



University  
of Glasgow

# *Engaging in the Scholarship of Teaching and Learning*

**Jane MacKenzie,  
Head of Academic Development**



My background

What is the Scholarship as the Scholarship of Teaching and Learning (SoTL)?

A SoTL framework including a worked example

Getting started with SoTL

- Finding a focus
- Evaluation methods
- Disseminating outcomes

Barriers to SoTL (if we have time)

## Now:

Head of Academic Development Unit responsible for:

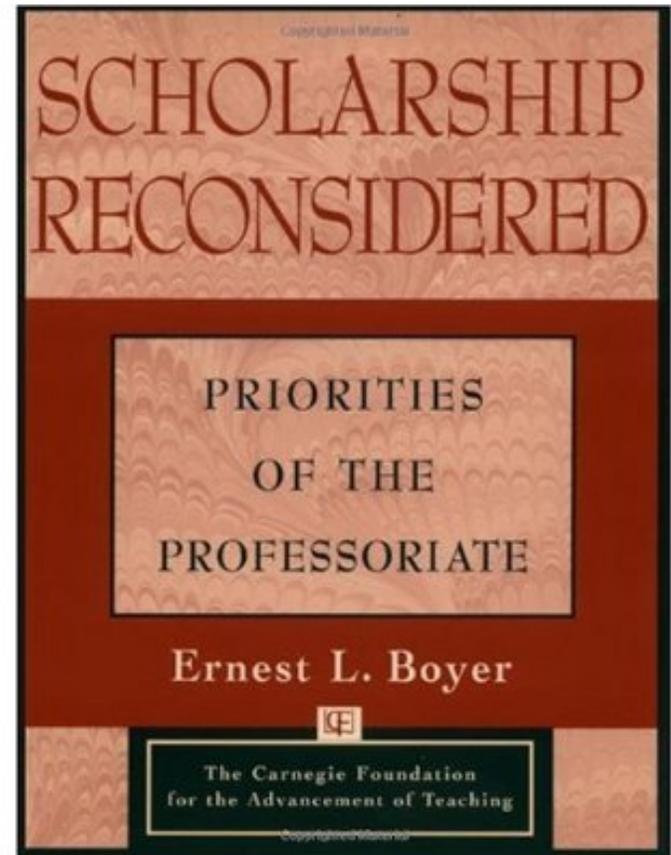
- Helping academic staff enhance their teaching
- Curriculum Development
- Quality Enhancement
- Helping staff to engage in SoTL

## Then:

- 15 years experience as a researcher (molecular biologist with extensive experience in cancer research and virology)

## Ernest Boyer's *Scholarship Reconsidered* (1990) identified 4 different and overlapping scholarships

- Scholarship of Discovery – research
- Scholarship of Application – service to the community/consultancy work
- Scholarship of Integration – makes links between disciplines/interdisciplinarity
- \*Scholarship of Teaching



\*Scholarship of Teaching has evolved into the *Scholarship of Teaching and Learning (SoTL)*

**SoTL is a very US-construct and has been described as:**

- A revolution
  - A movement
  - Something akin to a cult – SoTL *followers*
- 
- A process
  - An outcome or output

Over the past 25 years in the US it has become recognised as a normal form of faculty activity and is rewarded through tenure and promotion (at least in some universities).



- [Main page](#)
- [Contents](#)
- [Featured content](#)
- [Current events](#)
- [Random article](#)
- [Donate to Wikipedia](#)
- [Wikipedia store](#)
- Interaction**
- [Help](#)
- [About Wikipedia](#)
- [Community portal](#)
- [Recent changes](#)
- [Contact page](#)
- Tools**
- [What links here](#)
- [Related changes](#)
- [Upload file](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)
- [Wikidata item](#)
- [Cite this page](#)
- Print/export**
- [Create a book](#)
- [Download as PDF](#)
- [Printable version](#)

[Create account](#) [Not logged in](#) [Talk](#) [Contributions](#) [Log in](#)

Article [Talk](#)

Read [Edit](#) [View history](#)

## Scholarship of Teaching and Learning

From Wikipedia, the free encyclopedia

The **Scholarship of Teaching and Learning** (SOTL or SoTL; pronounced /s'otl/ or /s'otəl/) is a growing movement in post-secondary education. SOTL is scholarly inquiry into student learning which advances the practice of teaching by making research findings public.

SOTL necessarily builds on many past traditions in higher education, including classroom and program assessment, K-12 action research, the reflective practice movement, peer review of teaching, traditional educational research, and faculty development efforts to enhance teaching and learning. Terms closely related to the scholarship of teaching and learning are **good teaching** (that which promotes student learning and desired outcomes and is recognized by student satisfaction, peer review, etc.) and **scholarly teaching** (in which teaching is regarded as an area of study and the teaching and learning knowledge base is regarded as an additional discipline in which to develop expertise).

As such, SOTL research encompasses aspects of professional development or faculty development, such as how teachers can not only improve their expertise in their fields, but also develop their pedagogical expertise, i.e., how to better teach novice students in the field or enable their learning. It also encompasses the study and implementation of more modern teaching methods, such as **active learning**, **cooperative learning**, **problem based learning**, and others. SOTL researchers come from various backgrounds, such as those in educational psychology and other education related fields, as well as specialists in various disciplines who are interested in improving teaching and learning in their respective fields. Some researchers are educational researchers or consultants affiliated with **teaching and learning centers** at universities.

Research methods in SOTL include reflection and analysis, interviews and focus groups, questionnaires and surveys, content analysis of text, secondary analysis of existing data, **quasi-experiments** (comparison of two sections of the same course), observational research, and case studies, among others. As with all scholarly study, evidence depends not only upon the research method chosen but the relevant disciplinary standards. Dissemination for impact among scholarly teachers may be local within the academic department, college or university, or may be in published, peer-reviewed form. A few journals exclusively publish SOTL research, and numerous disciplinary publications disseminate such research (e.g., *J. Chem. Educ.*, *J. Natural Resour. Life Sci. Educ.*, *Research in the Teaching of English*, *College English*, *J. Economic Education*), as well as a number of **core SoTL journals and newsletters**.

**The International Society for the Scholarship of Teaching & Learning (ISSOTL)** [↗](#) was founded in 2004 by a committee of 67 scholars from several countries and serves faculty members, staff, and students who care about teaching and learning as serious intellectual work. ISSOTL has held annual conferences since 2004, attended by scholars from about a dozen nations. The conferences sites include Bloomington, Indiana USA (2004); Vancouver, British Columbia, Canada (2005); Washington, DC, USA (2006); Sydney, Australia (2007); Edmonton, Alberta, Canada (2008); Bloomington, Indiana, USA (2009); Liverpool, UK (2010); Milwaukee,

## **Most scholars agree that SoTL is distinct from excellent teaching and involves:**

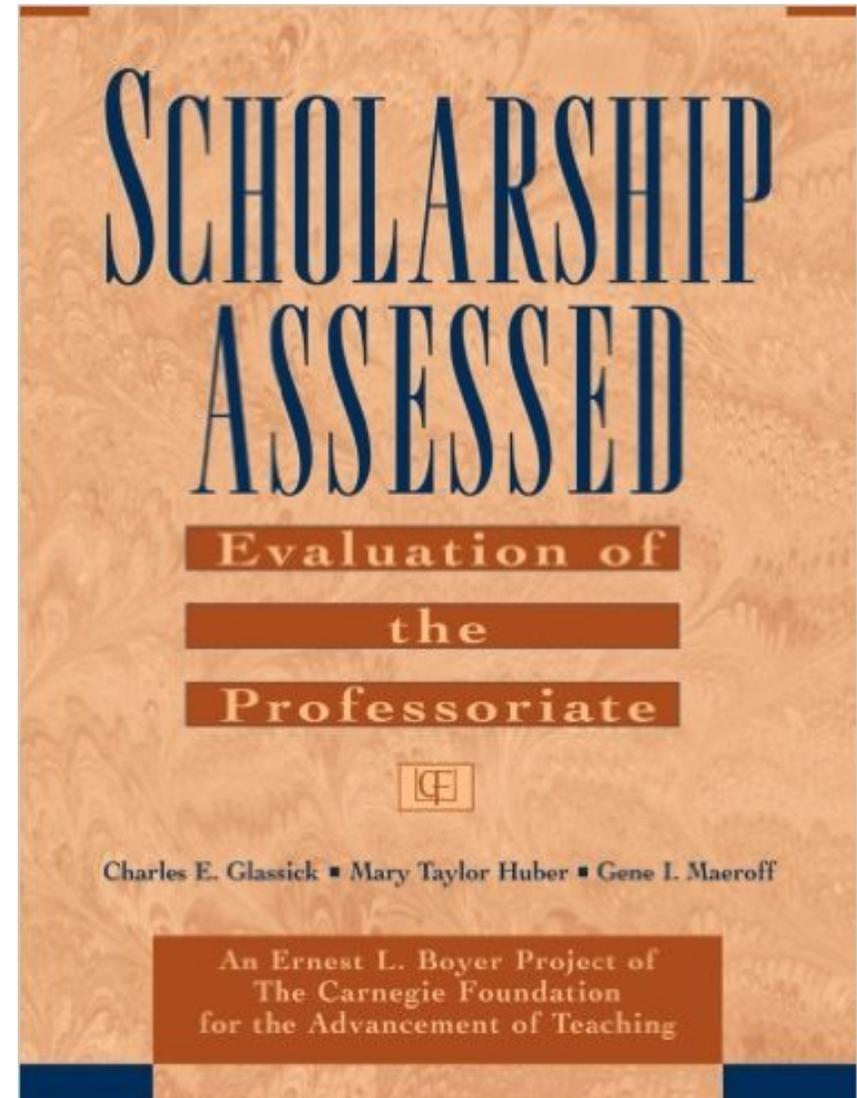
- Knowledge of the literature on teaching and learning as well as of our own discipline
- Reflection on and evaluation of our teaching and the learning of our students
- Dissemination of good practice

## What are you currently doing in your teaching practice that might constitute SoTL?

- Engaging with L+T literature
- Relective critique
- Evaluation of practice
- Dissemination of outcomes

## Glassick et al's framework

1. Clear goals
2. Adequate preparation
3. Appropriate methods
4. Significant results
5. Reflective critique
6. Effective dissemination



**Clear goals** – a clear articulation of the purpose of your SoTL work, sometimes formulated as questions, often problem focused but context dependent

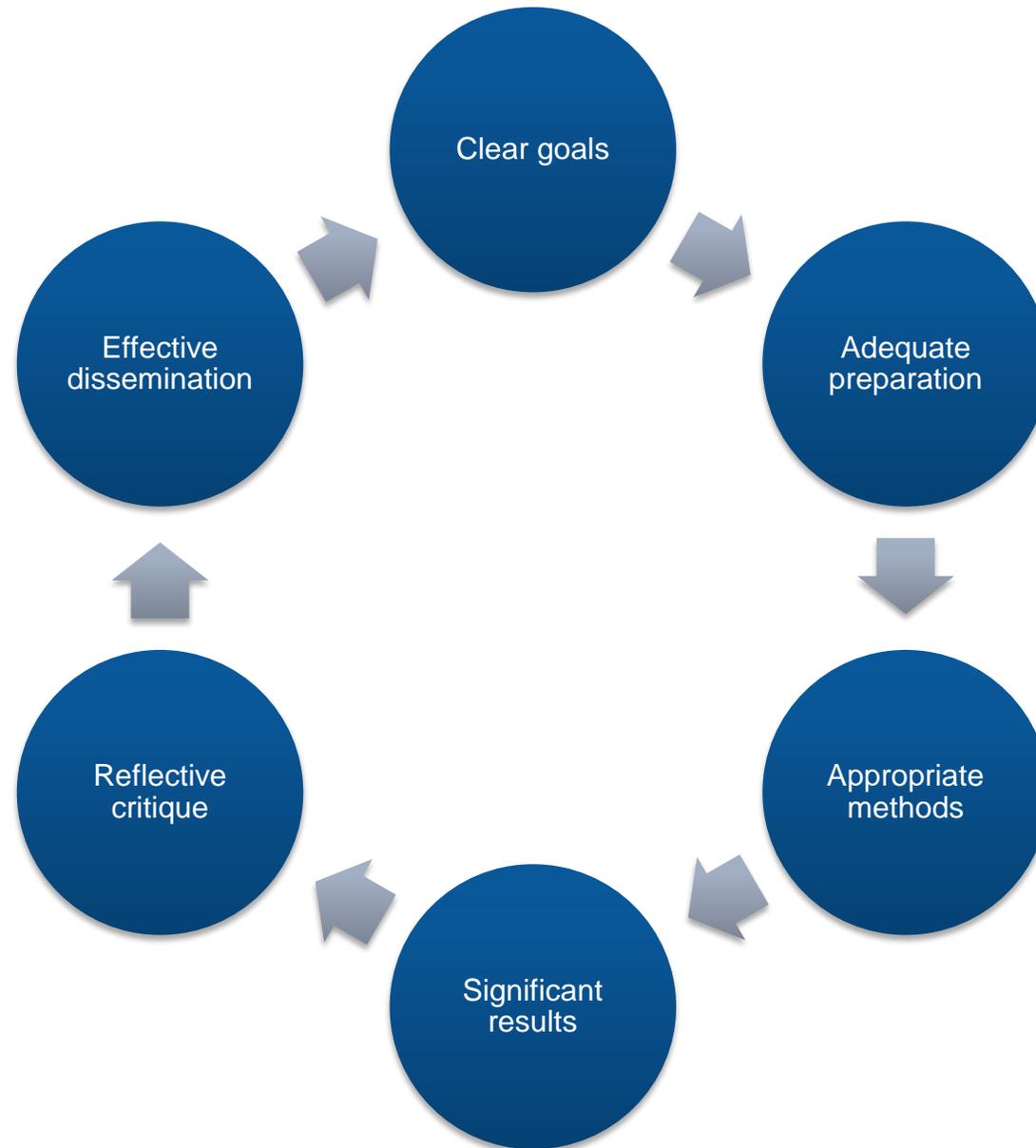
**Adequate preparation** – must include careful consideration about what is already known about your topic of investigation – engaging with the L+T literature

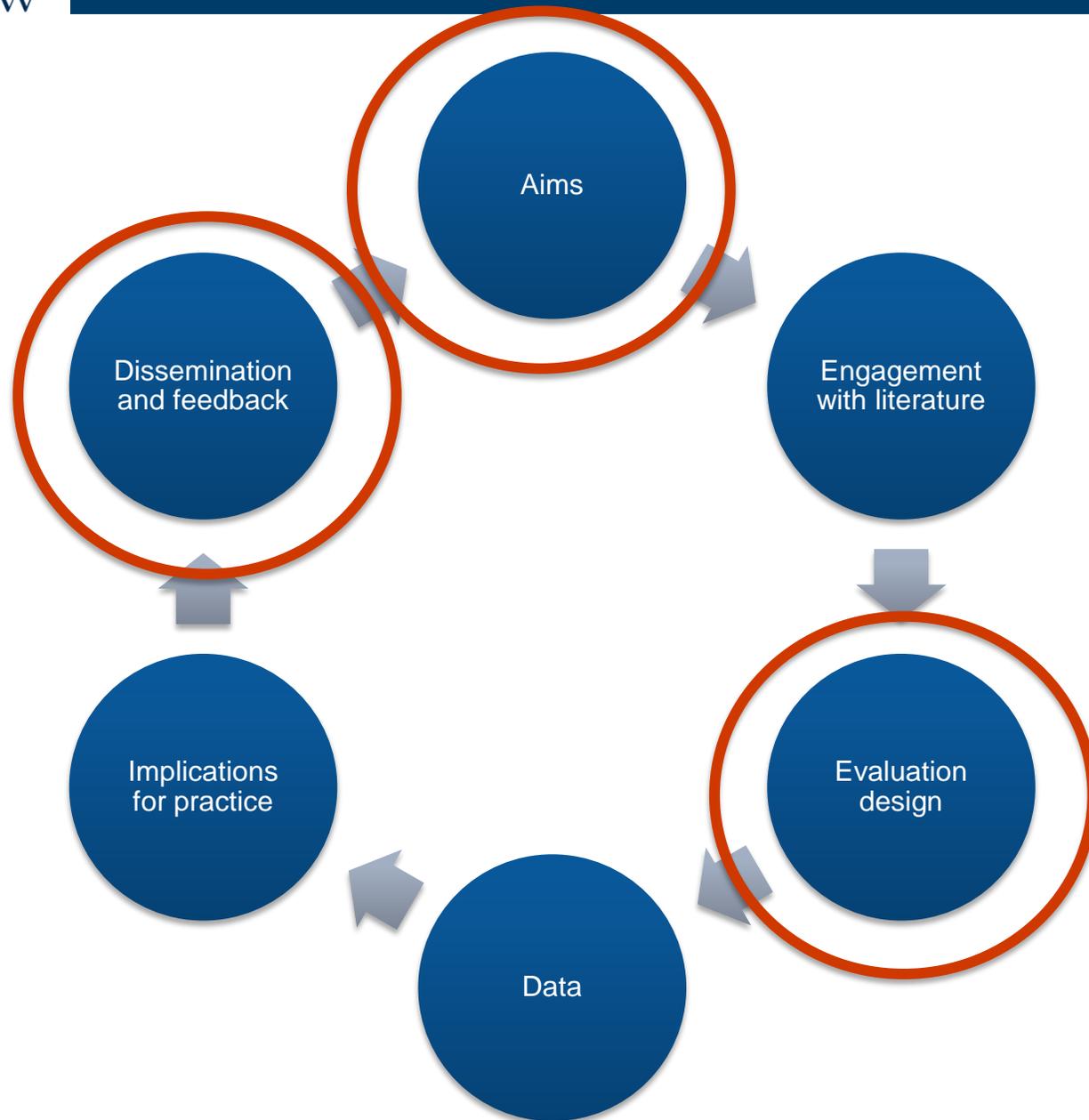
**Appropriate methods** – SoTL should be 'aligned' - select appropriate methods in order to achieve what you set out to achieve

**Significant results** – have the data you've gathered enabled you to address your focus or concerns.

**Reflective critique** – careful consideration of the implications of your findings for your own practice and/or the practice of others

**Effective dissemination** – who is going to benefit from your findings? How can you make your findings public so as to benefit from peer review? What do we mean by public?





Collaborative project (with colleague from Biology Faculty – Graeme Ruxton).

New discussion-based course introduced to help 3<sup>rd</sup> year Zoology students develop their experimental design skills

We wanted to establish whether the course was effective

Initially we had 2 specific questions:

- **Is some formal training in Experimental Design at level 3 better than none at all?**
- **Is this form of delivery better than conventional teaching (lecture)?**

These skills are essential for the successful biology graduate and should be developed in our degree programmes (Lederberg (1995)).

Most practical work involves participating in controlled exercises and highly structured investigations with little opportunity to truly 'experiment' prior to the final year project itself (Hazel and Baillie (1998)).

**Little known about how and when students develop the skill of experimental design**

**Is some formal training in Experimental Design at level 3 better than none at all?**

- Assessment scores
- Interviews with project supervisors

**Is this form of delivery better than conventional teaching (lecture)?**

- Student questionnaire at the end of the course

### Is some formal training in Experimental Design at level 3 better than none at all?

- Student **grades significantly higher** in a project based part of the degree than in previous years
- Project supervisors indicated that the **students were more engaged** in the projects than in previous years and needed substantially **less supervision**

### Is this form of delivery better than conventional teaching (lecture)?

- 90% of students believed they would be **better** at designing their own experiments after the sessions than before
- Discussion **format much preferred** over lecture

Collaborative nature of the project was important:

After the initial year's evaluation Graeme and I was interested in why the introduction of a course of experimental design was needed in the 3<sup>rd</sup> year of students' degrees

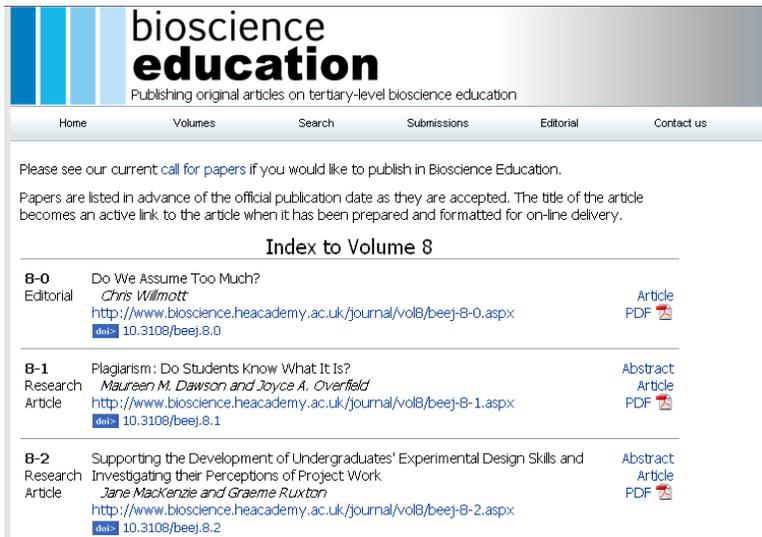
We wanted to explore students' experience of experimental work throughout their degree

So the following year we conducted in depth interviews with students at the end of their group projects.

Presented initial outcomes at Science Learning and Teaching Conference

Outcomes of student interviews published in HEA's Bioscience Education e-journal

Case study also placed on beSoTLed website



**bioscience education**  
Publishing original articles on tertiary-level bioscience education

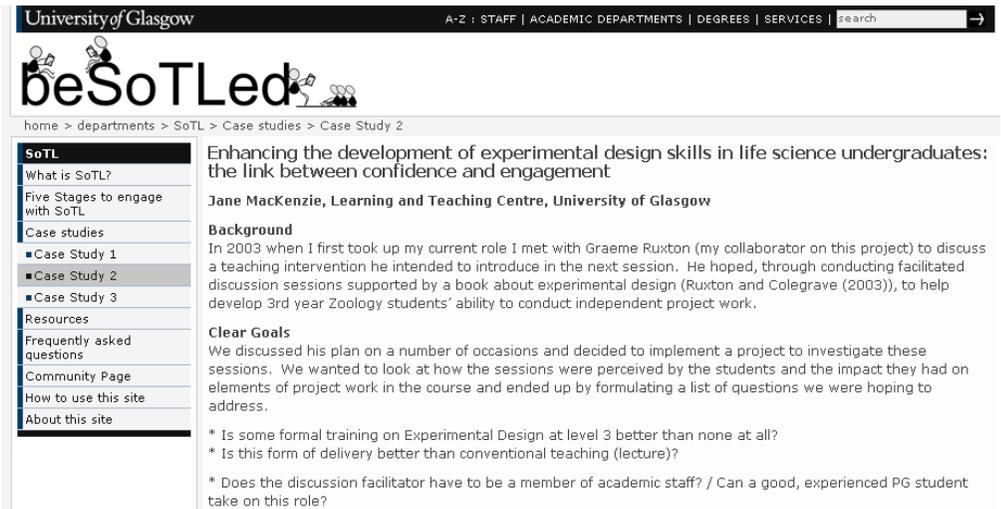
Home Volumes Search Submissions Editorial Contact us

Please see our current [call for papers](#) if you would like to publish in Bioscience Education.

Papers are listed in advance of the official publication date as they are accepted. The title of the article becomes an active link to the article when it has been prepared and formatted for on-line delivery.

**Index to Volume 8**

<b>B-0</b> Editorial	Do We Assume Too Much? <i>Chris Willmott</i>	Article PDF
<b>B-1</b> Research Article	Plagiarism: Do Students Know What It Is? <i>Maureen M. Dawson and Joyce A. Overfield</i>	Abstract Article PDF
<b>B-2</b> Research Article	Supporting the Development of Undergraduates' Experimental Design Skills and Investigating their Perceptions of Project Work <i>Jane MacKenzie and Graeme Ruxton</i>	Abstract Article PDF



University of Glasgow A-Z : STAFF | ACADEMIC DEPARTMENTS | DEGREES | SERVICES | Search

**beSoTLed**

home > departments > SoTL > Case studies > Case Study 2

**SoTL**

- What is SoTL?
- Five Stages to engage with SoTL
- Case studies
  - Case Study 1
  - Case Study 2**
  - Case Study 3
- Resources
- Frequently asked questions
- Community Page
- How to use this site
- About this site

**Enhancing the development of experimental design skills in life science undergraduates: the link between confidence and engagement**

**Jane MacKenzie, Learning and Teaching Centre, University of Glasgow**

**Background**

In 2003 when I first took up my current role I met with Graeme Ruxton (my collaborator on this project) to discuss a teaching intervention he intended to introduce in the next session. He hoped, through conducting facilitated discussion sessions supported by a book about experimental design (Ruxton and Colegrave (2003)), to help develop 3rd year Zoology students' ability to conduct independent project work.

**Clear Goals**

We discussed his plan on a number of occasions and decided to implement a project to investigate these sessions. We wanted to look at how the sessions were perceived by the students and the impact they had on elements of project work in the course and ended up by formulating a list of questions we were hoping to address.

- \* Is some formal training on Experimental Design at level 3 better than none at all?
- \* Is this form of delivery better than conventional teaching (lecture)?
- \* Does the discussion facilitator have to be a member of academic staff? / Can a good, experienced PG student take on this role?

## **SoTL projects vary in topic, scope, methodology and complexity:**

- Feedback from students on your teaching performance
- Evaluation of a new course
- Enquiry into what students value in terms of assessment and feedback
- Testing impact of using clickers in lectures
- Introduction and evaluation of support for critical thinking and writing
- Students' engagement with the use of technology

**In groups, consider one aspect of your teaching practice that you would like to know more about**

Consider things that have ‘gone wrong’ or didn’t go to plan in your classrooms/assessment work or didn’t go to plan – why do you think this is?

Or a class or test that has gone much better than you expected – why?

Or what just makes you curious about your teaching?

- Try to turn the observation you've just made into a question of topic for exploration
- Be clear about the terms you are using and the scope of what you want to explore
  
- How can you take this forward?
- What does the literature say about this topic and how can that inform your work?

**Evaluation** – gathering feedback on our teaching practice

**Assessment** – testing student learning

Tends to be reversed in the United States

**There are 3 obvious sources of evaluation data**

- Your students – gathering feedback
- Colleagues – peer observation of teaching
- Yourself – reflection on practice

## Student evaluation methods range from quantitative to qualitative

Quantitative methods can capture '**what**' is happening – this usually requires you to have an hypothesis to test

Qualitative methods can capture the '**why**' and are useful when you wish to explore a phenomenon

Starting out I have a preference for straightforward, exploratory, qualitative methods – you can always move to a more complex form of evaluation later

**You are limited only by your imagination**

**Simple methods include:**

- Questionnaires
- Focus group interviews
- Writing a letter to next year's class
- Confidence logs
- Nominal group technique

Questionnaires are the most commonly used evaluative instrument  
but:

*“They [can] reveal relatively little about the quality of the learning experience....and offer few insights into the nature of the possible improvements in teaching – and in learning.”*

George and Cowan (1999)

**Don't feel that you have to use a questionnaire!**

**For the purposes of gathering feedback on your teaching simple, open question-based questionnaires are sometimes best**

- Minute papers – can be used frequently with minimal disruption, asks student for brief responses to open questions e.g. What's the most important thing you learned? Anything you don't understand?
- Stop, start, continue – or better still stop, why, start, why, continue, why

**This is a very free form evaluation that can result in rich information about student experience with the added benefit of requiring students to formally reflect**

- Leave 5 or 10 minutes at the end of the last/a late class
- Ask student to write a short letter of advice to students doing the same course next year
- Can be done individually or as a group

## Has the advantage of being open and yet ranked – both qualitative and quantitative

- Start with the class being asked two or three very open questions (like Stop, start, continue or minute paper)
- Students asked to write their responses on white boards while tutor leaves the room
- Students then provided with votes (pens/postits/sticky dots) and asked to vote for the most important statements.

## **The evaluation cookbook**

<http://www.icbl.hw.ac.uk/ltidi/cookbook/contents.html>

**Reviewing your teaching** <http://www.ed.ac.uk/schools-departments/institute-academic-development/learning-teaching/staff/advice/researching/reviewing-your-teaching>

## **Classroom Assessment techniques**

<http://www.celt.iastate.edu/teaching/cat.html>

**beSoTLed** <http://tinyurl.com/orb8upc>

## Traditional SoTL outputs

- Conference presentations or seminars
- Books or chapters about the outcomes of SoTL work
- Journal articles

## **The literature about SoTL is clear: there are other non-traditional routes to dissemination and peer review:**

- Evaluated teaching materials, software, videotapes, workbooks
- Books or chapters about teaching in your discipline
- Scholarly blog posts
- Presenting to University committees/working groups on the outcomes of your work
- Websites that support learning of students or colleagues
- Leading/initiating networks for teachers in the discipline
- Others?

**What routes to dissemination are available to you?**  
**Think local, institutional, national, international AND**  
**discipline-specific and cross-disciplinary**

- Faculty or department committees or teaching meetings
- Discipline-based professional networks/bodies
- Discipline or cross-disciplinary conference papers
- Institutional presentations/workshops
- Self-publishing from twitter to blogs to online resources

## **So many journals – variable quality and rigour**

The Practice and Evidence for the Scholarship of Teaching and Learning in Higher Education (PESTLHE) [www.pestlhe.org.uk](http://www.pestlhe.org.uk)

Transformative Dialogues <http://www.kpu.ca/td>

JoSoTL <http://josotl.indiana.edu/>

IJSoTL <http://digitalcommons.georgiasouthern.edu/ij-sotl/>

The beSoTLed project – a website (open access) designed by 2 members of the GU Learning Community, **Lorna Morrow** (Department of Psychology) and **Rob McKerlie** (Dental School) and me



Working together to achieve more

<http://tinyurl.com/orb8upc> OR Google besotled

**Bell, S., et al. 2006. The Scholarship of Teaching and Learning: a university teacher learning community's work in progress. Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education 1: 3-12.**

**beSoTLed** <http://www.gla.ac.uk/departments/sotl/>

**Boyer, E. 1990. Scholarship revisited. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching**

**Evaluation cookbook** <http://www.icbl.hw.ac.uk/ltidi/cookbook/contents.html>

**HEA's pedagogical research toolkit** <http://exchange.ac.uk/downloads/ped-r-toolkit.pdf>

**Kreber, C. 2002. Teaching excellence, teaching expertise and the Scholarship of Teaching. Innovative Higher Education 27: 5-23.**

**Matthew, R. 2009. University Teachers – A new approach to staffing in Higher Education. Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education 4: 69-75.**

**Physical sciences Ped-R getting started resource**

[http://www.heacademy.ac.uk/assets/ps/documents/practice\\_guides/practice\\_guides/getting\\_started\\_ped\\_research.pdf](http://www.heacademy.ac.uk/assets/ps/documents/practice_guides/practice_guides/getting_started_ped_research.pdf)



**Questions?**

**What might get in the way of you starting/getting on with/completing scholarship/SoTL work?**

**What might encourage you to start/get on with/complete scholarship/SoTL work?**

Time

Coming up with a focus

Getting started

Maintaining enthusias?

Procrastination?

\*Not knowing the best methods of evaluation/  
getting student feedback

Writing for public consumption

Finishing off