Faculty Development, Student Satisfaction, and Reported Learning in the SUNY Learning Network

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Online teaching and learning environments have evolved only recently to the point where not only courses, but entire degree programs, may be completed via the Internet. How best to structure such environments has been a challenge, one that many institutions are only beginning to address. Added complexity arises when the system implementing an online teaching and learning environment is a very large one, as in the case of the State University of New York (SUNY), by some measures the largest unified system of public higher education in the United States. This chapter will examine issues of pedagogy, faculty development, student satisfaction, and reported learning in the State University of New York Learning Network, the forum for online learning leading to complete degree programs for 53 SUNY colleges.

BACKGROUND

The SUNY Learning Network (SLN) is the online instructional program created for the 64 colleges and nearly 400,000 students of the State University of New York. The primary goals of the SUNY Learning Network are to bring SUNY’s diverse, high-quality instructional programs within the reach of learners everywhere and to be the best provider of asynchronous instruction for learners in New York state and beyond. Strategic objectives for this initiative are threefold:

1. To provide increased, flexible access to higher education within and beyond New York state
2. To provide a mechanism for maintaining consistently, high-quality online teaching, and learning across the SUNY system
3. Leverage the resources of the State University of New York system to contain the costs associated with the development, design, and delivery of online education.
This chapter focuses primarily on the second goal—that of providing a mechanism for maintaining consistently high-quality online teaching and learning.

The SUNY Learning Network started as a regional project in the Mid-Hudson Valley involving eight SUNY campuses. Initially, the development and delivery of asynchronous courses was a new activity for SUNY campuses and faculty. With generous support from the Alfred P. Sloan Foundation, combined with enthusiasm and resources from SUNY System Administration and participating campuses, the SLN successfully met the challenges of an early developmental phase that focused on “proof of concept” and “expansion—scalability.”

Successful experiences led to an expanded vision and goals for the SLN, and the scope and objectives of the project have grown substantially. The annual growth in courses, from eight in 1995–1996 to more than 2,500 in 2001–2002, and annual growth in enrollment, from 119 in 1995–1996 to more than 40,000 in 2001–2002, with courses offered at all undergraduate and graduate levels from 53 of our institutions, illustrates that the project has met, and in many ways exceeded, original projections. The program has recently been recognized by EDUCAUSE as the 2001 award winner for Systemic Improvement in Teaching and Learning and by the Sloan Consortium for its 2001 Excellence in ALN Faculty Development Award.

**CONCEPTUAL FRAMEWORK**

The SUNY Learning Network represents a formal online teaching and learning environment. To understand how best to structure such an environment to ensure effective pedagogy, it is useful to begin by looking at what works well in traditional learning environments and to attempt to attend to models of best practices identified for effective education. Of course, such an examination must be done in light of our understanding that differences exist between online and classroom-based teaching and learning. But starting with best practices in structuring traditional learning environments is a good foundation for further investigation.

The National Research Council’s Commission on Behavioral and Social Sciences and Education provides guidance in this area, especially in the publication *How People Learn* (Bransford, Brown, Cocking, Donavan, & Pellegrino, 2000). The authors offer a model for effective learning environments in which a system of four interconnected components combine and mutually support each other. These interconnecting components are foci that provide a foundation for learning environments, the best of which appear to be learner centered, knowledge centered, assessment centered, and community centered. The model may be seen as a set of overlapping circles, as illustrated in Fig. 16.1.

The authors detail each of these foci—briefly summarized here. Good learning environments are knowledge centered in that they are designed in consideration of desired outcomes. Guiding questions for creating a knowledge-centered learning environment include: What do we want students to know and be able to do when they have completed our materials or course? How do we provide learners with the “foundational knowledge, skills, and attitudes needed for successful transfer” (Bransford et al., 2000)?

Good learning environments are also learner centered, that is, they function in a manner that connects to the strengths, interests, and preconceptions of learners (Bransford et al., 2000) and help students to gain insight into themselves as learners. In such environments, teachers work to bridge new content with students’ current
understandings and to facilitate growth, while attending to the learners' interests, passions, and motivations.

Another characteristic of good learning environments is that they are community centered; that is, they promote and benefit from shared norms that value learning and high standards. Ideally, good learning environments connect to relevant external communities and provide a milieu within the classroom where students feel safe to ask questions, work collaboratively, and in which they are taught to develop lifelong learning skills.

Finally, the authors emphasize that good learning environments are assessment centered, meaning that they provide learners with many opportunities to make their thinking visible (Bransford et al., 2000) and to get feedback to create new meaning and new understanding.

The guidelines in *How People Learn* provide an excellent framework from which to consider the design of online learning environments, in that they summarize much of what is known about good learning environments generally. However, in addition, we must also consider the specific needs of higher education learners and focus on lessons learned from research in college-level teaching and learning, as these are most relevant to the SLN. Are there guidelines that help to determine how to implement a learning-, assessment-, knowledge-, and community-centered environment—one that is designed to engage higher education students specifically?

Certain institutional practices are known to lead to high levels of student engagement. Perhaps the best-known set of engagement indicators is the “Seven Principles of Good Practice in Undergraduate Education.” (Kuh, 2001)

The seven principles of good practice in undergraduate education identified by Chickering and Gamson (1987) reflect much of what is identified by Bransford and colleagues (2001) in the design of good learning environments. These principles distill decades of research on the undergraduate experience, providing some guidance on
how best to structure learning in higher education. Chickering and Gamson (1987) encourage the following general conditions and behaviors for successful learning: (1) frequent contact between students and faculty, (2) reciprocity and cooperation among students, (3) active learning techniques; (4) prompt feedback, (5) time on task, (6) the communication of high expectations, and (7) respect for diverse talent and ways of learning.

We feel that the principles of good practice outlined by Chickering and Gamson (1987) are at the heart of the model presented by Bransford and colleagues (2000) and provide a focus specific to higher education learning environments. Figure 16.2 details this relationship.

Although these principles provide guidance in developing higher education learning environments, they are written at a relatively high level of abstraction without a specific focus on the needs of higher education students learning at a distance, as in the case of the SLN. Further, the SLN was specifically designed as an asynchronous environment, and for many courses in the program, it depends largely on text-based interaction to carry out teaching and learning. A specific set of indicators that does focus on higher education at a distance in primarily text-based, asynchronous environments may be found in the model proposed by Garrison, Anderson, and Archer (2000). This framework also reflects the principles of good practice and, we propose, the model presented by Bransford and colleagues (2000). It is to the Garrison, Anderson, and Archer (2000) framework we will now turn, with the goal of providing a more comprehensive conceptual background and to provide a more developed and detailed set of categories through which to examine issues of pedagogy, faculty development, student satisfaction, and reported learning in the SLN.
In the model of critical thinking and practical inquiry proposed by Garrison, Anderson, and Archer (2000), three overlapping lenses—cognitive presence, social presence, and teaching presence—provide mutual support to create a framework in which interaction in an asynchronous online educational experience may be assessed. The model seeks to explain how to best analyze and ultimately promote higher order learning in computer mediated, largely text-based environments such as the SLN. Later, we will look at social, teaching, and cognitive presence in greater depth.

In this model, social presence is viewed as the “ability of students to project themselves socially and affectively into a community of inquiry” and is deemed critical in the absence of physical presence and attendant teacher immediacy necessary to sustain learning in the classroom. Teaching presence is referred to as “the design facilitation and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes.” (Anderson, Rourke, Garrison, Archer, 2001). Teaching presence has three components—instructional design and organization, facilitating discourse, and direct instruction.

The authors define cognitive presence as “the extent to which students are able to construct and confirm meaning through sustained discourse in a community of inquiry,” and it is achieved in concert with effective teaching presence and satisfactory social presence. The authors provide a visual representation of the model, reproduced in Fig. 16.3.

How does this model relate to the principles of good practice in undergraduate education espoused by Chickering and Gamson (1987)? Again, one might revise the model to locate the seven principles of good practice, as shown in Fig. 16.4.

We feel that the principles of good practice are also essential elements of the teaching and learning transaction, and crucial in creating and sustaining student engagement.

FIG. 16.3. Elements of an educational experience. (Source: Garrison, Anderson, & Archer, 2000).
and learning. We feel that the Garrison, Anderson, and Archer (2000) model specifies how to identify and enact these principles in a specifically online learning environment. Because it was designed for online learning environments, the framework and indicators articulated by Garrison, Anderson, and Archer (2000) is useful in analyzing the SLN faculty development efforts. Although it is not the original intention of the authors that this model be used for assessing faculty development programs, it does provide a "checklist" against which efforts to create an effective online learning environment can be analyzed.

Next, we will describe the faculty development process and identify elements of support for the creation of social presence and teaching presence that are embedded in SLN training. We will also explain how faculty become aware of and enact these in the online courses they teach to create and sustain cognitive presence. By attending to both the general principles of good practice in higher education articulated by Chickering and Gamson (1987) and to how they are identified and enacted in online, asynchronous environments in the Garrison, Anderson, and Archer (2000) framework, we will attempt to discover whether the faculty development efforts were likely to result in good pedagogy and a high-quality learning environment for SLN students.

**FACULTY TRAINING**

They are peers in the execution of “real work.” What holds them together is a common sense of purpose and a real need to know what each other knows. (John Seely Brown on communities of practice)
All faculty teaching through the SLN participate in a program of training. The goals of this faculty development initiative are to help new instructors understand the nature of online learning and how to transform what they do in the classroom to best exploit the affordances and mitigate the constraints of Internet-based teaching and learning. Below, we describe this training and highlight the components of the experience that we feel reflect principles of good pedagogical practice that support the creation of social and teaching presence.

Faculty Development: A Community Approach

All faculty who participate in the SUNY Learning Network agree to participate in a 5-month preparatory training, and engage in an ongoing dialogue and receive ongoing support during the entire time they develop and teach their courses. The dialogue and supportive interaction takes place within the SLN community of trainers, multimedia instructional design partners, experienced faculty, SLN program staff, and the faculty help desk.

Faculty report a number of motivators for deciding to develop and teach an online course. In our most recent survey of faculty, with 255 respondents, we found that most faculty chose to participate because of an interest in online teaching (Table 16.1).

Training begins with participation in an online, all-faculty conference that mirrors the environment in which faculty will eventually instruct. Through participation in this online conference, new faculty come together with experienced faculty and conference facilitators to experience what they and their students will do in this new learning environment. The online conference helps faculty to understand, firsthand, the affordances and constraints of an online environment, allowing them to have the perspective of the online student. This conference also allows new faculty to connect to experienced faculty, and models an effective online course design, effective learning activities, and productive course management practices. This initial online experience for new faculty is designed to provide encouragement, support, and responsiveness, and facilitates entry into the community of SLN online course developers and educators.

In this phase of the faculty development and course design process, new faculty also have the opportunity to observe “live” ongoing courses, examining and discussing the course designs and instructional styles of experienced SLN instructors in a variety of disciplines. Again, through these activities, embedded in the real work of developing a

<table>
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<tr>
<th>Motivator</th>
<th>Frequency</th>
<th>Percent</th>
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<tr>
<td>Course only offered online</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Fear of being left behind</td>
<td>5</td>
<td>1.9</td>
</tr>
<tr>
<td>Want/need to telecommute</td>
<td>11</td>
<td>4.3</td>
</tr>
<tr>
<td>Marketability of skills</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>Curiosity</td>
<td>17</td>
<td>6.7</td>
</tr>
<tr>
<td>Interest in technology/Internet</td>
<td>22</td>
<td>8.6</td>
</tr>
<tr>
<td>Interest in online teaching</td>
<td>152</td>
<td>59.6</td>
</tr>
<tr>
<td>Other</td>
<td>30</td>
<td>11.8</td>
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<td>Total</td>
<td>255</td>
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course, new faculty are encouraged to become members of the larger SLN community, to learn its norms, practices, and vocabulary. Entry into this community is symbolized in part through the distribution of T-shirts with the SLN logo and the phrase “replicate-work-replicate,” a practice required in the software that faculty use to create their courses.

In addition to the online faculty conference, new instructors also engage in 20 hours of face-to-face training. During three full-day trainings, implemented over an ongoing 5-month synchronous and asynchronous training cycle, faculty receive a comprehensive course development guide, and meet their instructional design partner, training facilitators, help desk staff, the SLN program staff, and other new instructors. Through participation in this emerging community, faculty explore the idea that online instruction does not simply entail mimicking what happens in the classroom, but rather requires a considerable transformation and rethinking of course components.

Common issues that arise include understanding new roles and new technology. For example, writing and posting online course materials in cooperation with an instructional design partner represents a break with familiar, frequently individual, higher education practices. New faculty frequently struggle with the idea that their instructional design partner will view and provide feedback on their materials. Building trust and understanding through frequent communication is essential in this new relationship. Facilitating the understanding that this practice has assisted hundreds of previous instructors is also helpful in building trust.

Other challenges include learning how to manage a database-driven online course site. Throughout face-to-face training, faculty are introduced to various features of the software and provided best practices on how to integrate good pedagogy while learning the new features. For example, in learning how to edit documents in this environment, faculty write a profile that helps students see them as “real people” with interests, concerns, and lives outside the course.

In concert with their instructional design partner, the help desk, experienced instructors, and trainers, the new faculty work on how to best create a teaching and learning environment in which students get to know the instructor, each other, and have ample opportunities for quality interaction and feedback. To fully exploit the unique opportunities of online instruction faculty are initially encouraged to reflect on course learning outcomes and then to investigate, with the ongoing support of the SLN community, how best to translate and achieve these outcomes online. The faculty help desk provides continuous support to answer technical questions and make the technology as invisible as possible, reducing confusion about technology and helping faculty focus on their key role—facilitating learning. Figure 16.5 provides an overview of the faculty development process.

After 7 years of faculty development efforts, more than 1,400 instructors have engaged in training offered through the SUNY Learning Network. This training and the accompanying support reflects what Buckley (2002) referred to as “lavish care” necessary (though not always sufficient) to ensure a transforming experience. During this initial faculty development cycle, new instructors receive what Buckley calls “boutique-level” service that, we believe, has helped establish the reputation of the SUNY Learning Network and resulted in interest and enthusiasm of later adopters.

The SLN Course Management System (CMS)

The SLN CMS was developed by higher education professionals specifically for the purpose of higher education teaching and learning. The design team focused on
providing sound pedagogical tools that provided maximum design flexibility while maintaining an attractive and informative graphical interface that students could easily learn to use. Courses created in the SLN CMS may include text, images, sound, and multimedia appropriate to meet course-learning objectives. Figure 16.6 shows the SLN CMS interface, as seen from a student’s perspective on the Web.

We believe this common interface reduces the burden that might arise from a nonstandard course environment and helps students focus on learning content, rather than navigation of the course.

HELPING FACULTY CREATE AND SUSTAIN QUALITY ONLINE TEACHING AND LEARNING

How does the faculty development process outlined above help faculty to engage in behaviors that are likely to result in productive learning environments? Clearly, to achieve this goal, there is a need to focus on the elements put forth by Bransford and colleagues (2000); that is, the trainings need to emphasize the importance of learning-centered, knowledge-centered, assessment-centered, and community-centered environments. In addition, because the SLN is a higher education learning environment, we emphasize the importance of the specific principles of good practice in undergraduate education outlined by Chickering and Gamson (1987). Finally, because the goals of the trainings are to help faculty understand the nature of online, asynchronous learning, we emphasize many of the indicators of social presence outlined by Rourke, Garrison, Anderson,
and Archer (2001) and teaching presence outlined by Anderson, Rourke, Garrison, and Archer (2001) that lead to better online learning. Later, we will discuss faculty development in greater detail, especially as it relates to social and teaching presence, and examine how faculty learn about ideas and practices related to these concepts through SLN trainings.

Rourke, Garrison, Anderson, and Archer (2001) identified social presence as the “ability of learners to project themselves socially and emotionally into a community of inquiry.” Social presence is important in that it supports learning by making interaction, “appealing, engaging, and thus intrinsically rewarding” (Rourke et al., 2001). The model also presents a more specific set of online indicators for facilitating engagement than those represented by the general principles of good practice in undergraduate education. Attention to social presence is also necessary, though not necessarily sufficient, to attain the learner-centered environment emphasized by Bransford and colleagues (2000). Rourke and colleagues proposed three categories for analyzing computer conferencing transcripts for evidence of social presence—affective, interactive, and cohesive.

Affective indicators can be described as expression of emotion, feeling, and mood, which may be evidenced by the use of emoticons, humor, and self-disclosure. The authors define interactive indicators as messages of a “socially appreciative nature” that are found within the threaded interchanges of online discussion. (These may be found in other parts of an online course, though Rourke and colleagues (2001) focused primarily on threaded discussions.) In the absence of the physical cues of verbal and nonverbal communication, interactive indicators provide evidence that “somebody is out there ‘listening.’” This evidence that your professor or fellow students are attending to your communications may be seen through the continuation of a “thread,” or interchange; by directly quoting or by referring directly to another’s message; by asking questions to elicit clarity; by complimenting or expressing appreciation; and by expressing agreement.
The authors also identify “cohesive indicators,” which are evidenced by the use of “vocatives,” for example, addressing participants by name, the use of inclusive pronouns (we, our, group), as well as “phatics and salutations,” or verbal exchanges that serve a purely social function such as greetings and closures (Rourke et al., 2001). These indicators equate with the Chickering and Gamson (1987) principle encouraging contact between students and faculty, while providing appropriate concern for making such contact authentic in an online learning environment.

Support for Building Social Presence in SLN Training

Affective Dimensions

SLN training facilitators emphasize the affective nature of online learning in a number of ways. For example, the use of humor and appropriate methods for self-disclosure are discussed in both online forums, the face-to-face trainings they precede, and with their instructional design partner. In these forums, faculty learn that humor, although useful and potentially socially binding, can also backfire and cause misunderstanding and even anger in the absence of physical presence and verbal and nonverbal signals that often facilitate humor. The training forums provide opportunities to discuss humor and, again where appropriate, to model it, along with suggestions about the affordances and constraints of an online environment.

Faculty are encouraged to model appropriate levels of self-disclosure in their introductory course documents. Trainers provide faculty with examples of introductory documents that give students background information on instructor interests, research specialization, and even personal Web sites. These examples are meant to help instructors understand how to begin to create a sense of togetherness, shared mission, and to begin to put students at ease about studying online. Trainers emphasize that modeling appropriate levels of self-disclosure will help lower the barriers that a lack of physical immediacy may create online.

Interactive Dimensions

The importance of interaction is strongly emphasized in faculty development efforts. Certain interactive indicators identified by Rourke and colleagues (2001) are integrated into the technology used by the faculty; others are specifically highlighted through the various training forums. Faculty explore different forums for interacting with students within their course management system. Interaction may be done publicly—in topical open class discussions and course related bulletin boards—or in private, as appropriate, through “virtual office hours,” private folders, and individualized feedback to specific assignments. Faculty discuss the pros and cons of small group forums and learning activities designed and implemented to encourage student–student interaction.

Faculty are encouraged to require certain levels of interaction, that is, to begin to help students get into the habit of interacting online (which may be relatively foreign to both the students and the instructor), faculty examine guidelines and rubrics on what constitutes significant or meaningful interaction. Rules, such as requiring a minimum number of postings, help get the class into the habit of reading and thoughtfully responding to each other’s messages. In time, these rules fade into the background as students become authentically engaged in discussions. Requiring students to post messages to “get credit” in online threaded discussions ensures a minimum level of interaction, and the other indexes identified by the authors—continuing a thread, quoting from other’s message, and referring to other’s messages, occur more naturally
as they are needed for effective communication. That being said, faculty are also specifically encouraged to refer to student comments to engage and elicit student interest and participation.

Early on, faculty explore the nature of “substantive comments” in online discussions. Trainers encourage faculty to articulate what constitutes high-quality comments with the goal of encouraging students to thoughtfully respond rather than to merely post “I agree” messages in online discussion. Trainers also offer faculty rubrics that provide a more systematic means of assessing significant student interaction. Rubrics can allow for more precise feedback on course participation. They also facilitate the attainment of higher levels of discourse in support of cognitive presence and critical thinking by “setting the bar” at a level that is higher than might evolve without them.

**Cohesive Dimensions**

The importance of addressing students by name is highlighted and modeled in online and face-to-face trainings. Although the authors emphasize the importance of inclusive pronouns in online communication, such as *we* and *our*, it may be just as important to emphasize the avoidance of other modes of address, such as *the student* and other third-person vocatives. The use of both inclusive pronouns (*we, our, us*) and the second person (the appropriate use of *you* when referring directly to students) is specifically recommended and modeled in trainings forums.

Greetings and salutation that serve a purely social function are implemented in at least two ways. Students are automatically greeted by name when they enter the SLN system, with a randomly generated greeting such as “Aloha Jim” or “Welcome Jim.” The course template has areas that are designed to provide initial greetings early in the course, such as the Newsflash area, which by default offers students a “Welcome to the course” message. Welcome messages are also contained in standard course documents.

Beyond these low-level, automated, cohesive messages, faculty discuss the importance of warmly welcoming student and of responding to social posting with greater frequency and in a rapid fashion, especially early on in the course, when the cohesiveness of the class is still fragile and emerging. Trainers routinely encourage faculty to use student names in responses to help create a sense of cohesion.

**Helping Faculty Create and Sustain Teaching Presence**

The component of the Garrison, Andersen, and Archer (2000) framework that details “teaching presence” is also quite useful in helping to explain and to analyze the faculty development process implemented within the SUNY Learning Network. We will provide a brief description of this part of the framework and then return to it when discussing the SLN faculty development and course design process in greater depth.

Anderson and colleagues (2001) defined teaching presence as “the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes.” Although the authors were principally concerned with analyzing course discussion transcripts for evidence of these categories, it is our belief that teaching presence is also evident in other areas of online courses. Anderson and colleagues (2001) acknowledge this and encourage others to investigate teaching presence beyond course discussions. We will use the
categories devised by Anderson and colleagues (2001) and provide additional examples of teaching presence (beyond what may be found in discussion transcripts), and describe how faculty are supported to understand and create teaching presence in SLN online courses.

Teaching presence in this model has three components—instructional design and organization, facilitating discourse, and direct instruction. Under the category "Instructional Design and Organization," the authors include: setting curriculum, designing methods, establishing time parameters, utilizing the medium effectively, and establishing netiquette. This aspect of the model equates with Chickering's and Gamson's (1987) concern for active learning techniques, time on task, communication of high expectations, and prompt feedback, again, providing more consideration of the affordances and constraints of online environments.

Support for Instructional Design and Organization

Support for instructional design and organization is provided in many ways. For example, all faculty are provided a shell structure from which to build their courses. The SLN CMS embeds a common instructional design format and organization into each course. It is however, flexible, and faculty can alter the format to suit their needs and the specific learning outcomes for their courses. This CMS provides several advantages for achieving the goals of building an asynchronous learning network on the scale of SLN. Each course has a common look and feel, so students do not need to learn a new interface every time they enroll in a new course. Placeholder documents also serve to remind faculty to include information that students will need to feel well oriented in any course. The CMS helps faculty to establish teaching presence in accordance with several of the categories identified by Anderson and colleagues (2001). These are—setting the curriculum, establishing time parameters, utilizing the medium effectively, and establishing netiquette.

Setting the Curriculum

Common course information placeholder documents provide a reminder to faculty of the importance of this element of teaching presence, and that they need to inform the students about the course, how it will proceed, and how students can succeed. Common issues confronted include the sequence, quantity, and pacing of learning activities in each section of the course.

Each course contains documents into which course-specific information may be inserted. Trainers, using the hard copy and online-faculty development guide provided to all faculty, give examples of appropriate content that can be tailored for a standard set of course information documents. Documents that touch on setting the curriculum include: a welcome document, a course overview, course learning objectives, "how you will be evaluated" and "my expectations" documents, as well as readings and course materials. Such signposting begins to fulfill the role of creating a "narrative path through the mediated instruction and activity set such that students are aware of the explicit and implicit learning goals and activities in which they participate" (Anderson et al., 2001). In addition to creating the narrative path, we feel it is also important to provide a "table of contents" to the narrative, so faculty can also create course-level, section-level overview documents with the goal of reminding students where they are and what they will be working on throughout each section of the course.
Establishing Time Parameters

This element of teaching presence is critical; keeping students moving along at a similar pace is foundational to supporting meaningful interaction in asynchronous learning environments such as the SLN. For students to engage in coconstruction of knowledge, they need to work together, and well-articulated time parameters facilitate effective interaction.

Faculty in SLN learn about the importance of establishing time parameters in several ways. Again, the SLN CMS provides standard documents and instructional cues that help establish time parameters. For example, it contains a preformatted course schedule, into which learning activities, topics, assignments and due dates may be recorded. Each course segment (module) contains a standard “What’s Due?” document for that section of the course. At the document level, “discussion starter” documents contain start and end date reminders so that faculty remember to provide these time parameters to students. Assignment starter documents contain similar due date reminders to help faculty to keep students on track. In addition, the SLN CMS permits faculty to activate and deactivate learning modules to control course pace.

Utilizing the Medium Effectively

Under this category, Anderson and colleagues (2001) included helping students understand how to use the technology appropriately, for example, the proper use of the reply and quote functions in online discussion. Again, the SLN CMS contains standard course documents that help faculty to help students understand these functions, and they are placed immediately before the task to which they refer or in which they will be used. Such shared documentation on effective use of the medium reduces the burden on individual faculty to “reinvent the wheel” in each course.

 Occasionally, students will need extra help with the technology, so in addition to documentation within each course, a central student help desk exists to assist students to make effective use of the medium. But rather than take a merely reactive role, the help desk facilitates an interactive, online orientation to SLN. This course, modeled on all other SLN courses, is offered each semester and helps students understand the medium and its effective uses, as well as practice the skills necessary for success before they enter a specific, credit-bearing course.

To help faculty understand and address instances when students are not using the medium well, one of the roles of the SLN instructional design partner is to monitor each course, especially in its very early stages, and to make sure that the faculty member is aware of communication breakdowns, such as misplaced postings and unanswered questions, so that they may be repaired.

Designing Methods

Under this category, the authors include the provision of instructional strategies that help structure learning activities. One of the greatest challenges in online learning is the clear articulation of how learning activities will be structured and paced, and new online faculty frequently struggle with providing clear instructions on how to accomplish a particular activity. Cooperative learning methods in particular require clear directions and close monitoring. The ability to draw on hundreds of courses that have been developed, designed, and delivered through the SLN provide some assistance in overcoming these challenges. Faculty are able to review examples of learning activities
that were either successful or unsuccessful to understand how their design and method may impact their effectiveness. Examples include student-designed surveys, journals, observations, individual and collaborative projects, and jointly constructed annotated bibliographies. Through the SLN Faculty Developers Center and the all-faculty conference, instructors can view entire archived courses, “sit in” on live courses, and access excerpted examples of well-designed, or previously successful, learning activities. These faculty-support resources are detailed next.

*Faculty Center*

Through this online resource, faculty can access their SLN e-mail, explore a common set of library resources, search a repository of discipline specific learning objects (MERLOT), access the online version of the SLN handbook, participate in an online faculty orientation, and access instructional design tips and online teaching tools, beyond those included in the SLN CMS. The Faculty Center is one resource for promoting understanding of this element of “teaching presence.”

* Archived Courses*

Faculty are encouraged to browse from a broad selection of previously delivered and now archived courses across disciplines and to examine them for ideas regarding how they will design their own course. These courses provide a “static” view of previous designs that have proven effective in the eyes of the instructional designer, faculty members, and students.

*Live Courses*

New faculty may enter a selection of live, ongoing SLN courses to get an understanding of how experienced instructors conduct and facilitate a course. This guided discovery process occurs during the all faculty online conference and allows faculty to see and discuss the dynamic process by which a course unfolds and through which teaching, social, and cognitive presence may evolve.

*Excerpted Activities*

Instructional designers have developed a database of innovative online teaching and learning activities from previous courses that new instructors can access. This resource is smaller than a complete course but represents a greater concentration of examples from across many courses.

*Establishing Netiquette*

Rourke and colleagues (2001) referred to “netiquette,” that is, behaviors that are deemed appropriate in online communication. Newcomers to online communication are often unaware that certain acts may violate established norms. One example is typing in uppercase, which is viewed as “shouting” in online communication and thus inappropriate for most messages. Dominating conversations with long postings is another potentially problematic violation of netiquette. Trainers review these concepts, and the hard copy and online versions of the SLN handbook provide examples of simple policies for acceptable interaction in online college courses.
Support for Facilitating Discourse

Another element of teaching presence in the Anderson and colleagues (2001) framework is facilitating discourse. The task of facilitating discourse is necessary to sustain learner engagement and refers to “focused and sustained deliberation that marks learning in a community of inquiry” (Anderson et al., 2001). The authors provide indicators of the act of facilitating discourse, which include identifying areas of agreement and disagreement; seeking to reach consensus and understanding; encouraging, acknowledging, or reinforcing student contributions; setting climate for learning; drawing in participants and prompting discussion; and assessing the efficacy of the process. This aspect of the model equates with Chickering’s and Gamson’s (1987) encouragement of contact between students and faculty and reciprocity and cooperation among students—further delineating these for online learners. This activity is also essential for sustaining the knowledge-centered and community-centered learning environment emphasized by Bransford and colleagues (2000). We will look at the components of facilitating discourse and identify how faculty in SLN learn about this skill.

Trainers and instructional design partners encourage faculty to consider the early stages of their courses as an opportunity to begin to create a nonthreatening environment in which students can begin to engage in discourse. A standard practice designed to help meet this goal is the use of an “ice-breaking” module. In this initial course section, students engage in ungraded activities where they can practice the skills needed to participate in the course. These might include open class and small group discussions, submitting a profile, or taking a learning style quiz. These activities are designed to encourage class discourse in a safe, supportive, and unassessed (at least in terms of course grade) environment.

Two indicators of discourse facilitation, identifying areas of agreement and disagreement and seeking to reach consensus and understanding, depend on the ability to frame a thought-provoking topic of discussion. Students need to be encouraged to engage in dialogue to express thoughts that others may then acknowledge or refute. Before consensus can exist, ideas must be expressed and examined. Faculty learn how to start and extend such discussion in several ways. Through face-to-face and online forums, faculty explore resources that document effective, engaging online discussion practices. For example, in face-to-face trainings, faculty examine and discuss a list of 14 ways to enhance online discussion that correspond to the categories identified by Anderson and colleagues (2001). Faculty “experience” these tips by participating in facilitated discourse in the online all-faculty conference. Examples of discourse facilitation tips to faculty are

1. **Include a grade for participation.** Be clear about how students can succeed in discussion with reference to quality and quantity guidelines, as well as requirements for timeliness. Entering an asynchronous discussion after it is nearly over can be unproductive (though there are ways around this problem, such as asking a late student to summarize the discussion that has already occurred).

2. **Provide an overview of what is due for each week.** This weekly agenda will help keep students working as a cohort and ensure a “critical mass” for getting discussions off the ground.

3. **Make the discussion interesting or provocative.** Asking students to respond to “known answer” questions is unlikely to generate sustained involvement. Discussion questions should be open-ended, focused on learning objectives, and likely to spur some controversy or interaction.
4. **Participate wisely.** The instructor should not dominate the discussion. Nor should he or she be absent. It is the instructor's job to keep the discussion on track by guiding without pontificating. Frequently, an instructor will provide a comment that students perceive as the "official answer," and discussion can come to a halt.

5. **Require a product that is based on or the result of discussion.** A "hand-in" assignment that is based on class discussion can help students to synthesize, integrate and apply what has been discussed.

With the ongoing assistance of an instructional design partner for implementation, tips such as these help faculty to understand how to facilitate productive discourse in the service of creating teaching presence and ultimately cognitive presence.

**Direct Instruction**

Anderson and colleagues (2001) also included indicators of direct instruction in their framework for the analysis of teaching presence. These indicators include presenting content and questions, focusing the discussion on specific issues, summarizing discussion, confirming understanding, diagnosing misperceptions, injecting knowledge from diverse sources, and responding to technical concern. This aspect of the model equates with Chickering's and Gamson's (1987) concerns for prompt, assistive feedback, again with emphasis on the needs of online learners. Attention to direct instruction is also essential for sustaining the knowledge-centered learning environment emphasized by Bransford and colleagues (2000).

Regarding the final indicator of direct instruction, responding to technical concerns, it should be noted that faculty in the SLN are specifically instructed not to respond to student technical difficulties, as this diverts instructor resources away from their primary role, facilitating learning. It is the role of the SLN Help Desk to address all technical issues, and faculty are advised to refer all such questions to the help desk to avoid students becoming dependent on instructors for technical support.

New online faculty struggle with how to engage in direct instruction. Novice instructors frequently raise questions about how they will "teach" in the absence of visual and aural clues reflective of students misunderstanding. So, how do new SLN faculty learn about effective practices for direct instruction in this lean medium of online courses? Again, there are a variety of forums in which this topic is explored. For example, new faculty interact and learn from experienced faculty in the "Managing and Teaching your Course" workshop, the last in a series of three face-to-face workshops for new instructors. In this meeting, experienced instructors present lessons they have learned from designing and facilitating their own courses, including how they present content, focus and summarize discussions and issues, and identify and remedy misunderstanding.

New faculty learn that direct instruction takes place most commonly through dialogue with the instructor (as well as more able peers). Some examples of suggestions for effective dialogue discussed in training forums include:

- Resist the temptation to respond to every student's response. Otherwise, the discussion may become a series of dialogues between you and each student, rather than among the students.
- Assign individual students the task of summarizing the discussion, and check for accuracy and comprehensiveness.
• Employ student-led discussion where assigned students devise critical thinking questions and are evaluated on the quality of their questions and how they facilitate the discussion.
• Create a discussion response that calls on specific students that have not yet participated in the discussion.
• Create a discussion response that asks a specific student to clarify a point, or that asks a student to reassess a response in light of another student’s response.
• Create a discussion response that asks a follow-up question of the group or of an individual student. (SLN Faculty Developer’s Guide)

Through suggestions and tips such as these, as well as participation in online forums such as the all-faculty conference, new faculty gradually learn from experienced faculty and trainers how to engage in effective dialogue and to implement direct instruction online.

STUDENT SATISFACTION AND REPORTED LEARNING

As part of the revision cycle of the course design and faculty development Processes, we have engaged in systematic efforts to evaluate and analyze online teaching and learning in SLN. Each semester, we conduct surveys of participating faculty and students through an integrated, Web-based data collection infrastructure.

Questions driving this assessment include: How do students who have taken online courses through SLN feel about the experience? (For example: Is there sufficient interaction with instructors and students to sustain satisfactory levels of social presence and engage students in learning?) Do students feel there are any disadvantages to the online format relative to the classroom? (For example: Does the online format and pedagogy foster or inhibit thoughtful discussion of course topics, effective written communication, or the likelihood that students will ask for help when they don’t understand something?) Are there other downsides? (For example: Do these online students find that they waste time because of the distractions of the Internet and thus spend less time engaged in learning, or does the online environment make them feel isolated?) Finally, how do students feel that the environment compares to the classroom overall?

To assess whether this online learning environment has been successful from a student perspective, it is necessary to remind ourselves what our “student” goals were. To determine whether and to what extent we were achieving this goal, we administered an online student satisfaction survey, which consisted of 35, Likert-type and open-ended questions. To define high-quality teaching and learning in devising the survey, we framed questions around the principles of good practices in higher education (Chickering & Ehrmann, 1995; Chickering & Gamson, 1987). We believe that these practices reflect good pedagogy in classroom and online learning environments. Approximately one third of the questions we asked were based on the Flashlight Evaluation Handbook and Current Student Inventory, developed by the Flashlight Program of the Teaching, Learning, and Technology Group (Ehrmann & Zuniga, 1997).

In the most recent survey (summer of 2001), we received surveys from 935 students, about 26% of student enrollments for that period. This response rate, while low, is quite typical of e-mail and Web-based survey returns, which have been declining in recent years (Sheehan, 2001). It may be necessary to admit that the entire field of survey research suffers from this trend (Bradburn 1992; Hox & De Leeuw, 1994). For example, a recent study of academic and non-for-profit research organizations (O’Rourke &
Johnson, 1998) revealed that, even when using well-designed, random sampling survey techniques, the 36 organizations polled averaged only a 46.8% return rate. The authors admitted that although they had asked for typical return rates, it was possible that the organizations gave figures for the most successful efforts, making the actual, typical rates even lower than 46.8%.

An examination of the demographics of the students who responded to the SLN student survey reveals that they appear to be a fairly representative sample of the entire population of students taking courses for the semester in which the survey was conducted. Students’ ages, employment status, distance from campus, reasons for taking an online course, matriculation status, computer types, full- or part-time status, and other variables are a close approximation of these demographics for the entire population of SLN students for that semester (see Appendix, Tables A1–A8). This being said, caution must be taken when interpreting these results due to the low response rate. The results must be viewed as suggestive rather than conclusive.

Students are asked, via e-mail, to complete the Web-based survey by both SLN administration and their instructor. Follow-up reminders are sent to nonrespondents 2 weeks and 4 weeks after the initial request. Although the survey is completely voluntary, the format of the instrument requires that all questions be answered before the survey may be submitted successfully, so for these surveys, students respond to all items. Students are instructed that the results of the survey will not be revealed to their instructor and that it is a voluntary activity that will have no bearing on their grade.

RESULTS

High-Quality Online Teaching and Learning

To discuss the strategic goal relevant to this chapter—providing a mechanism for maintaining consistent, high-quality online teaching and learning across the SUNY system—requires that we define what we mean by "quality." Again, we used the best practices identified by Chickering and Gamson (1987) in the design and evaluation of faculty development efforts. We feel that these principles of good practice, based on decades of research on the undergraduate experience, are at the heart of recent understandings of the structure of high-quality, higher education, online learning environments (Bransford et al., 2000; Garrison, Anderson, & Archer, 2000). These principles are presented here, followed by survey comments and results related to each:

A. Good Practice Encourages Contact Between Students and Faculty

Being a shy person, I am able to think questions and answers through before I respond. In a regular classroom setting, I often don’t get my question out before we are on to another topic. I really like the online classes. I wish I could complete my degree online … (Survey comment)

This online course is exciting to me because you can always ask a question and expect an answer. In the class, questions are somewhat limited because of time. (Survey comment)

I have taken seven online courses, and this was the best one by far, due largely to the amount of input and continual feedback from the professor. You never had to wait for a reply; you had the feeling he was right there with you all the time. He’s a great one, and a
great asset to online teaching. I also want to praise the SLN Help Desk. I never saw such fast responding. Regardless of what I asked, they were helpful, supportive, and prompt!!! Anytime, any day. Applause, applause!! (Survey comment)

The communication is lacking with the instructor, and so I don't even know what I sent that she didn't get. This is changing my mind about taking any future online courses. An e-mail from the instructor just letting me know that she didn't receive something would have alerted me that something was wrong; but now I still don't know what she is missing because she is now on vacation!!! Not a phone call or e-mail, just an incomplete grade. This would have never happened in a classroom. (Survey comment)

The comments above testify to the importance of dialogue between faculty and students. When present, students report enthusiasm for their experience; without it, students report frustration, even anger. It has been suggested that information technologies “can increase opportunities for students and faculty to converse” (Chickering & Ehrmann, 1995) and that such conversation is critical to learning and satisfaction. So, we asked students whether they had high levels of interaction with their instructors and other students and about the quality of the interaction. Overall, more that 75% of respondents reported high levels of interaction with their instructors, and approximately 73% felt they had high levels of interaction with their online classmates. In addition, approximately 78% of respondents felt that the quality of the interaction with their instructors was very high, and approximately 70% felt the quality of interaction with fellow students was very high. When asked to compare the level of interaction to similar classroom-based courses, a majority felt there was as much or more interaction with their instructor and fellow students as in similar classroom-based courses. Emphasizing the importance of social discourse and contact with and between students and faculty, principles of good practice would predict that the amount and quality of interaction will relate to satisfaction and learning, and our results suggest that they do. Table 16.2 shows the correlations between students' reports of the quantity and quality of interaction with faculty and with other students and their reports of satisfaction and learning in SLN courses.

If interaction is crucial to student reports of satisfaction and learning, then reported isolation, or lack of interaction, is just as important. We asked students about feelings of

| TABLE 16.2 |
| Correlations Between Interaction, Satisfaction, and Learning (N = 935) |

<table>
<thead>
<tr>
<th></th>
<th>Quantity of Interaction with Instructor</th>
<th>Quality of Interaction with Fellow Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>Spearman's rho</td>
<td>.605**</td>
</tr>
<tr>
<td>Reported learning</td>
<td>Spearman's rho</td>
<td>.636**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.376**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.408**</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (two-tailed).
isolation due to the format of the course. We found that approximately 30% of students did report some feelings of increased isolation, but about 70% did not. We also found that students who had more experience in online learning (those who had taken three or more online courses) were somewhat less likely to report feelings of isolation than those taking their first online course. Results seem to indicate that feelings of isolation may diminish with greater experience in negotiating the new learning environment. This is a finding that may warrant further study:

B. Good Practice Uses Active Learning Techniques

This was a good experience for me. This course made me do a lot of deep thinking and allowed me to further my education. I cherish the fact that I can learn at this stage of my life. Thanks very much for offering this course. (Survey comment)

I have to tell you that I read the chapters more carefully as it was my responsibility to learn the subject matter. This course has helped me with my concentration skills. I was surprised how much I enjoyed the course. It was a real challenge to me and I love a challenge. (Survey comment)

We read and then had assignments, few of which related to the textbook. My grade was above average, but I do not feel that I received much out of this course. (Survey comment)

As the comments above suggest, meaningful learning requires active student engagement. When students are active participants, they tend to report excitement; when they are passive, they tend to report disappointment.

How well do traditional classroom practices actively engage students? Frequently, not very well. Barnes (1980) found that, even among faculty who actively solicited student participation, students only responded 50% of the time when called on. Karp and Yoels (1987) reported that in classes of less than 40, 4 to 5 students accounted for 75% of all interactions, and that in classes of more than 40, 2 to 3 students accounted for more than half of all interactions. Stones (1970), in a survey of more than 1,000 students, found that 60% stated that a large number of classmates listening would deter them from asking questions, even when encouraged to do so by the instructor.

In contrast, in the most recent SLN survey, 93.4% of respondents reported active participation in their online class. To get a sense of how active and in what sense the students engaged in active learning, we asked them to compare their levels of participation in online discussions about course material with comparable classroom discussions (Table 16.3). We found that students were about twice as likely to report more active participation in online discussions than in classroom-based discussions.

Think about a similar classroom-based course you have taken. Compared to that course, because of the way this course uses online communication and interaction, how likely were you to actively participate in scheduled discussions about the course material?

Active learning implies a certain level of ownership of the learning process. Taking responsibility to ask for clarification when misunderstandings arise can be seen as an element of active learning and productive discourse. Students reported that they were about twice as likely to ask for clarification when they did not understand something online as compared to in similar courses they had taken in the classroom (Table 16.4).

Think about a similar classroom based course you have taken. Compared to that course, because of the way this course uses online communication and interaction, how likely were you to ask for clarification when you did not understand something?
TABLE 16.3
Active Participation

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much more than in the classroom</td>
<td>186</td>
<td>19.9</td>
<td>19.9</td>
</tr>
<tr>
<td>More than in the classroom</td>
<td>260</td>
<td>27.8</td>
<td>47.7</td>
</tr>
<tr>
<td>The same as in the classroom</td>
<td>308</td>
<td>32.9</td>
<td>80.6</td>
</tr>
<tr>
<td>Less than in the classroom</td>
<td>139</td>
<td>14.9</td>
<td>95.5</td>
</tr>
<tr>
<td>Much less than in the classroom</td>
<td>42</td>
<td>4.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>935</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 16.4
Requests for Clarification

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much more than in the classroom</td>
<td>151</td>
<td>16.1</td>
<td>16.1</td>
</tr>
<tr>
<td>More than in the classroom</td>
<td>216</td>
<td>23.1</td>
<td>39.3</td>
</tr>
<tr>
<td>The same as in the classroom</td>
<td>396</td>
<td>42.4</td>
<td>81.6</td>
</tr>
<tr>
<td>Less than in the classroom</td>
<td>124</td>
<td>13.3</td>
<td>94.9</td>
</tr>
<tr>
<td>Much less than in the classroom</td>
<td>48</td>
<td>5.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>935</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

One side benefit, because all of this communication occurred through written means, was that about 83% felt that the online format helped them improve their ability to communicate effectively in writing.

It has been suggested that information technologies allow students and faculty to converse "more thoughtfully and safely than when confronting each other in a classroom or faculty office" (Chickering & Ehrmann, 1995) and that this increased comfort and level of thought contributes to learning and satisfaction. We asked students to compare the amount of thought they put into their online discussion comments with those they made in the classroom. We found that about 86% of respondents reported that they put more thought into online discussion comments than into comparable classroom discussion, providing support for this hypothesis. As would be predicted, a significant
TABLE 16.5
Correlation Between Thought in Discussion Comments, Satisfaction, and Learning
(N = 935)

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction</th>
<th>Reported Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion thought</td>
<td>Spearman’s rho</td>
<td>.252</td>
</tr>
<tr>
<td></td>
<td>Sig. (two-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

correlation exists between amount of thought invested in discussion responses, and learning and satisfaction (Table 16.5).

To confirm whether online conversations did occur “more safely,” that is, with more opportunity to explore topics that might be difficult to explore face-to-face, we asked students how likely they were to ask an awkward question online as compared to the classroom, and whether they were more likely to ask for clarification online than in the classroom. Approximately 69% of respondents reported they were more likely to feel comfortable asking an awkward question online. Approximately 40% reported that were more likely to ask for clarification online, which was about twice the rate of those reporting that they were more likely to ask for clarification in the classroom (18%).

Authentic interaction implies that student participants feel empowered to disagree, not only with each other, but also with the instructor. When asked whether they felt more comfortable disagreeing with the instructor online, a large number of respondents (42%) reported that they did feel more comfortable dissenting in this environment.

C. Good Practice Gives Prompt Feedback and Communicates High Expectations

I absolutely love this class. (The professor) expects a lot, but it’s all so clear and interesting that it actually is fun. I’ve learned so much! I wish more classes were online. (Survey comment)

I enjoyed this class because the teacher was helpful; she was prompt with answering questions and grading assignments. The teacher was very clear with what she wanted the class to do. (Survey comment)

What I’ve appreciated most about this course has been the instant feedback and evaluations, critiques, etc. from my professor. It’s helped to keep me motivated and striving for better each week of the class. This has been a fantastic experience! (Survey comment)

There was very prompt response to discussion threads and test and assignment evaluations. Responses to comments were made within a day in most cases. This encouraged students to discuss with the instructor and other students on a regular basis. It felt like the course was alive, and help was there when you needed it. (Survey comment)

... my only problem with the class was that I like to get an answer to my questions immediately, but I did get used to it, and my instructor did get back to me as soon as possible. (Survey comment)
TABLE 16.6
Correlations Between Satisfaction, Learning, Expectations, and Feedback (N = 935)

<table>
<thead>
<tr>
<th></th>
<th>Prompt Feedback</th>
<th>Quality Feedback</th>
<th>Clear Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>Spearman's rho</td>
<td>.562**</td>
<td>.590**</td>
</tr>
<tr>
<td>Learning</td>
<td>Spearman's rho</td>
<td>.485**</td>
<td>.556**</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (two-tailed).

I don’t think it was actually the instructor’s outline for the course that wasn’t specific, but what was expected for a “discussion” or what the quiz would be like. I felt as though I were going into those areas “blind.” I personally would have liked maybe an online example of what the quiz would look like, even saying it is a multiple choice, books are ok to use, etc. (Survey comment)

The comments above demonstrate the importance of clear expectations and timely feedback. When they are present, students are satisfied, when absent, less so. We asked students about the speed and quality of the feedback they received in their online courses. Approximately 85% of respondents reported that they received very prompt feedback, and about 87% felt that they had received high-quality, constructive feedback. In addition, more than 90% reported that the instructor provided clear expectations of how students could succeed in the course. As demonstrated in Table 16.6, each of these variables correlates significantly with reports of satisfaction and learning.

D. Good Practice Emphasizes Time on Task

I have learned more from this course than any other graduate course I have taken. There was a lot of work involved, but it only enhanced my understanding of lessons taught and has improved my teaching abilities in the classroom. I have, and will continue to recommend, this system to fellow teachers who are trying to obtain a graduate degree. Thank You!!! (Survey comment)

I love the learning experiences gained from the online courses. I find that I actually work harder, because generally it does take more time and effort to complete the online courses. With this in mind, the time used is very valuable and adds more meaning and depth to the overall learning experience. (Survey comment)

This was my final course for my degree. I will never try to take another math course (online or not) in a 5-week session—it is just not enough time for me. (Survey comment)

As the comments above suggest, time on task is an important contributor to learning. When students understand and recognize the opportunities afforded by additional time, they report higher levels of satisfaction and increased learning. Without sufficient time, learning is impaired. We asked students to think about the format of their courses and the fact that there was “anytime—anywhere” access. Did they feel that this increased level of access resulted in more time studying? Approximately 71% of students reported
that they did spend more time studying as a result of the increased access afforded by the online format (Table 16.7).

However, the possibility for wasting time in online courses, due to the distractions of the Internet, is also possible. Approximately 13% of respondents did report that the online format resulted in more wasted time browsing, and about 87% did not.

Wasting time can take other forms. For example, technical difficulties can consume time that would otherwise be devoted to more productive purposes. So we asked students about technical difficulties and their effect on the students' learning and satisfaction. Approximately 88% of respondents felt that taking a course through SLN was no more technically difficult than taking a classroom based course. We also found that students who were less likely to report technical difficulties were more likely to report higher levels of satisfaction and learning.

E. Retention

Currently, we do not have a process for tracking completion rates for each of the campuses that participate in the SUNY Learning Network. This is related to the different roles played by participants in the program. As with traditional courses, campuses track enrollment, maintain students grades, and record completion rates at the local level, and there is no centralized mechanism for storing and reporting all such data. We do, however, have some evidence from particular campuses that suggests that course completion rates may be similar between face-to-face and online courses. For example, at the university at Albany, the completion rates for certain online courses have been statistically similar to face-to-face offerings. If anything, they have been slightly higher than classroom based versions (see Figs. 16.7 & 16.8).

Similar results were reported at Herkimer County Community College. Tracking 21 different courses in the spring 2001 semester, offered by the same professors both online and in the classroom, the college reported no significant differences in completion rates between the online and the face-to-face versions of these courses.

Clearly, these results are inconclusive and require additional study. Inasmuch as we do not have more complete information on this issue, these results are merely suggestive of a comparison of completion rates that are not, necessarily, lower online.

Overall, approximately 87% of respondents reported being satisfied or very satisfied with their courses; about 90% report learning a great deal; about 94% reported being satisfied or very satisfied with SLN services; and 97% reported satisfaction with the SLN Help Desk. When asked whether they would take another SLN course, only 1.7% responded that they would definitely not want to do this. Finally, overall, these
FIG. 16.7. Comparison of Completion Rates for ETAP 426 and 526 (Computing in Education) for four semesters—traditional and online versions.

FIG. 16.8. Comparison of course completions in face-to-face and online versions of ETAP 523 (Media in Teaching and Learning) for two semesters.

935 students were 1.7 times as likely to report learning more in their online courses (35.9%) than in comparable classroom-based courses (20.8%), though the majority felt they were equivalent (43.3%).

Faculty Survey Results

In addition to collecting data on student satisfaction and learning, we also collect data on faculty attitudes about teaching in this online environment. For the most recent semester, we heard back from 255 faculty from more than two-dozen institutions, ranging from community college through four-year and university centers. To understand student responses to online learning, it is useful to explore the faculty experience as well. The following section provides information on faculty reactions and work that gives insight into student-reported satisfaction and learning. Three instructional variables that
seem most relevant are interaction, opportunities to implement alternative means of assessment, and opportunities to implement more systematic instructional design.

In the spring 2001 semester, faculty responded to a 31-item online survey about their experience of developing and teaching an online course through the SUNY Learning Network. As with the student survey, all items had to be completed to submit the survey, so all items were answered in all of the returned surveys. Two hundred and fifty-five surveys were returned, which represents approximately 52% of the faculty who were teaching in that semester. Again, because of this relatively low response rate, these results are more suggestive than conclusive.

Interaction

We feel that the importance of interaction in teaching and learning cannot be understated. Through interaction with the instructor, peers, and course content, students have the opportunity to negotiate meaning and connect new concepts to previous knowledge. One measure of this important variable is faculty perceptions of interaction. To the item “Compared to classroom based teaching, rate your level of interaction with your online students,” respondents were, again, more than twice as likely to rate their interaction with online students as higher than their classroom students. Approximately 49.4% felt that their level of interaction with students was higher online than in the classroom, approximately 23.9% saw no difference, and about 22.7% thought the level of interaction was lower online than in the classroom. The remainder did not teach the course in the classroom.

We asked a similar question regarding interaction between students and found the following results: Respondents were about 1.7 times as likely to rate interaction between their online students as higher than their classroom students. About 43.2% rated interaction between online students higher than their classroom students; about 27.5% saw no difference, and 25.5% rated interaction between their classroom students as higher than their online students. The remainder did not teach the course in the classroom.

Alternative Means of Instruction and Assessment

For instruction to become more learner centered, faculty must have an opportunity to consider alternatives to traditional methods and to be able to engage in more systematic design of instruction that incorporates those alternatives. Considering all the time and effort that faculty reported expending in the creation of courses (more than
150 hours), we wondered whether the experience of developing and teaching an online course afforded such opportunities. Apparently it does. Approximately 97% of survey respondents reported that developing and teaching their online course offered them a new opportunity to consider alternative means of instruction, and approximately 93% reported that the experience offered them a new opportunity to consider alternative means of assessment.

Systematic Design of Instruction

Regarding instructional design, we asked the following question: "Think about similar courses you have developed for the classroom. Relative to those courses, how likely were you to systematically design instruction before teaching the course?" Respondents were more than nine times as likely to report more systematic design of instruction for their online courses than for their classroom courses. Approximately 58% of respondents reported higher levels of systematic instructional design online, about 37% reported no difference, and about 6% reported less systematic design of instruction online.

Student Performance

We also wanted to understand how faculty perceived student performance in online courses as compared to similar classroom courses. To the question, "If you have ever taught this course in the classroom, how would you rate your online students' performance to your classroom students' performance?" respondents were twice as likely to report better performance from their online students than their classroom students. Approximately 32.5% reported better performance from online students; about 41.2% reported no difference in performance; and approximately 14.1% reported better performance from classroom students. The remainder did not teach the course in the classroom.

Inasmuch as faculty and students rated their online teaching and learning experiences superior to similar classroom experiences, does this mean that we are suggesting that online learning should replace the classroom? Absolutely not. Obviously, there is a great deal more to residential higher education than this study reports on. But would the experience of designing and teaching an online course improve classroom teaching and learning? We asked SLN faculty this question, and 85% agreed that it would.

Relevance to Other Institutions

Are these findings relevant to other institutions? We believe they may be useful in a number of ways. Online learning environments are not easy to implement successfully. Effort, coordination, planning, and expense are required. If an institution is considering systematic implementation of online education, it is useful to know that success, as measured by traditional notions of best practice in higher education, is possible.

In general, although we acknowledge that these results are for the most part suggestive, to find that nearly 1,000 students from dozens of institutions from associate level through graduate level programs reported high levels of learning and satisfaction in online courses offered through a single, unified system should be helpful to the decision making of other institutions. Positive student response to this learning environment suggests that it is possible to overcome the complexity and challenges involved in system-wide online learning initiatives, to provide increased flexible access, and to maintain high standards across courses.
For those who are concerned that online learning is, by its very nature, cold, sterile, and isolating, finding that the vast majority of these respondents reported high levels and high-quality interaction with their instructors and other students, and that the majority were unlikely to report feeling isolated, is potentially helpful. Knowing that most respondents reported fast and high-quality feedback, as well as clear expectations for success, is also encouraging. It is important to understand that such results are not likely without considerable planning. We believe a focus on developing systems (such as the student help desk and overall faculty development process) that emphasize the importance of student support and interaction is critical to success in this area. Fostering existing communities that can grow to take on expanded roles in these areas may also prove helpful. The learning community embodied in SLN evolved gradually. Wenger (1998) summarizes the importance of this process succinctly, “To develop the capacity to create and retain knowledge, organizations must understand the processes by which these learning communities evolve and interact. We need to build organizational and technological infrastructures that do not dismiss or impede these processes, but rather recognize, support, and leverage them” (p. 6).

Our research suggests that a number of variables correlate significantly with high levels of satisfaction and learning. Before embarking on the implementation of new online learning environments, it would be wise to consider the following: high levels of interaction with the instructor and the quality of that interaction, interaction with fellow students and its quality, prompt and high-quality feedback on assignments, clear expectations on how to succeed in the course, and low levels of technical difficulties. These are all variables that correlate highly with both satisfaction and learning and, therefore, need to be given a high priority in planning and developing an online environment. Perhaps not surprisingly, these are also variables that correlate highly with satisfaction and learning in the classroom.

**IS ONLINE LEARNING "AS GOOD AS" THE CLASSROOM?**

This is a question that continues to appear in the popular media and is a cause for concern among online learning critics. From these results, the answer appears to be "No, it may be much better." We see reason for optimism in the knowledge that, in the most recent term for which data was collected, nearly the majority of nearly 1,000 online students from dozens of institutions not only reported high levels of satisfaction and learning, but, when asked to compare their online course to similar classroom courses, these students were: twice as likely to report active participation in such important activities as discussion of course materials; twice as likely to report asking instructors for clarification; twice as likely to report putting more thought into discussion; and twice as likely to report spending more time studying. We also found that faculty were twice as likely to report higher levels of interaction with and between their online students; that they were able to explore and implement alternative means of assessment and instruction, and that they were nine times as likely to report engaging in more systematic design of instruction in their online class compared to similar classes they had developed and taught in the classroom.

It may be that the instructional improvements and more active student behaviors account for the fact that students were nearly twice as likely to report learning more online than in the classroom, and that faculty were twice as likely to report better performance from their online students than from students in the same course taught in the classroom. Does this mean that online learning should replace the classroom? Of course
TABLE 16.8
Student Satisfaction for the Past Six Terms in SLN*

*Responses to: “Overall I was very satisfied with this online course.”

TABLE 16.9
Reported Learning for the Past Six Terms in SLN*

*Responses to: “Overall, I learned a great deal in this online course.”

not. Do faculty feel that the experience of developing and teaching an online course can improve what they do in the classroom? In our most recent survey the answer was yes.

These high levels of satisfaction and learning replicate findings from six previous surveys in the period 1998 to 2001 (Tables 16.8 & 16.9).
In summary, we feel that an emphasis on multiple perspectives may be a step forward in the development of online learning environments. Attention to the principles espoused by Bransford and colleagues (2001), Chickering and Gamson (1987), as well as Garrison, Anderson, and Archer (2000) may be the best approach to ensuring high quality in the development of future online learning forums. We will endeavor to facilitate understanding of this emerging model (Fig. 16.10) to the SLN community as we seek to improve the experience of students and faculty in the SUNY Learning Network.

APPENDIX: COMPARISON OF SUMMER 2001 SURVEY SAMPLE AND ENTIRE SLN POPULATION FOR SUMMER 2001 ON DEMOGRAPHIC VARIABLES

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>SLN Population (n = 3596)</th>
<th>Survey Sample (n = 935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>54%</td>
<td>59%</td>
</tr>
<tr>
<td>Not employed</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Part-time</td>
<td>29%</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
### TABLE A2
**Age**

<table>
<thead>
<tr>
<th>Age</th>
<th>SLN Population (n = 3596)</th>
<th>Survey Sample (n = 935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–24</td>
<td>47%</td>
<td>36%</td>
</tr>
<tr>
<td>25–34</td>
<td>24%</td>
<td>26%</td>
</tr>
<tr>
<td>35–44</td>
<td>19%</td>
<td>24%</td>
</tr>
<tr>
<td>45–54</td>
<td>9%</td>
<td>13%</td>
</tr>
<tr>
<td>55–64</td>
<td>.5%</td>
<td>1%</td>
</tr>
<tr>
<td>65+</td>
<td>.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### TABLE A3
**Distance From Campus**

<table>
<thead>
<tr>
<th>Distance from Campus</th>
<th>SLN Population (n = 3596)</th>
<th>Survey Sample (n = 935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>On campus</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>&lt; 30 minutes</td>
<td>44%</td>
<td>42%</td>
</tr>
<tr>
<td>30 minutes–1 hour</td>
<td>24%</td>
<td>23%</td>
</tr>
<tr>
<td>1–2 hours</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>&gt; 2 hours</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### TABLE A4
**Primary Reason for Taking an Online Course**

<table>
<thead>
<tr>
<th>Primary Reason</th>
<th>SLN Population (n = 3596)</th>
<th>Survey Sample (n = 935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict with personal schedule</td>
<td>31%</td>
<td>39%</td>
</tr>
<tr>
<td>Not offered on campus/schedule</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance/lack of transportation</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Family responsibility</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>Interest in technology/</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
### TABLE A5
Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>SLN Population ((n = 3596))</th>
<th>Survey Sample ((n = 935))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>67%</td>
<td>77%</td>
</tr>
<tr>
<td>Male</td>
<td>33%</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### TABLE A6
Matriculation Status

<table>
<thead>
<tr>
<th>Matriculation Status</th>
<th>SLN Population ((n = 3596))</th>
<th>Survey Sample ((n = 935))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matriculated</td>
<td>74%</td>
<td>75%</td>
</tr>
<tr>
<td>Nonmatriculated</td>
<td>26%</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### TABLE A7
Computer Type Use for Online Course

<table>
<thead>
<tr>
<th>Computer Types Used</th>
<th>SLN Population ((n = 3596))</th>
<th>Survey Sample ((n = 935))</th>
</tr>
</thead>
<tbody>
<tr>
<td>486 PC</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Macintosh</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Other/don't know</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Pentium PC</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Pentium II PC</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>Pentium III PC</td>
<td>24%</td>
<td>27%</td>
</tr>
<tr>
<td>Pentium IV PC</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
TABLE A8
Full-or Part-Time Academic Status

<table>
<thead>
<tr>
<th></th>
<th>Full-Time or Part-Time</th>
<th>SLN Population (n = 3596)</th>
<th>Survey Sample (n = 935)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>39%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>61%</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES

