3. Teaching new skills and teaching skills in a new way (Part 1)

The morning session continued with specific presentations featuring good practice examples with regard to teaching new skills and teaching skills in a new way. The session consisted of three presentations followed by a detailed discussion and feedback of participants.

3.1. *Didactical Concepts for Future Training for Manufacturing*, Reinhard Pittschellis, Festo Didactic (Germany)

Mr. Reinhard Pittschellis presented the didactical concepts for the future training for manufacturing, based on Festo Didactic experience.

Digital transformation will never be as slow as it is today. There is a need for tools to make education efficient in embracing change, to bring practice into schools, to bring knowledge directly to the workplace. This may require the use of new media. The notion of a **Learning Factory** represents a promising approach in this respect. A "Learning Factory" is a realistic, but for didactical reasons simplified model of real working environments, which allows problem based, project based and action-oriented trainings.

At Festo Didactic, design of a lesson starts with a job profile. The latter then leads to a question of what type of competencies are needed for this job profile. The competencies, in turn, are based on related activities, procedural knowledge and declarative knowledge. **The key orientation is therefore on competencies that are relevant for the job**.

Learning Factories are located in the heart of the factory and implies:

- Learning on demand;
- Short training units (30 min);
- Managers as trainers;
- Train the trainer concept;
- Administration by apprentices;
- Covering: basics (Soldering, screwing etc.); product trainings; automation; organisation (5S, One-piece flow) etc.

At the Learning Factory, short lessons can be given, focusing on exactly what learners need, and they can apply it right away, opposed to going a seminar or an offsite course.

Adaptive multimedia learning paths are competency-oriented, curated learning paths that adapt to individual learning behaviour are based on reusable **learning nuggets** that use a variety of didactic media. Based on this, is it easier to develop specific lessons. The approach implies building lessons on many smaller parts instead on one big box. That ensures flexibility and personalisation. It also makes it easier for the student to see where the knowledge is useable. Theory is best delivered in smaller portions (nuggets), and students do work assignments, and have reflection afterwards.

Training usually implies a mix of many media. It can have different nuggets. It can include e-learning, seminar, simulation etc. In that respect, Virtual Reality (VR) will hardly become the next learning revolution, but it can help a lot. A mix might be different for each learner and each topic. With different nuggets, one can arrange