Learning Centers, a Tidal Wave in shaping the Workforce of the Future

Euro - CASE
OSLO, October 21, 2019

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Workforce of the Future
Senior Director – Learning Centers & Programs
Our Purpose

“Dassault Systèmes provides business & people with 3DEXPERIENCE universes to imagine sustainable innovations capable of harmonizing product, nature and life.”
A 40 Years Journey in Industry Transformation

- 1981 3D Design
- 1989 3D DMU Digital Mock-up
- 1999 3D PLM Product Lifecycle Management
- 2012 3DEXPERIENCE® platform Business Experience
Video can be seen at:

https://www.youtube.com/watch?v=NqubbRN2PjM
New Skills, New Roles, New Education
“...there’s never been a worse time to be a worker with only ‘ordinary’ skills and abilities to offer, because computers, robots and other digital technologies are acquiring these skills and abilities at an extraordinary rate.”

Erik Brynjolfsson and Andrew McAfee, MIT Initiative on the Digital Economy (from their book The Second Machine Age).
Roles are shifting

<table>
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<tr>
<th>Entrepreneurship</th>
<th>Innovation</th>
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<td>Engineer’s activities</td>
<td>Engineer’s role</td>
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<td>Technician’s activities</td>
<td>Technician’s role</td>
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<tr>
<td>Operators activities</td>
<td>Operators role</td>
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Learning Centers
New practices are cyber-physical

Industry-inspired Learning Partners for **Industry Renaissance**
Knowledge and Know How *in Industry, Academia and Society.*
Learning Centers | Investment challenge

K€

50

500

1000
Academia & Industry connected by the 3DEXPERIENCE Platform

Multi-disciplinary
Cloud-based
Social Collaboration
3DEXPERIENCE Learning Center

Universities

Colleges

Vocational Schools

Industry

Center
Equipment Expertise
3DEXPERIENCE Learning Center | Access to learning

- Universities
  - Lab Access
    - Virtual / Physical
  - Funding

- Colleges
  - Lab Access
    - Virtual / Physical
  - Funding

- Vocational Schools
  - Lab Access
    - Virtual / Physical
  - Funding

- Industry
  - Labs Specification,
    - Funding, equipment
  - Funding

Center
- Equipment
- Expertise
3DEXPERIENCE Learning Center | Access to learning

- Additive manufacturing
- Virtual Twin
- Learning Factory
- Composites
- Cobotics
3DEXPERIENCE Learning Center | Authentic projects

Universities

Projects

Problem Revenue

Colleges

Center

Equipment Expertise

Vocational Schools

Industry

Problem Revenue

Proof of Concept
3DEXPERIENCE Learning Center | Formative collaboration

Universities
- Problem
- Revenue

Colleges
- Projects

Vocational Schools
- Projects

Industry
- Proof of Concept
- Problem
- Revenue

Center
- Equipment
- Expertise
3DEXPERIENCE Learning Center | Authentic projects

GLOBAL FACTORY 2012 - 2014
SMART FARM 2014 - 2016
FACTORY FUTURES 2016 - 2017

500 students, 18 Universities, 16 countries, 13 hours time difference; Yearly: September-January

EURLAB 2012 - 2018

Distributed design of mechatronics systems, high school students meets one a year to build and operate
3DEXPERIENCE Learning Center | Rapid knowledge transfer
Simultaneous content development for Initial & Continuing Education

► Course content optimized for development cost AND consistency
► For Students AND professionnals
► For Engineers AND Operators
National & Regional programs

Nationwide ecosystems connected by 3DEXPERIENCE
Learning Centers | Skill gap challenge

- Decision making machines - Environment
- Exponential Complexity
- Digitization of Everything
- Imperative Globalization
- Career Path Fragmentation
- Engineering Ethics
- Interdisciplinary Skills
- Digital Literacy & Security
- Intercultural Agility
- Lifelong Learning
Educators Challenge

What changes?
- Most new jobs yet unknown

What to teach?
- The skill of solving problems
- The skill of Learning

How?
- Project Centric Learning
Project-Centric Learning

Students learn better in Authentic context

- Soft Skill & disciplinary knowledge overlaid
- Start with ideation
- Finishes with making
- Contextual: Relevant to Industry, Society, Environment
- Social

Courses “Push” Project Project as Capstone

Project “Pulls” Courses Project as Foundation

cdio PBL
Transposing the context of practice
From Projects in Industry to PBL in Education
ILICE in the Eyes of Educational Experts

Science starts to be available....

Facilitating process competencies with digital workspace
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Abstract
Nowadays, industries demand more process competencies to work online in virtual teams. The study focuses on 3DEXPERIENCE™ platforms and digital workspace to support project work in a PBL course of Automation of Manufacturing Process. As online collaboration and project management are facilitated, the students acquire process competencies. In the platform, students perform all the project group activities, including communication, ideation, scheduling and documentation, while using real engineering tools to finish the project. The course of the undergraduate curriculum of Mechatronics Engineering has six teachers and 22 students from the last semesters. The curriculum is blended in lectures and projects. Each group of five or six students has to develop a project taken from an industry real manufacturing process. This study shows the first implementation experience and lessons learned. The data were collected from open-ended questions and by tracking the group process into the online platform. The effectiveness of this strategy was assessed by using text analysis, and achievements were compared with previous courses.

Development of innovative suspensions for a radio-controlled light racing car
Collaborative project into 3DEXperience platform
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Abstract
Students’ experience with Dassault Systemes’ ILICE platform for PBL
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Abstract
Students increasingly bring informal digital tools and practices into formal educational arenas. For collaboration and organisation of the problem-based project work at Aalborg University (AU), students equally use tools that they know from everyday life and previous education, e.g., Facebook and Google Docs. These might be easy to use, but not necessarily the best tools to support the learning process and experience. The university currently does not provide a feasible alternative solution for digital support for project work. The primary virtual learning environment of the university is a learning management system mainly used for delivering course descriptions and resources, leaving the students on their own with respect to collaboration tools. This gap is remarkable, especially given the fact that AU considers the Problem-Based Learning (PBL) pedagogical model as a core element of the educational philosophy at AU.