

**International Expert Conference
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Certified IT Qualifications and Blended Learning
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Session 5: Blended Learning in process-oriented VET

Presentation: Blended Learning at the Siemens Technik Akademie Berlin, Training Concept

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ABSTRACT:

Traditionally technical education has been designed with two major weaknesses from our point of view:

- 1) The program of study is designed from the bottom up: students learn about a variety of different related topics in discrete courses, often concentrated on details, and (with luck) eventually at the end of their study they will have a capstone course in which all of the pieces are pulled together into the big picture.
- 2) “Soft” or “employability” skills are either left out or again offered in discrete courses which students often perceive as “unimportant” to their technical major, often because they are offered through other departments.

Siemens Technik Akademie in Berlin has developed a systems-focused Certification Program in Mechatronic Systems which turns traditional design on its head. We begin with the “big picture” by focusing on an actual complete mechatronic system, which has been fully simulated using Siemens’ SIMIT. Students center their technical learning around this system, utilizing on-line tools and e-learning modules, starting at the macro level of the system and moving downward to the detail level on an as-needed basis. This provides a context for learning which, in our experience, has shown that students learn more quickly and efficiently and with higher information retention. They understand why they are learning what they’re learning, and are able to transfer this information to other contexts via other simulations and via hands-on learning at their educational institution.

At the same time, the necessary soft skills including critical thinking, teamwork, presentation skills, project and process management, “learning to learn”, etc. are integrated as a natural part of their technical education. Our experience again has shown that the non-technical portions of their study necessary for success in the workplace are better accepted and internalized when integrated into the technical content.