

SREB

*Educational Technology
Cooperative*

Guidelines for Professional Development of Online Teachers

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Guidelines for Professional Development of Online Teachers

Based on the SREB *Standards for Quality Online Teaching*

Providing quality professional development for online teachers is extremely important to ensure ongoing quality teaching and learning — just as it is for teachers in traditional classrooms. The professional development of online teachers should be well-planned and organized to meet the specific academic and instructional needs of online teachers.

Introduction

Working with many member states, SREB developed the nation's first *Standards for Quality Online Teaching*, which define the qualifications of a quality online teacher and the standards needed for academic preparation, content knowledge, online skills and delivery. Building on those standards, these guidelines can assist state virtual schools as they hire, train, support and evaluate online teachers.

The content and strategies suggested in the guidelines are based on the skills and knowledge essential for high-quality online teaching and describe the support that state virtual schools should provide for their online teachers. The guidelines are comprehensive in scope, and it is anticipated that teachers will gain these skills and knowledge through continuing professional development. The guidelines give state virtual schools a valuable tool to:

- develop and provide professional development programs and support for their online teachers; and
- assess the quality of professional development programs, products and services available from third-party providers.

Professional development is most successful when it is a continuing process of learning and improvement. Because online teachers work in various locations, most professional development — as well as support, mentoring and monitoring — should be conducted online. Face-to-face professional development opportunities can be added when appropriate and available. Of course, online teachers also should participate in professional development related to their academic disciplines.

The Need for Online Teacher Preparation

Research shows that a teacher’s skill in face-to-face teaching does not necessarily transfer to an online classroom. In a traditional class, the teacher combines instructional and content knowledge to determine which instructional strategies, activities and assessments to use. Technology is rarely the primary means of communication. In online instruction, the teacher must combine instructional and content knowledge with technology *and* rely on technology as the means of communication. Online teaching requires an expanded set of technology skills — skills that professional development can strengthen.

The format of professional development should include both formal and informal activities, ranging from traditional and online courses, to workshops, Webinars and forums. Online teachers also need ample opportunities to share ideas and information with other online teachers and professionals. The success of SREB’s Online Teacher Forum, an online environment for sharing and discussion, illustrates the value and power of providing online teachers the opportunity to collaborate with each other. The professional development activities need to be designed to be flexible and to meet the unique time schedules and off-site work circumstances that characterize online teaching.

What is the best way to provide quality professional development for online teachers? There is no single answer to this question. Using multiple strategies, including real-time as well as “anytime” online training and traditional workshops, ensures that each online teacher has a rich, multi-layered understanding of online teaching. These strategies include:

- viewing models of effective online teaching, communications and strategies — and role-playing situations that apply these strategies;
- discussing how to handle difficult situations with students, parents and site-based staff;
- using scenarios and case studies to differentiate instruction, based on knowledge about the students in the class and performance on class activities;
- partnering experienced and new teachers for extended mentoring and support;
- reviewing current research and practices;
- developing systems to provide administrative monitoring and support, including clearly stated expectations for participation and performance in professional development activities; and
- hands-on training and experimentation with the Learning Management System and other technology tools used to deliver and support instruction.

The Guidelines

The guidelines that follow are related to each of the standards and their associated indicators in SREB's *Standards for Quality Online Teaching*. For ease of reading, the standards and indicators are shaded to distinguish them from the professional development guidelines. The guidelines provide detailed information to assist online teachers in acquiring and sustaining competence and effectiveness. In addition, they provide guidance to state virtual schools to ensure that teachers have access to the necessary information and tools to teach online courses successfully.

I. ACADEMIC PREPARATION

Standard and Indicators

The teacher meets the professional teaching standards established by a state-licensing agency or the teacher has academic credentials in the field in which he or she is teaching. The teacher:

1. meets the state's professional teaching standards or has academic credentials in the field in which he or she is teaching;
2. provides evidence that he or she has credentials in the field of study to be taught;
3. knows the content of the subject taught and understands how to teach the content to students;
4. facilitates the construction of knowledge through an understanding of how students learn in specific subject areas; and
5. continues to update academic knowledge and skills.

Professional Development

Participation in professional development specific to the teachers' academic discipline should be an area of continuing emphasis. Online teachers should:

- earn a discipline-specific academic degree;
- participate in ongoing professional development related to the content of the subject(s) taught and effective instructional strategies, such as:
 - credit and noncredit courses provided by colleges, the state virtual school or other educational institutions;
 - workshops and Webinars;
 - school and departmental meetings;
 - study groups organized by content, experience level and other areas of need or interest;
 - active participation in professional organizations;

- self-directed learning through participation in workgroups, Internet-based or Web-based communities, self-paced tutorials, readings, conferences and action research;
- participate in training on the pedagogy of teaching online. These opportunities should include those listed above as well as shadowing and/or mentoring other online teachers, planning and delivering professional development for online teachers, and pursuing an endorsement or certificate in online teaching; and
- develop knowledge of both the content and the instructional applications of software programs and tools that are content-specific, and keep up to date on emerging technologies in their fields.

State Virtual School Support

The state virtual school should:

- collaborate with professional organizations in specific content areas and in curriculum development to provide a multifaceted professional development system that focuses on strategies for online teaching and learning and continued content knowledge acquisition within each content area; and
- provide information to online instructors in each content area about the professional development opportunities provided by these organizations.

II. CONTENT KNOWLEDGE, SKILLS AND TEMPERAMENT FOR INSTRUCTIONAL TECHNOLOGY

Standard and Indicators

The teacher has the prerequisite technology skills to teach online. The teacher:

1. demonstrates the ability to effectively use word-processing, spreadsheet and presentation software;
2. demonstrates effective use of Internet browsers, e-mail applications and appropriate online etiquette;
3. demonstrates the ability to modify and add content and assessment using an online Learning Management System (LMS);
4. incorporates multimedia and visual resources into an online module;
5. utilizes synchronous and asynchronous tools (e.g., discussion boards, chat tools and electronic whiteboards) effectively;
6. troubleshoots typical software and hardware problems;

7. demonstrates the ability to use effectively and incorporate subject-specific and developmentally appropriate software in an online learning module; and
8. demonstrates growth in technology knowledge and skills in order to stay current with emerging technologies.

Professional Development

Online teachers should:

- assess fully their own skills in using essential software and hardware and seek professional development to enhance existing knowledge of:
 - word processing;
 - spreadsheets;
 - presentation software;
 - e-mail applications;
 - file management;
 - multimedia applications and tools such as digital cameras;
 - Learning Management System (LMS) and state virtual school-specific software applications;
 - synchronous and asynchronous communication tools;
 - content-specific software and hardware;
 - Web browsers and standard operating systems;
 - assessment creation tools such as industry standards tools and those in the LMS;
 - Webinar software;
 - Web-based social networking and collaboration tools;
 - Web-based simulations and gaming tools;
 - appropriate open source tools;
- assess their ability to use, facilitate and promote the use of software and hardware, Internet tools and resources *with students* and should remediate skills they do not master through professional development;
- understand the reporting capabilities of the LMS and know how to export data into tools such as Excel and other applications that support data analysis, so they can analyze student data in planning for instruction;
- understand the instructional design of the online course for which they are responsible. They should be able to adapt the online course to meet the needs of online learners and to keep the course up to date;

- understand and teach 21st Century Literacy Skills, which include strong academic and teamwork skills, thinking and reasoning skills, and proficiency in using technology;
- know how to revise and add course content, assignments and assessments; how to troubleshoot basic technology-related problems; and how to stay abreast of emerging technologies;
- be familiar with the concept of reusable digital content and how to locate and integrate existing content resources;
- be able to answer student questions on the use of the LMS tools, file management and the Internet; understand which issues should be forwarded to technical support personnel; and
- use strategies for success in a nontraditional work environment, such as:
 - designing a workspace including ergonomic considerations (e.g., a home office);
 - balancing home/work life;
 - troubleshooting home office technical issues;
 - utilizing technology away from the workspace.

State Virtual School Support

The state virtual school should:

- assess each teacher's professional development needs in the areas listed above, discuss the results with the supervisor or mentor, and collaboratively develop a professional development plan. A professional development plan should reflect the teacher's needs and interests. Differentiated professional development opportunities also should be provided;
- provide ongoing professional development on upgrades to the Learning Management System (LMS), state virtual school-specific software and other essential software as needed;
- provide instruction to online teachers on how to use required software and technology tools and how to solve the variety of problems that they and their students are likely to encounter when using these tools. Scenarios and case studies, as well as self-paced tutorials, should be incorporated into training;
- provide training on basic troubleshooting for online teachers if the teachers are expected to provide this support to their students. To do this efficiently, the state virtual school should provide data sheets about any required technologies and access to any online tutorials/support materials that can be used with students;
- provide a copy of the helpdesk ticket and solution to the online teacher when a student contacts the helpdesk for support;
- provide online teachers with opportunities to learn about and share their experiences using new technologies and applications; and

- have a plan of accountability to identify effective teachers, provide ongoing support to teachers as they learn new skills, and identify those teachers who are not making adequate progress or fail to maintain the standards of the state virtual school program. The plan should provide opportunities for retraining, improvement and growth, as well as measures to be implemented if it is determined that a teacher is not well-suited to online teaching.

III. ONLINE TEACHING AND LEARNING METHODOLOGY, MANAGEMENT, KNOWLEDGE, SKILLS AND DELIVERY

Guidelines are identified for Standards A-I.

A. Standard and Indicators

The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment. The teacher:

1. demonstrates effective strategies and techniques that actively engage students in the learning process (e.g., team problem-solving, in-class writing, analysis, synthesis and evaluation instead of passive lectures);
2. facilitates and monitors appropriate interaction among students;
3. builds and maintains a community of learners by creating a relationship of trust, demonstrating effective facilitation skills, establishing consistent and reliable expectations, and supporting and encouraging independence and creativity;
4. promotes learning through group interaction;
5. leads online instruction groups that are goal-oriented, focused, project-based and inquiry-oriented;
6. demonstrates knowledge and responds appropriately to the cultural background and learning needs of non-native English speakers;
7. differentiates instruction based on students' learning styles and needs and assists students in assimilating information to gain understanding and knowledge; and
8. demonstrates growth in teaching strategies in order to benefit from current research and practice.

A. Professional Development

Online teachers should:

- be able to engage students actively, using:
 - strategies that help students communicate clearly, including asking better questions, being more receptive to feedback and following through on commitments;
 - supplemental materials that provide students with multiple opportunities for interacting with the content;

- multiple technologies that deliver the same content in different ways (e.g., e-mail, announcements, discussion postings, FAQs, phone, mail and videoconferencing, adding video or audio to a text);
 - instructional practices that build on knowledge the students already have, or that are problem-based, or that help make students aware of what they are doing and why they are doing it;
 - multicultural approaches that reflect the cultural backgrounds of the students;
 - strategies that help English-as-a-second-language (ESL) learners;
 - students' interests, strengths and needs to present content in ways that make the course more meaningful to students;
 - strategies that get students directly involved, such as small group activities, brainstorming or discussion, debates and mock trials, case studies, simulations and role-playing, guest experts, games and interactive multimedia assignments;
 - interactive communication, including e-mail, calendar reminder notices and announcements;
 - public and private communication, including whole group and small group discussions, e-mail and journals;
 - techniques that promote student engagement, such as implementing deadlines within the course, encouraging students to actively participate in course discussions and providing students with strategies and tools for staying organized and on-task;
 - opportunities for students to work with on-site mentors and state virtual school staff as needed;
 - tactics for modifying or supplementing existing course resources and activities to meet learners' needs (see III E, F, and G), provide variety in the task demands, or re-teach concepts and skills, consistent with the policies of the virtual school program;
- know how to facilitate and monitor interactions and create a learning community among students in each course. They should seek to improve these skills by:
- identifying the roles an online teacher plays in facilitating open communication and nurturing learner growth;
 - using a framework for assessing, responding to and targeting e-mail and instant messaging communications to better support students in specific situations;
 - developing relationships with students through conversations about content- and non-content-related topics, interacting with students using multiple channels of communication, and demonstrating respect, trust, empathy, compassion and understanding;
 - modeling appropriate online communication in discussions and e-mails and guiding students on using appropriate communications as needed;
 - monitoring the tone and emotion of teacher-student and student-student communications and quickly, respectfully and individually addressing any communications that may need to be rephrased or deleted;

- using moderation models or taxonomies to analyze their own responses during online discussions to keep the discussions effective and dynamic. (Some of the more frequently used models are included in the Resources.)
 - using active listening and empathetic response strategies (e.g., sending “I” messages) that paraphrase the speaker’s words rather than reacting to them; and
 - setting and enforcing clear expectations and guidelines for course participation and proactively addressing the common problems that occur in online discussions (e.g., posting off-topic; narrow, nonspecific postings; too much cheerleading; improper posts and inflammatory remarks); Teachers should monitor all discussions, ensuring that they involve all students and addressing students who repeatedly violate the guidelines for participation; and
- participate in ongoing professional development to learn how to:
 - promote learning through group interactions that are goal-oriented, focused, project-based and inquiry-oriented;
 - promote involvement in group activities, such as small group discussions led by one student who is responsible for facilitating the discussion and another student who is responsible for summarizing the discussion;
 - assign roles for group members, have group members assess the effectiveness of the group as a whole as well as the contributions of each member to the group’s success (or lack thereof), then use the group’s self-evaluations when working with the students to build on strengths and address challenges;
 - assign study buddies who provide feedback and support each other’s work; and
 - implement proven, cooperative learning strategies (e.g., think-pair-share strategies, round robins, circle-the-sage and jigsaw) in which partners in small groups discuss issues or problems for a short period of time and report back to the larger group.

A. State Virtual School Support

The state virtual school should:

- provide instructional and management resources to support online teachers including:
 - strategies on how to group students and facilitate group functioning;
 - group project ideas and implementation strategies;
 - a series of strategies and possible responses related to creating a climate for learning;
 - feedback comments that model ways to provide feedback on student interactions and performance;
 - a set (or sets) of taxonomies of online teacher postings to online discussions so instructors can classify their responses (e.g., administrative, affective, corrective, informative and Socratic types of messages);
 - templates and examples of welcome letters, e-mails and phone calls;

- course announcements, such as announcements that inform the students about the upcoming lesson, that encourage participation, that set expectations for task completion and celebrate successes; syllabi and pacing guides; and grade book organization and comments that can be added to individual grades;
- provide administrative monitoring and support, including providing clear policies for teacher and student participation and working with students, parents and site-based staff, especially with those who have not responded to the teacher's communications;
- provide information about new and emerging technologies such as Wikis, blogs, collaborative content development software, videoconferencing software, etc. (If the state virtual school encourages the use of these tools, technical support is essential.)
- provide ongoing online forums for online teachers to share and discuss challenges in managing, facilitating and assessing online discussions; and
- consider training to help online teachers adapt to varying size classes.

B. Standard and Indicators

The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations. The teacher:

1. consistently models effective communication skills and maintains records of applicable communications with students;
2. encourages interaction and cooperation among students, encourages active learning, provides prompt feedback, communicates high expectations, and respects diverse talents and learning styles;
3. persists, in a consistent and reasonable manner, until students are successful;
4. establishes and maintains ongoing and frequent teacher-student interaction, student-student interaction and teacher-parent interaction;
5. provides an online syllabus that details the terms of class interaction for both teacher and students, defines clear expectations for both teacher and students, defines the grading criteria, establishes inappropriate behavior criteria for both teacher and students, and explains the course organization to students;
6. provides a syllabus with objectives, concepts and learning outcomes in a clearly written, concise format;
7. uses student data to inform instruction, guides and monitors students' management of their time, monitors learner progress with available tools and develops an intervention plan for unsuccessful learners;
8. provides timely, constructive feedback to students about assignments and questions; and
9. provides students with clear expectations about teacher response time.

B. Professional Development

Online teachers should:

- demonstrate knowledge and skills in promoting student success by:
 - providing thoughtful, timely, candid and constructive feedback;
 - setting clear expectations and guidelines for course and discussion participation at the outset of the course, and referencing these guidelines during the course as needed;
 - developing an online syllabus or orientation module that defines clear and reasonable expectations for both teacher and students, and that defines the grading criteria and explains the course organization;
 - being alert for signs of frustration and loss of interest and/or motivation;
 - analyzing students' e-mail messages for context and content and seeking clarification if messages are not clear;
 - understanding that online teaching may require more than one feedback response in working with a student on an assignment;
 - knowing when and how — both publicly and privately — to evaluate the learning of the individual and the class, acknowledge progress and celebrate achievement;
 - assisting students with time-management and study skills, and (using the LMS tools) supporting student organization and time-on-task by creating unit/module checklists, using a course calendar/task list features, and making announcements that keep students on track by providing "big picture" information and reminders;
 - using LMS-based or state virtual school-developed reporting tools for monitoring and documenting participation;
 - developing and implementing intervention plans for students based on student data (see III H); and
 - working effectively with student support teams, including the parent, site-based staff and state virtual school staff.

B. State Virtual School Support

The state virtual school should:

- develop time-saving techniques such as student-accessible FAQs, a course-specific glossary of common vocabulary, informative announcements, and use of the "notes" feature in word processing or browser software to speed up the process of making comments on assignments, in the drop box and in the online grade book;
- develop and implement an appropriate student induction program that includes instruction in the needed technology skills, online study and time-management strategies, use of the specific software and course delivery platform, methods of communication, administrative procedures, and state virtual school policies and assessment procedures; and

- provide resources to support online teachers that could include:
 - using advanced online students as mentors to other students;
 - LMS-based or state virtual school-developed reporting tools that help online teachers monitor and document participation; and
 - an online, secure directory of contact information for each student.

C. Standard and Indicators

The teacher models, guides and encourages legal, ethical, safe and healthy behavior related to technology use. The teacher:

1. facilitates student investigations of the legal and ethical issues related to technology and society;
2. establishes standards for student behavior that are designed to ensure academic integrity and appropriate uses of the Internet and written communication;
3. identifies the risks of academic dishonesty for students;
4. demonstrates an awareness of how the use of technology may impact student testing performance;
5. uses course content that complies with intellectual property rights policies and fair use standards;
6. provides students with an understanding of the importance of Acceptable Use Policies (AUP);
7. demonstrates knowledge of resources and techniques for dealing with issues arising from inappropriate use of electronically accessed data or information; and
8. informs students of their right to privacy and the conditions under which their names or online submissions may be shared with others.

C. Professional Development

Online teachers should understand and be able to:

- use, advocate, model and teach “safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property and the appropriate documentation of sources.” (The ISTE National Educational Technology Standards and Performance Indicators for Teachers)
- teach their students respect for and enforce the application of copyright and intellectual property rights, plagiarism prevention and appropriate citation of sources. Information that should be provided includes:
 - guidelines for online use of existing content as defined in the Technology Education and Copyright Harmonization Act (TEACH Act);

- guidelines for the use and sharing of student work beyond the instance of the course;
 - review of the state virtual school's expectations, policies and other information for student orientation;
 - strategies for fostering academic integrity and plagiarism prevention;
 - knowledge and use of specific sites and tools such as Copyright.org, Creative Commons, Turnitin.com or similar tools, and open source sites;
 - strategies for evaluating and assessing student performance in order to reinforce concepts of respect for intellectual property rights and plagiarism prevention;
 - resources about how to locate, evaluate and cite suitable online resources;
- engage in professional development on policies related to state and federal laws related to child protection on the Internet, cyber ethics and safety; academic integrity; student, parent and staff privacy policies; digital equity; and information literacy. Online teachers should be able to apply a variety of strategies to prevent infractions of policies in these areas and to address violations;
 - recognize and handle cyber bullying, hate sites, accessing inappropriate sites, inappropriate and/or illegal file sharing and hacking;
 - use and monitor social networking tools such as YouTube, TeacherTube, Wikis, blogs and other collaborative sites, which enhance 21st Century Literacy Skills and help students appreciate diverse viewpoints and collaborate on complex projects;
 - use robust passwords to protect a computer from harm;
 - use proactive strategies for the enforcement of Acceptable Use Policies (AUP) and ways to recognize intentional misuse of technology; and
 - work with local student support staff, including parents and counselors, as well as the administrative staff of the state virtual school in monitoring, reporting and resolving issues that arise in these areas.

C. State Virtual School Support

The state virtual school should:

- provide online teachers, students and parents with easy access to resources and training on virtual school policies and procedures including the school's handbook, state and federal laws, Acceptable Use Policies (AUP), Web sites and fact sheets with critical information on copyright and citing sources; and
- provide online teachers with a written policy about the virtual school's policy on the teacher's intellectual property rights, including information about ownership of what is developed by the teacher in the course of teaching and/or developing a course. An annual update of this information could be included during the contract signing for the upcoming year.

D. Standard and Indicators

The teacher has experienced online learning from the perspective of a student.

The teacher:

1. applies experiences as an online student to develop and implement successful strategies for online teaching;
2. demonstrates the ability to anticipate challenges and problems in the online classroom; and
3. demonstrates an understanding of the perspective of the online student through appropriate responsiveness and a supportive attitude toward students.

D. Professional Development

Online teachers should:

- know how to teach and facilitate online courses in which they are responsible for instructing students in completing assignments, meeting the timelines for assignments, and communicating, collaborating and sharing with classmates and the instructors through online discussions, e-mails and other available communication technologies, such as Webinars, blogs and Wikis. Ideally, the online teacher should have taken an online course in teaching and facilitating online courses. This involves at least one experience giving the online teacher an opportunity to work remotely within a group;
- be able to analyze the experience of online learning, including:
 - the sense of detachment that most online learners report and need for the online teacher to help the participant overcome this “distance”;
 - the need for the teacher to help the learner develop and apply the skills of self-regulation and self-efficacy, as well as how the learner develops and applies these skills (e.g., time management, goal-setting, problem-solving, file organization and the management of assignments, readings and e-mail);
 - evaluation of his or her own weaknesses and successes as an online learner and what contributes to them;
 - how the online teacher creates a sense of community among the learners;
 - how the online teacher develops a relationship with the online learner and deals with the online learners’ concerns and needs;
- apply what they have learned from the course work and experience of being an online learner to their own teaching practices by:
 - providing students with tips on how to stay organized, maintain self-discipline and set goals from their own experiences;
 - communicating a sense of kinship, patience and understanding to their online students as they become comfortable with the online environment and tools;
 - employing the instructional practices and strategies included in the online course;

- use instruction in teaching and facilitating online learning to:
 - understand the characteristics of successful online learners and effective instructional design for the online environment;
 - use strategies for community building;
 - formulate and use discussion prompts and rubrics;
 - facilitate online asynchronous and synchronous discussions;
 - use techniques for assessing student performance and learning in the online environment;
 - modify lessons by adding content, resources, assignments and assessments based on learner needs and on keeping the course up-to-date and relevant;
 - use strategies for managing diverse learning needs in a virtual classroom;
 - utilize techniques for using and modifying the online tools to address students needs; and
 - recognize and deal with cheating.

D. State Virtual School Support

The state virtual school should:

- provide a structured online mentoring program, using veteran teachers to support both new and experienced teachers. The mentoring program should be conducted in a nurturing and supportive environment, with clear expectations for performance on the part of the mentor and the online teacher. Separating the support and evaluation functions should be considered because this provides teachers with a non-threatening environment in which to seek help and support;
- provide ongoing online professional development training in new research-based techniques to improve facilitation of online teaching; and
- provide a Wiki and/or discussion area for online teachers to share suggestions and get support from a wider community of online teachers in how to apply the skills they learned from taking an online course to the actual teaching of an online course.

E. Standard and Indicators

The teacher understands and is responsive to students with special needs in the online classroom. The teacher:

1. understands that students have varied talents and skills and uses appropriate strategies designed to include all students;
2. provides activities, modified as necessary, that are relevant to the needs of all students;
3. adapts and adjusts instruction to create multiple paths to learning objectives;
4. encourages collaboration and interaction among all students;
5. exhibits the ability to assess student knowledge and instruction in a variety of ways; and
6. provides student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications.

E. Professional Development

- Online teachers should develop respect for learning needs of diverse students and learn how to accommodate the needs of these learners by having a broad repertoire of instructional strategies. They should participate in professional development options that model and instruct them in developing these skills.
- Professional development should help online teachers:
 - meet the challenges of promoting content learning and conceptual understanding in a largely text-based environment by using graphic organizers; pre-, during and post-reading strategies; note-taking strategies; mental management; and explaining the language of thinking-through techniques such as think-alouds and meta-cognitive labeling;
 - promote time management, study skills and goal-setting;
 - use techniques that support scaffolding of goals and of content presentation and acquisition and help students to stretch while maintaining realistic expectations;
 - use learning style inventories to gather information on the students in the class, analyze the results and use the results to inform instruction;
 - become aware of the principles of universal design and the federal Section 508 accessibility requirements for people with disabilities and include appropriate text explanations of online course videos, audios and graphics for any of these resources that the online teacher adds to the course;
 - understand the impact of different learning styles and disabilities, including test phobia and fear of performance in an online course, and knowledge of a variety of ways to assess student understanding of the content and concepts;

- provide and document the provision of the specified accommodations in a student's IEP;
- understand assistive technologies and where to seek help if a student is using an unfamiliar assistive technology tool; and
- work with local student support staff, including parents, counselors, ESL resources and special education teachers as well as the staff of the state virtual school, in supporting the students in the class.

E. State Virtual School Support

The state virtual school should:

- provide online teachers, students and parents with easy access to resources such as the school's policies and practices in supporting special needs students, Web sites and fact sheets with critical information on accessibility and special education, and Section 504 requirements; and
- provide online teachers with information about students with IEPs, 504 plans or other local school plans that require the teacher to provide specified accommodations. Issues include how this information will be used to facilitate the online course and what the teacher needs to know about assistive technologies that the student may be using. If necessary, the online teacher should be provided with any additional required software or hardware and the training on how use it. A planning guide available from the Center for Applied Special Technology (CAST) is referenced in the Resources section.

F. Standard and Indicators

The teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures. The teacher:

1. creates or selects fair, adequate and appropriate assessment instruments to measure online learning that reflect sufficient content validity (i.e., that adequately cover the content that the assessments are designed to measure), reliability and consistency over time; and
2. implements online assessment measures and materials in ways that ensure instrument validity and reliability.

F. Professional Development

- Online teachers should be able to create or select fair, adequate and appropriate assessment questions, instruments and strategies to assess content learning and conceptual understanding. Professional development, tutorials and mini-modules are available for the teachers to review as needed. State virtual school-supported question banks are available for teachers to use, and training on their use is provided.

- Professional development for online teachers should include information and strategies to help teachers:
 - interpret and apply state and national content standards in assessment development;
 - find reliable and valid assessments and resources related to assessment, including assessment development tools;
 - understand the variety of ways that students can demonstrate content learning and conceptual understanding, and recognize that using the same assessment technique for every student in the class may not be an accurate measure of each student’s learning;
 - implement online assessment measures and materials in ways that ensure instrument validity and reliability;
 - use summative assessments, such as unit tests and benchmark exams, to determine what students know and do not know at specific points in time;
 - use formative assessments to gather the information needed to adjust teaching and learning as part of the teach-assess-reteach cycle, such as reteaching a concept or lesson providing opportunities for enrichment; and
 - distinguish between the purposes of assessment (gather and use information on student performance) and grading (communicate information about student achievement), and implement grading systems that accurately present student achievement.

F. State Virtual School Support

The state virtual school should provide opportunities for online course developers and teachers to work together as course outcomes and assessments are developed, to ensure the appropriateness of the outcomes and the validity and reliability of the assessments. Doing so would strengthen online courses and the teacher’s knowledge and skills about assessments.

G. Standard and Indicators

The teacher develops and delivers assessment, projects and assignments that meet standards-based learning goals and assesses learning progress by measuring student achievement of learning goals. The teacher:

1. continually reviews all materials and Web resources for their alignment with course objectives and state and local standards and for their appropriateness;
2. creates assignments, projects and assessments that are aligned with students’ different visual, auditory and hands-on ways of learning;
3. includes authentic assessment (i.e., the opportunity to demonstrate understanding of acquired knowledge and skills as opposed to testing isolated skills or retained facts) as part of the evaluation process;
4. provides continuous evaluation of students to include pre- and post-testing and student input throughout the course; and

5. demonstrates an understanding of the relationships between and among the assignments, assessments and standards-based learning goals.

G. Professional Development

Professional development for online teachers should include information and strategies to help teachers:

- interpret and apply state and national content standards in determining content and assessment alignment, as well as content and assessment development;
- use information from learning style inventories, as well as other data sources, to differentiate instruction and assessments;
- give students the opportunity to represent their knowledge in ways that are personally meaningful;
- define the content and conceptual knowledge that the students need to demonstrate and strategies that allow students to determine (with teacher approval) how they will demonstrate their acquisition of that knowledge;
- identify the value of using alternative strategies for accurately assessing student content and conceptual knowledge acquisition; for example, using a written test for a student with a written language disability may not tell the teacher what this student has learned, whereas a telephone interview might yield more valid results;
- use authentic assessments, such as investigations and labs, self-assessment and reflection, e-portfolios, projects, journals, opened response and well-designed multiple choice questions, asynchronous discussions, performance assessments that are video- or audio-taped, case studies, debates, research, rubrics, Wikis and blogs, simulations, podcasts and games;
- provide authentic feedback, including scenarios and models of well-designed responses; and
- understand the concept of using competencies to assess student progress and plan for teaching and re-teaching.

G. State Virtual School Support

The state virtual school should:

- provide resources to support the use of standards-based assignments and assessments, including:
 - curriculum maps for each course that show the alignment of the course content and assessments to the national and state standards;
 - curriculum maps for each course that show the competencies that students need to master and the alignment of the course content, activities and assessments to the competencies;

- a repository of digital assets and learning objects, meta-tagged with national and state standards;
 - a bank of assessment items correlated to national and state standards;
 - a bank of feedback comments to help teachers create ways to provide feedback on student performance;
 - training in use of state virtual school-supported question banks; and
- provide professional development on how to use the available resources, mini-modules on assessments that are available anytime, anyplace and a forum for discussion about assessment strategies, especially authentic assessment and competencies.

H. Standard and Indicators

The teacher demonstrates competencies in using data and findings from assessments and other data sources to modify instructional methods and content and to guide student learning. The teacher:

1. assesses each student's background and content knowledge and uses these data to plan instruction;
2. reviews student responses to test items to identify issues related to test validity or instructional effectiveness;
3. uses observational data (e.g., tracking data in electronic courses, Web logs, e-mail) to monitor course progress and effectiveness; and
4. creates opportunities for self-reflection or assessment of teaching effectiveness within the online environment (e.g., classroom assessment techniques, teacher evaluations, teacher peer reviews).

H. Professional Development

Online teachers should possess the knowledge and skills necessary to use data effectively to support and provide increased student learning. Professional development for online teachers should include information and strategies to help teachers:

- use student and course data as well as other sources of information to help determine the instructional strategies to use, including: an analysis of the nature, content and frequency of students' discussion postings; quiz results analysis of the error patterns and time spent on the assessments for each student and for the class as a whole; analysis of drop box assignments, both for the content of the assignments and whether students are reading the feedback provided; analysis of time spent on viewing content within the course and log-in records; analysis of patterns of grades in the grade book; and analysis of e-mail and instant message communications;
- analyze the data to differentiate instruction prior to students undertaking new topic areas;

- use the built-in capabilities of the LMS for conditional release of content and assessments to make planning more efficient;
- analyze data from other sources, such as interest surveys; learning styles inventories (e.g., Myers-Briggs Type Indicator; Multiple Intelligences; Visual, Verbal, Kinesthetic and Auditory Preferences; and Learning and Motivation Style); school-based data provided by the state virtual school, the local school staff and parents/guardians, such as reading level, special needs and accommodations and personal circumstances that impact the student's performance in the course; and information from the student;
- apply the results of the analysis of data to both plan re-teaching activities and assessments for individuals and groups; and
- use student feedback to evaluate courses and teaching effectiveness.

H. State Virtual School Support

The state virtual school should:

- provide the online teacher with the analysis of information from a virtual school-adopted interest survey, learning style inventory, reading inventory and summary of school-based data. Mentoring new online teachers as they develop skills and knowledge in this area would be especially helpful; and
- ask a team of teachers in a course content area to collaborate on content and assessment analyses and determination of content and assessment revisions. This will strengthen the course and the knowledge of the teacher.

I. Standard and Indicators

The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self- and pre-assessments. The teacher:

1. employs ways to assess student readiness for course content and method of delivery;
2. employs ways for students to effectively evaluate and assess their own readiness for course content and method of delivery;
3. understands that student success (e.g., grade, level of participation, mastery of content, completion percentage) is an important measure of teaching and course success; and
4. provides opportunities for student self-assessment within courses.

I. Professional Development

Professional development for online teachers should include information and strategies to help teachers:

- use assessments and data from the assessments embedded in the content to track student progress, provide ongoing feedback and help students improve performance as they are learning;
- assist students in using self-assessments and data from the assessments embedded in the content to monitor their own progress and improve their performance as they are learning;
- refine their knowledge and skills in:
 - interpreting the results of existing pre-assessments within a course;
 - adding self- and pre-assessments to a course; and
 - using journals, the online grade book, participant statistics, e-portfolios, rubrics, personal blogs or discussion forums, and e-mail communications as self-assessment strategies, both for students and for themselves.

I. State Virtual School Support

The state virtual school should:

- use an online assessment with students to assess their readiness for an online course and provide teachers and counselors with the results of that survey;
- provide teachers with a variety of ways to assess student readiness for online course content such as reading, mathematics, and writing assessments;
- provide teachers with models of ways to use and interpret self-assessments in courses; and
- provide opportunities for online teachers to discuss the use of pre-assessments and self-assessments and how to assist students in monitoring their own progress and applying that knowledge to improving their performance.

Resources

Archambault, Leanna and Kent Crippen. "The Preparation and Perspective of Online K-12 Teachers in Nevada," Thomas Reeves and Shirley Yamashita, Eds. *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2006*, p. 1836-1841. Association for the Advancement of Computing in Education — (http://www.editlib.org/index.cfm?fuseaction=Reader.ViewAbstract&paper_id=23981).

This pilot study surveyed a group of online teachers from two virtual schools in Nevada to determine their perceptions concerning their level of preparation for teaching online. The teachers reported having little preparation for teaching online in the areas of online pedagogy, course design and technical assistance.

Center for Applied Special Technology (CAST). Curriculum Barriers Template, published by ASCD in *Teaching Every Student in the Digital Age: Universal Design for Learning*, Rose & Meyer, 2002 — (<http://www.cast.org/teachingeverystudent/tools/curriculumbarriers/template.cfm>).

The Curriculum Barriers Template helps teachers analyze the potential barriers for students that may exist in materials and methods. Teachers complete a three-column table, including Materials and Methods, Student Qualities, and Potential Barriers/ Missed Opportunities.

Davidson, John Wesley. *The Necessary Components of a Staff Development Program to Prepare Teachers to Teach Secondary Online Classes: A Delphi Study*. Dissertation, 2005. Virginia Polytechnic Institute and State University — (<http://scholar.lib.vt.edu/theses/available/etd-04222005-075111/unrestricted/davidjoh1.pdf>).

Research and publications in the area of higher education suggest that many factors, such as student characteristics, mentoring and teacher/student interaction, influence the success of students enrolled in online courses. Other factors that affect the implementation of successful online courses and virtual schools include policies, funding, student support, technology, curriculum, access, equity, staff development and administration. This study identified the necessary components of a professional development program to train teachers to teach secondary online courses.

Davis, N. E. and M. D. Roblyer. “Preparing Teachers for the ‘Schools that Technology Built’: Evaluation of a Program to Train Teachers for Virtual Schooling.” *Journal of Research on Technology in Education*, p. 399-409, Summer 2005 — (http://www.iste.org/content/navigationmenu/publications/jrte/issues/volume_371/number_4_summer_20051/preparing_teachers_for_the_schools_that_technology_built.htm).

The U.S. Department of Education agreed that the creation of a model for incorporating virtual schooling in preservice teacher education programs, accompanied by appropriate assessment of the effect for a range of competencies, would be a significant innovation. This article describes the planned model led by Iowa State University and the evaluation designed to establish its effectiveness.

DiPietro, Meredith and Richard E. Ferdig, Erik W. Black and Megan Preston. “Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers.” *Journal of Interactive Online Learning*, p. 10-35, Spring 2008 — (<http://www.ncolr.org/jiol/issues/PDF/7.1.2.pdf>).

A study of 16 virtual school teachers from the Michigan Virtual School (MVS) reports on best practices in online teaching. The paper concludes with implications for policy, research and practice.

Guide to Teaching Online Courses. National Education Association, 2006 — (<http://www.nea.org/assets/docs/onlineteachguide.pdf>).

This guide was produced as an effort to ensure secondary students with quality online content, focusing on teaching skills, professional development and the overall improvement of online teaching.

Irvine, Valerie and David Mappin and Jilliane Code. "Preparing Teachers to Teach Online: The Role of Faculties of Education." *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2003*, p. 1978-1981. Association for the Advancement of Computing in Education — Abstract: (<http://go.editlib.org/p/11148>).

This presentation reported the issues and implications for higher education programs for preparing teachers to teach online, based on the literature, current practices and results of a survey of the perceptions of preservice and inservice teachers toward online education and their feelings of preparedness to teach online.

Knowlton, Dave S. "A Taxonomy of Learning through Asynchronous Discussion." *Journal of Interactive Learning Research*, p. 155-177, December 2005. Association for the Advancement of Computing in Education — Abstract: (<http://editlib.org/p/5675>).

This article presents a five-tiered taxonomy that describes the nature of participation in, and learning through, asynchronous discussion. The five tiers of the taxonomy include: (a) passive participation, (b) developmental participation, (c) generative participation, (d) dialogical participation, and (e) metacognitive participation.

National Standards for Quality Online Teaching. North American Council for Online Learning. 2007 — (<http://nacol.org/nationalstandards/>).

The North American Council for Online Learning (NACOL) released this document in February 2008. As a result of the research review, NACOL fully endorsed the work of the Southern Regional Education Board (SREB) *Standards for Quality Online Teaching* and *Online Teaching Evaluation for State Virtual Schools* as a comprehensive set of criteria. The standards, as identified by SREB and in use by the 16 SREB member states, include guidelines set forth in the other criteria from the literature review. A full cross-reference of standards was conducted. SREB reports are available at www.sreb.org.

North American Council for Online Learning. Resources and materials from "Changing the Course of Education," 2007 Virtual School Symposium — (https://www.nacol.org/events/vss_2007/resources.php).

This panel presented recent research on online teaching and learning. The presentations focused on the implications of the research for practitioners and included findings from brain research applied to the use of gaming in online learning, the effective use of interactive tools in online math courses, the instructional design elements that motivate student persistence, and the meaning of different patterns of participant interaction in online professional development.

Norton, Priscilla and Robin Davidson Smith. "Preparing Virtual Teachers: Who Is on the Other End?" *Proceedings of Society for Information Technology and Teacher Education International Conference 2007*, p. 456-463. Association for the Advancement of Computing in Education — Abstract: (<http://go.editlib.org/p/24580>).

This study examined the impact of one model of online teacher preparation, the Online Academy for Teachers, on the participants' understanding of the roles and responsibilities of the online teacher and their sense of efficacy as online teachers.

Norton, Priscilla. "Scaffolding Online Learning; The ART of Mentoring." *Proceedings of Society for Information Technology and Teacher Education International Conference 2005*, p. 2025-2032. Association for the Advancement of Computing in Education — (http://www.editlib.org/index.cfm?fuseaction=Reader.ViewAbstract&paper_id=19360).

This paper examines the characteristics of online learners and describes a process for online teachers to use in online communications. This process focuses on a framework for "Assessing, Responding and Targeting" online communication so that teachers and learners share responsibility and accountability.

Reingold, Roni and Rikki Rimor and Anat Kalay. "Instructor's Scaffolding in Support of Student's Metacognition Through a Teacher Education Online Course - A Case Study." *Journal of Online Interactive Learning*, Summer 2008 — (<http://www.ncolr.org/jiol/issues/viewarticle.cfm?volid=7&IssueID=23&ArticleID=119>).

This study demonstrated the importance of the instructor's feedback in helping students learn more effectively through the use of reflective and metacognitive processes. Implications for the design of teacher education programs also are discussed.

Savery, John R. "BE VOCAL: Characteristics of Successful Online Instructors." *Journal of Online Interactive Learning*, Fall 2005 — (<http://www.ncolr.org/jiol/issues/viewarticle.cfm?volid=4&IssueID=15&ArticleID=73>).

Teaching in an online environment requires a special set of teaching skills, since many of the strategies and tactics associated with best teaching practices are somewhat constrained by the primarily text-based environment. Instructors who use the VOCAL (Visible, Organized, Compassionate, Analytical and Leader-by-example) approach will have more productive learning environments, fewer management problems and more positive learning experiences with their students.

Treacy, Barbara. "What's Different about Teaching Online? How are Virtual Teachers Changing Teaching?" Reprinted from Kentucky Virtual High School Newsletter, October 2007 — (<http://edtechleaders.org/documents/teachingonline.doc>).

This article describes what's different in the online classroom and why online instructors need specific training. Training for online instructors is particularly effective if it, too, is provided online, enabling instructors to gain valuable experience as online learners prior to having their own online students.

Zorfass, Judith and Arlene Remz, Jennifer Gold, Denise Ethier and Patricia Corley. *Strategies to Ensure that Online Facilitators are Successful*. Education Development Center Inc., 1998 — (<http://www2.edc.org/NCIP/facilitation.html>).

This paper examines the distinctive characteristics and challenges of the online learning environment, the knowledge and skills an online facilitator needs to be successful, and the kind of support and guidance needed by novice facilitators. It also describes ways to provide technical assistance, mentoring, support and guidance to novice online facilitators.

