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Continuing education in Wind Energy through E-learning

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In 2013, DTU Wind Energy stepped into the era of virtual teaching and launched a 100% online version of an existing course in WAsP – the Wind Atlas Analysis and Application Program [1, 2]. The course received excellent feedback from the learners and lead to the development of other E-learning courses about wind energy tailored to the industry needs for continuing education.

The WAsP E-learning course builds upon a five-stage pedagogical model [3] where learners are trained to exchange information in discussion forums; thereby supporting each other's learning. The teacher's role is to moderate the group discussions along the way and to motivate learners to complete the course, which is rewarded by a diploma. Nearly 100% of the learners complete the WAsP E-learning courses.

One challenge, when working with busy individuals from the industry, is that only a fraction of the learners tend to be active in group discussions. An unsupervised version of the WAsP course is being considered in order to make the participation fully flexible (i.e. study anytime and anywhere). This is inspired by the current movement of Massive Open Online Courses (MOOCs), which are typically offered on-demand and with much lower completion rates (typically <5% of learners).

The strategy for E-learning at DTU Wind Energy is to expand the portfolio of E-learning courses with 1-2 new courses per year and to build up a one-year master program for continuing education. The master courses can be followed over several years and will lead to a specialization in wind energy. The master program is targeted at employees in the wind energy industry and other engineers who wish to specialize in wind energy. The working style will be flexible and easy to adapt into a busy working schedule.

In order to attract students to existing and future courses at DTU Wind Energy, the Department has developed a MOOC to be released on the open platform Coursera.org in early 2016. This flagship course gives an introduction to different research topics in wind energy from planning and siting to wind turbine design. Since most Coursera courses are followed by more than 10,000 learners at a time, the direct teacher-learner contact is limited. Instead, the teachers attempt to create an engaging learning environment through visual appearances in 10-minute video lectures and in the discussion forums.

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[2] Badger, M, Prag, S-MW & Jowitt, WR 2014, *WAsP E-learning - Developing and running an interactive online course*. DTU Wind Energy. DTU Wind Energy I, no. 0094.

[3] Salmon, G. (2011). E-moderating. The key to teaching and learning online. 3rd Ed. Routledge: London and New York.