bioscience education

Editorial: Ok(ish) Computer – the old and the new?

Introduction to the Special Edition

Before I launch into the Editorial, I am first delighted to welcome you to the inaugural Special Edition of *Bioscience Education* and thank all the invited contributors. The articles are developed from presentations at the 'Effective Learning in the Biosciences' event held in Edinburgh this summer and hosted by the staff of the Centre for Biosciences (http://www.bioscience.heacademy.ac.uk/ftp/bioconf/EffectiveLearningintheBiosciences2011Proceedings.pdf).

But with firsts come lasts, and it is sad for me to add that this is the final volume of *Bioscience Education* that will be written out of the Subject Centre in Leeds where it first began. I add a personal thanks to a team that has catalysed so much for so many, and I wish everyone who has been connected with the Centre the very best for the future in their new roles. The new email address for the journal will be bioscience.education@heacademy.ac.uk and feel free to use this to send any of your own good wishes to the Biosciences team.

The event subtitle 'Equipping Students for the 21st Century' dovetails to some extent with the theme of this editorial; technology and modern H.E. The message is tempered in the same cyber-breath that advocates using technology when 'traditional', non-technological, solutions can be bettered, which is by no means always. This does not suggest that we shouldn't experiment with technology to find out how appropriate it might be – quite the contrary. Very often we find ourselves blending approaches, technological and other, in ways that are intended to suit both teacher and learner (and some would argue administrator/manager and significant others).

The evolution of *e*-learning projects from simple web sites into interactive multimedia learning resources is described by Carol Wakeford, fostering collaborative (very human) approaches to learning. Such concepts are shared by David Robinson's online experiments. David describes an online course where practical activities require observational or experimental work completed at home, with some fieldwork being 'virtual'. We also hear about his tutorial help that is available through video/audio conferencing and online forums. Anne Smith's students learn about the complexity of animal behaviour systems by constructing their own simulations using StarLogo software. This is a nice example of how technology can provide tools that would otherwise not be available as part of our L&T armoury.

Moving away from matters technological, a solid 'traditional hands-on' approach to preparing students for the challenges of university numeracy and literacy is provided by Harriet Jones. Harriet's work describes a valuable, thought provoking approach and I encourage you to consider its potential for your own practices. Jon Scott's rapid exploration of his research into the best feedback mechanisms is also very enlightening, particularly surrounding the value of (direct) oral feedback. Dave Lewis' short communication overviews a blended approach to ethics delivery in schools both as open educational resources (providing valuable online links to those developing such system) and also via personal, 'out of the computer chair', outreach work. Chris Willmott's article rounds off my review of the Special Edition with an activity that often rounds off an academic qualification – finding and beginning a career. Here, Chris uses alumni to motivate and inform his current students of the realities of this important driver of H.E.

Standard articles Editorial: Ok(ish) Computer – the old and the new?

I remember the first 'personal' computer I ever saw. It was the mid 1970s and I'd only just started school. On a winter's night, a neighbour brought a computer home from his work and I, together with seemingly the whole neighbourhood, loitered in his living room as he

plugged it in. It 'was electric' as we marvelled at the green glow of the screen. At some carefully guarded point, I was allowed to push the space bar whilst a 'spaceship' (comprising a few of the characters from the normal typeset) dropped an asterisk 'bomb' onto blocks proposed as 'buildings' below. It was several years before 'Space Invaders' colonised, and in that heady gathering I felt the first pull of computer technology. I missed the building with my asterisk, I got too excited and pushed the space bar too early. Yet, unlike many events in my formative days, failure didn't curb my enthusiasm. Now I'm not suggesting that I learnt very much, but I knew I wanted to interact again. I am not now retreading the steps of considering the role of entertainment in education (see Langan, 2011). However, I will say that this was the first of many interactions that helped me to learn, or at least be stimulated to engage and potentially learn, as a consequence of the process ('exciting new computers') rather than the content ('dropping an asterisk'). An important question in my own field of research is to what extent technology drives student satisfaction levels. I already see many good practices that utilise the digital terrain very well, from text messages to instantly communicating class changes and cancellations to exciting use of online tools to excite learners in and out of the classroom. I am pleased to report that several examples of what I think are 'good technological practices' are described in this particular volume.

Perhaps then it is not surprising that so much contemporary educational developments embody 'new technologies' even though often these are not particularly new and the learning designs and philosophies that underpin them are even less youthful. When I took over this editorial role technology-associated articles were considered the most popular with the readership (of what is of course an *e*-journal with its own selective readership). An overview of downloads for Volume 16 is provided in Table 1.

Table 1 *Most viewed articles from Volume 16 (returned July 2011) showing the prominence of technology-associated innovations.*

Article - aspx web page	**Keywords**	**Viewed**
/journal/vol16/beej-16-3.aspx	Plagiarism, Turnitin	594
/journal/vol16/beej-16-4.aspx	Text messenging	569
/journal/vol16/beej-16-1.aspx	Podcasts, assessment	383
/journal/vol16/beej-16-c3.aspx	Plant identification	268
/journal/vol16/beej-16-2.aspx	Laboratory video guides	249
/journal/vol16/beej-16-5.aspx	International student assessment	207
/journal/vol16/beej-16-c4.aspx	Assessing lab/field books	196
/journal/vol16/beej-16-0.aspx	Editorial	187
/journal/vol16/beej-16-c1.aspx	Community based resources	136
/journal/vol16/beej-16-6.aspx	Fieldwork	129
/journal/vol16/beej-16-c2.aspx	Postgraduate researchers in teaching	108
Article - pdf documents		**Viewed**
/journal/vol16/beej-16-3.pdf	Plagiarism, Turnitin	178
/journal/vol16/beej-16-2.pdf	Laboratory video guides	147
/journal/vol16/beej-16-4.pdf	Text messenging	130
/journal/vol16/beej-16-5.pdf	International student assessment	105
/journal/vol16/beej-16-0.pdf	Editorial	98
/journal/vol16/beej-16-c4.pdf	Assessing lab/field books	88
/journal/vol16/beej-16-c3.pdf	Plant identification	75
/journal/vol16/beej-16-c1.pdf	Community based resources	62
/journal/vol16/beej-16-6.pdf	Fieldwork	61
/journal/vol16/beej-16-c2.pdf	Postgraduate researchers in teaching	47

Admittedly, Volume 16 contained many articles of this type and for those interested, *Bioscience Education*'s 'All Time Top Three' downloads are shown below. The list shows (left to right) the: article type; volume; title; (number of downloads).

- Essay - Volume 2 - *The use and abuse of Powerpoint in teaching and learning in the Life Sciences: A personal overview* (4690)
- Research Article - Volume 10 - *The effectiveness of lecture-integrated, web-supported case studies in large group teaching* (3149)
- Short Communication - Volume 11 - *Who wants to be a biologist? An excellent quiz tool for students* (2183)

I share with many the school of thinking that technology should not drive learning design, rather that learning needs should be supported/enhanced by appropriate technologies. We vary as educators in how much technology we want to, can, or have to, add into our working lives. I am unsure across the many cultures in modern H.E. what the current generations of students expect of their host institutions or how their satisfaction with their experiences will be governed by the growing web of digital systems. I am involved in many ventures to enhance learner satisfaction and the prominence of courses running smoothly in the 'Organisation & Management' theme of the National Student Survey provides a good rationale for introducing systems such as text/tweeting information about class changes (cancellations/room changes etc).

Fittingly, this issue includes Viv Rolfe's meta-analysis of the effectiveness of multimedia resources. In the spirit of the first Special Edition, I should add that an article using this type of analysis provides another first for this journal. Sheila Hope continues the technology theme, exploring the role of 'movies' and some of software available to develop such outputs to provide feedback. This article provides plenty of good advice and encouragement to those wanting to explore this area. Karen Bledsoe's article discusses approaches used by the author to infuse Problem Based Learning approaches into large biology lecture classes. This provides useful insights from the research and her experiences to help guide the novice in designing such learning designs. Katy Jordan's article investigates how teachers support student learning in small group tutorials using threshold concepts around troublesome areas in the Plant Sciences discipline area. I feel the value of this article is much wider than the specific examples for this particular subject area. I mean this both in terms of the notional concepts of thresholds and also the techniques by which they were unearthed.

Finally, we have something of a New Year treat in our final paper from Sehoya Cotner and Gordon Gallup who have created a very stimulating laboratory class, using some 'very physical', non-technological tools to explore the concepts surrounding sperm competition. I know that one of the referees of this article is already planning his own version of this work. Even if it isn't your bag, I think it is a stimulating read and introduces terminology that I am confident is yet another first for *Bioscience Education*.

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