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CHALLENGES LEARNING IN THE AGE OF DIGITALISATION AND INDUSTRY 4.0

Abstract:

Almost 10 years ago, the term 'Industry 4.0' was introduced. It describes the integration of communication technology in industrial manufacturing using all factettes of technology like digital twins, predictive maintenance, autonomous logistics, multiple realities (VR/AR) and much more. The last years the term was replaced by Digitalisation almost as a hype. A lot of companies adopted their business and product development processes according to these opportunities and had to change very rapidly and flexible in all areas of their business. Companies got competition from totally unexpected industries. In addition, the still dynamic global approach of all corporate groups forced them especially in the DACH region to change and focus to remain profitably in the business. (cf. Schuh et al., 2017, p.7).

The key challenges are at SME's and family-owned enterprises. Very mature people who worked in production all their lives have to adapt all the changes. They are forced to combine their deep engineering knowledge with all the new possibilities and evaluate the benefits for their business. It is the first time in history that sometimes the young and assumed unexperienced people, trainees, apprentices and students might be able to teach their masters. Technology and Digitalisation is their field of expertise, nowadays. Born as "digital natives" they have no fears even without experience in most of their professions. They throughout ideas thinking they can conquer and change the world and solve all problems their way. But can they gain practical and engineering experience with chatting to their networks and watching videos? Possibly both parties are right to certain extent. Basic fundamental skills are needed as well as adaptation to the new culture, which is most possibly much faster, flexible and high performing (cf. Catalano, 2019, p.25f).

For all these young people grown in this digital age which is dynamic, flexible and innovative - learning will never end. Teachers will have to adapt and need to be trained to become more a facilitator for learning processes and skills which will last for life (cf. Catalano, 2019, p.28).

The questions are remaining; 'How to enable students for life-long learning in higher education?' 'Which tools are required?' 'Which skills are required from the area of technology, business and society?'

The paper will not be able to provide one clear answer but will provide a good start of research and give examples for a defined scope for the combination of Learning 4.0 in a rapidly changing environment. A Questionnaire and Case Studies have been executed as qualitative research methods and some trends has been analysed taking all the feedback and literature research.

Keywords:

Life-long Learning, Higher Education, Industry 4.0, Learning 4.0, Digital Change, Digitalization, Learning Methods, Project Based Learning, Self-paced Learning.

JEL Classification: D20, D83, A20