

# Best Practices for Virtual Instructor-Led Training

Jay Crook M.S., March 2017

Virtual Instructor-Led Training (VILT) may be an intimidating idea for many instructors; to explore the unknown (at least to you)! Trusting technology to be the vehicle to deliver your knowledge to students can be scary, but it doesn't have to be.

So what would be the ideal situation for VILT classes; a technology savvy instructor presenting to a technology savvy class?

Teradata Corporation delivers VILT classes almost every week. The instructors have years of programming knowledge and are comfortable working on huge mainframe servers. The students are the ultimate technology geeks; database administrators, database architects, application developers, etc. Sounds like the perfect combination, right? And yet, even this grouping has had problems with VILT.

What can we learn from them?

The director of Teradata's Customer Education for Americas, Deb Hoefer, acknowledged that the number of ILT classes has been decreasing due to customer budgets, however VILT numbers have increased (Feb 2014). She also noted that VILT training tends to be less effective as ILT, and effective training needs to have "stickiness," in that the student continues to use training knowledge.

At the same meeting, a new instructor, Patty, said, "As with ILT, VILT presenters can get stage fright. The difference with VILT is the presenter cannot rely on body language, eye contact, and other cues. A sense of uncertainty may develop."

The following are suggestions and observation compiled from the experience of the Teradata instructors.

## **Pros of VILT over ILT:**

- Students tend to be more prompt for VILT than for ILT
- It's easier to monitor student work

## **Tips for engaging students:**

- Ask lots of questions
- Call on students
- Encourage students to continually use chat
- Use chat to get responses from all students at the same time (great for review questions)

## **Tips for using WebEx:**

- Write down host id in case of power failure. In such case, the first student logged in becomes the host if the host is disconnected.
- Last screen of PowerPoint presentations should have passcodes and passwords for labs.
- Noisy callers have a speaker icon that lights up. They can be muted in WebEx. Be sure to unmute them when asking questions (icons indicates who is muted).
- Dual screen can help with monitoring WebEx while giving a presentation.

- Use show of hands for breaks.
- During a break show a white board for return times (maybe use a countdown clock app).
- Plug headset into cordless phone and put phone in pocket in case you need to get up. A wireless headset would be even better (battery life may be issue for long classes).
- Have a welcome screen for students who login early. Include class title, instructor, call in number, and number for WebEx support.

### **VILT Class Example:**

In a VILT class conducted March 2014 with a veteran Teradata instructor, the following actions were observed. Jennifer did the following:

- Welcome each student as they join over the phone.
- Disable the announcer for student entry to avoid the distractions of joining and exiting.
- Verify that each student received all materials and can connect to the lab environment.
- Have students introduce themselves (name, location, role using Teradata, version of Teradata).
- Showing an actual interactive usage of an example is very beneficial. Be sure to go slow enough to compensate for network delay.
- Use the pen tool in PowerPoint to call attention to certain areas of the slide.
- Instead of duplicating content, show students where to access information. Use the chat feature to provide urls.
- Mention company websites for additional resources.
- If available, a graphics tablet would make using the pen cleaner looking.
- When the class gets very quiet, the instructor encourages class to make more comments.
- In a real classroom a student is responsible for not following asleep. There needs to be some responsibility bestowed on students in order for the instructor to get feedback. One possibility is to require students to raise their hand occasionally (a feature with WebEx). The instructor could say, "Is everybody following OK? Raise your hand if you are." If someone does not raise their hand the instructor asks if he/she needs additional explanation.
- Instructor can log into WebEx using a second PC as a student to see the screen as the student would. This achieves a couple of benefits; experience the slides refreshing at the same delay as students, and monitor if material is being shared correctly.
- Long classes cannot support a cordless phone due to battery life.

## **Problems reported by instructors**

### **Student participation**

Body Language: It's hard to gauge student progress without being able to see them.

- *"I think the students enjoyed the class but it was hard to tell as several of them were extremely quiet for the bulk of the class."* – Jennifer M. (7/23/12)
- *"The class seemed well received but it is difficult to tell during a VILT."* – David M. (10/28/14)

Few students dominate discussion.

- *"2 - 3 students asked most of the questions which is typical for VILT classes."* – Mark J. (4/22/13)
- *"Class went well. Many \_\_\_ employees attended. Had 2 - 3 students ask the majority of the questions."* – Mark J. (5/13/13)

- *"VILT classes tend to be quiet and this one was as well even though attempts are made to make the class interactive."* – Mark J. (9/10/13)
- *"Class went pretty well. Very quiet class. Students did not seem to be engaged. Hard to get a reading on the students. Even when I asked questions directly, there was little or no response. Maybe it was because the class was on a Friday afternoon. Very full 4 hours with the 3 modules that were taught (afternoon only class)."* – Mark J. (3/18/16)
- *"Students were enthusiastic and asked questions. When prompted (well, dragged – it is VILT and no one wants to speak on a conference call) students participated in discussions."* – Jennifer M. (11/23/15)

Large classes tend to have a broader range of skills.

- *"As the group is big in size, and as it is only a two day session, I could not take time to ask for individual experiences of the students in SQL in general and Teradata SQL in particular. But during the discussions, I realized that some of the students are using SQL for about 20 years! Naturally for some, the topics are mostly familiar but there are some who said they really learned new concepts. So generally the experiences are all over the place and that became bit challenging..."* – Rao N (11/7/17)

Work distractions: Encourage students to be full time students during the class.

- *"The three students from [removed] were distracted for most of class. I'm not sure, but I believe that they may have been concurrently working remotely during the class. I did have to ask them to reduce their discussion among themselves during class and to let me know if we needed more frequent breaks to accommodate their needs."* – Jennifer M. (3/4/13)
- *"Overall, I think the class was well received but unfortunately many in the class were distracted by their daily tasks during the class. This and the diverse nature of the student's experience made it more difficult to keep on task and moving in a timely manner in the class."* – Jennifer M. (5/10/13)

Attrition: Students drop out for various reasons.

- *"There were 11 students the first day, and then it dropped down to about 6 to 7 on the second day. The third day was at about 6 but the last day was at 5 students until the last module when the \_\_\_ network crashed. I waited about 30 minutes and then only 2 students managed to find a way back to the class."* – David M. (5/28/13)
- *"Class went well. Only 2 students were consistently in the class. The 3rd was in and out. Labs went well. Many questions by one student only."* – Mark J. (3/17/15)
- *"Also, as with several of the other virtual classes there was a high ratio of no shows."* – Jennifer M. (6/23/16)

## Instructor-to-Student Interaction

One-on-one interaction difficult.

- *"In a public VILT class it is difficult or impossible to recommend another course for anyone."* – David M. (5/13/13)
- *"There was some confusion as many of the students had received instructions on downloading the eDocs only to have paper copies available in the class. Per instructions, I talked to these students offline. Unfortunately, that meant pretty much the whole class heard and wanted to talk offline as well."* – Jennifer M. (6/25/13)

## Technology Issues with Students

Too much input: Suggest students use dual monitor configuration; one for WebEx, one for workbook and labs.

- *"Many students found it hard to see the presentation in WebEx, the lab on the virtual desktop, AND the manual."* – Jennifer M. (1/17/13)

Some students had trouble with their phone lines.

- *"I think the class went well but I had a great deal of trouble hearing Santosh. His audio line had extra noise on it and his volume was very low. Unfortunately, I had to ask him repeat his questions a few times as I simply couldn't hear him clearly."* – Jennifer M. (7/11/16)

## Technology Issues with Instructors

Typing: Suggest using a headset microphone so hands can be free to type.

- *"Although typing problems exist in other courses as well, VILT classes require much hands-on corrections by the instructor which is exacerbated by remote requirements."* – Jennifer M. (2/22/13)

WebEx problems slowed down class progress.

- *"Too much disruption in WebEx connection. Teleconferencing was not properly audible."* – Sangit P. (6/14/13)
- *"As always, it's hard to tell with a Virtual class but I think it went well overall. We had some disconnects with the WebEx. Brian had set himself up as the host for both Dave and my class. When I logged on, it gave me no options to change the host to myself. It simply said I was already hosting a meeting. Susan gave me the list and I set up my own meeting for the duration of the class. We may need to change the way we set up VILT classes when there are two starting at the same time."* – Jennifer M. (11/11/14)
- *"Several of the students commented that they would've preferred to have audio via WebEx rather than via phone line. Since these students in particular didn't have land lines, I can see why they wouldn't want to be on cell phones all day. Do we have any alternatives? Is there anyway WebEx can host the audio as well as the visual delivery?"* – Jennifer M. (2/16/15)

- *"Class went well. Not many questions as is typical for a VILT. Still had the same WebEx problem with drawing lines but able to work around it."* – Mark J. (11/10/15)
- *"They are all very interested. But 20min into the training there was a system wide WebEx outage and this took an hour from our schedule and put a dent into the tempo of the class. Felt that they did receive it well."* – Rao N. (6/3/16)
- *"Class went well besides some problems with audio portion of WebEx. We took our AM, PM and lunch breaks around the times we experienced the audio problems and did not need to extend the class time beyond Friday."* – Mark J. (1/17/17)
- *"This was a very full group and there were originally problems with the audio/WebEx. Brian and Sylvia tried to help and even set up a new call....but some students were not able to unmute until I muted all callers then manually un-muted them after giving them resuming the host role. It was weird."* – Jennifer M. (6/24/16)
- *"Class went OK but had problems with WebEx throughout the class. Reported problem to Cisco Support and spent almost 2 hours with them over the 3 day class. Resolution was proposed by Cisco but the problems returned. Cisco investigating whether to open ticket to permanently resolve. Somewhat frustrating to students. I plan to follow-up this week with Cisco."* – Mark J. (10/27/15)

Instructor had issues with own equipment.

- *"My PC really acted up – only while doing the WebEx. It would freeze after blinking for some time. Happened on 2nd day. Got the help from Helpdesk and reinstalled the Video drivers and TrendMicro SW. Did tested the WebEx with the helpdesk person. But again the same thing repeated today. This did not go well as I have to reboot my pc at least 4~5 times each day in the middle of a topic as it just hangs up! In a normal day there is not any issue with my laptop. Will call up the help desk again."* – Rao N. (2/10/15)
- *"I did have a power failure on Monday which delayed class starting for 10 minutes. My UPS kept the class going but since I can only go 2 hours on backup I needed to contact the power company ASAP."* – Jennifer M. (4/27/15)

Internet access problems.

- *"Class went well but we had some technical difficulties. On the afternoon of the 3rd day, our internet/cable provider (Time Warner) went off line. We lost internet to our house. After a delay of maybe 15 – 20 minutes, I used the Hotspot on my iPhone but that connection dropped twice. We ended up just having a conference call with the students and me teaching as the students were flipping pages in their student manuals. This lasted from maybe 3:45 – 5:30 PM. The students seemed fine/understanding of the problems. With the internet back on the 4th day (today), the class went smoothly. Overall the students were quiet. The only questions came through the "private chat box" in WebEx."* – Mark J. (12/15/15)

- *"I had some phone issues. I changed handsets, head sets and finally dialed into the call again. I think it was a Charter but they couldn't confirm what happened. The issue was resolved but it was irritating in the short term."* – Jennifer M. (6/17/16)

## **Problems reported by students**

Instructors tend to have more feedback about VILT issues than students. It may be because problems with connectivity, communication, and equipment are more noticeable to them and it poses a challenge that they must overcome. To students, it's just a delay. While the instructor is trying to find a solution, the student can check messages or do a little work.

If you compare the preceding instructor feedback with the student feedback below, you can easily tell which group has more input. VILT problems should be important to instructors, but it is easy to over exaggerate their damaging effect on the class.

## **Student material**

Depending on IT and firewall issues, some students were provided electronic student manuals (eDocs) and some were provided with paper hard copies. It was not uncommon for students with a printed manual to request a soft copy, and vice-versa. Here is a sampling of related student comments.

- *"I really liked the manual but would have liked an electronic copy also."* – Annette W. (12/19/2015)
- *"It's nice to have hardcopy of training before the class; also it's nice for future reference."* – (3/19/2016)
- *"Suggesting ahead of time to have the users print out the manual – since all training on the PC, hard to use a soft copy and use the WebEx and virtual machine at the same time."* – Anonymous (6/25/2016)

Taking notes can be difficult.

- *"I think there is a problem in the difference between what is documented in the course materials and what is covered by the instructor via a live system. I couldn't go back to the materials to review what was covered to do the lab because the meat of the class was the demonstrations via the instructor in the live system not what was in the material. I think it is important that you cover all the concepts in the course material and whatever you need to know to do the labs should be documented in the course material. Then, reinforce the concepts with examples in the live system. The labs are general and you can't go back to the course material for reference because much of what was covered was done via a demonstration in the live system."* – Suzi L. (12/3/15)
- *"This course is not best suited for virtual instruction. The course would be better served if it was onsite. Without two monitors there is no way to follow along through exercises and reviews. You are constantly missing some aspect of training."* – Mike G. (4/27/2015)

### **Duration of classes**

Another complaint was that classes were too condensed and should have lasted another day (or more). This is partly due to an ILT class being delivered as VILT and the extra issues that come with its administration.

- *"Remote learning was convenient, although those of us in the Pacific time zone had a really early start."* – Anonymous (11/17/2016)

### **Connectivity issues**

- *"There was too much distraction from people on unmuted lines. The same emphasis used to prepare us for taking the course should be used to present good online classroom practices."* – Anonymous (2/2/15)
- *"Audio on WebEx via computer audio would have been more convenient for a virtual training, instead of having to dial in separately via phone."* – Kamal N. (8/16/16)
- *"[We] had issues due to WebEx. Mark was awesome to find an alternative. But it was very disruptive for first two days."* - Karthikeyan M. (1/17/17)
- *"At first I was using my cell phone for the audio which was very inadequate. I was able to switch to Google phone which helped immensely. I think it would be helpful to provide the audio in the WebEx. The virtual desktops were useful for receiving help from the instructor and so he could monitor our progress, but were at time frustratingly slow."* – Anonymous (1/23/2016)
- *"I have only a cell phone and had to use my minutes for the daily class. WebEx supports sound through a computer, why was that not available? It would have been far more convenient and less expensive for me."* – Elena B. (2/19/2015)
- *"Trouble access content through firewall."* – Melony T. (11/17/2016)

### **Students being distracted**

- *"I have never taken a virtual course. I found it more difficult to stay focused than an ILT because of the small 'window' of my screen. I think I could have been much more engaged had I physically been in the classroom with other students. But I'm glad a VILT is available because had I been required to travel I may not have gotten approval for this training class."* - Tim B. (6/7/16)

### **Communication**

- *"[It was] difficult in knowing when to ask questions without interrupting the presentation. Capability to place on chat is beneficial. Presenter stopping between a subject change to ask if there are any questions was good idea."* – Lori D. (12/3/2015)

## Positive reactions

Just so it is understood that not all reactions are problems or criticism, here are a few positive comments from students.

- *"Really good for being over the internet. Impressed."* – Annette W. (12/19/2015)
- *"The content and pace of the course was great."* – Adam Molloy (1/9/2016)
- *"It was very thorough. I was able to understand the terminology being used by our DBA."* – Lisa R. (10/24/2015)
- *"Jennifer was extremely knowledgeable and encouraged us to stay engaged despite it being a WBT."* – Yasha B. (8/27/2016)
- *"I found this course to be excellent."* – Mark W. (7/1/2016)
- *"I was hesitant about taking a virtual course for the first time. But this worked out fine for me."* – Ed E. (12/4/2014)
- *"I liked taking the virtual class. I prefer to do that rather than travel to a training facility."* – Donald B. (2/20/2016)
- *"My house is better than at work for virtual training :)"* – Anonymous (10/21/2016)
- *"I was able to attend all three days from the comfort of my home. Doesn't get much better than that. Have I mentioned that the instructor was phenomenal?"* – Anthony N. (8/26/2016)
- *"It was very good. I think it was perfect."* – Mike (8/23/2016)

## Comparing VILT with ILT

Other data was collected from student in a 1 to 5 scale. Here are the results with a comparison between ILT and VILT. You will notice that all scores are relatively balanced, with maybe the exception of environment. Some students may prefer to be in a classroom than at home or work.

Students giving feedback:

Area	VILT	ILT	difference
Course Content	4.23	4.22	+.01
Course Impact	4.30	4.26	+.04
Instructor	4.55	4.60	-.05
Environment	4.14	4.27	-.13
# classes	78	156	
# students	424	1342	

### **VILT gaining in popularity**

In the past three years at Teradata, the number of VILT classes has increased. This is possibly due to companies tightening their belt when it comes to training.

<b>Year</b>	<b>% of Classes that are VILT</b>
2014	16%
2015	30%
2016	47%

### **Class Size**

Class sizes for VILT can be smaller than ILT because classroom and equipment rental, travel, and lodging expenses are not an issue.

From 2015 to 2017, Teradata customer VILT classes range from 1 to 17 students, averaging 8 students (62 classes). Whereas, ILT classes range from 4 to 25 students, averaging 13 students (99 classes).

Compared to the years of classroom instruction, VILT is still a new field of discovery. There is much we have yet to study, research, and learn.

# Literary Review

Virtual Instructor-Led Training (VILT) was defined as any live or synchronous training in which the instructors deliver or facilitate courses through the web and/or teleconferencing to attendees in different locations (West, Donovan, Benedicks, Carmody, 2010). This provides many benefits for students, instructors, companies, and academia.

The primary reason companies use VILT is to reduce travel costs and extend training to more people, in more locations (GP, 2010). These organizations are searching for increasingly cost-effective methods to deliver effective training. Survey data reveals that VILT is one of the fastest growing techniques selected to resolve this paradox (West, Donovan, Benedicks, Carmody, 2010).

VILTs also create an equal opportunity learning environment, for students and/or instructors that may be battling an illness or physically challenged (Adewale, Ibam, Alese, 2012).

The virtual classroom can replicate familiar elements of the face-to-face teaching environment, such as instructors addressing the class as a group, responding quickly to questions, providing feedback to students in groups or individually, calling on participants (verbally or in private text messages), queries and polling, whiteboard illustrations, and posting references for all to see (Tremblay, 2006).

VILTs are a transition between Instructor-Led Training (ILT) and Web-Based Training (WBT). WBTs and other asynchronous environments can provide increased flexibility and convenience, however the freshness of face-to-face interaction in the synchronous is often sacrificed (Tremblay, 2006). Synchronous distance education has the advantage over asynchronous at real time discussion and brainstorming, offering an environment closer to the traditional class environment and allowing instant feedback. The delay with asynchronous distance education lowers interaction levels and can cause decreased levels of student interest and engagement.

Students in blended learning courses report a greater sense of community than students in courses held completely online or in face-to-face classrooms (Rovai & Jordan, 2004).

## **Areas of Interaction**

The learning experience is composed of three constructs: the teaching presence (teacher-student), the social presence (student-student), and the cognitive presence (content-student). The absence or imbalance of any one construct impacts both the learning and sense of community as a whole (Hawkins, Graham, Barbour, 2012).

1. Teacher presence: teach, design, facilitation, and provide course objectives, clear expectations, instructions, and meaningful feedback. Prevent students from getting lost or becoming inactive.
2. Cognitive presence: construct and confirm meaning, exploration of the subject, integration, and apply the new knowledge.
3. Social presence: identify with the community and develop relationships. Indicators of social presence may include humor, self-disclosure, and the use of informal language. Instructor facilitation may be required to initiate.

Mattes, Nanney, and Coussons-Read (2003) found that students who choose online classes over traditional classes tend to be more comfortable with computers and less socially bold. Many of these students are independent learners, with a high motivation to learn, and are self-disciplined. However,

many other students require more social interaction with their instructor and fellow students. They often lack the ability to regulate their own learning through self-discipline. Instructors play a pivotal role in motivating these types of students. Building rapport and a social presence must be intentionally planned and integrated into the learning (Murphy and Rodriguez-Manzanares, 2009).

The success of a class was dependent on both instructors' teaching style and students' learning style (Lee, 2010). The challenge is for virtual teachers to find new ways of interacting and building rapport (Hawkins, Graham, Barbour, 2012).

We are social creatures by nature and we enjoy events that cater to our need to connect with others. A greater sense of satisfaction through personalization leads to more focused attention and greater mental processing during the learning event. Greater mental processing, leads to increased learning. In short, when the audience feels that you are speaking directly to them, they pay more attention (Sheet, 2014).

General Physics Corporation's research found that more respondents use engagement tools during VILT sessions than after. Specifically, the majority use live conversations, chat, poll, and quizzes during VILT. After VILT, the preferred tools include quizzes, live conversation, blogs, forums, chat and polls (GP, 2010). Here are some options for providing interactions that hold the participants interest while they learn (Sheet, 2014).

- Activities
- Polls
- Videos
- Discussions
- Quizzes
- Trivia
- Games
- Scavenger hunts
- Stories

While practice makes perfect, the type of practice required for proficiency includes focus, feedback, and reflection (Sheet, 2014).

### **Teacher-to-Student Interaction**

It is not that easy for an instructor to make the transition from the classroom to VILT. Longobardi (2003) suggests that some exceptional instructors comfortable with teaching in a classroom setting may not be as dynamic in a virtual classroom.

Instructors lose the connection with their students that they had in the classroom. They lose visual cues such as body gestures. Not only do VILT instructors experience a disconnect from their students, but also from their profession, traditional notions of what it meant to be a teacher, and their fellow instructors (Hawkins, Graham, Barbour, 2012).

They also have a challenge when entering the VILT to engage the student. Instructors can greatly benefit by being a student in a VILT class before they teach a VILT class. They gain firsthand knowledge of the learners' needs (Sieber, 2005).

It is easier for the student to disengage from the course if they do not feel connected to their teacher. A relationship that includes deadlines, encouragement, and continual teacher communication may be enough to keep students motivated (Hawkins, Graham, Barbour, 2012).

Instructors can increase motivation in VILT by using either intrinsic motivation and/or extrinsic motivation (Artyushina & Sheypak, 2012). Extrinsic suggestions will work only while the student is under the control of the teacher (Artyushina & Sheypak, 2012). Extrinsically motivated students perform to either obtain a reward or avoid punishment external (Artyushina & Sheypak, 2012). Motivation is necessary for learning, requiring planning a strategy for a continuous and interactive motivational dynamic (Artyushina & Sheypak, 2012).

The greatest influence that can increase attendance is commitment from the employee's manager to complete the training. Management support and reinforcement is a critical factor to establishing learner engagement and accountability (West, Donovan, Benedicks, Carmody, 2010).

Instructors need to make a connection with each student. One method is storytelling. A best practice is to weave stories throughout learning events as examples to support the content. The stories should be brief and relevant (Sheet, 2014).

Another method of connection is by email. Students may see email exchanges with their instructor as a way to personalize the course and confirm the presence of the instructor (Savery, 2010).

Virtual students deserve the same attention as present students. One instructor puts a sign on the door, "Please Do Not Disturb: I am having a Skype visit with a student. I'll be available at 2:30" (Messner, 2010).

Using more than one facilitator for a VILT session allows one facilitator to stay focused on the topic, while the other can address technical issues and support interactive activities (West, Donovan, Benedicks, Carmody, 2010).

### **Student-to-Student Interaction**

In a VILT environment, students may be spread out across the world, yet they still need to learn from one another. "Since 80 percent of learning is informal, learners crave the opportunity to network with like-minded professionals" (Rizkalla via Weinstein, 2012).

In the collaborative learning environment, there can be enhanced student-to-student interaction which may enhance educational motivation through peer relationships (Adewale, Ibam, Alese, 2012). More is learned by speaking than listening, as speaking helps people better remember and process information (Sheet, 2014).

### **Content-to-Student Interaction**

Even with good instructional design, the human capacity to process information is limited. The brain will kick out "excess" content that may be important if you provide too much information in a short period. Instructors should provide activities and allow a short break for any session longer than an hour (Sheet, 2014). Students become bored and distracted when the classes continues for long periods. In a study carried out by Koppelman and Vraklen (2008), students stated that the classes lasting for short periods and with frequent intervals were more effective and as a result, they had no problem keeping their attention (Karal, Cebi, Turgut, 2011).

There are four keys to creating effective learning content: (Weinstein, 2012)

1. Proper Planning and Design: design your content in a way that will be effective for all types of learners such as shorter modules, interactive elements, and fantastic visuals.
2. Seamless Accessibility: materials should have descriptive titles, be intuitive, and easy to find.
3. Effective Measurement and Evaluation: reevaluate tests and quizzes if some questions are answered incorrectly often.
4. Access to Additional Help Resources: students may need more help and may need to contact someone with questions and comments.

Measurement of Effectiveness of VILTs: (GP, 2010)

1. Learner, Customer and Instructor Feedback and Satisfaction Rates
2. Learning Outcomes
3. Event Popularity/Participation Rates
4. Transfer of Learning to Work & Business Results

### **Problems**

The misperception is that an existing ILT can simply be executed online using VILT technology and still produce the same result (West, Donovan, Benedicks, Carmody, 2010).

Many instructors and students who use VILT do not think their companies are “very effective” at it. The top reasons are (GP, 2010):

1. Difficulty engaging learners and getting them to participate.
2. Instructors were not fully utilizing VILT tool functionalities.
3. Technology issues hampered their effectiveness.

Other research also confirmed that a lack of full engagement and technology issues were the main limitations to successful VILT implementation (West, Donovan, Benedicks, Carmody, 2010).

### **Class Sizes**

Studies indicate that the most effective online class size ranges from 12 to 21 based on the difficulty of the subject matter. With 15 to 22 students in a beginner level course compared with 15 students in an advanced level course (Arzt,2011). One study found that for one face-to-face class, an enrollment of 17 was the ideal size, however an online version of that course required more faculty time, and thus warranted a smaller class size (Tomei, 2006).

In basic level courses, as class size increased in population, satisfaction increased. For advanced classes, the reverse was the case: satisfaction decreased as class size increased (Burruss, 2009). Satisfaction was partly related to connectedness. Connectedness in their study included student interaction, teacher-to-student interaction, student-to-student interaction, and content-to-student interaction. Less connectedness was found in larger classes than smaller classes. Group size must be sufficient enough to promote interactions, but not so large that a sense of connectedness is lost (Burruss, 2009).

The individual classes should remain manageable (20 students or less) to allow for adequate interaction between the facilitator and students (West, Donovan, Benedicks, Carmody, 2010).

## **Technologies**

Companies are using a variety of delivery technologies. The most commonly reported are WebEx (52%), Live Meeting (41%) and GoToWebinar/GoToTraining (27%) (West, Donovan, Benedicks, Carmody, 2010).

The most common engagement tools used during VILT delivery include live conversation (82%), chat (64%), polls (54%) and quizzes (54%) (West, Donovan, Benedicks, Carmody, 2010).

# Appendix A

The following is a sample email that is sent when a student registers for a VILT course.

Teradata Education is pleased to confirm your enrollment in course: **#12345 – Sample Course**. This virtual class will be delivered live over the internet with an instructor.

Please read this email in its entirety as it contains important information regarding session details and **pre-class setup requirements**.

## Add to Your Outlook Calendar

To add this class to your Outlook calendar, click the Calendar Icon below (then click "open," click "save and close").



## Schedule

02/13/2017 9:30AM – 5:30PM EST  
02/14/2017 9:30AM – 5:30PM EST  
02/15/2017 9:30AM – 5:30PM EST

## Important Pre-Class Setup Instructions

For this class, you will be connecting through a virtual environment to access a live Teradata system for your hands-on workshops. It is **NECESSARY TO TEST CONNECTIVITY** to Teradata's lab environment **PRIOR TO THE START OF CLASS**. Please perform this test using the PC and from the location you plan to attend training (i.e., work office, home office, or classroom).

Click [here](#) for instructions on how to perform the test.

## What happens when you don't run the connectivity test prior to class?

If you fail to run the connectivity test prior to the start of class and encounter problems, you will need to exit the class and contact the [ReadyTech Support Desk](#) for assistance or phone 800-555-1234 and identify yourself as a Teradata customer. In consideration of the other students, the instructor will be unable to address individual connectivity issues.

## Connecting to the Virtual Classroom

### WebEx Information - There are two ways to join the WebEx meeting.

1. To join the WebEx meeting utilizing the "Call Me"(preferred) or VoIP options, click the link below:

- [Join WebEx meeting](#)
- If requested, enter your name and email address, then click "Join"
- Click on More options under the Call Me tile
- Choose Call Me Option
- Enter Your Phone Number
- Click OK

OR

2. To join WebEx meeting by Dialing in, click the link below:

- [Join WebEx meeting](#)

- If requested, enter your name and email address, then click “Join”
- Click on the Phone Icon
- NOTE the **ATTENDEE ID** and enter the ID when you Dial-in

### **Audio Information**

**Audio Dial-in (US): 800-555-1234** OR

Toll Free Audio Dial-in (US/CANADA): 800-555-1234

International Dial-in Number: [Click here](#)

Enter Meeting Number: **12345** and your **ATTENDEE ID**

Phone lines will be open 15 minutes prior to the class start time.

### **Take a look around...**

As part of your enrollment, you have access to the Teradata Education Network (TEN). TEN contains up-to-date public class schedules, course catalogs and information on education planning and self-paced training subscriptions.

To log in, simply:

1. Enter the following URL: [www.Teradata.com/TEN](http://www.Teradata.com/TEN)
2. On the right side of the page, click the **Log in** link.



3. Enter your user ID, which is **<12345>**, in the **User ID** field. (Your user ID is all lower case and is case sensitive.)
4. In the **Password** field, enter your password. If you have never logged in to the Teradata Education Network, your default password is **<12345>**. (This password is upper case and is case sensitive.) If you have logged in before, your password has not changed.
5. Click the **Log in** button.

### **Course Materials**

You will be provided with course materials at least three business days prior to the class start date. If you have not received materials by this time, please email the [Education Support Center](#) or call 800-555-1234.

### **Cancellation Policy**

Click [here](#) to review Teradata’s refund, cancellation, and no-show policy.

### **Questions**

If you have any questions, please email the [Education Support Center](#) or call 800-555-1234. We look forward to your attendance in class. We appreciate your business!

# Appendix B

## Teradata SMEs: How to Record a Presentation

The purpose of this document is to provide a simple reference for subject matter experts (SMEs) who plan to make video presentations. It is not intended to be exhaustive but to provide SMEs with the information necessary to get started quickly.

Educational research has proven that by engaging more of the senses, the potential for students to retain information increases. That is one reason narrated presentations with relevant graphics are popular with students. It may require more work to develop, but for important material it is worth the effort.

### Equipment

The only special equipment required to create a quality video presentation is a good quality headset microphone which can be plugged into a phone or computer. There is no Teradata standard for microphones however a good one can be purchased for \$30. The product should have the mute and volume controls on the cord, not the headset. Examples of well rated headsets are the **Cyber Acoustics AC-840 Mono USB Headset with Boom Microphone** and **Logitech 9000**. Teradata employees are required to use the Office Depot account for this type of purchase (<https://business.officedepot.com/home.do>).

When preparing to record, the SME should position the microphone between the nose and mouth. This will reduce popping noise caused by saying words with the letter “P”. Here are some other tips for improving audio quality:

<http://www.articulate.com/rapid-elearning/4-simple-tips-for-recording-high-quality-audio/>

### Software

For basic presentations, SMEs probably have all of the necessary software. Before choosing how to record a presentation the SME must define what will be included. Will it just include a PowerPoint **presentation** or will it also include a **simulation**?

#### 1. Recording a PowerPoint ONLY Presentation

The simplest way to record a PowerPoint presentation is to use **PowerPoint**. It already has recording capabilities (under the **Slide Show** tab is a button labeled **Record Slide Show**), so all that is needed is a microphone.

There is a YouTube video which provides a good demonstration on “**How to Record Narration for a PowerPoint Presentation.**” It can be accessed from:

<http://youtu.be/QZp3jumnWUg>

SMEs following this example need to use the **Radio Quality** setting.

Since PowerPoint is a Microsoft product, Microsoft has provided information about how to “**Record and add narration and timings to a slide show.**” Use this reference for additional help, such as how to turn a mouse into a laser pointer. That information is accessible at:

<http://office.microsoft.com/en-us/powerpoint-help/record-and-add-narration-and-timings-to-a-slide-show-HA010338313.aspx>

When finishing the recording process, the SME should zip the PowerPoint file and additional audio files together and pass on to the course developer.

## **2. Recording Simulations with/without PowerPoint**

Teradata Learning recommends using **Camtasia** to record simulations. It is good for SMEs who plan to create many recordings, but it may be more than what SMEs really need. Besides cost, there is the extra expense of learning the product.

Since many people are familiar with **WebEx**, it may be the best option.

With WebEx, SMEs can be in a meeting all alone and still record. They need be sure to share their desktop as they would in a real meeting. Access to a second computer and logging in as a guest can help the SME see what is being recorded. This may be helpful or it may become a distraction. SMEs should do some experimenting to see what works best for them.

A good video walkthrough for recording with WebEx is:

[http://youtu.be/xkJ\\_aiva7k](http://youtu.be/xkJ_aiva7k)

SMEs should set their **Recorder Settings** to **Record on this Computer**.

The WebEx support page for recording meetings is located at:

<https://support.webex.com/support/documentation/help/index.htm#9442.htm>

When finishing the recording process, the SME needs to zip the WRF file and pass it to the course developer.

# Appendix C

## Best Practices for Teaching at a Customer Site

### Prior to Class

#### 1. Send the customer a template e-mail

Hello Ann,

I will be teaching the Teradata class at XYZ on August 23 - 27. I was given your name as my point-of-contact (please let me know if I should contact someone else instead). I just wanted to send this e-mail to introduce myself and ask a few questions:

1. The paperwork for the class (Logistics Worksheet) states the class will begin at 8:30 AM on Monday, August 23. Can I meet someone at 7:30 AM on this first day only to allow me to do some classroom setup?
2. If the answer to question #1 is yes, who should I meet and where?
3. What is the address where the class will be conducted?
4. Will I need anything more than a valid driver's license at the Security Desk?
5. Can the class materials mailed to XYZ (manual, highlighters, etc.) be in the classroom at 7:30 AM on the first morning?
6. Is there a white board and/or easel in the classroom?
7. Can I use a thumb drive to display my PowerPoint slides on the classroom PC?
8. My cell number is (555) 555-1234. Can I have your cell number (or whoever will meet me) in case I need it the first morning of the class?

Thank-you, Ann!

Dee Instructor

A friendly email is creating a good first impression. This begins the communication with the instructor and the client, and it also provides a point-of-contact for the instructor for starting the class. The instructor may already have the address for where to ship the manuals and supplies, but often the shipping address and the address for the class may be many miles apart. It is good to show up at the right place!

#### 2. Check for latest version of PPT slides and student manual

You don't have to download the material each time you teach, but it is wise to check the version number or the date of the newest files to verify that you have the latest and greatest.

#### 3. Day before class (after arrival), make dry run to customer site.....ALWAYS! Make a map.

It is a lot easier to find the location for the class when you have plenty of time to explore. Many internet mapping resources can be off at locating an address. In the evening, you don't have to deal with rush hour traffic, so it is not as stressful. Know where you are going the next day and you will sleep better that night. Make the drive from the hotel and note how long it takes. It will be longer during rush hour traffic.

## First Day of Class

### 1. **Before leaving the hotel, be prepared**

Be sure to start with a good breakfast and caffeine. You never know what to expect in class. Check DevEx, Infohub, and emails for newly added articles or postings related to the class. Make a final review of your presentation before class.

### 2. **Meet contact one hour before start of class**

This is good for building a relationship and getting someone to help. Security can often slow you down in getting started. This contact person can show you the classroom and contact IT if you need networking support. It is also good to know where the restrooms, break room and cafeteria are located.

This is a good time to arrange the chairs and tables in the room to accommodate your teaching style.

### 3. **Set-up projector**

It is not uncommon for the multimedia personnel to put a projector in the room without testing it for functionality. Make sure it works soon enough to get a replacement if needed. This set-up may include experimenting with the classroom lights and closing the blinds.

### 4. **Arrange tables and chairs (if necessary)**

Your teaching style will dictate how best to arrange the room. You may prefer more of a lecture style with the tables in rows. Or you may like more discussion and the ability to walk up to any student, in which a U-shaped arrangement of tables may be better.

### 5. **Clean / organize classroom (you would be surprised)**

At some locations, the classroom may double as a storage room. If this is your situation, try to reduce the interference of that stuff by moving it to a corner of the room. Also, make sure the air conditioner works well. You will soon have more bodies and computers that will be warming the room.

### 6. **Distribute manuals and “flyer folders” on the students tables**

Pull out two flyers for discussion; TEN and Certification. A course catalog provides early students something to look at and is also a selling feature to get them to think about future classes.

## Start of Class

### 1. **Focus your attitude**

Each class is individual and unique and moves and re-acts differently based on the class, the client, and the individuals attending – it’s always new and must be appreciated and understood as such. You must adapt to each class, be proactive before arriving, and ready when in front of the class to roll with whoever and whatever the day will bring, good or bad.

### 2. **Introduce yourself and have students introduce themselves**

Just because you are at a customer site does not mean everyone is already acquainted. This can be the start of networking among your students. This introduction gives you credibility as an expert and also helps you to know what roles the students have and what they are expecting from your class.

This icebreaker makes the class more engaging, and helps students feel more comfortable when interacting later.

This is also a good time to discuss breaks and the material to be covered.

**3. Provide business card to each student**

This creates the impression that learning and support continues beyond the classroom. It gives the student comfort to know they can contact you if they have question when “on the job.”

**4. Discuss their database configuration before getting into the course material**

Ask them what they are doing with Teradata. If they are migrating from Oracle/DB2/SQLServer, tell them those products are good... but each have their own LIMITATIONS when it comes to using them in a data warehouse environment - and once the course is over, they will believe it.

You can get the students tuned in and involved by getting their database names – they like this. Ask them to show some of their work, along with some of the Table Definitions, DDLs and the most complex SQL they have!

A good place to start class is by addressing some challenges they may already be dealing with. You can either address it then or tell them when it will be addressed in the class. This can start the “parking lot.”

### **During Week of Class**

**1. Use “parking lot” to track questions and resolutions**

Sometimes instead of answering all of the questions as they arise, it may be good to write them on the board. When you get to that point in class when the question is addressed, you can mark it off.

Don't be afraid to say you don't know the answer. Tell the students you will contact someone that evening to get an answer. That makes the students feel important that you would go to that much effort just for them. You might even tell the student you will contact someone even when you know the answer, just to create that feeling of importance in the student.

**2. Go to lunch with class at least once a week**

At lunch, some of the quieter students may ask questions they have been holding in reserve. A more relaxed environment will help the students to connect better with the instructor which carries over into the classroom.

**3. Leave classroom in better shape than first day**

This gives our company a good name as people who are professions and who care.

**4. End-of-class: Say good-bye to contact and thank them for their support and help**

This gives your contact a chance to ask how class went and maybe discuss additional classes that may benefit some of the students.

## Challenges

1. **Staying current with changes in the ILT Depot**

Not only is it good to have the latest course material, it is good to keep improving it. Have a notepad available as you teach. If you see a mistake, write it down then. You will forget it ten minutes later. This will benefit you and other instructors later.

2. **Knowing what changes have been made in manuals (Change List)**

If you download a version of the course material, look through the change list prior to class so you won't be surprised later. It is possible the change is incorrect and you may need to contact someone to confirm or disprove the change.

3. **ReadyTech has worked very well but struggle often with customer PC configuration settings (sometimes change every day)**

Make sure firewall issues at the customer site do not block connectivity to ReadyTech.

4. **Printed manuals vs. eDocs**

The students with printed documents want them in an electronic format for ease of use. However, if you give students a protected electronic document, they cannot add comments or highlighting to it. They also have difficulty juggling screens during the class labs.

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