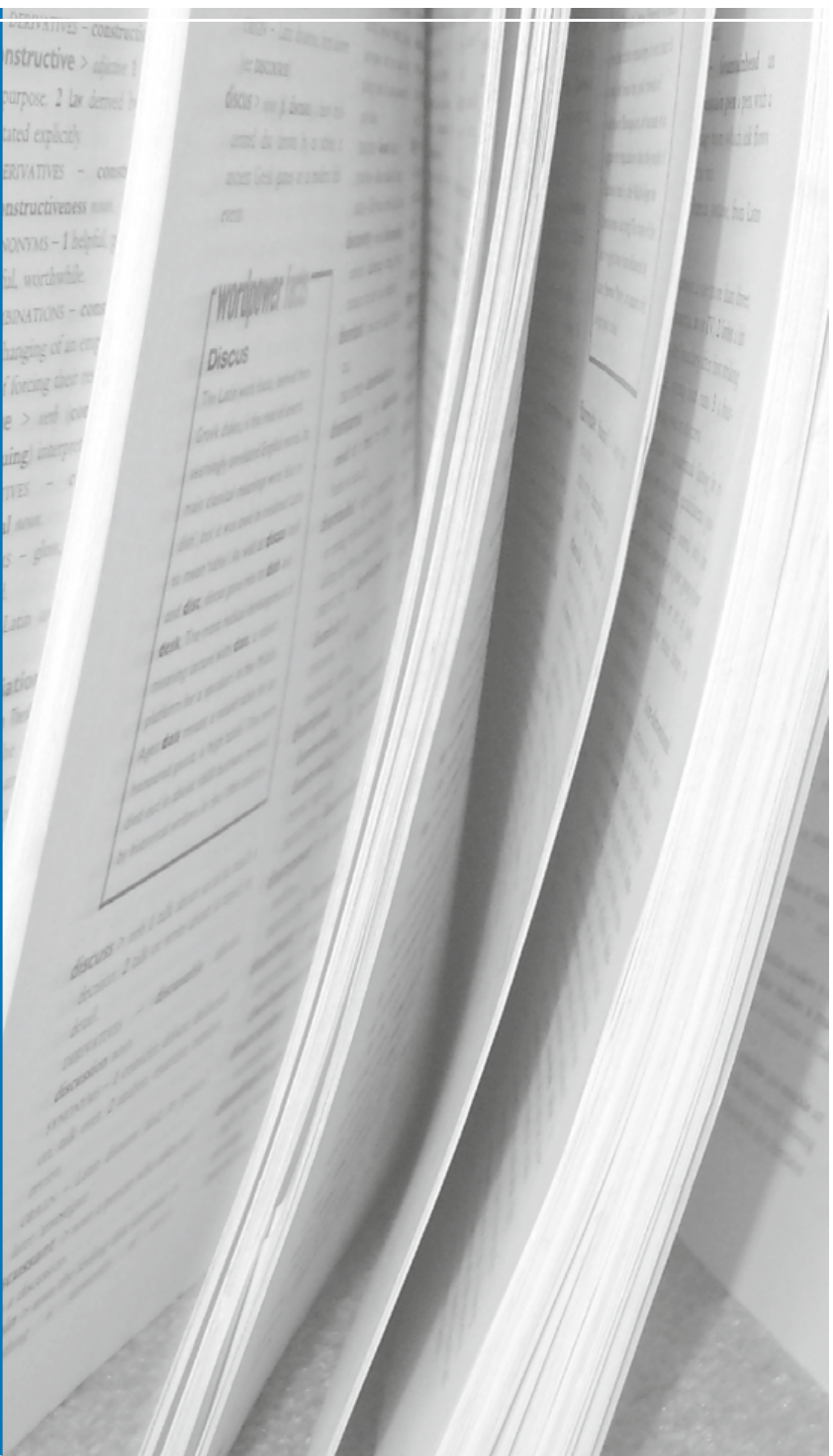




bioscience
education



Collected Papers
Volumes 1 - 8

Bioscience Education is an online, bi-annual electronic journal owned and published by the UK Centre for Bioscience. Its aims are to promote, enhance and disseminate research, good practice and innovation in tertiary level teaching and learning within the biosciences disciplines.

It is intended to encourage and facilitate greater understanding and exchange of ideas through being freely available online, fully archived and peer-reviewed.

The journal publishes a range of articles on tertiary level biosciences education, including peer-reviewed research and practice papers. The journal should be of interest to tertiary level staff and students, upper secondary school staff and employers.

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Preface

In the last 10–20 years university teaching has undergone a number of profound changes. The universities have not only increased in size (number of students) but also they have increased in number as the Polytechnics became universities and many smaller colleges successfully achieved university status. Furthermore, the electronic revolution began in earnest, leading to the concept of “e-learning” – use of computers, computer-based assessments, asynchronous learning and an ‘anytime, anyplace’ ethos to course provision. The Internet has pervaded almost all aspects of university life and more recently the Web 2.0 technologies encourage users to alter the content and so become active contributors, rather than passive recipients of information. Such technologies have tremendous potential to improve communication between staff, between staff and students, and between student and student, yet the rapid rate of development means a sense of alienation and being left behind by the ‘digital natives’ is also a real possibility. Additionally, against a background of reducing resource for teaching, increasing class sizes and a much more disparate set of students entering the universities there has been a tremendous emphasis on research activity (almost certainly not pedagogic research in science departments). The government’s Research Assessment Exercise (RAE) has exacerbated the disparity in recognition, reward and emphasis between research and teaching activities and arguably has rewarded the former much more than the latter. Nevertheless, someone has to teach the next generation of bioscientists and, I would argue, only the present generation of practicing bioscientists can do this. A consequence was that many of us insisted that teaching demanded more attention and that student learning, facilitated by quality, stimulating teaching, was enormously important. Departments with a high quality research output could be richly rewarded financially as a result of their RAE submission: what about high quality teaching? The Quality Assessment Agency had been visiting universities assessing teaching quality since the early 1990s, but the rewards were a numerical “score”, a position on a league table. The question was, what to do about improving teaching quality in more concrete terms?

In 2000, in response to these questions and to help academics navigate the changing landscape the Learning and Teaching Support Network (LTSN) was founded and the National Teaching Fellowship Scheme rewarded its first individuals for personal excellence in teaching. The LTSN was divided along disciplinary lines with the 24 subject centres covering most, if not all, of the subjects taught in UK universities. Inevitably many disciplines were grouped together and the LTSN Centre for Bioscience aimed to cover all the bioscience subjects from anatomy to zoology but excluded the specifically medical, health or clinical-chemistry disciplines. The overall aim was to improve the quality of teaching in UK universities by giving help and sharing good ideas. From the outset the LTSN was intended to be a network, in other words it was perceived that there were many exciting and innovative ideas for improving teaching quality in the 140 or so universities, and that linking individuals in various ways would encourage the sharing of ideas for good practice both within and across disciplines. The Centre organised meetings, provided a website, published a newsletter (the Bulletin), funded projects and did a range of other things, to encourage this interaction. It was never thought of as a hub-and-spokes type of arrangement with the Centre at the centre: we appreciated that although we had some expertise in “TLA” (teaching, learning and assessment) a vast amount was out there in the departments. Linking individuals is the key to the Centre’s philosophy (both as LTSN Bioscience and later as the UK Centre for Bioscience, Higher Education Academy).

As another of our linking activities, the Bioscience Education E-journal, was started in 2003 in response to an expressed wish of bioscientists who wanted to publish the results of their pedagogical research. As a Centre we felt there was a need for a journal of bioscience pedagogical research in accessible language: a journal by bioscientists, for bioscientists. From the start we felt the journal required the kudos of peer-review, a spread of article types to reflect the range of work going on and a recognisable image. An Editor was appointed and an Editorial Board was recruited. We agreed that we would be strict, only accepting papers after thorough review by at least two individuals. In fact, the review process has turned out to be not only rigorous but, thanks to our Editors-in-Chief (Dr Allan Jones and Dr Chris Willmott), also helpful. Editorial Board members have generously gone through manuscripts, tracking suggested changes and, I am sure, improving the quality of submitted papers to everyone’s benefit.

It was also agreed from the outset that this would be a web-based journal and that all the editorial business including submission, reviewing papers, and communications with authors would be conducted by email only. The ‘e-only’ approach meant a rapid turnover of articles and hence publication time, as well as dissemination to a potentially wider audience than we ever could with a hardcopy publication. It may, therefore, seem slightly curious that we have now produced a hard copy version (up to and including Volume 8, 2003–2006).

Why then a hard copy version of an e-journal? There are several reasons. We are proud of the body of work that has been gathered together. Although the published papers remain on the Web from Volume 1 for anyone to access, we thought people would like to have a collected edition on their shelves for reference. It is also easier with a printed copy to take it to show somebody else, to discuss possibilities and for a course management team to consider new ways of teaching put forward in the journal. We also thought that the existence of a printed version might encourage others to submit their work and would publicise the work of the UK Centre for Bioscience.

At the moment the journal is ‘free’: there is no charge for submitting papers. Of course, nothing in this world is really free and apart from editorial and secretarial input from the Centre, we are indebted to our Editorial Board members (see inside front cover) for giving freely of their time and expertise to look at papers and make comments, and generally help in promoting the journal by encouraging other to submit. We also try to get them to turn papers round as rapidly as possible as is appropriate to a web-based journal. In turn, although we collect papers together in “volumes” every six months, we try to put papers up on the web site as soon as they are accepted.

In assembling this printed volume I have grouped the papers according to subject as far as possible (see Contents). They are not in date order and authors have not been allowed to make any changes other than to their contact details. The reviews of books and software are not re-printed in this hard copy version. We hope that you will find this a useful collection of articles. I do not believe they are ephemeral and so my wish is that people will plunder this collection for ideas to improve their teaching. If they do this then our aim of being a network is fulfilled at least in part.

Ed Wood (Editor in Chief)

This book is dedicated to the memory of Professor Ed Wood (1941–2008)