Centre for Bioscience Professional Development

Getting published – writing papers for pedagogic research journals

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Overview

- 7 reasons why papers get rejected
- Why publish education papers?
- Top tips for getting published - FAQs
- Some suggestions about suitable journals

7 reasons why papers get rejected

- Inadequate engagement with existing literature
- Poorly written
- Show and tell, i.e. only done once
- Little or no evaluation
- Not original
- Too obscure, not transferable
- Content good, but not for specific journal

Why publish education research?

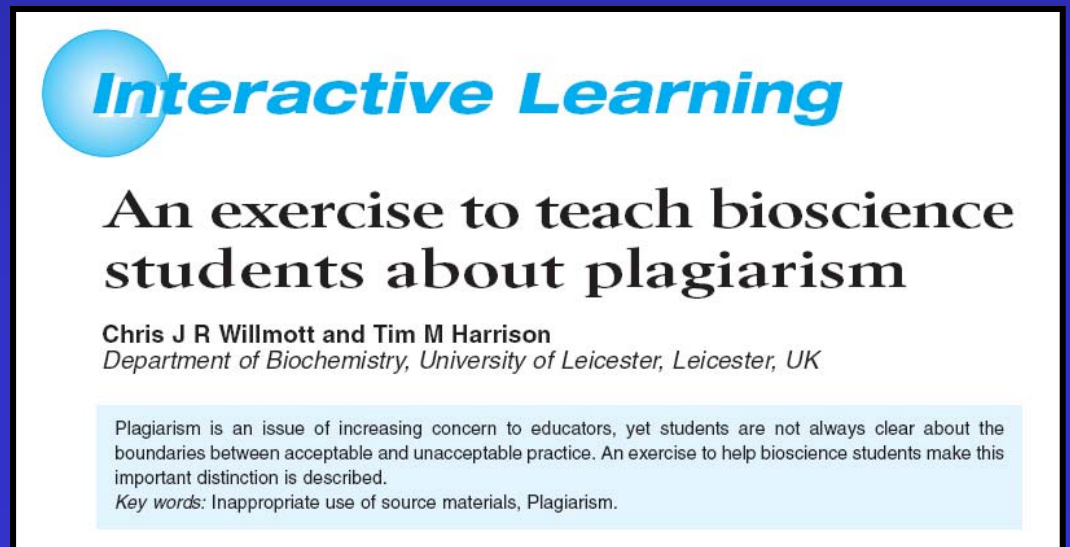
- RAE2008? This is more hindrance than help. Line managers will generally be underwhelmed by the impact factors of education journals

  ... therefore must be other motivations!
- Growing recognition of importance of PedR 'Evidence-based practice'
- Desire to share 'something that works' with others
- Extrinsic rewards include: peer recognition, institutional recognition, enhanced networks
- Intrinsic rewards include: new and exciting ways to approach your own teaching, security of knowing your teaching underpinned by scholarship

(McLeod *et al*, 2005)

"I'm not sure what to study/publish"

- May have a project arising naturally from things that you are doing – ideal for subject-specific paper
- Starting a new project?
  More than one discipline?
  More than one institution?
  Golden rule = choose something that interests YOU
  Second rule = identify a 'hot topic'



Interactive Learning

An exercise to teach bioscience students about plagiarism

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Plagiarism is an issue of increasing concern to educators, yet students are not always clear about the boundaries between acceptable and unacceptable practice. An exercise to help bioscience students make this important distinction is described.
Key words: Inappropriate use of source materials, Plagiarism.

J Biol Ed
37:139-140 (2003)

Broader research priorities (1)

TLRP Tavistock Report (2002) noted general absence of 'evidence-based practice'.
Specific issues identified included:

- relevance and effectiveness of VLEs
- effects of performativity* and student-centred teaching on the learning process
- the role of 'peer groups' and 'peer interaction' in shaping expectations about learning
- how to measure "the student experience"

* Performativity = *approaches that focus on assessment and outcomes, and the relationship between teaching and skills needs in modern economies*

Broader research priorities (2)

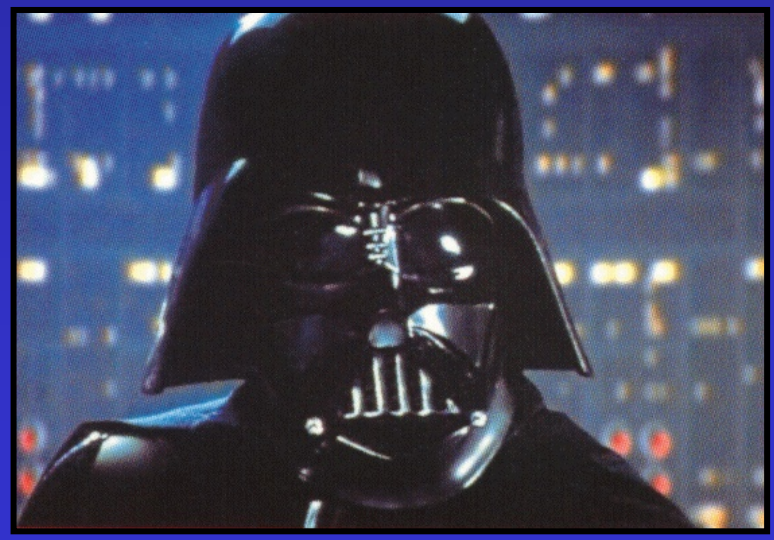
Could add the following:

- Widening participation
- Distance learning
- Web 2.0 technologies
- Educational value of ‘social’ interaction between students and/or with staff
- Links between neurobiology and learning

"I haven't got any evidence"

- Likely that you are actually already sitting on a gold-mine of potentially interesting data, e.g.
  - Exam performance?
  - Module review and feedback forms?
  - Completion rates? First destination data?
- Quantitative data?
- Qualitative data?
- Triangulation?*

* Triangulation = synthesising evidence of different types and from different sources, in order to arrive at conclusions



http://www.rumrill.net/brian/pics/pics5/pics5/DarthVader/darth_vader_closeup.jpg

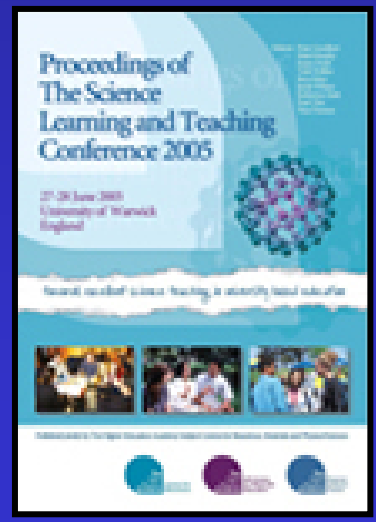
"I'm worried about my data"

- Started evaluation?
- Spotted how you may have done something better?
- Don't panic, it may not be fatal
- Can't 'do that extra experiment'
- Be honest, be self-critical
- "Warts and all"

www.generalmonck.com/biography.htm

"I'm still not sure"

- Can you repeat another year (with improvements?)
- Can you offer anything else?
  e.g. Can you make the activity itself available as supplementary material or via a web link?
- Consider conference presentation, but pick event with meaningful *Proceedings* document
  e.g. Science Learning & Teaching Conf.



"I'm not familiar with the literature"

- Inadequate discussion of background *can* be a killer
- Pedagogic articles not as well served by search engines as scientific/biomedical papers
- Follow the scent from other people's reference lists
- Google Scholar http://scholar.google.com

Search for "poster assessment"

- Assessment and Evaluation in HE (3 articles)
- Innovation in Education and Teaching International (2)
- Journal of Biological Education (1)
- Nurse Education Today (1)
- Review of Educational Research (1)
- Studies in Higher Education (1)
- Journal of Chemical Education (1)
- Learning Environments Research (1)
- Journal of Pediatric Nursing (1)

...but turns out author called Poster!

"I don't know what writing style to use"

- In general, same advice as per science research articles
- Decide on the intended Journal *before* writing the paper, not after
- Check their *Instructions for Authors* and obey the rules on formatting! Read some other papers published in your target journal
- Think "brevity and clarity" – tell as much of the story as necessary, but tell it concisely

Writing checklist (after Joy *et al*)

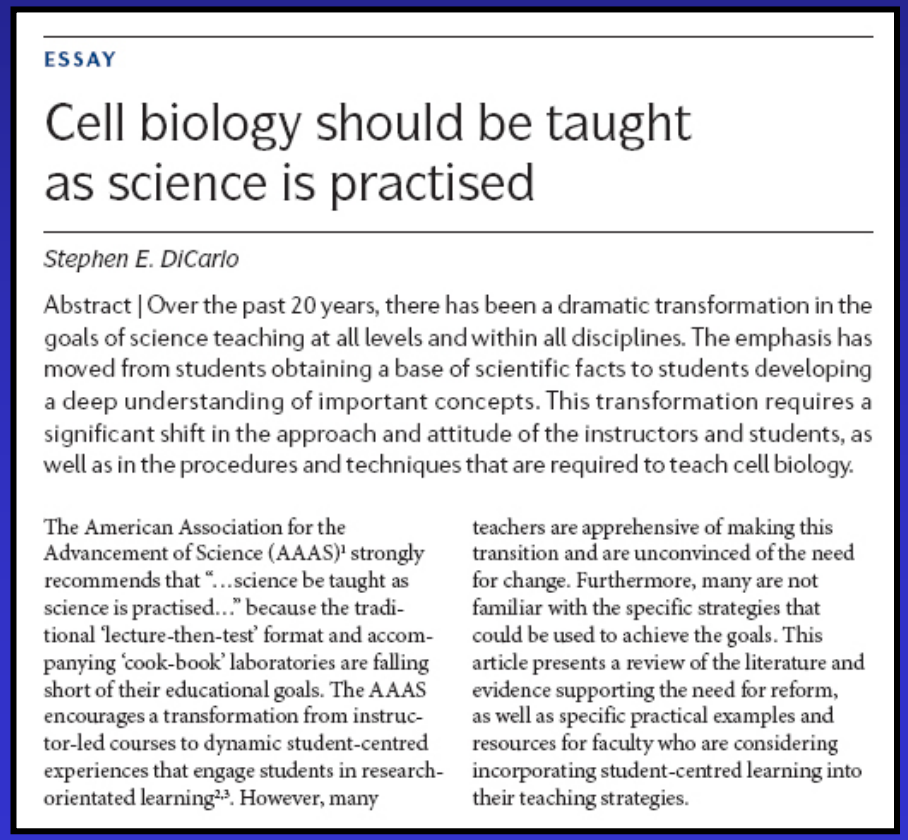
- Is the message *clear?*
- Is the message *interesting?*
  - *novel*?
  - appropriate for the *journal?*
  - appropriate for the *section* of journal?
- Is the message supported by *appropriate evidence?*
  - quantitative?
  - qualitative?
- Is the English of sufficiently *high quality?*
- Are the references *up to date?*
- Is the *formatting* correct?

"I'm not sure where to submit my work"

- Education articles in 'mainstream' science journals?
  - **Science** *Education Forum* – last issue every month
    http://www.sciencemag.org/sciext/educationforum/
  - **Nature Reviews Molecular Cell Biology**

- Realistically, need to develop reputation via other journals
- Generic v Subject-specific?
- Deliberations website

NRMCB **7**:290-296 (April 2006)



ESSAY

Cell biology should be taught as science is practised

Stephen E. DiCarlo

Abstract | Over the past 20 years, there has been a dramatic transformation in the goals of science teaching at all levels and within all disciplines. The emphasis has moved from students obtaining a base of scientific facts to students developing a deep understanding of important concepts. This transformation requires a significant shift in the approach and attitude of the instructors and students, as well as in the procedures and techniques that are required to teach cell biology.

The American Association for the Advancement of Science (AAAS)[1] strongly recommends that "…science be taught as science is practised…" because the traditional 'lecture-then-test' format and accompanying 'cook-book' laboratories are falling short of their educational goals. The AAAS encourages a transformation from instructor-led courses to dynamic student-centred experiences that engage students in research-orientated learning[2,3]. However, many teachers are apprehensive of making this transition and are unconvinced of the need for change. Furthermore, many are not familiar with the specific strategies that could be used to achieve the goals. This article presents a review of the literature and evidence supporting the need for reform, as well as specific practical examples and resources for faculty who are considering incorporating student-centred learning into their teaching strategies.

"I'm not sure where to submit my work"

- Deliberations website

  www.londonmet.ac.uk/deliberations/journals/

Generic v Specific?

- Generic:
  - higher impact factor?
  - wider readership?
  - cross-curricular projects
- Subject-specific:
  - nearer the ‘chalkface’
  - more likely to be of direct relevance to readers
  - more likely to be ‘used’

Publishing – generic education journals

- Assessment and Evaluation in Higher Education
- Studies in Higher Education
- Teaching in Higher Education
- Computers and Education
- International Journal of Science Education

An apology (to ICS delegates)

- Going to be drawing specific on biological examples
- But…

The Higher Education Academy Information and Computer Sciences


Getting Started in Computer Science Education Research

Contents

Getting Started in Computer Science Education Research

Authors: Mike Joy, Shanghau Sun, Jirarat Sitthiworachart, Jane Sinclair and Javier López.

This resource is aimed at academics whose background is principally in computing/IT at university level, and who are interested in developing their teaching activities with a view to research leading to publication.

"Getting started in computer science education research" by Mike Joy *et al*

Excellent and comprehensive analysis mapping type of PedR to particular computing journals

www.ics.heacademy.ac.uk/resources/pedagogical/cs_research/index.php

Publishing – biological journals

- Journal of Biological Education
- Bioscience Education E-journal
- Others:
  - CBE Life Sciences Education
  - Biochemical and Molecular Biology Edn
  - Advances in Physiology Education

Journal of Biological Education

INSTITUTE OF BIOLOGY

Why publish in JBE?

- ✓ Covers Secondary as well as Tertiary Edn
- ✓ Has (small) impact factor
- ✓ Widely read in UK and elsewhere
- ✗ Subscription required

www.iob.org/?tree=000_006_002

Bioscience Education E-journal

Why publish in Bioscience Education?

- ✓ Free electronic access for all
- ✓ Fast turn around
- ✓ Friendly service, supportive
- ✓ Broad range of articles accepted
- ✗ No impact factor at present

Bioscience Education e-journal

http://www.bioscience.heacademy.ac.uk/journal/

Bioscience Education: Range of articles

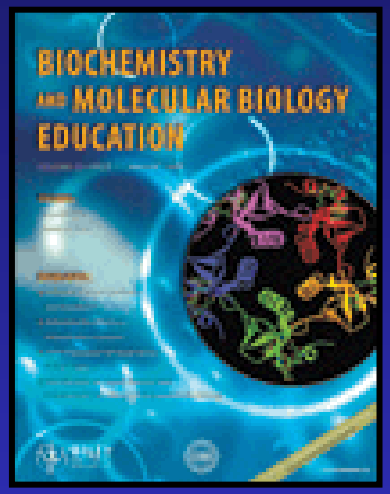
- Research articles
- Descriptive accounts (1)
- Descriptive accounts (2)/Short Communication
- Review articles on topics related to T&L
- Essays on bioscience education policy matters
- Reviews of current or historical interest
- Original electronic resources
- Reviews of books
- Reviews of websites

Bioscience Education e journal

http://www.bioscience.heacademy.ac.uk/journal/

Other Biological Pedagogy Journals

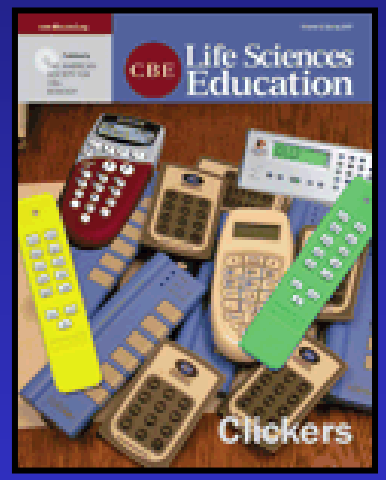
Some other titles serve sub-specialisms within biology



Biochemistry & Molecular Biology Education

www3.interscience.wiley.com/cgi-bin/jhome/112782101

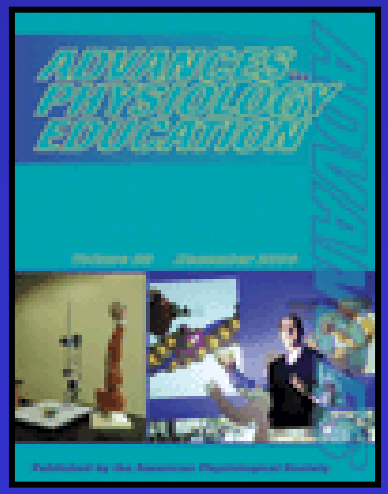
www.bambed.org



CBE Life Sciences Education

Formerly Cell Biology Education

www.lifescied.org



Advances in Physiology Education

http://advan.physiology.org/

Assessment & Evaluation in Higher Education

"... publishes papers and reports on all aspects of assessment and evaluation within higher education."

www.tandf.co.uk/journals/titles/02602938.html

Biological examples:

Orsmond *et al* (2005) Biology students' utilization of tutors' formative feedback: a qualitative interview study **30**:369-386

Cann (2005) Extended matching sets questions for online numeracy assessments: a case study **30**:633-640

Pickard (2006) Staff and student attitudes to plagiarism at University College Northampton **31**:215-232

Downs (2006) What should make up a final mark for a course? An investigation into the academic performance of first year Bioscience students **31**:345-364

Studies in Higher Education

"... welcomes empirically based, reflective and synoptic articles dealing with any aspect of higher education, approached from any perspective or discipline.

... articles should be written in an accessible, but rigorous, style that is likely to engage those without a specialist interest in the topic being discussed."

www.tandf.co.uk/journals/carfax/03075079.html

Biological examples:

Lawson and Johnson (2002) The validity of Kolb learning styles and neo-Piagetian developmental levels in college biology **27**:79-90

Hughes and Large (1993) Staff and peer-group assessment of oral communication skills **18**:379-385

Computers and Education

"The Editors welcome any papers on cognition, educational or training systems development using techniques from and applications in any technical knowledge domain."

www.sciencedirect.com/science/journal/03601315

Biological examples:

Evans *et al* (2004) Virtual learning in the biological sciences: pitfalls of simply "putting notes on the web" **43**:49-61

Riffell and Sibley (2005) Using web-based instruction to improve large undergraduate biology courses: An evaluation of a hybrid course format **44**:217-235

International Journal of Science Education

"...the authoritative voice in the world of science education. It bridges the gap between research and practice, providing information, ideas and opinion. It serves as a medium for the publication of definitive research findings."

www.tandf.co.uk/journals/titles/09500693.html

Biological examples:

Ellis (2004) University student approaches to learning science through writing **26**:1835-1853

Watters and Watters (2007) Approaches to learning by students in the biological sciences: implications for teaching **29**:19-43

Journal of Research in Science Teaching

"...publishes reports... on issues of science teaching and learning and science education policy ."

Scholarly manuscripts... employing qualitative, ethnographic, historical, survey, philosophical, or case study research approaches..."

www3.interscience.wiley.com/cgi-bin/jhome/31817

Biological examples:

Orgill and Bodner (2006) An analysis of the effectiveness of analogy use in college-level biochemistry textbooks **43**:1040-1060

Duncan and Reiser (2007) Reasoning across ontologically distinct levels: students' understanding of molecular genetics **in press** (DOI 10.1002/tea.20186)

Acknowledgements

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References

Joy M. *et al* (2007) Getting started in computer science education research
www.ics.heacademy.ac.uk/resources/pedagogical/cs_research/

McLeod S. et al (2005) Publishing scholarship in teaching and learning
www.csu.edu.au/division/landt/reschol/mcleodpaper.doc

Proceedings of the Science Learning and Teaching Conference 2005
www.bioscience.heacademy.ac.uk/events/reports/scilt2005.htm

Tavistock Report (2002) Review of current pedagogic research and practice in the fields of post-compulsory education and lifelong learning, conducted on behalf of the ESRC by Cullen *et al*
www.tlrp.org/pub/acadpub/Tavistockreport.pdf