

Academic Competency

EPC Congress

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Introduction

- Context, challenges and competency
- Understand whether teaching staff in engineering departments have the competencies necessary to meet these challenges.
- Consider where the gaps are (or might be)
- Propose how these gaps should be filled and who should take responsibility for this.



Context and Challenges

Economic priorities:

- Leitch; Lambert; Sainsbury; Innovation Nation; New Industry, New Jobs ; Engineering Graduates for Industry, The Higher Education Workforce Framework;
- UK must create more successful high-technology businesses and industries to manufacture, build and maintain the products, infrastructure and services of the future; Engineering skills base is a priority element to bring about this economic transformation

Industry Priorities: (Engineering Graduates for Industry)

- Industry wants engineering graduates who have practical experience of real industrial environments
- Industry regards the ability to apply theoretical knowledge to real industrial problems as the single most desirable attribute in new recruits



Context and Challenges

Higher Ambitions:

- Building relationships with industry, business, schools and students
- Developing flexible modes of delivery, learning and assessment
- Developing modules/courses/programmes with industry for industry
- Developing graduates with a commitment to work and learn
- Developing a professional approach to academia
- Developing a code of conduct for academics (cf professional engineers)



Competency

Competency

- The personal attributes used in work activities which underpin competent performance. Competency is not defined by the performance or outcomes but a measure of regular demonstration of ability indicative of the presence of a set of competencies required for effective practice.

Areas of Competency

- The Areas of Competency contain the building blocks of professional practice. They are comprised of core and general practice competencies and can be subdivided into 3 areas: Technical, Behavioural and Contextual.

Elements of Competency

- The elements of competency are the behaviours, skills, knowledge and attitudes which lead to effective practice. They do not contain reference to the technical skills required for practice. When combined with technical skills, competencies enable the delivery of a role/job or posting.



Context and Challenges

What does an academic do?

Job description

- Higher education (HE) lecturers facilitate learning and carry out research activities in universities and some colleges of further education (FE). They teach academic or vocational subjects to undergraduate and postgraduate students aged 18 upwards. Teaching methods include lectures, seminars, tutorials, practical laboratory demonstrations, field work and e-learning. Multimedia technologies are increasingly used.
- Most HE lecturers pursue their own areas of research and develop these in order to contribute to the wider research activities of their department/institution.
- Administrative tasks take up a significant part of the working day. Many lecturers also take on a pastoral role with their students. As HE lecturers progress along their career paths, they may be expected to undertake a managerial role.



Context and Challenges

What does an academic do?

Teaching:

- developing and implementing new methods of teaching to reflect changes in research;
- designing, preparing and developing teaching materials;
- delivering lectures, seminars and tutorials;
- assessing students' coursework;
- setting and marking examinations;
- supporting students through a pastoral/advisory role;



Context and Challenges

What does an academic do?

Research:

- undertaking personal research projects and actively contributing to the institution's research profile;
- writing up research and preparing it for publication;
- supervising students' research activities;



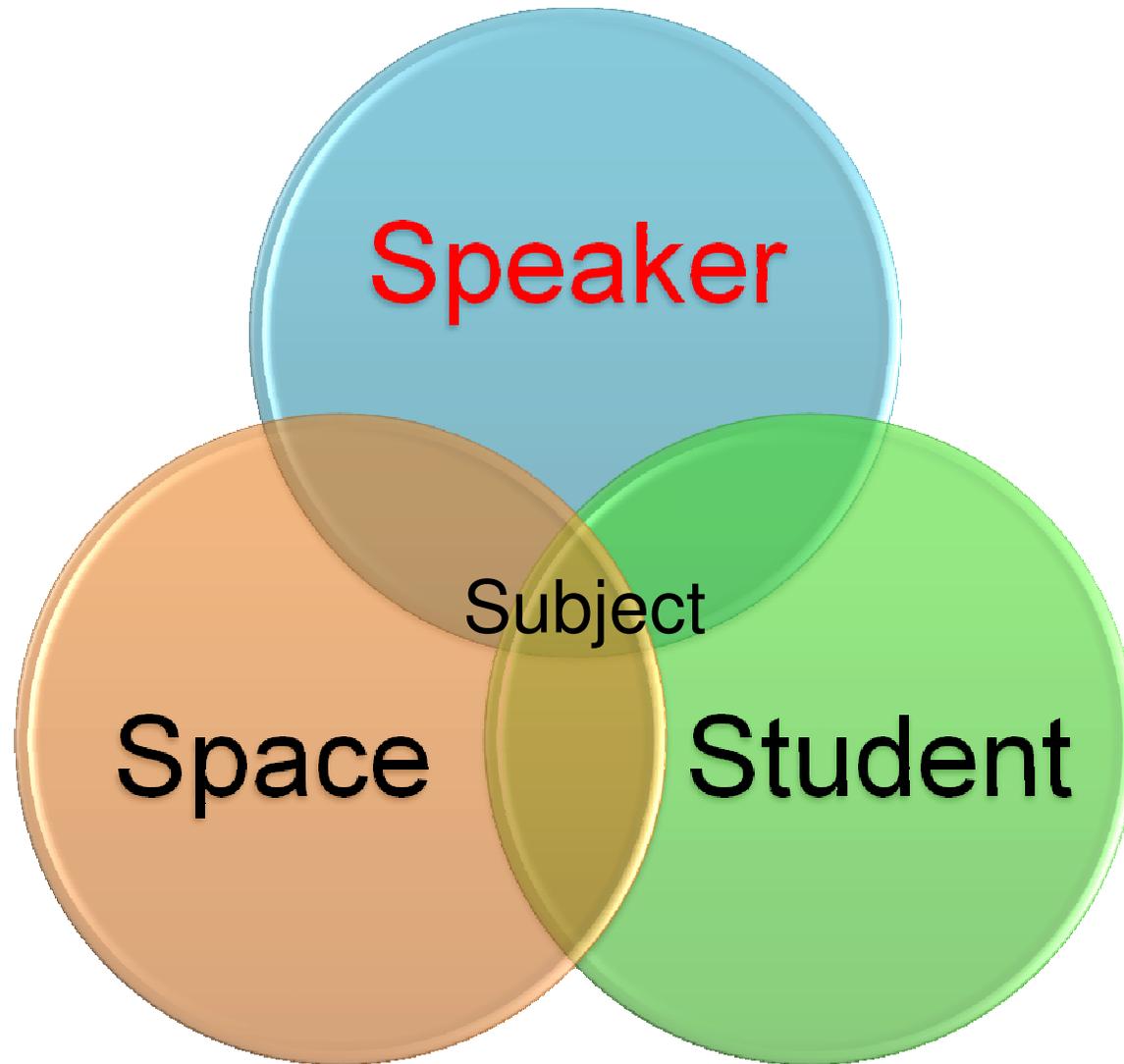
Context and Challenges

What does an academic do?

Other:

- undertaking continuous professional development (CPD) and participating in staff training activities;
- undertaking administrative tasks related to the department, such as student admissions, induction programmes and involvement in committees and boards;
- managing and supervising staff - at a senior level this may include the role of head of department;
- representing the institution at professional conferences and seminars, and contributing to these as necessary;
- establishing collaborative links outside the university with industrial, commercial and public organisations.





Seminar

- Held a seminar to consider **Teaching Skills Needed in Engineering Departments to Meet Future Challenges**
- In attendance: Universities, Industry, SSCs, HEA, NUS, RAE, eef, QAA, WES, Engineering Council attended.
- Format: Presentations (available on EPC website epc.ac.uk) and discussion.



Seminar Key Messages

- Engineering Departments Do / Do Not have the skills needed to meet future challenges.
- The key skill gaps will be:
- These should be addressed by:
- This should be funded by:
- _____ should take the lead in addressing this need.



Seminar Key Messages

*Engineering Departments **do not** all have the skills needed to meet future challenges.*



Seminar Key Messages

- There need to be more staff with: industrial experience, a knowledge of the full range of learning modes available, professional qualifications (engineering and teaching), the ability to flex across discipline boundaries, good knowledge of the external context, the ability to be part of a team, facilitation skills, mentoring skills, a good knowledge of learning technologies, excellent communication skills, enthusiasm, a collaborative attitude (with other staff, students and industry), a broad and cross disciplinary view.



Seminar Key Messages

- Some departments may already have some of these abilities but there is a gap between current capacity and predicted future need



Seminar Key Messages

- These should be addressed by: recruitment, secondments, KTPs, CPD, closer collaboration between HEIs and with other groups, (move towards medicine and law with practicing engineers teaching?), peer mentoring, more stringent university requirements for professional standards.



Seminar Key Messages

This should be funded by: University investment, RAE, HEA, Government ...

This agenda is important and should be led by “Champions for Change” from EPC / HEA / PIs supported by Employers, students, HEFCE, Government, the Engineering Community.



Final thoughts

What does an academic do?

What should they be doing?

What will they be doing in the future?

Clear competency and capacity building issues.

Need to respond to the changing landscape.

