Lessons in Achieving Evidence-based Teaching Practice

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Two acts of professionalism in university teaching

Using existing evidence in teaching
Gathering local evidence on teaching

Scholarship of Teaching and Learning (SoTL)

SoTL, where the focus is on learning, not research
Presentation based on Chapter 15:

Scholarship of teaching and learning

2012, ACER press
Who is doing it?

<table>
<thead>
<tr>
<th>Scholarship of Teaching and Learning item</th>
<th>Disagree</th>
<th>Agree</th>
<th>d/k</th>
</tr>
</thead>
<tbody>
<tr>
<td>I often ask other teachers to comment on my teaching ideas.</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
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<td>I often investigate questions related to how students learn in my discipline.</td>
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<td>Improving my teaching is more effective if reviewed by my colleagues.</td>
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<td>I can explain what concepts, models or theories underpin my teaching in this subject.</td>
<td></td>
<td>✓</td>
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</table>
What is scholarship of teaching/learning?

... begins with intellectual curiosity, is conducted deliberately and systematically, is grounded in an analysis of relevant evidence, and results in findings shared with peers to be reviewed and to expand a knowledge base.  

[Taylor Inst T&L Calgary]

Case 1. Decide whether you think this is an example of SoTL or not.
When grappling with the dilemma of how to encourage her students to be more engaged with her subject matter, Miranda picked up an idea from the start of a TV program. It began with three people talking about their experience of the topic of the program. She wondered if she could ask a student, mid-way through each teaching session, to present a scenario that showed how they thought her topic was of relevance to them (and other students). She drafted an outline of how it might work — how the students would be selected, what notice they would be given, how long they would be asked to talk in each class, what she expected to happen and why? Before trying it she sent a copy by email to an experienced colleague. She explained that she thought the student experience would be enhanced because they may be able to connect more with the topic if they experienced it as being more relevant. Her colleague agreed to observe her using the idea and on judging it to have been successful, suggested she write up a two-page outline of the process as a teaching tip.
A way to raise the status of teaching

A means through which teachers may come to teach more knowledgeably

A means through which the quality of teaching may be assessed

A way to enhance students’ experience of learning
Scholarship
Boyer’s overlapping scholarships

Teaching

Discovery

Integration

Application
To be **scholarly** is to be engaged in personal, but rigorous intellectual inquiry/investigation and development involving values such as honesty, integrity, open-mindedness, scepticism and intellectual humility, and building on what is known.

To be engaged in **scholarship** is to take that process, for scrutiny, into the public arena.

It is to make transparent the processes and outcomes of scholarly activities.
Scholarship of discovery

Discovery
Scholarship of discovery is research, which involves making transparent the scholarly processes that contribute new knowledge to the field.

Example: Studies of how faculty emotions in biology teaching are related to student learning.
What is scholarship of teaching/learning

SoTL

If teaching is about making learning possible …

… then the scholarship of teaching is about making transparent how learning is being made possible.

If teaching is about collaborative meaning-making …

… then the scholarship of teaching is about making transparent how collaborative meaning-making is happening.
Scholarship of teaching

Teaching
Making transparent how learning has been made possible. Discussing, reflecting, describing, in an informed and literature-based scholarly way, what happened and why.

Example: A departmental discussion about an approach to teaching a course using student-focused teaching ideas from the literature to explain learning aims.
<table>
<thead>
<tr>
<th>Level</th>
<th>Purpose of investigation</th>
<th>Evidence gathering processes will be</th>
<th>Investigation results in</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To inform oneself</td>
<td>Verified by self</td>
<td>Personal knowledge</td>
</tr>
<tr>
<td>2</td>
<td>To inform a group within a shared context</td>
<td>Verified by those within the same context</td>
<td>Local knowledge</td>
</tr>
<tr>
<td>3</td>
<td>To inform a wider audience</td>
<td>Verified by those outside of that context</td>
<td>Public knowledge</td>
</tr>
</tbody>
</table>
Engaging in SoTL - procedures

Six Steps (order of 1-3 may change)

1. Use a ‘theory’, model, framework or a substantial teaching tip to ground the initiative and provide the justification for action

2. Identify an intervention, or a current practice, or a collection of information that might lead to enhanced learning (preferably linked to a theory)

3. Formulate an investigative question related to teaching and/or student learning in the chosen context
Adapted from Trigwell, K. & Prosser M. (1996). Towards an understanding of individual acts of teaching. HERD.
CONSTRUCTIVE ALIGNMENT

To perform an examination skill on a patient

Observation of a doctor, then practise skill at the bedside with real-time feedback

Perform skill on a role model in an observed assessment
Structure of Observed Learning Outcomes (SOLO) taxonomy

Biggs & Tang (2007)

Levels of understanding:
- Prestructural
- Unistructural
- Multistructural
- Relational
- Extended abstract

Comparing/Contrasting:
- Compare
- Contrast
- Explain causes
- Analyse
- Apply

Theorising:
- Theorise
- Generalise
- Hypothesise
- Reflect

Activities:
- Identify
- Do simple procedure
- Enumerate
- Describe
- List
- Combine
- Analyse
- Apply
- Reflect

Not relevant
SoTL procedures

Steps (order of 1-3 may change)

1. Use a ‘theory’, model, framework or a substantial teaching tip to ground the initiative and provide the justification for action

2. Identify an intervention, or a current practice, or a collection of information that might lead to enhanced learning (preferably linked to the theory)

3. Formulate an investigative question related to teaching and/or student learning in the chosen context

4. Conduct an investigation (empirical, theoretical or literature-based) which addresses the question [with appropriate method]

5. Produce a result and some form of public artefact

6. Invite peer review on the clarity of each of the theory, practice, question, method and result steps of the procedure.

Trigwell, 2012, p.255
### Who should be engaged with SoTL?

<table>
<thead>
<tr>
<th>Level</th>
<th>Purposes</th>
<th>Verified by</th>
<th>Knowledge</th>
<th>SoTL</th>
<th>Who should do it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inform self</td>
<td>Self</td>
<td>Self</td>
<td>No</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>Inform local</td>
<td>Local peers</td>
<td>Local</td>
<td>Yes</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>Inform the world</td>
<td>Internat. peers</td>
<td>International</td>
<td>Yes (o/l)</td>
<td>?</td>
</tr>
</tbody>
</table>
### Scholarship of Teaching and Learning item

<table>
<thead>
<tr>
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<td>I often ask other teachers to comment on my teaching ideas.</td>
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<td>Public</td>
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<td>I often investigate questions related to how students learn in my discipline.</td>
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<td>✓</td>
<td>Inquire</td>
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<td>Improving my teaching is more effective if reviewed by my colleagues.</td>
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<td>✓</td>
<td>Review</td>
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<tr>
<td>I can explain what concepts, models or theories underpin my teaching in this subject.</td>
<td></td>
<td>✓</td>
<td>Theory</td>
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</table>
Why should all faculty do level 2?

Pearson Correlation co-efficients for Approaches to Teaching and Scholarship of Teaching

<table>
<thead>
<tr>
<th>Variable</th>
<th>Theory</th>
<th>Public</th>
<th>Inquire</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCSF</td>
<td>.30*</td>
<td>.42**</td>
<td>.43**</td>
<td>.43**</td>
</tr>
<tr>
<td>ITTF</td>
<td>-.27*</td>
<td>-.12</td>
<td>-.13</td>
<td>-.36**</td>
</tr>
</tbody>
</table>

CCSF = Conceptual Change/Student-focused approach to teaching
ITTF = Information Transfer/Teacher-focused approach to teaching

N = 56, *p<.05; **p<.01; ***p<.001
Engaging in SoTL

Preparing the ground for SoTL might involve:

› find out who in your department is already engaged in SoTL
› contact CoESP to see what they do and/or can do
› establish or join a network of university teachers with whom you can share your thoughts on teaching
› become familiar with learning ‘theories’ and teaching ideas and frameworks (see Chapters 1 and 2, of Hunt & Chalmers, 2012)
› attend research conferences that include teaching and learning in your discipline, and conferences about teaching and learning
› find out what sorts of SoTL investigations are acceptable.
   e.g. institutional support for the method used
Engaging in SoTL

Getting started

› List the questions related to your teaching or your students’ learning that you would like to know more about
› Search the literature for answers to those questions. If not answered …

A very useful starting resource is:

› A Tertiary Practitioner’s Guide to Collecting Evidence of Learner Benefit
› (Alkema 2011) – from this web-link


› Be clear about your purpose (level 2 or levels 2 and 3)
Engaging in SoTL

Evaluation as SoTL

Evidence-based educational evaluation (General):

   Evidence from more than one source/method

(for example, Guba & Lincoln, 1985)

Contextualised information can also be found in standard university teaching development texts:

(for example Ramsden, 2003, *Learning to Teach in Higher Education*)

Short, practical guides:

(for example Knight, 2002, *Small Scale Research: Pragmatic inquiry in social science and the caring professions*)
Overlapping scholarships

Teaching

Discovery

Overlapping Scholarships
Example: An investigation designed as a result of a literature-informed discussion, in a biology department, about student learning in relation to the use of constructive alignment in teaching biology.

The study has a focus on the department, and is intended for use in improving learning, but also includes departments in other universities, with an eye on publication in the biology education literature.
Scholarship of:

- Teaching
- Discovery

Levels 1 & 2 Investigation
Level 3 Investigation
Engaging in SoTL

Level 3 engagement

A practical approach to a successful outcome is to be a part of a team of investigators that includes someone familiar with social science research. They can provide:

- guidance on methodology and analytical techniques,
- interpretation of research texts, e.g. Cohen et al. (2007) and Tight (2003).
Engaging in SoTL

Level 3 engagement: All good research practices apply

- Align investigation background, question, & method
- Read related applications
- Complete a thorough search for what has already been researched
- Ensure that anticipated results are likely to be new knowledge
- Allow time to prepare the application/proposal
- Involve peers at all stages
- Marrying results with literature
- Ethics approval may be needed for publication
Engaging in SoTL is most likely to be a rewarding experience if it is seen as an integral part of teaching, and engaged in, with others, as questions about teaching arise during practice.