



# Training in the Virtual Environment

A WHITE PAPER PREPARED FOR ASPE BY WILLIAM KREBS

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## Challenges to Education

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Today's travel budgets are highly constrained. Where it used to be possible for students to travel to courses, this is now less often the case. Yet the economic pressures make increased worker productivity created by additional training an even greater imperative. Collaborative training tools can be used to avoid travel, but teaching the way we do for face-to-face when trying to use these tools presents a challenge to student attention. This is especially true in today's distracting world of multi-tasking, instant messaging, and other interruptions. New approaches are needed to span this focus gap.

## Technical Approaches

The use of online training tools such as Cisco's WebEx solves the problem of travel. Its training center offers an excellent platform for collaboration. By using its features, the instructor can not only share applications and presentations, but also encourage interaction by the students. Care has been put into making it reliable and high performing. In addition to sharing documents and applications, a whiteboard can be used to draw anything. Documents may be marked with student or instructor symbols, highlighting, or colors. A chat window allows private and global dialog during the course in parallel with the phone discussion. The sound system supports both telephone and voice over IP, and who is speaking is shown on the screen to help conversation flow. Another useful feature includes an indication when students have moved focus away from the shared window.

## Beyond Technology

But it's not just about the technical aspects of the tooling. To deliver education virtually, the instructor must strive to mold the course to the online venue. These strategies make up for the lack of face-to-face contact.

First, the instructor should have a checklist of students available. This is used to rotate exercises and questions to make sure everyone is involved. This is key because without the visual cues of face-to-face teaching, it is hard to tell who is still engaged. The list helps the teacher scan and remember who is left.

Second, students will have questions. An excellent solution is the use of the chat window for "backchat". Students pose questions as the instructors speak, which may be answered by the instructor or other students.

Third, some way to tell who is speaking is important. A good virtual training tool will offer some visual queue when someone speaks. This helps the teacher engage the student and connect the voice with the context of their previous comments.

Fourth, students need some way to interact. Physical models are not available, but tools that allow students to markup a slide are useful for engaging their attention. Rather than just showing a slide, challenge the students to conduct an exercise to markup the page.

## Agile Principles

Exercise: markup

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

Fifth, small quizzes can be used to recapture student's attention by shifting the pace from listening to thinking and speaking. This breaks up the pace to keep the course fresh.

Sixth, the constructive style of education is even more useful in virtual than in face-to-face. Don't shove solutions in front of students. Pose the question and framework, and let them use their diverse skills to create a solution. Sometimes the most powerful slide is a blank piece of paper.

Seventh, group dynamics can be leveraged. Discussion and other stories from other students can be as valuable to instruction experience as the prepared material. Be careful to detect how often people speak. Give shy ones extra chances, and moderate the enthusiastic.

Eighth, the use of role play to simulate business scenarios is very effective. It provides another mode of cognition, practical experience, and can be fun. The fun aspect will engage their mind. To start, take a role and demonstrate to the students how to act in a role. Then rotate, giving each student a chance to perform in a group. Students not involved in a scene can comment on each teams'

simulation. While this approach can be used in face-to-face or virtual environments, it becomes more valuable in virtual settings because the change of pace is critical in retaining attention.

Teaching to a class virtually can feel like flying blind. Using combinations of the above techniques can make it as effective as face to face.

## Emerging Trends

New tools offer promise of increasing student participation. Three dimensional virtual worlds such as Teleplace®, Second Life®, and similar tools offer potential for creative interactive learning models. Positional sound gives a feeling of presence. New versions allow display of websites in the environment. The power of these uses for education was demonstrated by the 175 presentations at the Virtual Worlds Best Practices in Education conference, which was held entirely online for a global audience.



The problem with these tools is that they require students to be used to navigating in a 3d space. That is also their benefit and promise. But until more students are familiar with such environments, traditional web-based tools like Cisco's Webex or Adobe's Connect provide a reliable and familiar alternative. And teachers need to learn how to use 3d spaces in an effective way. Directly translating slides into a 3d space may not be the best way to take advantage of this new tooling. While teaching approaches solidify, application and screen sharing programs can provide a useful bridge.

## Further Resources

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- <https://blogs.secondlife.com/community/workinginworld>
- <http://www.teleplace.com/>
- <http://www.vwbpe.org/>
- <http://www.webex.com/>
- Learning in 3D by Karl Kapp and Tony O'Driscoll
- Cases on Collaboration in Virtual Learning Environments by Donna Russell
- Learning Online with Games, Simulations, and Virtual Worlds by Clark Aldrich

## About the Author

Bill Krebs has worked as a software developer and consultant at five IBM Labs since 1983. Since 2001 he has trained over 1,000 engineers and managers worldwide in agile project management. Currently, he is the founder of Agile Dimensions, LLC, which specializes in distance training. He is on the board of directors of Rockcliffe University, and a corporate trainer with Davisebase LLC and ASPE, Inc. He will complete the one year certificate program in virtual worlds from the University of Washington in 2010.

