

"It is an amazing platform and to meet and learn together with people from all over the world – without travelling – is thrilling."

This participant quote perfectly describes the result of our discovery journey into the world of virtual learning. However, it took quite some effort to reach this conclusion. We would like to share our journey with you.

Siemens Global Learning Campus has always had the task of making employees fit – and that includes fit for a digital world. Different e-learning and blended learning concepts for business learning have been available at Siemens since about 2000. Online communication and conference systems are part of daily life for Siemens employees and facilitate cooperation and learning in virtual teams.

New virtual learning environments open new dimensions of learning. We wanted to embrace this innovative approach and help pave a new path for Learning Campus. We encountered both euphoria, which is mostly driven by the producers of such environments, and certain skepticism

from some product owners and trainers.

Against this background, we implemented the existing "Leading Without Authority" (LwA) face-to-face training in a virtual environment. Our key question was: is it possible to completely implement a behavior-oriented training in a virtual 3D training center? Even we had doubts that it would be possible to reflect on, train and change beliefs, attitudes, behavior patterns and communication styles in a virtual environment.

Implementing Leading Without Authority in a 3D virtual Training Center

The seminar "Leading Without Authority" is a well established and a highly valued face-to-face training. Previous participants have always appreciated the format where they bring their own cases, experience a high level of trust and openness in the group and gain valuable insights throughout the seminar. Our goal was to achieve the same high level of satisfaction and learning success within the virtual environment.

By contrast to the 2.5 day face-to-face training, we divided the virtual

seminar into five modules of 4.5 hours each. Content and training methods remained identical. In a kick-off meeting a week prior to the first module, participants were introduced to the technology and learned how to navigate their avatar. Many participants commented: "The kickoff was really necessary, to familiarize with the technology."

An essential advantage of the virtual training is that the participants can take part directly at their workplace or at a location of their choice. This allows employees worldwide to participate in the training, especially those who would otherwise not have had the possibility to join due to travel costs and travel time. The only technical equipment required is a headset, the installed software and a stable internet connection.

We offered several demo sessions where we had our first experiences with our newly developed seminar design and the spatial and functional possibilities within the virtual training center.

LwA-virtual: 5 Modules á 4,5h- overall seminar time 24h (net) incl. 2h kickoff



Kickoff	1. Module	2. Module	3. Module	4. Module	5. Module
2 hours Online-kickoff: Who is who Content Structure LFW AULA Pre-work: Individual case	4,5 hours Input: Presentation cases Learning goals Valuable FB Authority continuum Group work	4,5 hours Input: Leadership personality – TA Application on cases Emotional intelligence Case work	4,5 hours Input: TA-Drivers Exercise: Self- Motivation Reflecting own leadership Input: Motivating others	4,5 hours Input: Exerting influence Exercise: Exerting Influence The struct	4,5 hours Influence: Principles & communication Case work Feedback Transfer

We playfully explored the virtual learning environment and its functional possibilities. We learned what the avatars can do and even how navigating our avatar affects other virtual participants.

The two free pilot seminars were attended by 300 volunteers from 15 countries. We tested to what extent simultaneous, interactive participant work is possible (e.g. group work, role plays, positioning exercises). It was crucial for us to see if the participants really felt present and emotionally addressed.

My avatar and me – learning and how it feels

In our first paid training we welcomed participants from Mexico, Holland, Sweden, Spain, England and Germany in our 3D training center. At the beginning, the participants could select the appearance and clothing of their avatar. With their avatar, they could move freely through the various training rooms and the outdoor spaces. They used their avatar to interact with the trainer and other participants. Thus, the avatar represents a virtual person with whom the participant can identify: "I feel present as a person". However, the facial expressions and gestures can still be described as rudimentary, and we hope for fast and adequate improvements in this area.

Yet to our surprise, we noticed a high degree of immersion from the beginning. By this we mean a state of being completely involved emotionally and in terms of content, and fully present in the virtual learning world. A participant put it this way: "After a while I really felt being with the others in one room – like in an

onsite training." Due to the extensive immersion, we were able to conduct the entire seminar with all content and exercises.

Unlike online communication systems such as Circuit or LiveMeeting, in which some participants check emails or simply disconnect internally, the participants in the avatar-based learning world are much more present and deal with each other more mindfully. "It is much better than circuit – it keeps you more focused."

What we consider appropriate or inappropriate in the real world also applies to the virtual world. For example, this is true for proximity and distance. If an avatar is too close to another avatar, one can feel irritated. If you accidentally push another avatar because you haven 't quite learned how to navigate properly, you apologize. If you lose the group while changing rooms, you feel disoriented and alone. If you sit in a circle with others you have the feeling of belonging.

Requirements for successful learning in a 3D virtual training center

Changing personal beliefs and behavior is only possible when we see a need for change and understand and accept it cognitively and emotionally.

In order to sustainably anchor new behavior in us, strong positive emotional activation in required. Only when this occurs can our brain "rewrite" our behavior and gradually make new behavior routine.

That's why that high degree of immersion is so important to learning success, and the role emotion plays in the virtual world is just as important as

in classical face-to-face training. The state described as "I really feel the others – I'm with them" is critical.

In our two pilot seminars we identified the following success factors to support the participants' emotional involvement.

Functioning technology and competent handling of it

Of course, connection problems or program crashes quickly interrupt the feeling of being connected. If this happens while a participant is presenting their request or an exciting situation is taking place in a role play, the trainer and the group perceive this as extremely disruptive.



Only confidence in navigating within the 3D training center and in controlling your own avatar and the tools (flipcharts, whiteboards, chat functions, presentation areas, etc.) allow the learner to feel comfortable and free to engage in dialogue with others. A tour of the training rooms and a detailed introduction to the technology and the most important functionalities are absolutely necessary.

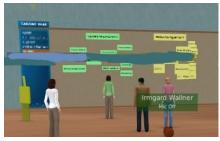
Special didactic features and required skills of the trainer

Building trust plays a crucial role in behavioral training. Therefore, trainers have to be able to focus participants' attention and gain their trust - for example by directly addressing individual participants, giving personal examples and targeted questions. Presentations must be brief and interactive, exercises clearly explained and discussions moderated more actively than in face-to-face training.

Especially with intercultural groups, trainers should be able to quickly connect with participants from different countries and build trust.

If technical problems arise despite thorough preparation, it is important that the trainer elegantly deals with them. If the problem cannot be solved, the trainer needs to have alternative solutions, creativity and inner calm (which spreads to the participants). A high level of flexibility is required by trainers and participants alike and can be consciously learned and practiced.

When giving input, the trainer receives no immediate reactions through the facial expressions and gestures of the participants (avatars) as in a face-to-face seminar. Although it is technically possible to change the avatar's facial expression, this is not well-defined and is barely visible to the trainer speaking to a group. Therefore, it is even more important to actively involve the group regularly and at short intervals. Instead of long monologues, short, interactive impulses with targeted questions are necessary.



To ensure the high and varied demands on the trainers were fulfilled, we decided to have the virtual seminar run by two trainers (one trainer in the face-to-face seminar). This enables the trainers to deliver the content and control the group dynamics, as well as the emotional and technical aspects of the seminar.

Requirements for a virtual learning environment

Even in a 3D environment we bring along our subjective feelings regarding aesthetics and well-being. The 3D training center, which also includes a beautiful outdoor area, should be designed so that the participants enjoy

being there. It is advisable to use different rooms and locations for the different exercises, to design them attractively and make them only accessible by the group.

The rooms, their equipment and functionalities must be just as flexible and configurable as in face-to-face training. If the trainers require additional flipcharts or walls, they must be able to be quickly integrated into the room.

The operation of the tools and orientation in the rooms within the 3D environment must be simple and intuitive. The avatar must be customizable in order for the participant to identify with it as much as possible. Likewise, it is important to have good sound that reflects our sense of reality. For example, the closer I get to someone, the better I can hear him. In order for participants to work in small groups in parallel, different clearly defined audio zones are needed.

The participants confirmed this: "The different audio zones and tools to present something are great."

We view a stronger integration of facial expressions and gestures, as well as kinesthetic avatar control, as promising for the further development of virtual learning worlds

The assessment of the participants

"It's like a virtual reality game – great."

Participants told us that at first it was a bit tricky to dive into the content while getting used to operating and navigating within the environment. Of course, more technically minded participants adjusted quickly. The experience of moving inside a 3D training center exceeded the expectations of many participants.

"The avatar allows you to actually build a relationship with other participants and coaches."

Using an avatar allows participants to build personal relationships with other participants and with the trainer, similar to a face-to-face seminar. Despite the absence of facial expressions and gestures, the format is, from the participants' point of view, suitable for behavior-oriented training.

To our surprise, some participants even said that participating as an avatar made it easier for them to talk about sensitive issues: "It is easier to discuss things, because you don't see the others."



"I shouldn't have put on high heels today, so I would be quicker in moving around."

We often experienced a high degree of identification with our own avatar and thus a high level of immersion. This resulted in situational humor. The avatar presents one with the opportunity to try things out that would not be possible in reality, e.g. to change skin color or age...

"It is thrilling to be and learn with a global group."

Many participants were thrilled to learn in an international group and meet colleagues from all over the world. The global spirit, the diversity of experiences and the valuable cultural exchange were appreciated by the participants. This promotes an international corporate culture and contributes to stronger global networking.

"A very good solution for cost and travel restrictions."

With reduced training and travel budgets, learning in virtual environments is an ideal alternative to face-to-face training. It enables people to be reached who are geographically dispersed, and who would otherwise be over-burdened with the cost and effort of face-to-face training.

"It was great that we could directly apply our learnings and reflect on them in the next module."

The participants appreciated that they were able to integrate what they had learned into their daily work routine right after the training, and that they could share successes or clarify questions in the next module.

The conclusion from the project group's point of view

For us, it was initially unclear whether a behavioral-oriented seminar such as "Leading Without Authority" could be reproduced in a 3D training center.

Based on our very positive experiences in the two pilot seminars and the first training we clearly say yes!

There is no need to compromise on content, goals or methods. Everything that is offered in face-to-face training can also be replicated in the 3D training center.

Even though they have never met, trainers and participants – and participants among themselves - quickly build relationships using the avatars. This creates a high degree of openness and thus the necessary atmosphere of trust for sustainable learning.

The technical support options in the virtual space enable spontaneous adaptations and extensions of the learning concept (for example drag & drop, document exchange, document processing).

Small learning units can be integrated into the participants' everyday lives. Participants do not have to be away for an extended time to attend a seminar. Daily business and training can be done on the same day.

Content comes to the learners and not vice versa. Technology can bridge borders and allows lively exchange with colleagues from all over the world.

This not only boosts competence in terms of seminar content, but also increases the intercultural exchange of all participants.

It also reduces travel costs and CO2 emissions.

The most convincing argument, however, is: "The format is much fun!"

And we hope that in the future more participants will echo one participant's comment: "To say "goodbye" was not so easy".

Further uses for the avatar-based learning environment

Based on previous positive experiences, we see a number of other possible uses:

- Various behavioral trainings
- Content-related technical trainings
- Team meetings and team development activities - especially when there is a significant geographical distance
- Retrospectives for Scrum / agile project teams
- Workshops, e.g. for co-creation of content or a process
- Townhall meetings, information events, presentations
- Almost everything that requires the "personal" and simultaneous presence of different people

"It's cool and it's the future"

With this quote, we come to the end of our discovery journey into the world of virtual learning. We are convinced of the feasibility and acceptance of this innovative approach.

At the same time we are looking forward to new technical possibilities to further develop the virtual variant of the training "Leading Without Authority". By offering both face-to-face and virtual seminars, employees can choose according to their learning style. In this way, Global Learning Campus is expanding its learning portfolio, reaching more employees worldwide and actively promoting digital learning at Siemens.

