

WHAT IS the new virtual classroom? What are its benefits, uses, and features? How is it similar to face-to-face classrooms and to asynchronous e-learning? Read Chapter 1 for an orientation to *The New Virtual Classroom*.

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Meet the New Virtual Classroom

THE NEW VIRTUAL CLASSROOM is an increasingly popular alternative to face-to-face instruction due to the lure of travel savings and quick deployment of training. In this chapter we introduce the features and functions that synchronous e-learning tools make available for instruction. We describe pragmatic and instructional reasons to select the new virtual classroom as one component of your training delivery blend.

Ready or Not—Here It Comes!

Virtual classroom tools such as WebEx, Elluminate, and Live Meeting have ushered in a new age in electronic distance learning. The lure of travel savings, combined with quick deployment of training to large numbers of workers, has led to sharp increases in use of *synchronous e-learning* technologies among corporations. Survey respondents who reported participating in a synchronous event rose from 54 percent in 2001 to 87 percent in 2005 (Pulichino, 2005). According to another annual industry survey, instructor-led training from remote locations rose from 10 percent in 2003 to 16 percent in 2005 (Dolezalek, 2005; Galvin, 2003). In larger organizations of

ten thousand or more, remote instructor-led training accounts for nearly one-fourth of all training delivery (Dolezalek, 2005). The growth of synchronous e-learning as a training delivery medium will likely continue, given the greater inclusion of collaborative facilities in ubiquitous tools such as Microsoft Office Version 12 and Windows Vista, which will make the functionalities of the *new virtual classroom* as accessible as today's PowerPoint or Word programs.

The benefits of the virtual classroom to workforce learning include reduced travel time and costs, less time away from the job, faster deployment of time-urgent knowledge and skills, higher completion rates compared to self-study e-learning, and the opportunity to offer training to larger numbers of workers at a lower cost. From a learning perspective, users cite opportunities for immediate interaction and feedback from instructors as well as *collaborative learning* activities as the main advantages of virtual classroom technology (Pulichino, 2005).

Still, the new virtual classrooms are not problem free. In addition to technical challenges, users report that many sessions lack interactivity and engagement with participants. Members of our virtual classroom advisory team universally mentioned poor facilitation skills as a major contributor to boring virtual classroom sessions that fail to effectively leverage the technology.

Old Wine in New Bottles?

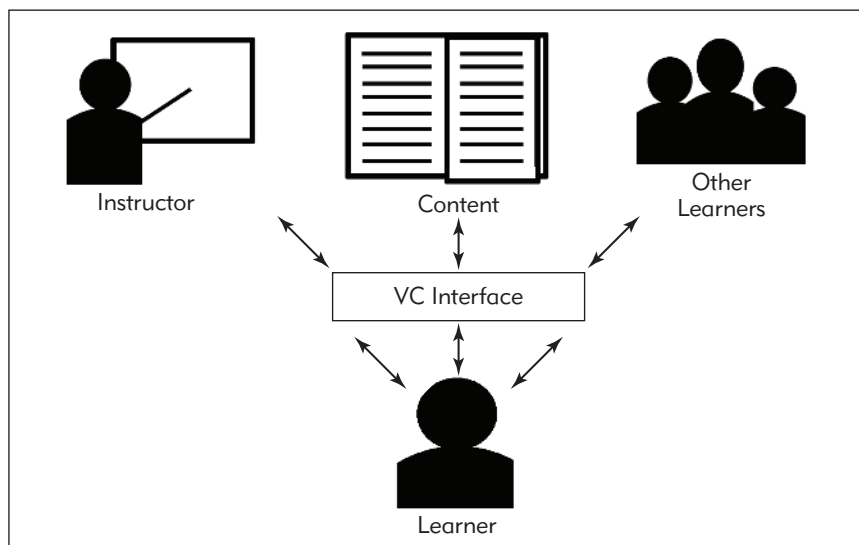
The majority of educational uses of new synchronous e-learning technologies are simple replications of face-to-face classroom instructional techniques (Hill, Wiley, Nelson, & Han, 2004). Bob Mosher, Chief Learning and Strategy Evangelist with LearningGuide Solutions, technologies, tells us: "I almost don't like the name 'virtual classroom,' only because there is a past mindset that comes with the word 'classroom' that the virtual world just doesn't match up with. . . . Calling it a 'classroom' brings back a set of expectations and outcomes that are just different in this domain" (Clark, 2005, p. 45). Steve Serbun, an "e-learning technical manager" with Bentley Systems, concurs. He feels that the classroom label sends a misleading signal to both instructors and participants. Instead of virtual classroom, he refers to

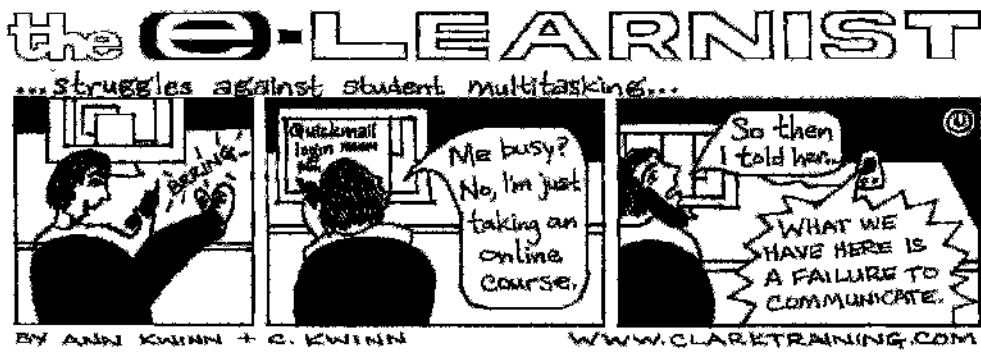
synchronous e-learning as “remote live training.” Recent industry surveys use the term: “*remote instructor-led training.*”

Whatever you decide to call the new virtual classroom, the problem is not so much with the terminology or the technology as with the mindset instructors and participants alike bring to the event. Too predominant is the metaphor of learners as **meaning takers (or sponges)** rather than **meaning makers**. Instructors rely on traditional classroom “lecture” modes, assuming that learners are absorbing the knowledge they dispense. However, as summarized in Figure 1.1, learning requires sustained and relevant interactions between participants and the content, the instructor, and other learners. When that interactivity is missing, the technology gets an undeserved bad rap.

Student dropout—mental or physical—is a greater risk in the virtual classroom than in a face-to-face setting. As one instructor put it: “The main frustration with the virtual classroom environment is multitasking. No matter how engaging you are as an instructor, you must still battle the students’ constant temptation to check email and multitask” (Pulichino, 2005, p. 15).

Figure 1.1. A Learner-Centered Instructional Environment.





What can instructional professionals do to keep participants involved and to maximize learning from virtual classrooms? The potential of the new virtual classroom is available to those who use its features in ways that promote learning. In this book we show you how.

For readers unfamiliar with virtual classrooms, we begin with a tour. We define and describe the hybrid nature of the new virtual classroom, which on one hand incorporates features similar to a face-to-face classroom and on the other hand includes characteristics of *asynchronous e-learning*.

What Is the New Virtual Classroom?

The term virtual classroom is not new. Universities were among the first organizations to make extensive use of technologies that combined synchronous and asynchronous learning environments using tools such as Blackboard and WebCT. Thanks to the rapid spread of broadband Internet access, virtual tools that support two-way audio (voice-over IP), still and animated visuals, as well as various interactive response facilities, characterize what we call the new virtual classroom.

We define the new virtual classroom as instructor-led synchronous computer learning environments attended by participants online at the same time but in different locations. The new virtual classroom tools provide facilities for two-way communication via audio and chat; projection of visuals—both still and animated; participant interactions of various types; as well as breakout rooms for small group activities. Keep in mind that real-time instructor-led virtual classroom sessions are often recorded and therefore can be viewed in

an asynchronous mode. However, we will focus primarily on the use of the new virtual classroom as a live event for workplace learning.

Features of the New Virtual Classroom

Figure 1.2 shows an *interface* typical of the new virtual classroom tools. As you can see, the *white board* consumes the largest portion of screen real estate. Instructors can project slides on the white board, which can then be annotated by participants or instructors with the use of text or drawing tools. The participant window located to the left of the white board lists the names of individuals in the session. At the top left of the interface, a series of *polling* buttons offers a facility for participants to respond to multiple choice questions. Instructors and participants can type messages in the *chat* (or *direct messaging*) area, located below the participant information window. *Icons* such as the clapping hands under the participant information window are used by

Figure 1.2. Features of the New Virtual Classroom.

With permission of Clark Training



all to indicate their reactions to ongoing events in the session. Last, the audio window in the lower-left-hand corner allows any participant with a headset and microphone to speak to the group and to hear what other speakers are saying. Although the screen location of these basic features may vary among different virtual classroom software, most of the synchronous e-learning technologies offer some combination of these facilities.

In addition to these common features, most of the new virtual classrooms offer a window to show video clips or to demonstrate a computer application as well as *breakout rooms*, which offer a virtual space where a small group can access the basic features described above. Instructors can easily divide classes into small teams for discussions or assignments in breakout rooms. If you are new to the virtual classroom, review our demonstration lessons on the CD that accompanies this book to see recordings of short lessons that illustrate all of these features.

We group the various features of the virtual classroom into three main classes:

1. Features to display visual information: white board, *application sharing*, etc.;
2. Features to promote participant interactions: polling, white board tools; and
3. Features for communication between instructor and participants and among participants: chat, audio, breakout rooms.

The challenge for instructional professionals is to use these features in ways that promote the psychological processes that underpin learning. Throughout this book we will provide you with guidelines and examples to help you do just that.

The Virtual Classroom: A Hybrid Learning Environment

Like a centaur, the virtual classroom is a hybrid, in this case incorporating properties of two different delivery technologies. As summarized in Table 1.1, the new virtual classroom has some features reminiscent of a face-to-face

Table 1.1. How the Virtual Classroom Is Similar to Precursor Learning Environments.

<i>Face-to-Face Classroom</i>	<i>Asynchronous e-Learning</i>
Instructor-led—imposes high cognitive load	Requires frequent and relevant interactions to sustain attention and promote learning
Social presence is high	The screen real estate benefits from relevant visuals

classroom and in other ways is more like asynchronous e-learning. These similarities will help you apply lessons learned about what works in these two delivery environments to the virtual classroom.

Virtual and Face-to-Face Classrooms

The first obvious similarity between face-to-face and virtual classrooms is that both are instructor-led environments with all participants present at the same time. Research shows that the mental load imposed on learners is much greater in instructor-controlled than in learner-controlled environments (Clark, Nguyen, & Sweller, 2006). Under the learner control typical of asynchronous e-learning courses, the participants use navigation buttons to move from one screen to the next when they are ready. However, in classrooms, participants are subject to the pace set by the instructor. Having to assimilate new information at someone else's rate adds mental stress—especially when the student is new to the topic and/or the skills taught are relatively complex.

A second similarity between virtual and physical classrooms is the greater amount of *social presence* compared to asynchronous self-study e-learning. Social presence is the extent to which the learning environment offers opportunities for social interactions, including hand shaking, eye contact, smiles, puzzled looks, verbal exchanges, and so forth. The virtual classroom eliminates the body language social cues that we take for granted in face-to-face environments. Face-to-face classroom instructors find this loss unsettling when they first work in a virtual setting: “The lack of visual contact with learners is the most distressing issue.” “It’s often difficult to read body

language when you are online. You don't have those subtle nuances to let you know when users are disengaged." "It is human interaction that is de-contextualized because non-verbal communication (facial expression and body language) is not shared between the instructor(s) and the learner(s)" (Pulichino, 2005, p. 15). Social cues are not only relevant to instructor comfort but are also related to learning and learner satisfaction. We will discuss social presence in more detail in later chapters.

Related to social presence is the opportunity in classroom settings for small group work as well as for on-the-spot questioning between instructors and participants. Under the right conditions, small groups working together can learn more than is possible in solo self-study environments. In Chapters 7 and 11 we discuss guidelines for when and how to set up collaborative learning environments in the virtual classroom.

Virtual Classrooms and Asynchronous e-Learning

Because instructor presence is such a predominant feature of the virtual classroom, it's easy to ignore lessons we've learned over the past twenty years from asynchronous self-study e-learning. Yet there are important similarities between the synchronous and asynchronous forms of e-learning. When learning at their work stations, participants are tempted to attend to pressing work assignments and try to divide attention between the instruction and distractions such as email or cell phones. In both synchronous and asynchronous e-learning, the main antidote to student multitasking is frequent and relevant interactions that involve all participants. The good news is that the virtual classroom is loaded with options for participant engagement! Planning and facilitating frequent and relevant interactions is the single most important thing you can do to create effective virtual classroom sessions. In Chapters 6 and 7 we show you how.

The critical necessity of frequent interactions is not the only similarity between synchronous and asynchronous e-learning. In any *e-learning* environment, the instructional interface is largely devoted to screen real estate for communicating content. In the virtual classroom, the white board serves this purpose. Too often, rather than exploiting the opportunity to display meaningful visuals, the white board is used to project a wall of words. For example, take a look at Figures 1.3 and 1.4. These before and after screens are

Figure 1.3. Less Effective Virtual Classroom Interface.

With permission from Lynn Nishimura, Sage Software

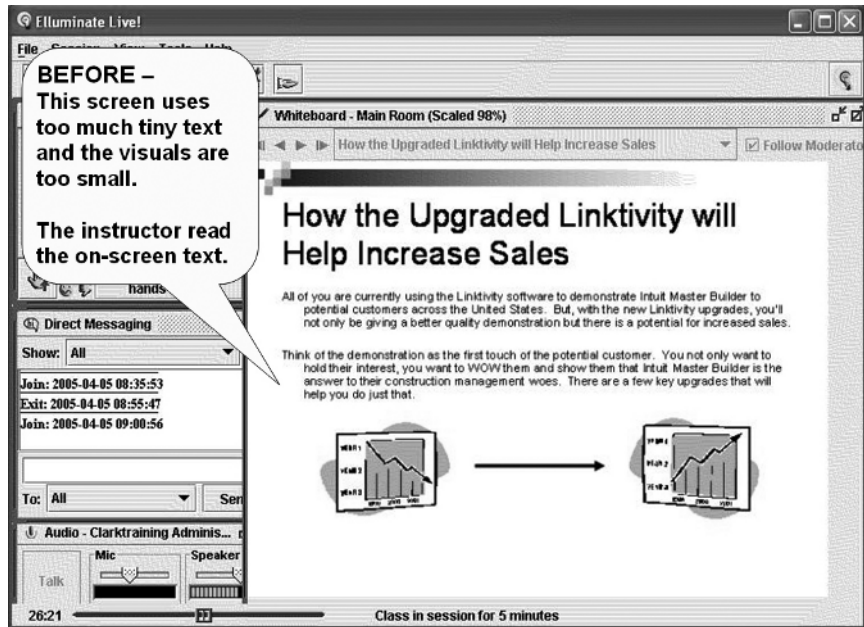
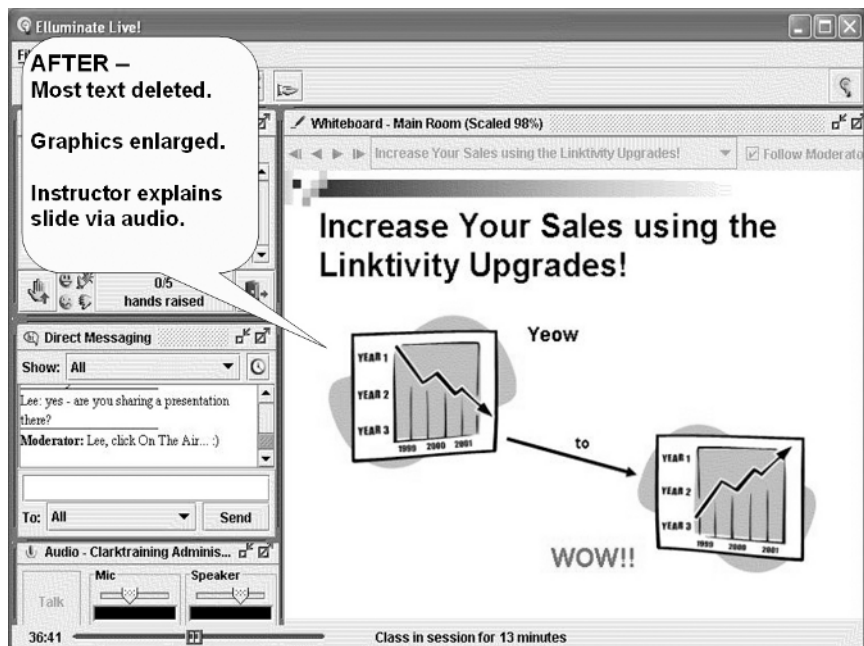


Figure 1.4. More Effective Virtual Classroom Interface.

With permission from Lynn Nishimura, Sage Software



taken from student projects in our “How to Leverage the Virtual Classroom” course. The “before” sample uses a large amount of tiny text, plus two small visuals. During the presentation, the instructor read the text to the participants. In the improved version (Figure 1.4), the facilitator speaks most of the words you see in Version 1 and has enlarged the visuals, making better use of the white board. In Chapter 5 we summarize research-based guidelines for use of visuals that lead to learning in the virtual classroom.

We found it telling that among the virtual classroom experts we interviewed, everyone mentioned the importance of interactivity. Yet **not one** mentioned the need for effective visuals! Why don’t we see greater emphasis on visual communication, especially in visually dominant media? We believe it’s due to resources and skills. First, it’s much faster to type text than to design and create an effective visual. Second, most instructional professionals have far greater verbal skills than visual literacy. Third, resource constraints often lead to reliance on clip art. The result is either slides of text or slides filled with decorative visuals that do little to promote learning. A good graphic artist is worth his or her weight in gold, especially in any form of e-learning in which the screen carries so much of the content.

Harnessing the Centaur

To summarize, the new virtual classroom embodies features reminiscent of the face-to-face classroom and asynchronous e-learning. By exploiting lessons learned from these precursor delivery media, you can make best use of the new virtual classroom. As in the face-to-face classroom, you will need to manage cognitive load carefully. In Chapter 8 we show you how. Likewise, you will want to leverage the benefits of social presence and collaborative learning activities. As in asynchronous e-learning, you will need frequent interactions to keep attention focused on the instructional event. In addition, you should exploit the visual potential of the white board to display graphics that lead to learning.

When to Use the Virtual Classroom

In Table 1.2, we distinguish between two categories of reasons that make the new virtual classroom a good training delivery media option. The reasons listed on the left are usually the driving forces behind selection of the virtual

classroom in the business environment. These reasons relate to time and money. You don't have to be a whiz in finance to see the savings in travel costs when delivering training virtually (versus in person) to a geographically distributed work force. For example, Budget Rent-A-Car reduced per student training expenses from \$2,000 to \$156 when converting a classroom course to electronic distance learning. Boeing reported savings of more than \$9,000,000 on travel alone (Burgess & Russell, 2003).

It's also faster to develop virtual classroom instruction, compared with asynchronous e-learning, and potentially faster to deploy compared to instructor-led training. It's no accident that sales and marketing departments are the leading users of synchronous e-learning (Pulichino, 2005). The need to quickly update a distributed salesforce on new products and new product features make the virtual classroom an ideal delivery vehicle. For example, Trudie Folsom, senior instructor designer at Intuit, follows face-to-face training with virtual classroom training for Intuit's channel partners. The virtual classroom sessions are used to provide short classes on special software features, sales demonstrations, and troubleshooting sessions (Clark, 2005).

A third pragmatic benefit to the virtual classroom is class completion. Compared to asynchronous e-learning, where dropout rates are high, a scheduled learning event like the virtual classroom tends to impose the discipline needed for completion.

Table 1.2. When to Use the Virtual Classroom.

<i>Pragmatic Reasons</i>	<i>Instructional Reasons</i>
Reduced travel costs	Real-time interactions between learners and instructor
Deploy training quickly	Deploying training over time
Reaching many learners	Visualization of content
Less time away from the job	Computer application demonstrations and practice
Ensuring course completion	Collaboration among participants
	Moderate social presence

However, all the time and cost savings in the world do not offset the losses incurred when the virtual classroom fails to support learning. This brings us to our second category of reasons, listed on the right hand side of Table 1.2, instructional justifications. Not all delivery media can equally accomplish all instructional goals. For example, there is no substitute for hands-on practice to learn motor skills. e-Learning is not a good choice for practice of non-computer-related motor skills.

We recommend using the virtual classroom when learning goals can be best realized by several of the following factors: (1) real-time interactions among instructors and participants, (2) real-time interactions with scarce content expertise, (3) visualization of content, (4) demonstrations and practice of computer applications, (5) collaboration among participants, and (6) moderate social presence.

If your requirements and/or resources mean that you will rely primarily on printed words, for example, text on screens with little need or opportunity for interactivity, consider an alternative delivery choice such as a website or print publication, perhaps followed by a Q&A in the virtual classroom. Virtual classrooms come alive when presenters use effective visuals and frequent, relevant interactions. When neither of these features is used, virtual classrooms gain an undeserved reputation as boring and ineffective.

The key to success in the virtual classroom is to be sure it's selected not only for pragmatic benefits, but also for the instructional opportunities it offers. And once selected, that sufficient resources are invested in course development to exploit the instructional potential of the technology.

Integrating Virtual Classrooms into Media Blends

More and more organizations are using a mix of delivery media—for the things each does best. Over 77 percent of U.S. organizations use blended learning, which accounts for 16 percent of all training in the United States (Ochoa-Alcantar, Borders, & Bichelmeyer, 2006). For example, a course designed to build interview skills for employee selection might start with a downloaded pre-reading on effective interview questions. The pre-reading is

accompanied by a web-delivered asynchronous exercise on distinguishing good and bad questions, coupled with an assignment to construct several effective hiring questions. This solo pre-work is completed prior to a virtual classroom session during which participants display their questions and obtain participant and instructor feedback. The virtual classroom session might also include brief presentations and Q&A from diverse sources of scarce expertise, such as legal staff and human relations personnel. During the virtual session, participants view a video demonstration of an effective hiring interview, followed by interview role plays in breakout rooms.

In a website design class, learners might start off in a virtual classroom with a video-delivered case study requesting a website design. After viewing the case, small groups meet in breakout rooms to define their approach and instructional needs. The instructor then provides examples of website design processes as well as links to supporting resources. Following the virtual classroom sessions, teams work asynchronously to review learning resources and create a first draft design that can be shared in a subsequent virtual session. This type of blend integrates synchronous events with asynchronous opportunities for reflection and independent work.

There are as many ways to blend media as the mind can imagine. The key to success is to use each delivery medium in ways that exploit its learning features and to incorporate all the media needed to achieve the learning objective.

In the chapters to follow, you will learn proven techniques, examples, and research to help you exploit the virtual classroom in order to achieve your organization's instructional and operational goals.

The Bottom Line

The new virtual classroom offers familiar features, benefits, and uses; some are similar to face-to-face and others to asynchronous e-learning environments. We recommend that the virtual classroom be used not only for its pragmatic benefits but also for its engagement and learning features. When a virtual classroom implementation fails to support learning, return on investment may be only an illusion.

COMING NEXT: LEARNING IN THE VIRTUAL CLASSROOM

How does the virtual classroom compare to face-to-face training when it comes to learning? In Chapter 2 we look at research reports that have compared learning from electronic distance media to classroom instruction. We introduce three major instructional components that must be addressed in any delivery medium: instructional modes, methods, and architectures. From attention to motivation, each of these components must be aligned to support basic human learning events. In the next chapter we focus on the psychology of learning in the context of the virtual classroom.

On *The New Virtual Classroom* CD

We include three recorded lessons on the CD, edited to illustrate the key features of a virtual classroom session. Each lesson illustrates different techniques appropriate to the instructional goal. If you are new to the virtual classroom, we recommend that you view one or more of these lessons as an orientation.

- How to Construct a Formula in Excel
- How to Define Business Goals
- How to Plan an Interview

For More Information

- Burgess, J.R.D., & Russell, J.E.A. (2003). The effectiveness of distance learning initiatives in organizations. *Journal of Vocational Behavior*, 63, 289–303.
- Clark, R. C. (2005). Harnessing the virtual classroom. *Training & Development*, 59(11), 41–45.
- Long, K. K., & Smith, R. D. (2004). The role of web-based distance learning in HR development. *Journal of Management Development*, 23(3), 270–284.

Pulichino, J. (2005). The synchronous e-learning research report 2005. The eLearning Guild Research. Accessed October 2005 at www.eLearningGuild.com.

EXPERTS' FORUM

THE GROWING ROLE OF THE VIRTUAL CLASSROOM

Eric Vidal, Director, Enterprise Business Unit, WebEx Communications

I have spent the last seven years developing e-learning and marketing strategies for sales training and corporate training departments. I joined WebEx Communications in 2004 and am responsible for developing key strategies, including simplifying and accelerating online training initiatives for enterprise and government customers.

The virtual classroom allows organizations to stretch their training resources, eliminate logistical barriers, and transform their training into strategic lines of business. Both trainers and business users can rapidly train and update their dispersed audiences on the latest product updates and initiatives inside and outside the organization. They can also edit, archive, and store sessions in an online library, giving their geographically dispersed audience instant on-demand access to this valuable information. The virtual classroom gives you the tools you need to transform your existing content into highly interactive online training programs. The virtual classroom allows you to:

- Educate channel partners more frequently and cost-effectively while avoiding stale canned presentations. The virtual classroom can include trainer interaction, side conversations, and small group activities.
- Quickly update your entire organization on process changes, regulatory compliance, and new initiatives without juggling travel schedules.
- Integrate tests, quizzes, and polls into your online training curriculum and assess the impact of your training material and presentation. Track performance and offer encouragement and support using a variety of online testing and collaboration tools.

- Generate revenue or help with resource accounting with self-service registration and e-commerce payment features. Offer paid-on-demand training classes in a secure, reliable environment with no additional capital expenditures. Can you imagine turning your cost center into a profit center?

When trainers and business professionals first started implementing the virtual classroom a few years ago, it was mainly to reduce costs (save time and money on travel). Next, people started to use it to expand their reach and do more with less. The e-learning leaders using WebEx solutions are constantly pushing the virtual classroom to not only save time and travel, but to embed the virtual classroom into actual business processes in order to impact the way the organization works. These leaders are not only using the virtual classroom inside the training organization, but with groups like product management, marketing, sales, customer support, services, legal, and much more. For example, at Philip Morris the approval time for a manufacturing process improvement change was reduced from nine months to nine days. Similarly, Fidelity National increased mortgage application-to-close ratios by reducing the process for closing transactions by over forty-eight hours. At Kraft Foods, supplier training process duration was compressed from six months to three days.

A recent survey of 341 WebEx customers told us how the virtual classroom is impacting their businesses and bottom lines inside their organizations:

- Get products to market faster
- Create more effective channel partners
- Develop more effective and efficient sales teams
- Shorten sales cycles by educating prospects and customers faster
- Improve customer service and satisfaction
- Reduce support costs by training customers
- Protect company by staying compliant
- Create revenue-generating opportunities with customers and partners
- Shorten the time for application rollouts
- Provide access of subject-matter experts to dispersed audiences

POSITIONING THE VIRTUAL CLASSROOM IN THE ORGANIZATION

*Andrew Noell, Learning Manager–Virtual Classroom
Lead for the Consulting Function, Deloitte Inc.*

At Deloitte Consulting LLP, we are always looking for innovative ways to provide high quality training in the most cost-effective manner. As a professional services firm, our practitioners are working on client engagements and it is difficult for them to travel for training. Additionally, as a knowledge-driven organization it is critical that we keep our practitioners up-to-date on key consulting topics. Five years ago, we started exploring the virtual classroom as an option. We have had great success with virtual classrooms. We are currently using Centra. But we also recognize that the virtual classroom has some challenges that need to be addressed. The three main challenges we have with virtual classrooms are:

- Awareness of the platform
- Preparing instructors to deliver training virtually
- The lack of interaction and engagement with participants

Awareness of the Platform One of my first assignments as virtual classroom lead for Deloitte Consulting LLP was to create a communication tool we could distribute to increase awareness of virtual classroom learning. We came up with a one-page document called “Virtual Classroom Learning in a Nutshell,” (See Figure 1.5.) In this document, which we circulated to our internal learning champions who were interested in understanding more about this platform to deliver learning, we defined virtual classroom as a real-time, instructor-led, online learning opportunity, explained when and why you would use it, and described the benefits and features of the solution. We also highlighted sample offerings from some of our successful deliveries as a reference.

Preparing Instructors to Deliver Training Virtually Our instructors typically fall into two categories: (1) they are hesitant to work with the new technology or (2) they significantly underestimate what it takes to deliver learning in a virtual classroom environment. It can be very challenging to schedule time with our instructors to help them prepare. Over the years, we have had to find creative ways to do this. Some of the strategies we use include:

Figure 1.5. Communication Tool to Increase Awareness of the Virtual Classroom.

With permission of Andrew Noell, Deloitte Inc.

Virtual Classroom Learning in a Nutshell

VIRTUAL CLASSROOM LEARNING

IS A *REAL-TIME* INSTRUCTOR-LED *ONLINE* LEARNING EVENT

- Communicate and learn live in a virtual classroom
- Same features as a classroom except no travel required

SAMPLE OFFERINGS –

- Train the Trainer on Centra
- S&O Hot Topics
- Life Sciences CRM
- Program Leadership Fundamentals
- Project Management Methodology (PMM)

Virtual Classroom Learning using CentraOne

When and Why?	Benefits?	Features
<ul style="list-style-type: none"> • Practitioners who are geographically dispersed • Sharing applications to demonstrate a particular software tool • Updating practitioners quickly and/or frequently • Supplementing self-paced training (e-Learning) to provide applicability and answer questions • To build culture through Deloitte instructors using real-life examples within the subject matter 	<ul style="list-style-type: none"> • Bring an entire group together virtually at the same time for learning, dialogue and exchange • Cuts travel and facility/hotel costs • Minimizes lost utilization & time at the client site • Allows culture building – a network for sharing information • Supports just-in-time training: <ul style="list-style-type: none"> - Easier to schedule instructors & requests for a course • Clients can be invited 	<ul style="list-style-type: none"> • Can access from a dial up or LAN connection • Sessions can be recorded for future use • Instructors and/or SMEs can easily be trained • Facilitator & participant tools for interaction simulate a classroom environment such as: <ul style="list-style-type: none"> - Internet Exploring - Application Sharing - Break-out Rooms - Audio Dialogue - Text Chat - Mark-up Tools - Surveys/Evaluations

Contact
For questions contact Andrew Noell

Definitions of synchronous tools used by Deloitte

is used to facilitate learning

is used for presentations & meetings

1. *Conference call.* Set up a conference call over lunch or after hours to provide an orientation of the virtual classroom, discuss the technical requirements, and review design and delivery strategies.
2. *Train-the-trainer.* In the virtual classroom, demonstrate the tool and how it is used from an instructor's perspective.
3. *Dress rehearsals.* In the virtual classroom, run through the delivery from start to finish, practicing the interactive features, reviewing what was learned during the train-the-trainer session, and become comfortable with delivering their content in a virtual environment.

The Lack of Interaction and Engagement with Participants When we started delivering virtual classroom sessions, we noticed that there was some confusion between an informational webinar and a virtual classroom learning opportunity. We needed to help our instructors design strategies to engage our participants.

We group the virtual classroom features into three categories when training our instructors:

1. Participant and instructor interface orientation
2. Event participation—dialogue, white board tools, and surveys
3. Virtual classroom capabilities—file sharing, application sharing, web views, and breakouts

Additionally, during the instructor training we use classroom analogies when describing some of the features. For example:

- Describe the white board as a “virtual” flip chart where participants can brainstorm ideas. Instead of tearing off a full sheet and taping it to the wall, in the virtual classroom you save it (for reference later) and start with another blank white board.
- Refer to file sharing as a “virtual” handout. Similar to a classroom, if an instructor passes around a document for you to keep, you can choose to take it with you or leave it on the table. With file sharing, you have a choice to accept or decline the automatic download initiated by your instructor.
- Set up breakout rooms similar to a classroom with instructions and the assignment. Allow time for participants to orient themselves to their new “room” in addition to the time allotted for the assignment. Have coaches assigned to each breakout room to assist.

As we overcame the challenges associated with the virtual classroom, our best practices made it easier for instructors to determine when to add different interactions to engage the participants. Virtual classroom is now one of our key learning solutions within Deloitte Consulting LLP.

ADOPTING THE VIRTUAL CLASSROOM

Dr. Kim Armstrong, Engineering Learning, Training and Development Enterprise Curriculum Lead, The Boeing Company, and Department of Professional Studies, California State University

At Boeing we are faced with an ever-growing population of students who are virtual and global. There has been a major shift over the past two years to reduce the Boeing footprint in terms of office/factory space, and many employees are enticed to become part of our virtual office program. We also have an ever-expanding presence globally, moving employees to all corners of the globe.

As we see more and more of our employees “virtual” and global, we were faced with how to include them in learning and development opportunities. We looked at our current delivery methods, which were primarily instructor-led, and determined that we must include the virtual classroom in order to stay competitive and to motivate our employees.

For example, we created a program for developing future chief engineers. The program is multi-phased and includes several weeks of virtual classroom learning through three elements—virtual simulation (each student independently completes a virtual simulation during the program), virtual team learning (where the students are teamed up in smaller groups to discuss the virtual simulation), and a concept we designed called “leaders teaching leaders.” The leaders teaching leaders concept uses WebEx and telecon, a virtual facilitator, and a virtual instructor to teach lessons based on the virtual simulation and team discussions that they had completed. In addition to cost savings, some benefits of the virtual classroom included the opportunity to bring together a large number of geographically, organizationally, and globally diverse groups of students. These students benefited from each other’s experiences and knowledge and allowed us to extend the classroom and the learning experience over a longer period of time. When we completed an ROI study on this program, we found that the virtual element added to the impact on knowledge transfer and the ultimate ROI was greater than 540 percent.

One of the key lessons learned when using the virtual classroom is employing a skilled virtual facilitator for each session, in addition to the instructor. The facilitator, just as in a classroom, sets the stage for the participants, handles the technology aspects (runs the Webex and PowerPoint slides, videos, and so forth), introduces

the instructor, provides the protocol for the class session (such as how to be recognized to ask a question, ensuring that students stay engaged, ask questions, keep time on the agenda, protocol about muting phones, etc.), and keeps the virtual session interesting and engaging. We also use the virtual facilitator as a coach to our leaders who will be presenting virtually prior to their sessions.

Another key lesson learned is using photographs to introduce the facilitator, instructor, and each of the participants. It is very helpful for the participants to “see” what their instructors and fellow classmates look like. We use photos at the start of the session. We also bring up the photos from time to time when someone is asking a question. It really adds a personal touch. Many of our participants, when surveyed after the class, noted that the photos made the virtual class feel more like a regular classroom-based class.