



# Tay Estuary Forum

Occasional Paper Series

4

Employers' requirements for graduate skills,  
attributes and knowledge in the coastal and  
estuarine sector

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# Employers' requirements for graduate skills, attributes and knowledge in the coastal and estuarine sector

Occasional Paper for the Tay Estuary Forum Conference

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## Summary

1. Graduates normally have those skills that are most frequently expected by employers.
2. Attributes expected of graduates are mostly - but not always - met.
3. Knowledge needs are best met in areas that are most valued.
4. Areas for concern are not necessarily deliverable through a higher education (University) setting and the "standard" student experience.
5. Assessed placements are recommended as a means by which workplace skills and attributes might be developed within degree programmes in higher education, and thereby contribute to graduates better meeting the needs and expectations of employers.

## Context and purpose

There is little doubt that graduates should possess the skills, attributes and knowledge that enable them to make a worthwhile contribution to the work of their employers when they emerge from higher education (HE) and enter the world of work. In order that their experiences in HE contribute to graduates' development of these necessary qualities, it is vital that both the HE sector and employment sectors are "connected" in terms of their respective expectations and roles. At the same time we should recognise and understand

if and how individuals might be presented with opportunities to acquire or develop the range and quality of their competencies. In the specific case of the Tay Estuary Forum and its member organisations, this issue comes down to two fundamental questions:

- What do employers in the estuarine and coastal environmental sector expect of graduates in terms of their key skills, competencies, and subject knowledge?
- How might Higher Education Institutions work with the employment sector to enhance graduates' competencies to meet the sector needs?

The purpose of this paper is to present findings relating to employers in the Tay Estuary Forum (TEF), with particular focus on where and how their needs are adequately met (or not met) by graduate recruits. Recommendations are made as to how steps can be taken to ensure that employers' needs for graduate skills, attributes and competencies are as well met as is feasible within the HE experience. Suggestions are made as to how connections between HE and employers might be developed to enhance graduates' competencies in relation to the needs of the coastal and estuarine sector.

### **Data acquisition**

A questionnaire was circulated by email to all TEF member organisations during April 2010. Respondents were asked to complete the questionnaire electronically and return by email. The questionnaire first asked respondents to provide information regarding the profile, status and type their organisation, and their recruitment of graduates. Further questions enquired as to the expectations of graduate employers, i.e. what skills, attributes and knowledge they expected of graduate recruits, and their opinions as to whether graduate recruits normally met their expectations in these regards. To assess employers' needs for skills and attitudes, lists were provided (13 for skills and 10 for attributes) and respondents asked to indicate the four most important. Respondents were also able to write in other skills or attributes that were not listed, and again indicate whether these needs were normally met by graduate recruits.

To assess employers' needs and graduates recruits' competencies in terms of knowledge, respondents were asked to grade (on a five point scale) how much knowledge areas were needed, i.e. from "not needed at all" through to "very high level" needed. Respondents were again asked to indicate if their needs for knowledge were normally met by graduate

recruits. Again, respondents were able to write in and assess other knowledge areas that were not listed.

## **Results**

Rather few responses were received; the following outcomes should therefore be regarded as “indicative” rather than “conclusive”.

In terms of graduate recruits’ skills, most of those skills that employers look for are normally met (Figure 1A). Report writing, ICT, and presentation skills were selected by most of the respondents; all respondents considered that graduates’ skills in these areas were usually met. It was, however, apparent that financial and numeracy skills, where needed by employers, were considered deficient (Figure 1A).

The attributes looked for by employers were not always considered to be met (Figure 1B). An ability to work under pressure was sought and considered to be fully met by about half of the respondents. In contrast, abilities in interpersonal communication and the “can do” attitude were frequently selected by employers but were only considered to be met by graduate recruits in about 2/3 of the cases (Figure 1B). Time management and problem solving were highlighted by about 40% of the respondents, but these attributes were only considered to be met in about half of the cases (Figure 1B).

When asked to suggest which skills and attributes were most lacking in graduate recruits, a range of comments was returned (Table 1). Broadly, these comments could be considered as either areas that are generally associated with experiences outside formal education (comments A, B, & C; Table 1) or areas in which graduates’ experience in HE should, in principle, have provided opportunities for development and acquisition (comments D, E & F; Table 1). It is arguable that acquisition of skills in spelling and punctuation should be the domain and responsibility of pre-university education (comment G; Table 1) whilst coherence and logic in report writing should be fostered and developed through experience in HE institutions.

In terms of employers’ expectations of graduates’ knowledge, a statistically significant and positive linear relationship was identified. Less frequently expected areas of knowledge were less frequently met (e.g. chemistry, sediment, estuarine circulation and mixing, coastal & flood engineering, tides & waves, fluid mechanics; Figure 1C). At the same time, more frequently expected areas of knowledge are more frequently met (e.g. nature

conservation, legislation, biology, environmental impact assessment, climate change, salt marshes; Figure 1C).

## **Outcomes and discussion**

Responses to the questionnaire survey highlighted some areas in which graduate recruits' skills and attributes could better meet employers' needs. Some areas identified are (or should be) well served by the student experience in HE. It would be expected, for example, that the demands of reading for a degree at a University should give ample opportunities for students to acquire and develop competencies in organisation and self-management, problem solving, and writing & reporting skills. Opportunities for acquiring subject knowledge through HE appear to be generally fit-for-purpose (see Figure 1C), although some specific areas have been noted as deficient (e.g. comment E; Table 1).

In contrast, there are other skills and attributes that do not necessarily align naturally with the student experience in HE. Commercial awareness, for example, is not commonly a focal point in environment-related HE degree programmes. At the same time, "broad-based interpersonal skills" might well be more a function of life experience; indeed, socio-demographic profiles for undergraduate students may often be rather polarised and present limited opportunities for interpersonal communication across and with a broad demographic.

There are, however, means by which students' experiences in HE may be enriched to meet better the expectations and needs of the employment sector. In order that students might gain those skills and attributes that may ordinarily sit outside the domain of HE, experience in the workplace during undergraduate study may add substantial value to the competencies they should expect to gain through HE. Vacation jobs, internships, and work-based learning placements for example, have the potential to provide the "practical, 'real-world' experience" that employers look for, providing opportunities for individuals to learn and develop, through experience, how to:

- be flexible in their work,
- communicate effectively with others,
- be aware of commercial imperatives, and financial aspects of work and the workplace.

Moreover, a work placement may take the form of a formal and assessed activity within a degree programme (e.g. a work-based learning "module"). Through structured activities and assessments, students can be alerted to and understand the value of personal skills

and attributes through self-reflection and evaluation of their own competencies. Such experience provides not only enhanced awareness of their competencies, but also insight to the employers' needs within the sector, and better understanding of the importance of personal skills and attributes for their future employability. The added bonus of work-based learning (from experience at the University of Southampton and elsewhere) is that the responsibilities of individuals in the workplace and reliance of others on the work of individuals is instrumental in engendering the "can do" attitude. Our experience in Southampton is that acquisition and development of self-reliance often provides a substantial impetus to learning, and thereby feeds back into and enhances students' acquisition of subject skills and knowledge.

We propose that opportunities for work experience for students in HE should be explored as a means to enhance their skills and attributes in alignment with the needs of the coastal and estuarine sector. The success of such arrangements will require an understanding of (1) strengths and weaknesses of graduates in relation to the expectations and needs of the employment sector, and (2) how and in what respects experiences in HE and the workplace are complementary or contrast. Partnerships between universities and employment sector "hosts" for student placements have significant potential to provide mutual benefits, but the necessary resources and flexibility – from both parties – should be understood and appreciated if benefits are to be fully realised.

<b>Comment:</b>	
<b>A</b>	“Recognising that work always has a value (£); this gives essential real world perspective to any task and is almost always missing in new graduates.”
<b>B</b>	“Practical experience of the real world.”
<b>C</b>	“Flexibility in approach with respect to involvement with a wide range of stakeholders as well as respect for authority.”
<b>D</b>	“Organisational skills - planning and prioritising their own workload for the first time.”
<b>E</b>	“Taxonomy and identification skills.”
<b>F</b>	“Logic and problem solving.”
<b>G</b>	“Ability to spell correctly, punctuate properly and write a cohesive, logical argument in reports.”

Table 1      Comments from questionnaire respondents identifying skills and attributes that graduate recruits most lack.

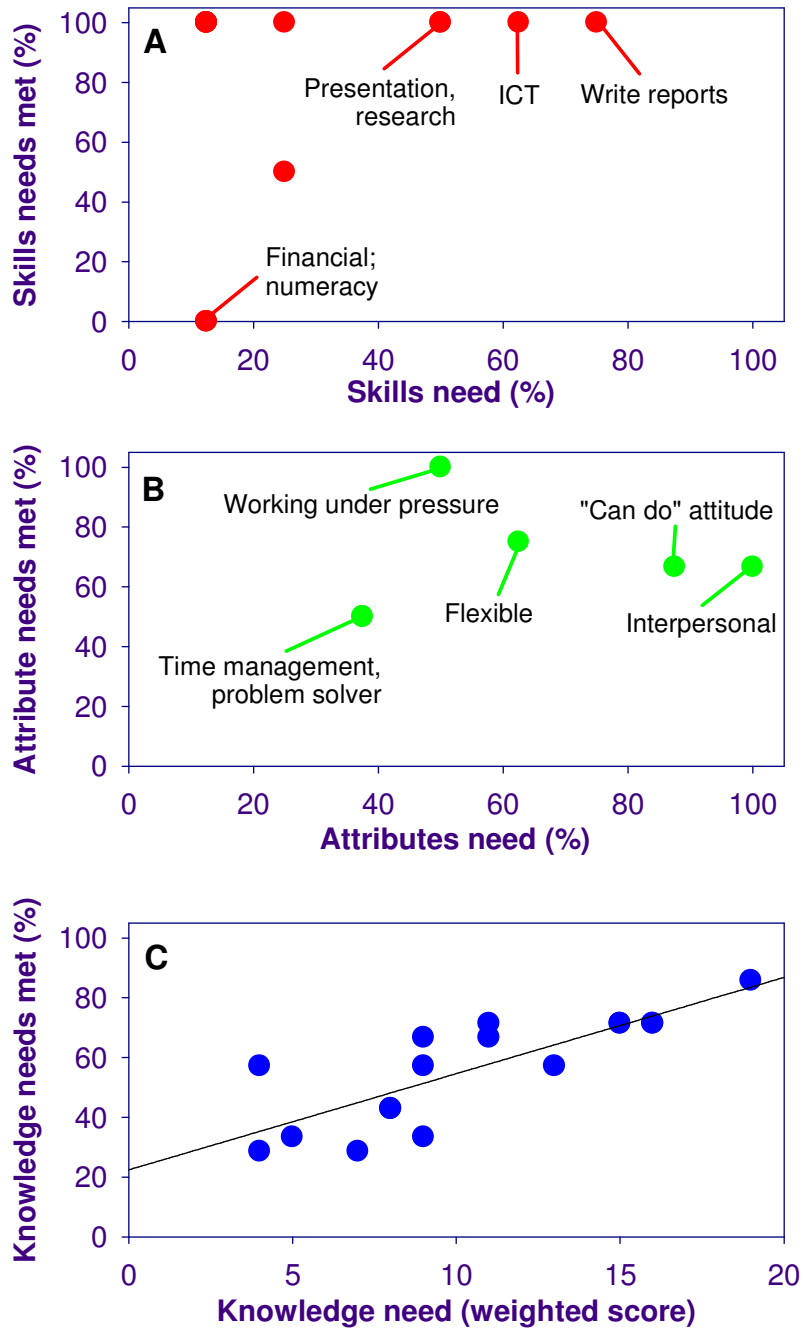


Figure 1 Employers' perceptions of graduates' skills, attributes and knowledge in relation to employers' needs of graduate recruits.