2 Design

> Appreciating teaching presence is an enormous design challenge but crucial if we are to avoid the potential anarchy of the Internet and the "cult of the amateur." (Keen, 2007, p.3)

INTRODUCTION

How can we design a community of inquiry that includes interaction and collaboration in a blended learning environment? The following discussion will direct the instructor to key design elements that are essential for realizing the potential of a blended learning course. The design principles explored here will guide instructors in the design and delivery of an engaging and collaborative blended learning course.

There is, however, a caveat to our discussion. We believe the instructor ultimately has control and responsibility for the design and delivery of an educational experience. At the same time, the

Internet and communications technology have "flattened" the educational world and provided enormous possibilities for learner choice, flexibility, and interaction. This flattening of the educational environment should not, however, translate into a diminution of educational responsibility. Appreciating teaching presence is an enormous design challenge but a crucial one if we are to avoid the potential anarchy of the Internet and the "cult of the amateur" (Keen, 2007). To allow the unpredictable influence of the Internet to undermine teaching presence would be a grave mistake if the goals are discourse, critical reflection, and deep understanding.

Our central contemporary educational challenge is how we design purposeful educational experiences using the potential of the Internet to bring teachers and learners together in sustained ways, while not losing the focus and direction central to any educational experience. More specifically, how do we design an educational experience that combines the potential for asynchronous online and synchronous face-to-face discourse in a reflective manner that provides the time to think deeply and not speed over enormous amounts of content? How do educators balance the flexibility and freedom of online learning with the expert guidance found in a purposeful face-to-face learning environment? We address blended course design and challenges in this chapter. The central challenge of blended designs rests on the thoughtful combination of the Internet and the culture of critical inquiry in higher education.

Adding on to excessive workloads or simply reducing class time will not meet the need for more meaningful learning experiences in this age of access to copious amounts of information via the Internet. Nor will we see any improvements in learning satisfaction or in outcomes through faculty development workshops that work on the margins by promoting the latest techniques. If we hope to make significant gains in the quality of the educational experience, which must be the goal as the educational needs of society are changing so radically, then we must focus on fundamental redesign

strategies. Design is central to releasing the potential of blended learning and is the focus of this chapter.

INSTRUCTIONAL DESIGN

Design is a planning process that includes consideration of many content and process issues related to the intended learning outcomes. The planning process described here is shaped at the conceptual level by assumptions, principles, and purposes. Design begins, prior to course commencement, with a holistic perspective describing the assumptions and approaches to learning. This then provides a framework for principles and guidelines that shape the design process of choosing content, creating student learning activities of collaboration and interaction, and identifying assessment procedures. Thoughtful instructional design is guided by this framework, which provides direction regarding content and process decision points. This broad approach is important; simply focusing on content provides little direction with regard to the process of constructing knowledge. Design will have a pragmatic impact on how students approach learning (Garrison & Cleveland-Innes, 2005).

The planning process is further shaped at a practical level by educational and technical possibilities and constraints. Paying attention to these conceptual and practical elements is another challenge in design. The goal is to find a solution with the least compromise to a collaborative community of learners engaged in purposeful educational activities. The design approach described in this chapter is to focus on the educational goals and strategies and let them determine the instructional technologies that are possible and appropriate for the purpose. The design process is to bring into alignment the goals of education with the properties of the technology.

Flexibility is a key design consideration. In an educational context, design is a process that constructs a flexible plan, one that must be open to the unexpected and allow for change of direction while staying within the parameters of the educational goals. Design must not be deterministic and rigid. Design is shaped by instructional theory, but evolving conditions during implementation necessitate instructional decisions. As circumstances change (as they inevitably will) and expectations are negotiated, design adjusts. As such, design and implementation must not be separated. Design continues during the implementation phase. The instructor is also a course designer (unlike the industrial approaches of mega-distance education institutions), necessitating that an instructor have both content and pedagogical expertise. An instructional design should be a resource, an important resource, yet one that is open to modification by an instructor with the experience and judgment to achieve the intended educational goals efficiently.

The educational experience is a complex and dynamic process that will inevitably produce unexpected results. Design must be sufficiently flexible to allow considerable customization to meet the educational needs of a specific group of learners. To help manage this complexity, designers and instructors need principles to guide design and implementation decisions. The principles that shape the community of inquiry are grounded in a collaborative constructivist view of learning. The quality of the instructional design will depend upon these principles. These principles, outlined in chapter 1, go beyond using technology to access and deliver content. We recognize that what is learned is inseparable from how it is learned. The issue (as it has always been in higher education) is to design the educational transaction that will engage learners in purposeful and collaborative activities that support discourse and reflection. In this regard, technology is an enabler: instructional design that fosters collaborative engagement is the first challenge if we are to achieve worthwhile educational processes and outcomes.

Often the challenge is to redesign a course or program of studies to gain effectiveness, efficiency, and flexibility in a blended learning context. This demands an evaluation of the current design from the perspective of engagement, collaboration, and community. Deficiencies (e. g., interaction) and constraints (e.g., nature of the content) associated with the current design must be critically analyzed and new perspectives considered. Ultimately, the instructor and designer (often the same person) will determine the end product. The Community of Inquiry conceptual framework can be enormously helpful in doing so (Vaughan, 2010a).

In summary, reaching the potential of blended learning necessitates a thoughtful investment in the design process. Thoughtfully integrating face-to-face and computer-mediated approaches introduces the need for explicit instructional design. This represents a considerable challenge, which will be amply rewarded in terms of the quality of the educational experience. Every expectation is that this more rigorous design process will make greater use of deep approaches to learning and result in higher levels of cognitive presence (Shea & Bidjerano, 2009). What must be avoided is an incremental design approach—simply layering additional activities, such as a discussion board—onto a full course of studies that employs a deficient approach to teaching and learning (e.g., a lecture). This can only lead to frustration, dissatisfaction, and diminished learning outcomes.

Best practices that are applicable to all blended learning course designs are not available. The possibilities and variations that could be classified as blended learning do not allow for generalized best practices. For this reason, we have organized our discussion of teaching presence around a set of seven principles derived from a framework consistent with the ideals of higher education. The CoI framework is the genesis of these principles that frame this book. In this chapter we focus on the first two principles—the design of social presence and the design of cognitive presence. While we treat

each of the presences and principles separately for purposes of reducing complexity, we must keep in mind that there is considerable overlap of the presences, and suggestions for one will address issues for the other.

SOCIAL PRESENCE

Designing a blended or online learning experience requires considerable attention and effort prior to the start of the course. This is because we are trying to fuse two very different but complementary modes of communication and interaction. We are challenged to blend synchronous and asynchronous communication functionally, in a way that will be congruent with the educational goals and contextual constraints. This means making informed design decisions among an enormously broad range of educational activities and media. Considerable attention is required at the design stage for blended learning. However, taking the time to create a thoughtful, coherent course structure will see a pay-off in time and effort saved during the delivery of the course and in realizing intended goals. While great benefits are realized in a blended teaching and learning experience, it does take considerable time and effort, particularly in the initial design stage, on the part of instructors.

The first design principle, identified below, focuses on social presence. Social presence, as defined in chapter 1, is not just a "feel good" issue. Social presence sets the environmental conditions for higher learning. Research has shown social presence to be an essential mediating variable between teaching presence and cognitive presence (Garrison, Cleveland-Innes, & Fung, 2010; Shea & Bidjerano, 2009). Social presence is connected to perceived learning and persistence (Akyol & Garrison, 2008; Boston et al., 2009) and the academic goals of an educational experience by supporting a questioning and reflective predisposition and creating a secure climate for critical discourse.

PRINCIPLE: *Plan to establish a climate that will support open communication and cohesion.*

Establishing and sustaining a community of learners is the focus of the first principle. First, attention must be given to affective concerns in order to create the conditions for open communication, cohesion, and interpersonal connections. In creating these conditions, social presence then links directly to cognitive presence and learning. All the presences are interdependent and influence each other. The focus of social presence is to support the affect, communication, interpersonal connections, and cohesion that support the inquiry process and deep approaches to learning required for cognitive presence.

The design strategy used here has three elements: organization, delivery, and assessment. Each of the design elements are implemented to support the principle described above.

ORGANIZATION

The organizational structure of a course must consider social presence and the dynamics of establishing trust as a foundation for open communication and group cohesion. Building trust must begin even before the first class. Trust is built by removing the unknowns about other group members. For example, the group becomes more familiar by having all group members provide short bios. This can be done verbally in the face-to-face classroom, virtually in the online classroom, or both. During the first class, students should be given time for interaction with other students and the instructor in order to decrease ambiguity about group members and the instructor, increase trust, and begin to develop relationships. Small group introductory exercises, for introductions to each other and the content, provide this opportunity.

It becomes quickly apparent during the organizational phase that group cohesion may be complicated by contextual contingencies

related to technology. Content and activities must be structured and matched to the pedagogical approach and the technology used throughout the course. For example, it is generally recognized that starting with a face-to-face experience can expedite setting climate and developing community. In this regard, when planning the first session the task of discussing expectations and providing introductions will need to be approached in different ways in a face-to-face or online context. In a face-to-face environment, the first session can be organized around small group discussions, exploring expectations and providing opportunities to get acquainted. However, support, direction, and examples should be offered in an online environment, by having participants create a bio page and engage in some preliminary activities that allow students to discuss the course and to get acquainted.

Strategies will then need to be developed through collaborative activities such as discussion boards and assignments to continue to develop group cohesion and common purpose. Collaborative activities build social presence. How are these best initiated and then sustained? A good strategy is to require a group project. Students in a blended course can meet face-to-face or online synchronously, perhaps also using web-based conferencing software such as Adobe Connect or Blackboard Collaborate. The latter is also an opportunity for the instructor to connect with the class between face-to-face sessions. Once students get into a project, an online forum or wiki could be used to construct a presentation or document (Figure 2.1).

Social media technologies are designed to engage Internet users, more so than the initial flat and information-push websites, and they provide enhanced interaction for building and sustaining community development. These ubiquitous technologies provide a range of asynchronous and synchronous online communication tools. The key is to understand the capabilities of these tools in terms of educational goals and objectives, as well as their ability to sustain social presence in a community of inquiry.

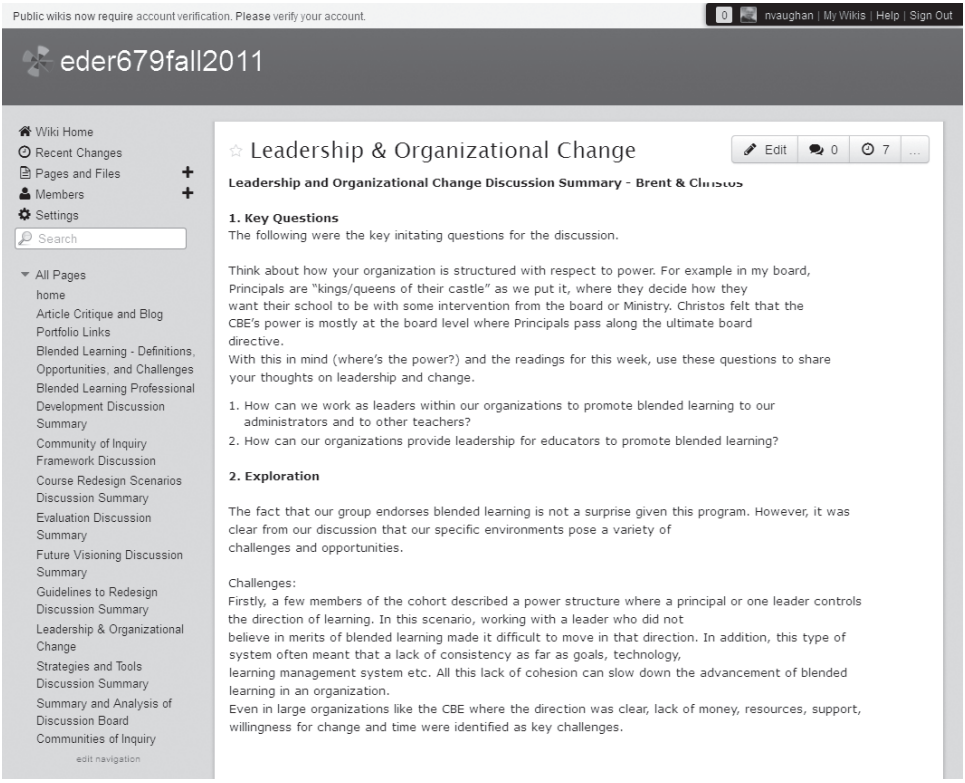

FIGURE 2.1. Summary of online discussion forum collaboratively constructed in Wikspaces

The technology is an enabler and provides the means to stay connected and to achieve true collaborative constructivist approaches. Consideration must be given to the effort required to learn to use the technology (from both the instructor and student perspectives) compared to the educational benefit. Table 2.1 provides examples of activities that harness the potential of social media tools in order to establish a climate that will support open communication and cohesion. Additional strategies for using social media applications are further described in chapter 6.

TABLE 2.1. Examples of activities for establishing a climate that will support open communication and cohesion

Activity	*Description*
Introductory letter or video clip	Consider composing a letter or creating a YouTube video clip that welcomes students, briefly describes your teaching philosophy, and suggests the role you envision for students in this course. This letter or YouTube clip can then be posted to an introductory discussion forum in a learning management system (e.g., Blackboard) where students can comment on your introduction and also introduce themselves.
Powerful learning experience discussion	On the first day of class, engage your students in an exercise where they each reflect back on an event that was a very powerful learning experience for them — it might or might not have been school related. Have the students, first, individually record their reflections and then form small groups to share their learning experiences and discuss why they were powerful. Debrief as a whole class about what makes learning experiences powerful and relate the discussion to the blended teaching and learning approaches that you have envisioned for your course.
Learning preferences inventory	Ask students to take a learning preferences inventory (a number of them can be found on the Internet) and to reflect on their individual results. "What specific learning strategies and study behaviours will help me succeed in this course?" Individual written reflections can be turned in or posted to a discussion forum or shared in small groups.
Discussion with previous students	Invite a couple of students from a previous class to attend the introductory face-to-face session or join an online discussion to talk about the nature of the course as they experienced it. They can share study approaches they found helpful and generally give suggestions about how to take best advantage of the blended learning environment to be successful in the course.

DELIVERY

When we focus on delivering an educational experience, we go to the heart of a community of inquiry: It speaks to the ideals of a collaborative constructivist educational environment and how we create and sustain purposeful learning activities. Students should be encouraged to develop personal relationships in a forum specifically designed for social sharing (Figure 2.2).

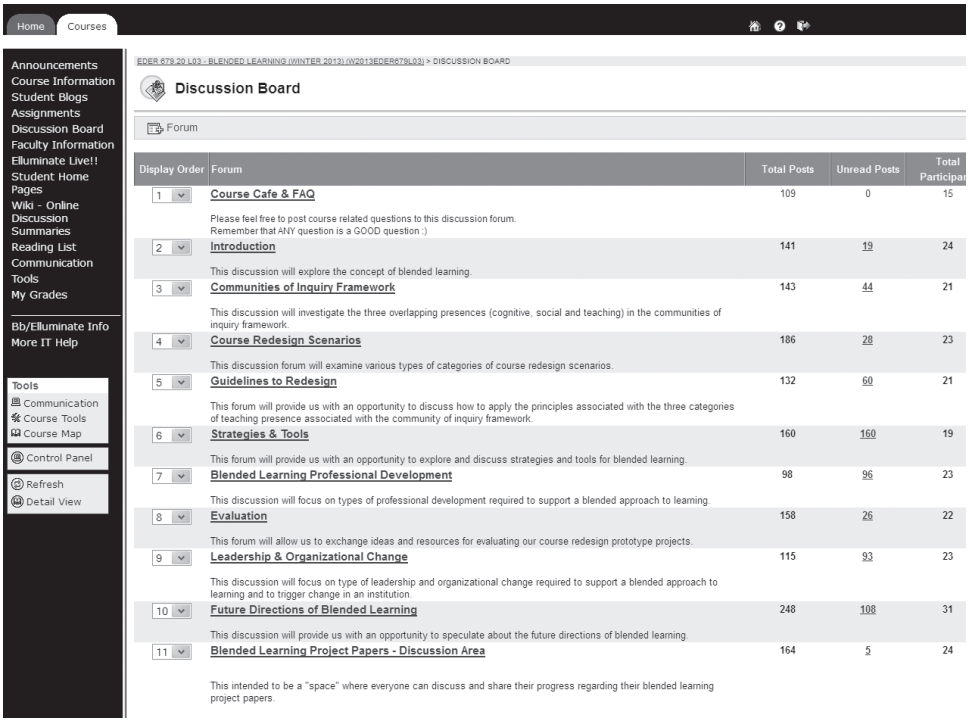

FIGURE 2.2. Course cafe and frequently asked questions (FAQ) discussion forum in the Blackboard learning management system

When we view social presence from a teaching perspective, facilitating open communication and group cohesion are of central importance.

Setting the boundaries of group behaviour accomplishes this. Clear guidelines must be discussed regarding expectations of both classroom and online discussion etiquette. To foster engagement and participation, setting guidelines is best done collaboratively. However, instructors can encourage and require that certain guidelines, if they don't surface from group discussion, be included. The following are examples of guidelines that we use for our online discussions:

1. Do more than state agreement or disagreement. Justify and support your opinion. The most persuasive opinions are supported by evidence, examples, reasons, and facts. If you disagree with something, say why.
2. Do the appropriate preparation, such as reading and class activity work, before you join the discussion.
3. Keep your comments fairly brief. A paragraph or two is plenty unless you are posting something that by nature has to be longer — a short story, for example.
4. Check your message before you send it. Pay attention to your spelling and grammar, and be sure your message makes the points you want to make in a clear and concise way. Remember, other students and instructors can read your messages.
5. Help move the discussion along. When contributing to a discussion, read other people's comments first. Introduce new ideas, but also build on what others have said ("piggyback" on others' ideas).
6. Keep up with the discussion throughout the course. After you have made your contribution on a topic, check back a few times to find out how the discussion is evolving. Does someone's comment make you think twice about your view?
7. Share your experience with your fellow students. You

may be able to offer advice to someone who is new to the course.

8. Respect others' ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
9. Be positive when offering advice. If one of your fellow students posts something to be edited or asks for your opinion on a piece of writing, be encouraging with your comments. If you see weaknesses in someone's writing or ideas, focus on describing the strengths to keep up and the opportunities for improvement. Put yourself in the shoes of the other people in the conference discussions.
10. Be gracious when receiving advice. When you post your work, you are hoping that other people will tell you what you have done well and suggest useful ideas about how to do even better. When others are critical, assume that they are trying to provide a critique, not criticism in the negative sense. Even if they don't seem diplomatic, be gracious in response.

Facilitation by the instructor should be emphasized at the beginning of a discussion topic in order to encourage students to participate. Be aware of a common initial risk: If the instructor dominates the discussion, students may be intimidated and, thereby, discouraged from offering their thoughts. Once students understand the expectations for discussion, the instructor needs to be present but should not dominate. This is critical in the early phases of a discussion in order to model academic discourse. While social presence is crucial, participants must stay focused on the academic objective in a formal discussion topic. Here are some additional strategies to help accomplish this task.

1. Timely instructor attention is meaningful to students. Respond in the face-to-face classroom or online. Model verbal immediacy behaviours in interactions with students and encourage them to do the same.

2. Share your experiences and beliefs in reference to the subject matter with students. Support and encourage students when they provide their own.
3. Course participation has long been left entirely up to the student. Making participation part of the course requirements is valuable online and can be so face-to-face as well. Make participation, in class and online discussion, a significant part of course grades.
4. Instructors can demonstrate engagement and presence by summarizing discussion threads at regular intervals. Once students are engaged and comfortable, have selected students summarize discussion threads.
5. The discussions in online environments are documentation of content and learning and are valuable beyond the process of posting. Encourage students to incorporate materials from the discussions in their assignments.
6. Open communication supports a healthy climate for collaboration, which in turn fosters trust and group cohesion. Design collaborative activities for learning and assessment, such as problem-solving tasks, projects, and small group presentations.
7. Blended environments allow for real-time engagement and interaction. This can be offered online as well; use Internet applications such as chat functions, web-cams, collaborative whiteboards, and interactive video.

In the early stages of delivery for social presence, learners working online need time to feel comfortable communicating in a primarily text-based environment and must adjust to expressing emotion and communicating openly without visual or other context cues. Instructors need to be sensitive and supportive in this regard;

instructor posts set the tone for openness and comfort, in what and how they post (Cleveland-Innes & Garrison, 2009).

ASSESSMENT

The third aspect of design is assessment. While we must consider assessment from a design perspective, assessment is the seventh principle, which we will discuss in depth in chapter 5. At this point we will simply foreshadow a few of the key issues that need to be considered at the design phase.

First, we must distinguish between formative and summative assessment. The purpose of formative assessment is to diagnose misunderstanding and provide constructive feedback and guidance to ensure continued progress. Formative feedback is particularly effective in creating and sustaining social presence. Students must be provided feedback and reinforcement to participate in a community of inquiry. A community of inquiry is a challenging environment, and students must be given feedback with regard to their communication patterns and effectiveness in working collaboratively. As stated earlier, instructor response and attention is the critical piece of this feedback. Where social presence is established, students will be able to identify with the group, feel comfortable engaging in open discourse, and begin to give each other feedback. This demonstrates that trust and group cohesion exist, which is essential if students are to function effectively in a community of inquiry.

We know from the literature on deep learning that educational context, and particularly assessment, has a significant impact on outcomes (Cleveland-Innes & Emes, 2005). Graded activities that require collaboration and constructivist thought will encourage students to work to this end. The activities include group projects, peer assessments, presentations, theory and model building, and structured academic debate.

COGNITIVE PRESENCE

The second design principle focuses on the goal of the educational experience: deep and meaningful learning. The philosophical and theoretical assumptions associated with this approach are grounded in collaborative constructivism. From this perspective, a learner, in collaboration with a community of learners, takes responsibility to construct and confirm meaning. The context and nature of this learning experience is defined by the concept of a community of inquiry and the engagement of all participants in purposeful and disciplined interaction and collaboration. Building this community of inquiry begins by designing for four phases of inquiry — problem definition, exploration, integration, and resolution — through systematic inquiry, discourse, and reflection.

PRINCIPLE: *Plan for activities that support systematic inquiry, discourse and reflection.*

Clear expectations and understanding of the inquiry process should be presented and discussed in the early stages of the course. Then the course activities shift to the requirements and assignments associated with the specific objectives of the educational experience. These activities and assignments include opportunities for critical discourse and reflection. Discussion activities are particularly effective at the problem definition and exploration phase. If the goal is to move the discussion through integration to resolution, a deliberate teaching presence will be required. Assignments that best support inquiry are those that have clear expectations and outcomes (e.g., problem- or case-based). Meta-cognition, or explicit presentation of cognitive process, can be valuable as part of the activity to move through these phases of inquiry. This is often an overlooked component of higher order thinking as reflected in the inquiry approach. Students should be formally introduced to the inquiry process and be expected to monitor their contributions and

activities with regard to the task at hand. This process of *learning to learn*, and sharing one's individual story of learning, should be an explicit aspect of the design phase.

ORGANIZATION

Designing a blended learning experience should start with organizing the content and activities. In addition, clear objectives for content and performance expectations will ensure a productive educational experience. To realize this advantage, it is crucial that the course outline, assignments, and grading rubric be posted well before the course begins. One of the great sources of confusion and frustration for students occurs when students are not clear about expectations. For this reason, it is extremely important to plan for the discussion and negotiation of the course outline and expectations at the beginning of the course.

Fundamentally rethinking a course for a blended learning design includes the challenge of covering all the content. As the knowledge base of most fields of study is growing exponentially, it has to be recognized that no one course can possibly cover all content on even the narrowest of topics. The challenge is less about what to leave out than it is how to organize it around the key concepts; therefore, during the design phase, the instructor should focus on key concepts and provide organizational models of the content. This can be done by having students construct their own schema (e.g., concept map) or by the instructor providing the conceptual framework. This will provide the organizational structure that students can use productively to explore more deeply the nuances of the subject. Constructing such schema will provide order and a deeper understanding that will stay with the student. Therefore, think more in terms of the inquiry process, be cognizant of simply transmitting information and avoid the latter.

The corollary to excessive content is excessive workloads. Avoid assignments and activities that are not central to the topic

(busy work) or are considered optional. The number of assignments should allow students time to construct personal meaning and confirm it through discourse. Constructing and confirming knowledge is an iterative process between discussion and reflection. It is particularly important to provide students the time to process information, considering that thoughtful written discourse is rigorous and time intensive. Therefore, online discussions cannot be rushed and should be at least a week in length. Another practical matter is to ensure that discussion topics have a clear outcome; otherwise discussion will lose focus and stall at the exploration phase. Finally, it is important to set office hours and let students know how quickly they can expect a response from the instructor. Open communication does not mean that you as an instructor are always present. It does, however, mean you are responsive and regularly present — predictably present. It is very important for instructors to manage their time commitment.

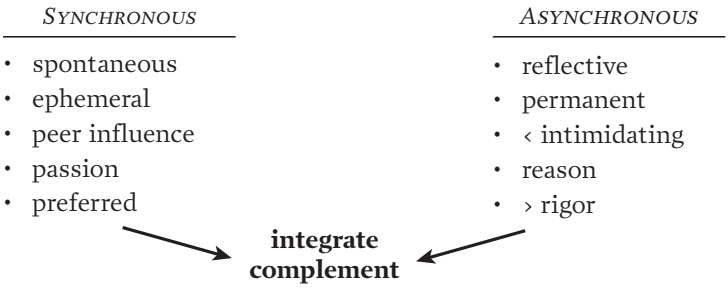

FIGURE 2.3. Integrating the strengths of spontaneous verbal and written communication

Organizational design must also consider how to structure the course in terms of blending face-to-face and online learning. This phase of the design process involves thoughtfully integrating synchronous face-to-face and asynchronous online learning experiences. Integrating face-to-face and online communication requires

an appreciation of the strengths of spontaneous verbal and reflective written communication (Figure 2.3).

Another organizational issue is matching the content to the mode of delivery. Some material may be best suited to a face-to-face or online context. A risk is that online activities will be viewed as a separate exercise and may not be perceived as having much relevance or importance as to what is happening in the face-to-face class. Online activities must be congruent with anticipated goals in the subsequent face-to-face class. That is, the face-to-face class must build upon the results of the online activities and be congruent with the learning outcomes and assessment procedures for the course (Table 2.2).

TABLE 2.2. Aligning learning outcomes, assessment activities, face-to-face and online learning opportunities, and technology tools

Learning Outcomes	What do you want your students to know when they have finished your course (e.g., key learning outcomes – knowledge, skills and attitudes)?
Assessment Activities	How will you and your students know if they have achieved these learning outcomes (e.g., opportunities for self-, peer-, and instructor- assessment)?
Before a Face-to-Face Session (Online)	How will you help students determine what prior knowledge and experience they have with the assessment activity?
During a Face-to-Face Session	How will students synchronously interact and engage with the assessment activity?
After a Face-to-Face Session (Online)	What portion of this assessment activity will require reflective time for interaction and communication?
Technology Tools	What tools could be used to help organize, facilitate, and direct these assessment activities?

In addition, Table 2.3 provides examples of activities that support systematic inquiry, discourse, and reflection.

TABLE 2.3. Examples of activities that support systematic inquiry, discourse, and reflection

Activity	*Description*
Student home page	Have the students construct a home page in a learning management system (e.g., Blackboard) where they post a digital image of themselves, a short biography, and their goals for the course. Icebreaker activities and opening discussions can then be designed for the first face-to-face session, which capitalize on the information collected and shared in these student home pages.
Course outline activity	On the first day of class, hand out copies of your course outline and review the key points within a brief Microsoft PowerPoint presentation. Give students 10 to 15 minutes to read the course outline and underline, highlight or make notes about any questions, issues or concerns they have. Next, ask students to form small groups to discuss their questions and try to help each other resolve them. Indicate that you will address questions that remain after they have first attempted to answer them within their small groups. Be sure to allow an appropriate amount of time for students to complete this process. Then ask students how many had questions that were satisfactorily answered in the small group. Remind them that fellow students can often help them see things in a new light, and point out that they should frequently discuss questions with other students. Suggest that they exchange, names, phone numbers, and e-mails with several other students and then use these peers as a first line of support (i.e., share class notes, study for tests, review draft assignments, etc.). *Note*: This entire exercise could also be completed within a learning management system, prior to or during the first week of the course. Post your course outline, create and post a narrated Microsoft PowerPoint presentation (e.g., Adobe Connect) that summarizes the highlights of your outline, and set up small group discussion forums to

	facilitate student discussion and resolve course-related questions, issues, or concerns. The instructor can answer questions still remaining during a face-to-face class session or within the main discussion area of your learning management site.
Introductory survey	Prior to the first day of class, send an e-mail to students indicating that you will be using a learning management system (e.g., Blackboard) to support the course and that they are required to log onto the site and complete an introductory survey (perhaps focused on assessing the prior knowledge or experience students have with the course objectives and/or discovering why students are taking the class and what they hope to achieve through the experience). The instructor can then post the survey results to the learning management system and have students discuss the results in small groups on the first class session. Sample introductory survey questions are provided in Appendix 1.

DELIVERY

The second design challenge is to consider the dynamics of delivery. From a cognitive presence perspective, as a discussion develops it will often be necessary to diagnose misconceptions, provide relevant information/insights, and encourage students to reach some form of resolution. This will demand more direct instruction. The process of migrating from facilitation to more direct instruction may repeat itself throughout a course and is especially relevant to bring major assignments to a conclusion.

Based on the second principle, the delivery of a meaningful learning experience is designed by integrating discourse and reflection. This is complicated by the choice between verbal or written communication. Discourse in a synchronous verbal environment has many motivational advantages and, if it is well facilitated, students will achieve the intended goals. However, asynchronous communication has another distinct advantage in terms of critical discourse. Students are able to reflect upon their comments when engaged in an asynchronous online discussion forum. A good example of the

differential benefits and applications of synchronous and asynchronous communication is brainstorming. Brainstorming ideas in a face-to-face setting will be energetic, exciting, and productive. However, brainstorming in an online context will generally be more focused and generate fewer but more relevant (i.e., quality) ideas.

Online discussions provide opportunities for students who do not feel comfortable participating in spontaneous face-to-face dialogue and debate. Some may still be reluctant participants. While attending to social presence issues may mitigate this, there may be cognitive presence opportunities to engage these students as well. The use of a reflective and rigorous form of communication — the written word — has the potential to encourage a higher quality of interaction for more students. A word of caution: The quality of response may be undermined when grades are assigned based upon frequency of response. While a grade may be assigned for participation, the key to quality interaction is to ensure that the discussion is central to the educational objective and that students meta-cognitively consider the nature of their contribution to the discussion. That is, consider having students label (i.e., script) the nature of their response from the perspective of the inquiry process — that is, an exploratory contribution, an attempt at integration, or perhaps a suggested resolution.

The following techniques will encourage and foster cognitive presence in blended environments:

1. Identify, present, and continually refer back to the key concepts you want students to take away from the course.
2. Make explicit the knowledge, skills, and attitudes students should learn and develop through course activities.
3. Use triangulation to provide multiple representations and multiple activities to reach the stated objectives.
4. Engage in provocative, open-ended Socratic questioning with a view toward encouraging experimentation,

supporting divergent thinking and many perspectives, particularly in ongoing online discussion.

5. Promote active engagement in practical applications of knowledge and shared summaries of discussion.

As noted previously, online activities must be well integrated into the face-to-face activities, and vice-versa. Face-to-face time must be valued and not wasted by only delivering content. This time is best used for engagement and higher order learning. For example, complex concepts are best explored in a face-to-face context; however, this does not prohibit having the students read content and begin an online discussion to identify areas of confusion before the face-to-face class. Moreover, consideration must be given to follow-up activities. If further reflection and discussion is beneficial, then this can be sustained in a reflective online environment. Some topics such as an assigned reading may be successfully handled fully online with students providing a summary followed by critiques from other students.

ASSESSMENT

Assessment structures reveal what is valued and shape how students approach their learning. Assessment must be consistent with deep and meaningful learning. If students are assessed by recall of factual material and a heavy workload, they will resist approaches that encourage critical discourse and reflection. They will expect the instructor to simply present the content in a timely and clearly structured manner. It is interesting to note that deep approaches to learning are associated, not only with appropriate assessment, but with teaching presence in the form of facilitation and choice, regardless of delivery method (Entwistle & Tait, 1990). Assessment very much shapes the quality of learning and the quality of teaching. In short, students do what is rewarded. For this reason one must be sure to reward activities that encourage deep and meaningful approaches to learning.

Qualitative feedback can be effectively provided in a face-to-face or online context. Online discussion boards are one mechanism. However, quantitative formative assessment online has an efficiency advantage. For example, formative online quizzes can provide feedback when needed by the student and do not need intervention or grading by the instructor. Online quizzes can be used for student use only or recorded for grades.

Summative assessment is about assessing competence. Summative assessment makes a judgment, based on quantitative and qualitative data, about achievement related to intended learning outcomes. If the intended learning outcomes are deep and meaningful learning, then assessment must be based on assignments that encourage critical thinking and inquiry. Such assignments can be analyses of case studies, article reviews, and individual or collaborative projects. Grading a collaborative assignment needs special consideration as tensions and inequities may arise in terms of individual contributions. For this reason, consideration should be given to having students work collaboratively to a point, but then have students submit individual assignments based on different perspectives or components of a larger problem. Even though students submit individual assignments, the group may, for example, do a collaborative presentation with a grade assigned for the group.

Self-assessment must be used with caution. While self-assessment may contribute to motivation and satisfaction, the association with learning is moderate (Sitzman et al., 2010). Therefore, to use it for summative assessment would carry validity concerns. With these caveats, the purposes for using self-assessment need to be very carefully understood. To use it for formative feedback may be advantageous. In this regard, it could be used to encourage metacognitive awareness by assessing one's responses.

COURSE EVALUATION

Student evaluations or ratings of instruction can also be used to evaluate the effectiveness of the blended course design. This evaluation would consider content, teaching and learning experiences, student assessment methods, and, most significantly, the appropriate use of face-to-face and online learning modes of delivery. Common strengths of blended designs are the rigorous design structure and a permanent record for systematic review and upgrading. This opportunity for improvement can enhance the course and provide evidence of effectiveness and may also serve as a model to others when designing their own blended learning courses.

When evaluating a blended learning design, there are tools that can help us gather important data. One useful tool is the Community of Inquiry (CoI) Survey (Arbaugh et al., 2008). The CoI Survey is based on the CoI framework and can measure perceived social, cognitive, and teaching presence. Together, these measures will provide an assessment of the community of inquiry and identify areas where the course has been successful or may need to be redesigned. As we have stated previously, the strength of blended learning is providing for active, engaged, and collaborative learning. For this reason, another tool that may be used to assess engagement is the Classroom Survey of Student Engagement (CLASSE). This tool is the course-based derivative of the National Survey of Student Engagement (NSSE), and it focuses on student perceptions regarding the amount of active and collaborative learning, interactions with faculty members, and level of academic challenge in a specific course (Ouimet & Smallwood, 2005).

CONCLUSION

The time and attention given to its design are distinct features of a blended learning course. The practical reality is that a blended

learning course design brings many challenges and decisions; time must be given on the front end if we are to integrate the differential strengths of face-to-face and online communication thoughtfully. Given the inherent complexities in a blended learning design, it is wise to keep things as simple as possible. That means limiting content, methods, and technology, while ensuring that intended educational goals are met. The previous discussion was intended to provide strategies and identify issues with regard to the organization of content objectives, the delivery of instruction, and the evaluation of learning outcomes — all of which need to be matched with face-to-face and online communication characteristics and possibilities.