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Poster

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Conflicts Challenges & Compromises: Teaching Management to Engineers.

UMIST is almost unique in that it has been teaching science, engineering and management from its inception in the 19th century. It is perhaps not surprising that it was one of only two universities in the United Kingdom to be originally selected to award the Engineering Doctorate degree (EngD), and it was one of the first to offer a four year undergraduate degree combining engineering with management. This paper focuses on the lessons learnt in ten years of experience teaching on the EngD's integrated Management Diploma.

There is a fundamental conflict in paradigm; engineers are used to finding a correct answer, model answers predominate and, with practice, analytical skills can be honed to such an extent that finding answers is routine. Yet in management we want engineers to appreciate that a range of approaches can be taken to the solution of any problem. Similarly to gain a full understanding of a problem there is a need to delve beneath the surface and investigate the range of theory that exists. They need to recognize that there is more to management than common sense.

The challenge for us as educators is how to find appropriate teaching techniques to achieve this change of attitude and to introduce and encourage new learning methods. This challenge is further exacerbated by demands to deliver courses over differing timescales, ranging from 1 or 2 hours per week for 30 weeks to 30 hour blocks. As pressures to provide short courses mount, the time for students to reflect on their learning experience is being removed and there is no time for the culture gap to be bridged.

WE pose the question; will we need revolutionary teaching methods or could problem-based learning and the e-learning environment provide the key to unlocking the engineers' managerial potential?

We recognize that there needs to be compromise on both sides, we need to help engineers broaden their learning experience, almost to encourage them to understand that the methods that are tried and true in engineering are unlikely to be successful in management. On the other hand, we need to understand that engineers view the world differently from the average management student and we need to use appropriate teaching methods to accommodate this and to ensure that the engineers get maximum benefit from their 'management experience';.