access to support 24/7, educators have increased opportunities for follow-up.

Designing e-learning that incorporates follow-up support will make the difference. Technology facilitates multiple structures for ongoing support, collaboration, feedback, and extended learning. When these elements are embedded into the design of e-learning and available over time, participants will likely be more successful in the application of learning. Electronic support can be coupled with face-to-face classroom-based support to offer even more assistance for participants.

Considering E-Learning

Skilled Instruction and Facilitation

Because e-learning environments can be somewhat abstract for learners, it is important to have instructors and facilitators skilled in engaging learners. They manage the sequence of the learning experiences, events, and process. Skilled instructors and facilitators ensure that all e-learners have the access and support that they need to be successful in the e-learning environment. They bring new ideas and resources into the e-learning experience to help learners adapt the content and process to their local schools. They also provide both public and private encouragement, risk-taking, feedback, and support to connect e-learners to the e-learning community.

Facilitation of e-learning ensures that the learning community is created and maintained, that individual strengths are tapped for the benefit of the entire community, and that all members participate actively in the learning experiences. The social interaction among learners within an e-learning environment sustains learners' interest, deepens their learning, and shares knowledge within the community. Skilled facilitators ask thoughtful questions to cause deeper reflection and learning, summarize information to organize ideas, and provide specific feedback designed to promote reflection (Collins, Elbaum, Haavind, & Tinker, 2000).

Face-to-face content or facilitation experts are not always successful in an e-learning environment. To be successful, e-learning instructors and facilitators use special skills to support e-learners. For those making decisions about e-learning, it is important to ask about the development and experience of the content experts and the program facilitators and ensure that both have specialized training in facilitating e-learning.

Strengthening Networks

Educators learn from other educators. They often report that exchanging ideas and information and solving common problems with those in similar roles is a powerful form of their learning. Technology expands opportunities and eases the physical challenges of networking by linking educators anytime, anywhere with others in similar roles. These electronic learning teams provide educators a forum for discussing authentic issues, learning from each other's experiences, sharing resources, and coaching or mentoring each other. Virtual networks can substitute for face-to-face meetings while providing the similar advantages.

Use of Technology

Technology can be either slick or substantive. E-learning for educators depends on appropriate use of the available technologies to enhance and facilitate learning rather than making it convoluted and complex. In some ways the technology should be as invisible in the learning process as possible to allow the content and the process of learning to remain in the forefront. When examining programs, products, and services for the appropriate use of technology, consumers will recognize if the content or the technology is in the forefront by considering what they focus on as they interact with the learning. Minimal attention to the technology and primary focus on the learning is a good indicator that the technology supports the learning.

Graphically Appealing

Graphics enhance understanding when they are attractive, purposeful, and subtle. Icons, colors, visual images, and page layout contribute to graphic appeal. The user who is able to make meaning of an icon without reading many words, who recognizes patterns or messages embedded within graphics, and who is not distracted by the graphics will be able to comprehend faster and more accurately. Images that are clean and easy to understand facilitate learning. The use of color can enhance important ideas and help learners understand. Information placed on pages in consistent ways helps readers feel more comfortable and familiar with the material. While the artistic preferences of the user and the developer may differ, it is important that the graphics used in e-learning facilitate learning rather than distract from it.

Considering E-Learning

Technical Support

E-learners, especially those new to e-learning, will be more successful if they have access to technical support during their learning. Technical support can be available in a variety of formats, online through searchable help programs, in chats, via e-mail, by telephone, or face-to-face. Access to support in using the technology is important to learners who encounter problems during their learning time. When problems occur with connectivity, the program, hardware, or learners' capabilities, the more immediate the support, the more likely the learner will be to continue participation. Frequent problems can lead to increased dropouts among e-learners. Those considering e-learning will want to know how technical support is provided, who provides technical support and their qualifications, whose financial responsibility it will be, and what the cost is to maintain the support whenever e-learning might be occurring.

Interactivity

A leading cause of dropping out in e-learning is isolation among learners and a lack of direction and motivation. Increased interactivity among participants and the instructor through immediate feedback, frequent assessments, shared assignments, and small study teams, will create a cyber-community among learners. When examining programs, products, and services, consumers will want to know, among other things, how interactivity is structured, how often it is expected and it occurs, how easy various communication systems work, and if there is the option for private and public communication within the learning group.

Platform Independence

Because operating systems differ, it is important to consider how e-learning programs, products, and services work with various operating systems and platforms. To ensure that all learners within an organization have access to e-learning from home and their workplace, platform independence is essential. If programs are more efficient on one platform, inequity of learning opportunity can occur among educators. If one of the advantages of e-learning is its ability to increase access, it is important that programs, products, and services work equally well on multiple platforms.

Places for Learning

Staff development, intended to improve student learning, will become an integral part of educator's workday if the facilities for learning are readily available, comfortable, and conducive to adult learning. Educators need a suitable learning environment that

- provides easy access to e-learning programs and services;
- accommodates individual and small group work comfortably with the technology;
- meets ergonomic standards; and
- integrates various technologies.

A suitable learning environment improves educators' motivation to access e-learning resources. Individual classrooms and offices equipped to accommodate brief learning episodes increase learners' flexibility and efficiency. Creating learning places that provide the essential resources to support learning is the responsibility of the school district.

Considering E-Learning

Awarding Credit for Technology-Mediated Staff Development

New forms of staff development, made possible through technological advances, require altering the traditional way continuing education units (CEUs) are awarded. Districts, states, and other agencies have traditionally calculated appropriate credits, salary advances, or other forms of compensation or recognition for staff development, based on seat time, the length of a course as measure by the number of hours it meets, rather than on demonstrated knowledge and skills or gains in student learning. Today, e-learning presents new challenges for calculating continuing education credits. Districts and states are faced with developing new policies for awarding credits, compensating educators for continuing education, or recognizing advanced degrees based on performance and learning rather than time. Because the hyper-text construction of most online courses allows learners to navigate through courses in any sequence and shorten or extend their learning, time is no longer a suitable factor on which to base decisions about awarding credit. Demonstrations of learning and student achievement, rather than number of hours invested, should be the primary criteria for awarding CEUs.

Professional Learning Plans

Educators' professional learning is most effective when it is aligned with school and district student learning goals and educators' performance expectations. Learning plans establish goals and indicators of success and map the learning activities that will lead toward goal achievement. Online assessments offer diagnosis of learners' strengths and areas of need and might offer suggestions about courses of study to address needs. Individual learning plans can be electronically developed and stored for periodic review, revision, and assessment by the educator and his or her supervisor. Educators can document their learning in electronic portfolios and can meet periodically with a team of peers or a supervisor to review content, goals, learning activities and progress. Demonstration of new practices and improvements in student learning, as documented with evidence may someday become the backbone of performance assessment systems in schools and districts.

Cost

Those considering the purchase of online products and services for staff development will want to thoroughly analyze the related costs – not only of purchasing the products, but also of providing the infrastructure necessary to realize their full potential. Infrastructure includes both behind the wall wiring and electricity, as well as hardware and software, technical support, ongoing maintenance, and equipment upgrades. Costs include both financial and human resource investments in e-learning. Greater access to information and increased opportunities for educator learning can both reduce and increase cost. Programs available to districts and schools are not necessarily less expensive to purchase or implement than traditional staff development programs; however, they may be more convenient and flexible. While costs for travel, substitutes, facilities, materials, and consultants may be reduced, it is prudent to invest these savings to ensure the availability of the highest quality programs, high speed, stable connectivity, readily available technical support, ongoing job-embedded learning, collaboration, planning, and implementing new practices.

Considering E-Learning

Considerations for E-Learning	
Consideration	Key Points
Results	<ul style="list-style-type: none"> ● Evidence of results of the program, product, or service ● Evidence of improved educator and student learning ● Evaluation results readily available
Quality Professional Learning Experiences	<ul style="list-style-type: none"> ● Meets NSDC's <i>Standards for Staff Development, Revised Edition</i> ● Integrated into a comprehensive staff development plan
Content Quality	<ul style="list-style-type: none"> ● Aligned with identified needs ● Aligned with local, state, and national standards for the content areas ● Deepens content knowledge ● Extends content-specific pedagogy
Flexible Time	<ul style="list-style-type: none"> ● Anytime, anywhere access ● Ease of navigation ● Time within the workday for learning
Content Flexibility	<ul style="list-style-type: none"> ● Multiple entry points ● Customizable content
Learner Readiness	<ul style="list-style-type: none"> ● Basic computer literacy skills ● Basic navigation skills ● Technical support available ● Self-directed and motivated learner ● Orientation to learning environment ● Re-entry process ● On-site and/or online assistance ● Ongoing support
Meeting Educators' Specialized Learning Needs	<ul style="list-style-type: none"> ● Increased access for specialized staff ● Specialized content ● Connecting learners with others in similar roles
Follow-up Support	<ul style="list-style-type: none"> ● Link educators with one another ● Ongoing support and problem solving related to application of learning through a variety of ways
Skilled Instruction and Facilitation	<ul style="list-style-type: none"> ● Ongoing interaction ● Continuous feedback ● Pose thoughtful questions to deepen learning ● Summarize and manage information ● Build community of learners ● Encourage participation

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Considering E-Learning

Strengthening Networks	<ul style="list-style-type: none"> ● Exchange of ideas and information ● Forum for discussion of important ideas, sharing resources, and support ● Development of multiple interaction groups
Appropriate Use of Technology	<ul style="list-style-type: none"> ● Multiple technologies to support learning ● Invisible use of technology (learning content in the foreground; technology in the background) ● Technology to support and enhance learning ● Appropriate use of technology
Graphically Appealing	<ul style="list-style-type: none"> ● Easy to read and understand ● Color, visual images, and icons facilitate learning ● Clear images
Technical Support	<ul style="list-style-type: none"> ● Available during learning time ● Online, onsite, and/or via telephone ● Support with program content, connectivity, hardware and software
Interactivity	<ul style="list-style-type: none"> ● Multiple forms of interactivity ● One-way, two-way, and multiple participant ● Public and private communication
Platform Independence	<ul style="list-style-type: none"> ● Works easily on multiple platforms ● Uses standard Web browser for access
Places to Learn	<ul style="list-style-type: none"> ● Comfortable facility to support learning ● Readily available ● Conducive to small group and individual learning ● Meets ergonomic standards ● Integrates various technologies
Awarding Credit for Technology-Mediated Staff Development	<ul style="list-style-type: none"> ● Performance-based rather than time-based ● Demonstration of learning ● Supported by evidence
Professional Learning Plans	<ul style="list-style-type: none"> ● Personal learning goals aligned with school and district priorities ● Diagnosis or assessment of areas of need ● Strategies to accomplish goals ● Indicators of success ● Ongoing review by peers, mentors, coaches, and/or supervisors
Cost	<ul style="list-style-type: none"> ● Investment in quality products and services ● Investment in infrastructure to support learning <ul style="list-style-type: none"> - Hardware - Software - High-speed connectivity - Regular maintenance - Planned upgrades - Specially prepared faculty - Appropriate participant-instructor ratio

Cautions

Although e-learning offers opportunities that are unavailable in the face-to-face staff development environment, staff development leaders will want to consider carefully some of the potential problems associated with e-learning. Each of these problems can be avoided through careful planning and quality product or program design. However, without attention to these areas, they can easily compromise a product's or program's quality.

Unknown Costs

Costs associated with connectivity, hardware, software, technical support and assistance, upgrading and maintaining equipment can surprise those who lack a comprehensive technology plan – especially if an existing plan does not address the use of technology for educator e-learning. For example, if educators are participating in online courses in a 24/7 environment, technical support either online or via telephone should be available to support learners 24/7.

Schools and districts implementing e-learning will ensure that their current technology infrastructure supports all aspects of e-learning before implementing it. They may even opt for pilot studies or trials to determine the level of technical support needed. A sound technology plan that includes ongoing maintenance, support, and regular upgrades will be the best defense against hidden costs associated with e-learning.

Isolation

E-learning has the potential to isolate learners from one another and fragment a school's or district's staff development efforts. If educators chose to learn alone to achieve their own personal learning goals – outside of a network of learners who are contributing to the same goals – their individual learning results may not contribute to the accomplishment of school-wide or district-wide goals. The power of staff development as a school reform process rests in its ability to bring together a community of learners who work in unison to achieve common goals. Mutual goals, shared commitment to continuous improvement, and collaborative efforts to improve teaching and learning through staff development will contribute to student achievement.

Programs or products that provide the structures to create and sustain communities of learners, and provide ongoing access to experts, and link learners with others are most likely to prevent isolation of learners. When student learning needs are the basis for shared goals for staff development, it is likely that collaboration, shared responsibility, commitment, and accountability will increase.

Program Design

Technology expands ways learning can occur, yet used inappropriately, it can inhibit learning. Some programs make poor use of the capacity of technology to provide quality adult learning experiences. In poorly designed programs or products, the learning sequence may be fixed, the platform outdated or too sophisticated for the learners, learning processes disrespectful to adult learners, or interactions among learners insufficient. With unsophisticated use of technology, e-learning dropout rates will increase and learning results may decline.

Another potential problem with e-learning program design is the transfer of face-to-face content and instruction to an e-learning environment. In some cases significant redesign of face-to-face courses is necessary to create effective online programs from face-to-face learning programs. The redesign may alter the amount and sequence of content, how learners interact with ideas, and how information is acquired and processed.

Preventing Problems

Other problems can occur associated with any of the considerations. For example, inadequate information about the program's link to improving student achievement may cause consumers to question the effectiveness of the program. Or, if the technology seems to overshadow the program's content, real reasons exist to question if the program appropriately uses the technology. The single best way to prevent problems associated with e-learning is to be certain that the programs, products, and services under consideration meet high standards, are aligned with identified needs, and fit within a comprehensive staff development system.

Before making any decision about the use of e-learning as a part of their comprehensive staff development program, it is important for staff development leaders to conduct a thorough analysis of the e-learning programs, products and services under consideration. This is true for both e-learning and face-to-face staff development. Before schools or districts hire consultants for any face-to-face staff development, they seek references or information about the consultant. The same careful scrutiny is necessary in the e-learning environment.

Perhaps the best way to take advantage of the opportunities available through technology-mediated professional learning is to integrate e-learning into a balanced professional development program that combines formal face-to-face learning experiences optimally followed by online and one-on-one support, "just in time" training and development, and collaborative work on those tasks that most directly influence the quality of teaching and learning (Doubler, et al). With these components built into a results-driven, standard-based, and job-embedded staff development program, the impact will be significant.

Components of the Resource Guide

Components of the Resource Guide

Used in conjunction with the *National Staff Development Council's Standards for Staff Development, Revised* and the International Society for Technology in Education's (ISTE) *National Educational Technology Standards for Teachers* and *National Educational Technology Standards for Administrators*, this resource guide will provide a comprehensive tool for assisting schools and districts to make appropriate decisions regarding the development, selection, and implementation of technology-mediated staff development. Developers recommend that teams of educators, representing the areas of technology, curriculum, and staff development and including classroom teachers and principals, work together to use this resource guide as a part of their decision making process.

In this resource guide are essential elements and guiding questions for each of the *NSDC's Standards for Staff Development, Revised*. The essential elements specify key attributes of each standard. Accompanying each essential element are guiding questions designed to address issues related to e-learning in professional development. In some cases the questions are completely unique to e-learning, and in other cases, they apply to both the face-to-face and e-learning environments.

Answering the guiding questions will help consumers of professional learning make informed decisions about e-learning products, services, and programs. Specifically the discussion about the guiding questions will help staff development leaders:

- Determine which programs, products, and services best meet their professional learning needs;
- Determine whether to adapt or adopt existing programs, or whether to create their own programs;
- Identify organizational changes that may be necessary to support e-learning; and
- Consider how e-learning fits into their comprehensive staff development plans.

Standard: A succinct statement of the staff development expectation. It establishes the level of performance to which all staff development can aspire.

Essential elements: Key components of each standard.

Guiding questions: Questions designed to promote dialogue about a school's or district's readiness, capacity, and strategy for implementing technology-mediated staff development.

Decision making matrix: A tool to facilitate data gathering, information analysis, and decision making about e-learning products, programs, or services.

Glossary: Definitions of key terms related to e-learning.

Using the Decision Matrix

Using the Decision Matrix

On pages 34-38 is a sample decision matrix a team might use when considering e-learning. Across the top of the page is space to write the title of various programs, products, or services. In the column corresponding to each product, those involved in the review process can add notations, checkmarks, or comments to indicate how well each product meets each standard and the e-learning qualifications. The decision making team may wish to use an agreed upon scale to rate each product. The e-learning qualifications relate to a program's or product's design and, in some cases, include qualifications unique to e-learning. In considering the feasibility and appropriateness of a particular product or service, staff development leaders will first want to consider the guiding questions related to the standards before completing the product specification checklist. A product may meet the e-learning qualifications, yet not provide high quality professional development.

Sample Decision Matrix

PRODUCT/ VENDOR		
CONTENT ESSENTIAL ELEMENTS		
Demonstrating Respect and Understanding		
Student Learning Needs		
High Expectations for All Students		
Alignment of Curriculum, Assessment, and Instruction		
Adjusting for Individual Student Needs		
Deep Content Knowledge		
Communication With Families		
Cultural Understanding and Respect		
Community Commitment		

Glossary of E-Learning Terms

Glossary of E-Learning Terms

24/7: The acceptable shorthand to describe services available 24 hours a day, seven days a week.

Asynchronous: Not at the same time. In the context of e-learning, asynchronous refers to situations where all learner are not participating at the same time. For example, an instructor might publish a series of lessons on a web site and learners can log on and complete the lessons as their schedules permit.

Bandwidth: The transmission capacity of a network. This describes the amount of information that can be transmitted at a time, usually in bytes, kilobytes (kb), or megabytes (mb) per second. The greater the bandwidth, the faster a computer can access information. Bandwidth determines the speed at which data are received. It also determines the practicality of a computer receiving certain kinds of data (for example, video over the Internet).

Compressed files: A process that reduces the size of a file without altering the content of the file. File compression takes different forms depending on the content. Large files of any form can be compressed for sending over the Internet, usually using an application to compress them before sending, and then requiring another application to expand the file when it has been received. Compression of multimedia files that are sent across a network (streaming is one method) are accomplished by reducing the amount of redundant information. This may result in changes to the quality of the content ranging from subtle to significant.

Computer-based training (CBT): Refers to courses presented on a computer which are most often self-paced. It does not necessarily mean that the course is connected to a network or that Internet access is required. Some computer-based courses are available on CD-ROMs. CBTs are one of the earliest forms of e-learning.

Computer network: A term used to describe two or more computers that are linked together and are capable of sharing information such as files, text, pictures, and video. Such networks can exist in one classroom, across a school district, or across the world, and may or may not be linked to the Internet. There are currently two major types of networks. A STAR network is structured around a central controlling computer that organizes and controls all information flowing through the network. A peer-to-peer network (for example, a classroom set of computers, has no central controlling computer, yet is capable of sharing files among the computers on the network.

E-Learning: Learning experiences facilitated through the use of electronic resources and designed to support the development, exchange, and application of skills, knowledge, attitudes, aspirations, and behaviors. E-learning includes forms of learning, roles for learners, structures for constructing knowledge, and relationships among learners mediated by current and emerging technologies that may not be available face-to-face.

Facilitated learning: E-learning that includes interaction with at least one other individual such as the facilitator or moderator and is guided by one or more persons who most often have specialized training to facilitate or moderate e-learning.

Handheld computer: Aclass of small digital devices that can be held in a hand. They store and access a number of different applications. Many offer functions similar to desktop computers.

Internet-based training: A form of computer-based training in which course materials or resources are accessed via the Internet or an Intranet.

Intranet: A computer network that is not linked to the Internet. A local area network (LAN) is an Intranet.

Glossary of E-Learning Terms

Internet: A global computer network that links computer networks and individual computers through the use of common protocol and a variety of different types of connections including radio, satellite, and telephone.

Learning community: A purposeful gathering of individuals who share common interests and goals for learning, improvement, or professional development. The learning community is committed to supporting one another's and their group's development. E-learning community members can be members of the same school or district or span cities, states, countries, or continents.

Multi-media: Integration of several forms of media, such as text, graphics, animation, video, sound, etc.

Online learning: A term used to describe Intranet- or Internet-based learning experiences.

Platform independent: When used in connection with e-learning, platform independence refers to a system that will operate or can be accessed from a number of different types of computers -- normally referring to different operating systems (Mac and PC). True platform independence would have a wider range of access. Sometimes platform independence is created when a standard web browser is used for access.

Self-paced learning: E-learning in which the learner proceeds through a course of study or an activity at his or her own rate and schedule without regard for the learning of others, usually without interaction with others, and usually without an instructor or facilitator.

Streaming audio/video: Audio or video that is available through one's computer as it is downloaded from the Internet, an Intranet, or other means. Images are not typically stored into the desktop computer's hard drive.

Synchronous: At the same time. In the context of e-learning, synchronous refers to situations in which all participants are connected at the same time. Chats, instant messaging, and web conferencing are forms of synchronous communication.

Technology-mediated learning: Learning experiences facilitated through the use of electronic resources and designed to support the development, exchange, and application of skills, knowledge, attitudes, aspirations, and behaviors.

Threaded discussion: A structure for online discussion where the topics provide the foundation for the structure of the discussion. Threaded discussion normally requires participants to "go to" the location of the discussion. The first message posted on a topic (subject) provides the basis for a hierarchical structure where responses to the topic are displayed visually to indicate the relationship to other messages. The most common arrangement is an outline structure, where initial posts are flush left, replies indented and immediately below the topic, responses to replies indented yet again, and located immediately below the target reply.

Videoconferencing: Interactive communication among two or more sites that includes minimally the transmission of video and audio to all sites and some synchronous communication often via fax, telephone, e-mail or video.

Wide-area network: A network of computers that links local area networks and individual computers over a widely dispersed geographic area. The Internet is a WAN. Multi-school districts with large geographic areas probably use a WAN to connect individual sites.

Context Standards/Essential Elements

LEARNING COMMUNITIES

Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.

● Shared Vision and Goals

● Expectation for Collaboration

● Learning Teams

LEADERSHIP

Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.

● Role of Leaders

● Distributed Leadership

● Policies and Structure

RESOURCES

Staff development that improves the learning of all students requires resources to support adult learning and collaboration.

● Financial and Other Support

● Time

● Access

Guiding Questions

- Does the e-learning program allow and support the development of shared goals and expectations among participants?
- How do the program's goals align with the goals of the school or district?
- Are educators expected to collaborate with others during the learning process?
- How does the program increase opportunities for educators to become a part of the learning community within or outside the school or district?
- How does the program facilitate the development of small learning communities focused on increasing student achievement?
- Does the technology environment overcome isolation and foster sharing of resources, experiences, and information with colleagues?
- To what degree do school and district leaders understand and value the advantages of technology-mediated staff development?
- Is staff development considered essential to the school's and district's improvement efforts?
- Does the professional development program provide guidance in establishing a technology integration team that includes staff development, curriculum and instruction, technology, and users to enhance implementation?
- To what degree have key stakeholders – including users, staff development, technology, curriculum and instruction, and other key decision makers – been included in the study, analysis, and decisions related to this program?
- Do current district and state policies acknowledge, address, or include e-learning as a viable form of staff development?
- Is there a comprehensive staff development plan to coordinate the integration of face-to-face and e-learning in professional learning?
- What evidence demonstrates that the online staff development program provides a better or similar return on the investment than face-to-face staff development does?
- What portion of the technology and staff development budgets are committed to providing an infrastructure and programs to support technology-mediated staff development?
- What steps will be taken to ensure that time educators invest in online staff development is compensated, recognized, or rewarded?
- How much time is provided within educators' workday for professional development?
- What steps will be taken to ensure that educators have time for appropriate professional learning?
- What resources are committed to providing ongoing acquisition, maintenance, technical assistance, and other forms of support to ensure consistent, reliable connectivity?
- To what degree does the technology infrastructure support equal access for all learners, especially those with disabilities, through high speed, broadband, stable connections to maximize the use of technology-mediated staff development?
- How will technology-mediated staff development be viewed in comparison to more traditional face-to-face staff development?
- What role does technology-mediated staff development play in the school or district?
- Does the learning design promote collaboration and group problem solving on issues of importance to student achievement?
- Does the program facilitate the formation of learning teams to support learning and implementation?
- Are learning teams flexible, allowing participants to interact with a variety of colleagues?
- Do leaders understand the role of technology in professional development?
- Do leaders regularly advocate for high quality professional learning with policy and decision makers and with community stakeholders?
- How are decisions about the purchase, development, or implementation of technology-mediated staff development made? Who is involved?
- What person and/or department in the school or district is responsible for e-learning in staff development?
- Are educators who are not technology-savvy encouraged and supported to participate actively in local e-learning decisions?
- What policies and structures currently in place, including those for awarding continuing education credits, will need to change to reflect the implementation of technology-mediated professional development?
- Does the program measure results in terms of learners' results and performance rather than on amount of time invested?
- What ongoing technical support is available from the vendor or within the district?
- What forms of partnerships and collaboration exist between school and community agencies to provide expertise, support, and other resources to support online staff development?
- Does the program allow nonlinear navigation and multiple exit options for participants who have different lengths of time to devote to learning?
- Does the program accommodate both brief and long learning periods to adjust for flexibility in learners' time?
- How flexible are educators' daily work schedules to allow and encourage engagement in professional development?
- How do the school and district ensure educators have access to high quality staff development from both their schools and homes, if the expectation exists for them to connect after their workday?
- Is the program compatible with the school's or district's technology infrastructure?
- Is the technology infrastructure adequate for the staff development programs under consideration and those that will be added in the future?

Process Standards/Essential Elements

DESIGN

Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.

● Learning Options

● Learning Strategies

● Follow-up Support

LEARNING

Staff development that improves the learning of all students applies knowledge about human learning and change.

● Supporting Change

● Adult Learning Needs

● Educators' Professional Goals

COLLABORATION

Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.

● Collaborative Culture

● Interactivity

● Group Development

Guiding Questions

- Does e-learning make it possible for participants to investigate specific problems, areas of interest, or special topics related to their own role, work environment, and conditions?
- Does the program provide multiple entry levels for learners, both in terms of their content mastery and their comfort and skills in using technology-mediated learning?
- How does technology-mediated learning expand the options available for educator learning?
- How many learning options are available for educators to select from? How are their selections made?
- To what degree do the learning strategies align with the intended outcomes, learner needs, and content?
- Are e-learning materials presented in ways accessible to those with physical limitations?
- How does the use of technology increase opportunity for learning, especially for learners with differing needs and interests?
- Are multiple learning strategies used to provide 1) understanding of key concepts, principles, and theories; 2) demonstrations of best practices; 3) application of theory to practice; and 4) feedback and coaching?
- Does the program provide a consistent structure for ease of use?
- Does the program provide access to experts to support or guide implementation even after the program ends?
- How is follow-up support sustained beyond the length of the program?
- What strategies and resources are provided to facilitate and encourage application of the new learning within the educator's workplace?
- What strategies and resources are provided to facilitate and encourage application of the new learning within the educator's workplace?
- How does the program support and encourage interaction – online or off – with a facilitator, supervisor, or colleagues to assess the learner's progress or goal achievement?
- Is the online learning environment available to educators to support not only courses but also ongoing learning, reflection, sharing of resources, and archiving of work products, information, and resources?
- What resources are available to support learners at various stages of change and levels of use?
- How are e-learning instructors/moderators selected, trained, and supported to facilitate e-learning and meet the needs of adult learners?
- What resources are available to provide supplemental support for novice e-learners or those unfamiliar or uncomfortable with the platform or environment?
- Does the program assess learners to determine if they are motivated and committed to learning at a distance?
- How does the e-learning program accommodate various adult learning styles, preferences, and motivation to learn?
- Does the program guide participants toward the specific content that aligns with their learning goals and the school's and district's goals?
- Does the program provide for private and public communication and data storage?
- Does the program allow for extended or in-depth study of particular areas?
- Does the program provide a diagnostic assessment or profile to help educators determine their areas of strength and need and establish professional learning goals?
- How does the program foster an ongoing collegial relationship between and among the learners and between the instructor/facilitator and learners?
- To what degree does the technology facilitate rather than impede the learning environment?
- Does the program provide opportunities that accommodate both synchronous and asynchronous collaboration to support learning?
- Are there options for each learner to personalize his or her e-learning environment?
- Does the facilitator encourage communication, build a collaborative culture, and manage interaction in helpful ways?
- What accountability, incentives, and structures does the program include for shared learning?
- What guidelines, expectations, and support are provided for team learning processes and ongoing collaboration and communication with fellow participants?
- How well does the learning process support shared learning process and products?
- Does the environment allow for multiple forms of interaction?
- Are learners encouraged to provide constructive feedback to one another and engage in reflective dialogue, sustained discourse, study groups, and social interaction to facilitate their learning?
- Do learners have multiple opportunities to participate in the real-time collaboration and social interaction (online or off) essential for facilitating their learning, application of the new learning in their practice, and sustaining a learning community throughout and after the program ends?
- Are participants able to view whole threads of conversation and easily choose whether to respond to the group or to individuals?
- Does the environment allow for participants to learn about each other personally and professionally?

Process Standards/Essential Elements

DATA-DRIVEN

Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.

● **Data Disaggregation**

● **Need Analysis**

● **Continuous Improvement**

EVALUATION

Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.

● **Evaluation Design**

● **Learner Evaluation**

● **Student Results**

RESEARCH-BASED

Staff development that improves the learning of all students prepares educators to apply research to decision making.

● **Access to Research**

● **Application of Research**

● **Action Research**

Guiding Questions

- What sources of student performance data contributed to the identification of the needs that led to the examination of these programs?
 - How will we – or have we – assessed educator learning needs?
 - Does the program preassess learners’ background knowledge or interest, comfort with technology, or ability to navigate within the environment?
 - Are data disaggregated to identify the areas of focus for educator learning in a way that makes the need clear, focused, specific, and “actionable”?
 - Who has been involved in analyzing or determining the need for this program?
-
- How well does the program’s content align with the data-driven needs of the school or district?
 - What evidence do we have about the program’s impact on educator and student learning?
 - What evidence have we studied to have confidence that the program will produce the results it promises?
 - How do the program’s content, learning processes, results, and support requirements compare with other staff development programs, especially with face-to-face ones?
-
- How will the school or district assess the implementation of this program?
 - How many other programs have we studied to meet the identified needs?
 - To what degree have key stakeholders – including users, staff development, technology, curriculum and instruction, and other key decision makers – been included in the study, analysis, and decision related to this program?
 - How will we assess our progress on an ongoing basis to ensure that we are achieving our desired results?
 - Who will be responsible for ensuring that the decision made regarding online programs will be successfully implemented?
-
- How will we evaluate the program’s implementation and its results?
 - What data reports are available to staff development leaders about learners’ involvement, participation, and success with e-learning?
 - Are management reports flexible to allow for customized reports?
 - Are multiple measures used for ongoing assessment of the program’s implementation and impact?
 - Does the program support performance-based assessment of e-learning in terms of impact on educator practice and student learning?
 - Who will be responsible for initiating implementation of the program?
 - How does the program use student performance data to assess overall effectiveness?
-
- How is learning structured to provide ongoing assessment of the implementation of the learning?
 - What tools or information are provided to individual participants so they are able to measure or assess their own progress?
 - Does the program support ongoing feedback from instructors?
 - How are participants assessed throughout the program? How often? How?
-
- What types of student data are included in the program evaluation reports?
 - How does the program use student performance data to assess program effectiveness?
 - Do educators have support in examining their students’ performance data to reflect on their own learning?
 - Are educators guided in using student performance data to examine their own performance?
-
- How does technology-mediated learning increase educators’ access to expert knowledge, current research, and best practices?
 - Does it facilitate access to conflicting research to expose educators to multiple perspectives related to a particular practice or issue?
 - How does the technology help educators efficiently locate research appropriate for their needs and interests?
-
- Do the examples, cases, and models of practices reflect the developmental issues that K-12 educators must consider in implementing new learning?
 - Does the program provide clear and multiple presentations of the application of theory in practice?
 - What expectations exist that educators know and understand the theories underlying their practices?
-
- Does the technology environment allow e-learning participants to facilitate their own action research?
 - Does the technology support, encourage, and facilitate educators to generate research related to the new learning when applying it to their own work environments?
 - Does the program encourage collaborative action research related to implementation of new practices to extend implementation and change in practice?

Content Standards/Essential Elements

EQUITY

Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly, and supportive learning environments, and hold high expectations for their academic achievement.

● **Demonstrating Respect and Understanding**

● **Student Learning Needs**

● **High Expectations for All Students**

QUALITY TEACHING

Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to appropriately use various types of classroom assessments.

● **Alignment of Curriculum, Assessment, and Instruction**

● **Adjusting for Individual Student Needs**

● **Deep Content Knowledge**

FAMILY INVOLVEMENT

Staff development that improves the learning of all students provides educators with knowledge and skills to appropriately involve families and other stakeholders.

● **Communication With Families**

● **Cultural Understanding and Respect**

● **Community Commitment**

Guiding Questions

- How does the technology-mediated learning experience help educators demonstrate respect for their students, families, and community?
- Does the learning experience help educators understand issues related to the digital divide?
- Does the program encourage educators to examine equity issues present in their school, district, and community?
- To what degree does the online learning experience help educators acquire strategies for meeting the needs of every student?
- Does the e-learning assist educators to apply their learning with developmentally different levels of students?
- Does the online learning program help educators develop an understanding of creating physically and emotionally safe learning environments for their students, adhere to Children's Online Privacy Protection Act (COPPA), and filtering mandates required by federal legislation.
- Is the program's content free from any form of bias against people?
- Do the program's demonstrations include representations of all people?
- Are the auditory and visual images respectful of all people?
- To what degree does the content of the program address all aspects of quality teaching, including curriculum, assessment, and instruction?
- How thoroughly does the program's content develop educators' deep understanding of their content?
- How well does the program's content address content-specific instructional processes that are developmentally appropriate for students?
- To what degree does technology-mediated learning assist educators to adjust curriculum, assessment, and instruction to address individual student learning needs?
- Does the program assist teachers in diagnosing student learning needs and planning instruction to address those needs?
- Does the program's content help educators differentiate instruction?
- How does the program demonstrate appropriate use of multimedia, including video, animation, music, sound, and/or special visual effects?
- What leading authorities in the content area were consulted in the development of the program's content?
- What research base supports the program's content?
- How well does the content align with local, state, and national curriculum standards?
- How often is the content updated to reflect new research in the field? What is the process for updating content?
- How does technology-mediated learning support communication between educators and the community, among educators, and between educators and their students' homes?
- How does technology-mediated learning increase parents' opportunities to receive information and provide input to the school and district?
- How does the technology increase access of parents, community members, students, and educators to information about the school, district, and community?
- Is there a system or process for participants to contribute to the body of knowledge about families, the community, or students?
- How do technology-mediated learning experiences increase educators' understanding and appreciation of their students, their families, and their community?
- In what ways do the technology resources encourage educators to adjust their curriculum, assessment, and instruction to reflect the unique characteristics of their school, district, and community?
- How does the program's content encourage educators to apply what they are learning within the context of their own school and community?
- How do educators integrate technology resources to enhance their students' involvement in their community?
- To what degree are educators and community members using decision-making programs or other software or communications systems to broaden the community's contribution to decisions within the school community?
- Does the program's content encourage educators to become familiar with and use community resources or involvement to enhance student learning?

Decision Making Matrix

PRODUCT/ VENDOR		
CONTEXT STANDARDS <i>ESSENTIAL ELEMENTS</i>		
Shared Vision and Goals		
Expectation for Collaboration		
Learning Teams		
Role of Leaders		
Distributed Leadership		
Policies and Structures		
Financial and Other Support		
Time		
Access		

Decision Making Matrix

PRODUCT/ VENDOR		
PROCESS STANDARDS <i>ESSENTIAL ELEMENTS</i>		
Data Disaggregation		
Need Analysis		
Continuous Improvement		
Evaluation Design		
Learner Evaluation		
Student Results		
Access to Research		
Application of Research		
Action Research		
Learning Options		
Learning Strategies		
Follow-up Support		
Supporting Change		
Adult Learning Needs		
Educators' Professional Goals		
Collaborative Culture		
Interactivity		
Group Development		

Decision Making Matrix

PRODUCT/ VENDOR		
CONTENT STANDARDS <i>ESSENTIAL ELEMENTS</i>		
Demonstrating Respect and Understanding		
Student Learning Needs		
High Expectations for All Students		
Alignment of Curriculum, Assessment, and Instruction		
Adjusting for Individual Student Needs		
Deep Content Knowledge		
Communication With Families		
Cultural Understanding and Respect		
Community Commitment		

Decision Making Matrix

PRODUCT/ VENDOR		
PRODUCT QUALIFICATIONS		
Results		
Quality Professional Learning Experiences		
Content Quality		
Flexible Time		
Content Flexibility		
Meeting Educators’ Specialized Learning Needs		
Follow-up Support		
Skilled Instruction and Facilitation		
Strengthening Networks		
Appropriate Use of Technology		
Graphically Appealing		
Technical Support		
Interactivity		
Platform Independence		
Professional Learning Plans		
Cost		

Decision Making Matrix

PRODUCT/ VENDOR	Notes
District/School Readiness	
Comprehensive Staff Development Plan	
Technology Plan	
Learner readiness	
Places to Learn	
Policy for Awarding Credit for Technology Mediated Staff Development	
Technology Support	

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