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Practice based knowledge: from craftsman to engineer

The focusing on theoretical knowledge in engineering faculties has caused a gap between academic training and professional practice, as latter of tern calls for practitioner judgment and experience. At the same time there is some confusion in engineers, especially when carrying out routine tasks, regarding their role (i.e. How it is different to that of a craftsman).

Polanyi stated that we often know more than we can tell, because such knowledge is embedded in practice. Hence, such Knowledge has to be passed on more through apprenticeship rather than textbooks. Heidegger insisted that purposeful action, where subject and were linked in a seamless interaction, was more "primordial" than the so called "fundamental" properties of objects that was sought by science. These properties

became important when thee was a “breakdown” in action that required deeper reflection. Such ides give value to the essentially practical activity of engineers, who are nevertheless schooled in the fundamental sciences in order to deal with breakdowns.

The craft based approach to engineering design is characterized by empirical processes that result in traditional products. In the technical rationality approach, the scientific view of the product is stressed and the process is one of optimisation. In the reflective practice approach, an engineering view of the product is ought, while the process is interactive. Although the reflective practice approach to engineering may be viewed as a return to practice from theory, it has to be supplement by technical rationality that is employed at breakdowns of practice.