

***Addressing the needs of employers:
writing development and other forms of engagement on
undergraduate STEM programmes***

Dr Barrie Cooper and Dr Trevor Day

Thursday 16th February 2012, 10.00 – 16.30

The American Museum, Bath

The purpose of this workshop is to examine approaches for mapping employability skills within undergraduate STEM programmes, and to share good practice in meeting the demands of academic requirements and the needs of employers.

Event Programme

10.00 – 10.15 Registration & coffee

10.15 – 10.30 Welcome & overview of the day

Ruth Waring, University of Bath; Dr Barrie Cooper, University of Exeter; & Dr Trevor Day, University of Bath/Reading & Writing for Results

10.30 – 11.00 Introductions/Speed networking *Dr Barrie Cooper & Dr Trevor Day*

11.00 – 11.30 Models for maximising undergraduate writing development *Dr Trevor Day*

TEA/COFFEE BREAK

11.45 – 12.15 Mapping the curriculum to enhance writing development *Dr Trevor Day*

12.15 – 13.00 Examples of what works in writing development *Dr Trevor Day*

LUNCH

13.40 – 14.25 Empowering students to shape their curriculum *Dr Barrie Cooper*

14:25 – 15:10 Models for employer engagement: from targeted interventions to curriculum design *Dr Barrie Cooper*

TEA/COFFEE BREAK

15.30 – 16.15 Assessing graduate skills development *Dr Barrie Cooper*

16.15 – 16.30 Review and evaluation *Dr Barrie Cooper & Dr Trevor Day*

Morning session

Addressing the needs of employers: writing development on undergraduate STEM programmes

Aims:

- to briefly review some features of STEM writing;
- to consider three models for academic writing development, and how they might apply in delegates' context;
- to reflect on four issues in mapping the curriculum to enhance writing development, to meet both academic and employability needs;
- to consider a range of examples of good practice

Dr Trevor Day, originally a marine biologist, has combined a career in scientific writing and publishing with teaching and educational research. Author/co-author of more than 40 books, 70 peer-reviewed articles, and 30 articles for national/international newspapers and magazines, his interests lie in enhancing students' academic writing development while enhancing their employability. A Fellow of the Royal Literary Fund at the University of Bath 2007-2011, he is a writing consultant and facilitator for the University of Bath and other universities. He leads the National HE STEM project on *Developing Writing in STEM Disciplines*, which has brought together writing and learning developers with STEM subject specialists to identify best practice in incorporating writing development in undergraduate STEM programmes.

Addressing the needs of employers: writing development handouts © Trevor Day, Reading and Writing for Results is licensed under a Attribution-NonCommercial-ShareAlike 3.0 Unported License..



Models for Maximising Undergraduate Writing Development:

Table 1. Classification of students' meaning-making in HE based on Ivanic (1995) and Lillis (2001)	
Authority	Who do you want to be?
Authorial presence	How do you want to say it?
Authorship	What do you want to say?

Table 2. Summary of Lea and Street's (1998) classification of models of students' writing development in HE	
Academic literacies	Writing as meaning-making and contested
Socialisation	Social encouragement into a culture, with writing as a more or less transparent medium of representation
Skills	Writing as a technical and instrumental skill

Making more explicit that which is implicit. Using the IPACE model for an assignment (adapted from Day et al, 2009).

Identity Student: Who am I as a writer within my discipline (community of practice)? How would I express that identity? What qualities should a person with that identity have?

Purpose(s) Student: What is/are my purpose(s) in writing this assignment? What is/are the department's purpose(s) in setting this writing assignment?

Audience(s) Student considers: Who is the primary audience for my work in this assignment? Is there a secondary audience? What assumptions can I make about their prior knowledge and understanding?

Code Student: What format, structure, and writing style should I use for writing this assignment? What are the conventions?

Experience Student: What am I bringing to the task in terms of the *content* of the assignment and the *process* of writing it? What knowledge, skills (abilities), values, attitudes and other qualities do I need to develop that will help me with this task?

**Exercise 1. Which writing development models are prevalent
in your own institution on undergraduate programmes? And where?**

	Location(s)	Supporter(s)/Proponent(s)
Skills (deficit) model		
Socialisation model		
Academic literacies model		

Exercise 2. To what extent is writing development scaffolded in a particular undergraduate programme?

<p>To take account of:</p> <p>1. the disciplinary tradition being made explicit in learning outcomes, assessment and feedback (formative and summative);</p> <p>2. a holistic consideration of writing elements (identity, purpose, audience, code and experience) being made explicit in learning outcomes, assessment and feedback (formative and summative);</p> <p>3. elements of writing at different scales, from large to small, being made explicit in learning outcomes, assessment and feedback (formative and summative);</p> <p>4. scaffolding writing development across the programme to take into account both academic and employability issues</p>	Year 1
	Year 2
	Year 3
	Year 4

Exercise 3. Examples of strong writing development practice in your own organisation?

Within STEM disciplines		
Location(s)	Practitioner(s)	Nature of the practice

Outside STEM disciplines		
Location(s)	Practitioner(s)	Nature of the practice

References

- Bean, J.C. (2001). *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. San Francisco: Jossey Bass.
- Bonanno, H. and Jones, J. (2007). *The MASUS Procedure: Measuring the Academic Skills of University Students, A Diagnostic Assessment*. Sydney, Australia: Learning Centre, University of Sydney.
- Borg, E. and Deane, M. (2011). 'Measuring the Outcomes of Individualised Writing Instruction: A Multilayered Approach to Capturing Changes in Students' Texts.' *Teaching in Higher Education*, 16 (3) 319-31
- Day, T. (2011a). 'What writing expectations do UK employers have of engineering graduates? And how might universities respond?' A paper presented at the European Association for the Teaching of Academic Writing (EATAW) Conference, 29 June – 1 July 2011, Limerick: University of Limerick.
- Day, T. (2011b). 'Overview paper: Developing Writing in STEM Disciplines' A paper given at the South West HE STEM Project Conference 'Developing Writing in STEM Disciplines', 12 September 2011, Bath: University of Bath.
- Day, T., Pritchard, J. and Heath, A. (2009). 'Final-year undergraduate students' experience of dissertation writing on their journey to becoming graduate engineers.' A paper presented at the European Association for the Teaching of Academic Writing (EATAW) Conference, 30 June – 2 July 2009, Coventry: Coventry University.
- Day, T., Pritchard, J. and Heath, A. (2010). 'Sowing the seeds of enhanced academic writing support in a research-intensive university.' *Educational Developments*, 11 (3), pp. 18-21.
- Deane, M. and O'Neill, P. eds. (2011). *Writing in the Disciplines*. Basingstoke: Palgrave Macmillan.
- Ganobcsik-Williams, L. ed. (2006). *Teaching Academic Writing in UK Higher Education: Theories, Practices and Models*. Basingstoke, Hampshire: Palgrave Macmillan.
- Ivanic, R. (1995). 'Writer identity.' *Prospect: The Australian Journal of TESOL*, 10 (1), pp. 8-31.
- Lea, M.R. (1994). "'I thought I could write until a came here": Student writing in higher education.' In: Gibbs, G. ed. *Improving Student Learning: Theory and Practice*. pp. 216-226. Oxford: Oxford Centre for Staff Development.
- Lea, M.R. and Street, B.V. (1998). 'Student writing in higher education: an academic literacies approach.' *Studies in Higher Education*, 23 (2), pp. 157-172.
- Lillis, T.M. (1997). 'New voices in academia? The regulative nature of academic writing conventions.' *Language and Education*, 11 (3), pp. 182-199.
- Lillis, T.M. (2001). *Student Writing: Access, Regulation, Desire*. London: Routledge.
- Monroe, J. (2003). *Local Knowledges, Local Practices: Writing in the Disciplines at Cornell*. Pittsburgh, PA: University of Pittsburgh.
- Pace, D. and Middendorf, J. eds. (2004). *Decoding the Disciplines: Helping Students Learn Disciplinary Ways of Thinking*. New Directions for Teaching and Learning No. 98: Summer 2004. San Francisco: Jossey-Bass.
- Russell, D. (2001). 'Where do the naturalistic studies of WAC/WID point? A research review.' In: McLeod, S., Miraglia, E. Soven, M. and Thaiss, C. eds. *WAC for the New Millennium: Strategies for Continuing Writing-Across-the-Curriculum Programs*. pp. 259-298. Urbana, IL: NCTE.
- Samuels, P. and Deane, M. (2008). 'Academic writing training for mathematics education PhD students.' *MSOR Connections*, 8 (3), pp. 47-50.
- WAC Clearinghouse (2011). *An Introduction to Writing Across the Curriculum and What is Writing in the Disciplines?* Fort Collins, CO: Colorado State University. Available from: <http://wac.colostate.edu/intro/> and <http://wac.colostate.edu/intro/pop2e.cfm> respectively [accessed 23 November 2011]