

# Everyone wants them – we enable them: communicative engineers

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For many years a lasting anchorage of the whole range of the occupational profile of engineers is demanded in the apprenticeship. The restructuring of the Bologna reform opened various possibilities to a strategic integration. The course “communication und organizational development” became an inherent part of the engineer’s education at the RWTH Aachen University in Germany. Already in the beginning of their academic education up to 1,000 students get to know the role of communication and cooperation processes on different levels of recursion (individual, group, organization, and network) as well as instruments for their creation.

As a didactic base Brall et al. (2007) developed a model of work-integrated learning (Fig.1). The application of this model let the students go through a double action and reflection cycle: at the beginning they act in concrete situations (E) on different levels of recursion. The mental models (EM) are formed by the reflection (R) of the concrete experiences which can be used in similar situations. During the arrangement of learning and also in the concrete working and study behaviour of the students, the deliberate models release intended action (A) which is reflected again (R) with and by the students. Generalised models (GM) are formed in comparison to experience-based models, supported by theoretical foundations in the lecture course.

Outgoing from this work-based and problem-based teaching and learning approach, the students go through an organizational development-process in a two-day lab (in addition to a lecture course): they create a fictive enterprise in the automobile sector and build the prototype of an innovative car. In this simulation the students reflect their own action and thereby discover the relevance of organizational structures and communication processes which become also formable by the individual action. The experience-related learning is complemented with modules of lecture and materials for self-directed learning.

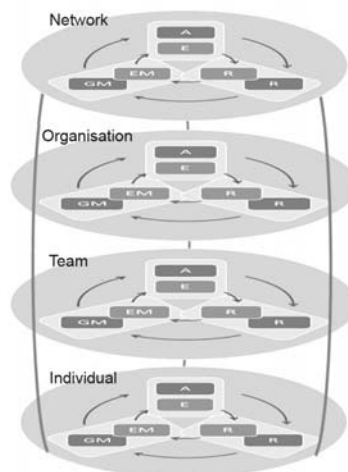


Fig.1: Double cycle of action and reflection on four levels of learning in the engineer’s education.

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