

TU616
12:30 – 2:00

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Overview of Contents

Teaching and Learning Considerations:

- The Scholarship of Teaching & Learning (SoTL)
- The nature of Research and Scholarship
- Strategies that support pedagogic research and scholarship
- Benefits for you and your classroom

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The structure of the seminar involves **presentation** of various SoTL concepts and then an **exploration** and discussion of strategies that support pedagogic research and scholarship, and their benefits for you and your classroom.

Assistance with the “evaluative” aspects and further exploration of SoTL is available from eLDSS. Please just contact me for assistance Email: etpeterd@inet.polyu.edu.hk

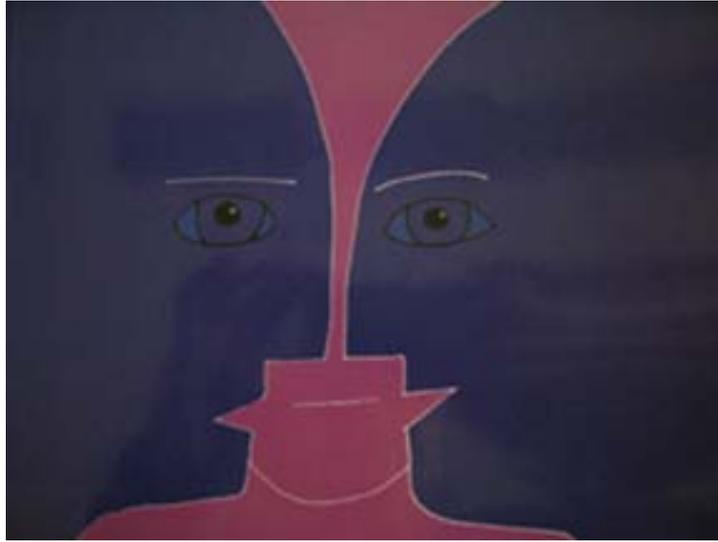
The goals of the workshop are;

- To develop an understanding of SoTL
- To present opportunities for participants to explore conceptions of SoTL
- To develop an awareness of SoTL and the possibilities for use in Teaching and Learning in Higher Education.
- To reflect on issues related to SoTL
- To model some [active classroom](#) strategies
- To promote opportunities for further support

Notes.....

(what do you want out of the workshop?)

SoTL – the Scholarship of Teaching and Learning ...



"The improvement of learning and teaching is dependent upon the development of scholarship and research in teaching."
(Prosser and Trigwell, 1999: 8)

The **Scholarship of Teaching and Learning** (SoTL; pronounced *so'.tl* or *S O T and L*) is a growing movement in post-secondary education. SoTL is scholarly inquiry into student learning which advances the practice of teaching by sharing this research publicly.

REF - http://en.wikipedia.org/wiki/Scholarship_of_Teaching_and_Learning

ACTIVITY:

What do you understand by the term "Scholarship of Teaching and Learning"?

What is the Scholarship of Teaching and Learning?

Perhaps the clearest way to define the Scholarship of Teaching is to differentiate between it, Excellent Teaching, and Scholarly Teaching.

Excellent Teaching is effective teaching, but it is not necessarily informed by scholarly literature pertaining to teaching and learning. It is based on naturalized practices developed from personal experience, trial, and error rather than based on a reasoned inquiry into how and why students learn.

Scholarly Teaching refers to teaching that is informed by scholarship conducted by others. Scholarly teachers seek to improve their teaching by consulting relevant literature, seeking feedback from students, consulting peers and mentors, and incorporating theories and strategies into their course design and classroom practices.

A Scholar of Teaching actually undertakes research that will contribute to literature pertaining to teaching and learning. A scholarly approach to teaching means that teaching is treated in the same scholarly way as one's area of research. It involves defining a problem or question, investigating the problem or question through appropriately designed research, and drawing conclusions. It also involves peer review, the basis on which much scholarship is currently evaluated, and therefore involves making results public.

Lee Shulman, president of the Carnegie Foundation, suggests that [scholarship](#) – as opposed to other acts of intelligence – has at three features (1999):

- It becomes public
- It becomes an object of critical review and evaluation by members of one's community
- Members of one's community begin to use, build upon, and develop the scholarship

An understanding of teaching and learning challenges as legitimate questions for scholarly inquiry.

A belief, therefore, that teaching is intellectual work, not merely the effective use of methods or techniques, and that discipline specialists are often best prepared to pose and pursue learning problems in their fields.

An understanding of teaching as a set of reflective practices which can be advanced through scholarly inquiry into student learning.

A belief, therefore, that the results of this inquiry should be made public, available for critical review and accessible for exchange and use by other scholars.

REF - Southampton Institute (2003) Definitions and Activities, Annex 1 to the Review of Research and Scholarship, 02/rsc/02, Research and Scholarship Committee, 4 February 2003

ACTIVITY:

Read through the Quotations relating to SoTL and indicate your rating.

Discuss with the people at your table..

Why the Scholarship of Teaching and Learning (SoTL)

The scholarship of teaching and learning movement has caused a buzz because it **attempts to move beyond the polarization of teaching and research**. Rather than have academics who are either teachers or researchers and who work in institutions that specialize in either teaching or research, the scholarship of teaching and learning attempts to bring a scholarly research approach to teaching, integrating the two aspects. For those who tend to privilege the research aspect of their academic careers, the scholarship of teaching and learning offers a way of bringing that research to their teaching. For those who privilege teaching, the scholarship of teaching and learning provides a way of examining how it is done, how it works, and what good teaching looks like.

Too often, the “problems” at the centre of research and teaching are viewed quite differently, according to Randy Bass in “[The Scholarship of Teaching: What’s the Problem?](#)”. In research, the problem is central to the investigative process and is therefore a positive element. In teaching, “problems” are something to be fixed rather than something to be investigated on an ongoing basis. Bass suggests, “Changing the status of the *problem* in teaching from terminal remediation to ongoing investigation is precisely what the movement for a scholarship of teaching is all about.”

It is natural for teachers to want to improve their effectiveness. The scholarship of teaching and learning provides a structured and valued means of both exploring current understanding of how students learn, and contributing to that understanding. It explains the effectiveness of some teaching practices while determining why others have not met expectations. More importantly, it is about investigating issues of significance to the teacher, rather than what is important to his/her department,

university, or the wider teaching community (although they may well benefit from such research).

While academics tend to participate in disciplinary communities, they unfortunately only rarely participate in educational communities. The scholarship of teaching and learning provides opportunities for scholars to participate in such a community, by drawing on the research of others (much of which may not be otherwise encountered by teachers), and by sharing original research publicly, opening it to peer review and allowing others to build on it.

Background to the Scholarship of Teaching and Learning (SoTL)

The very concept of a scholarship of pedagogy is still very unfamiliar to many university teachers' (Baume, 1996: 4)

Developing the scholarship of teaching is an important way in which individuals can act as professional teachers, and institutions and disciplines can raise the status of teaching. During the last decade there has been a growing interest in the UK in the scholarship of teaching. Much of the impetus for this came for the Dearing Report (NCIHE, 1997). This led to:

- The founding of the Institute for Learning and Teaching: Members of the Institute are expected to adhere to its professional values, which include a commitment to scholarship in teaching and a commitment to continued reflection and evaluation and consequent improvement of practice.
- The need for all Higher Education Institutions (HEIs) to develop a learning and teaching strategy: There are a wide range of mechanisms that institutions are putting in place to embed the scholarship of teaching.
- The development of the Learning and Teaching Support Network: This is a network of 24 subject centres supported by a Generic Centre, which builds on earlier initiatives, such as the Department for Education and Employment (DfEE) Discipline Networks and the Higher Education Funding Council for England's (HEFCE's) Fund for the Development of Learning and Teaching (FDTL). All of these initiatives recognise the importance of a discipline-based approach to promoting and sharing good practice in teaching, learning and assessment.

Developing the scholarship of teaching is an international issue, but the way the argument is played out varies between countries. For example, in the US, the issue of roles and rewards has been important (Diamond and Adam, 1995), while in the UK the discussion of the relationship of research and teaching and the impact of the Research Assessment Exercise (RAE) has dominated the debate (Healey, 2001; Jenkins, 2000; Southampton Institute, 2000).

In HK - UGC -

http://www.ugc.edu.hk/eng/doc/ugc/publication/prog/rae/rae_2006.pdf

► Research Assessment Exercise (RAE) 2006 The RAE is part of the UGC's performance-based funding assessment process. It aims to measure the output and quality of research of the UGC-funded institutions by cost centre as one of the key

factors for allocating the research portion of the institutional recurrent grant for the next funding period in a publicly accountable way.

RAE 2006 is the fourth RAE to be undertaken by the UGC at a 6-year interval since the last exercise in 1999. Given the rising standards both in Hong Kong and elsewhere, the UGC has decided consciously to raise the quality threshold in the 2006 exercise continuously to emphasize and to improve quality.

Characteristics of SoTL

For a start the scholarship **of** teaching (as discussed above) needs to be distinguished from the scholarship **for** teaching, ie 'being knowledgeable and up to date in the subject that you teach'

A scholarly approach to teaching entails being familiar with the latest ideas in one's subject and also being informed by current ideas for teaching that subject. A scholarly approach also involves evaluating and reflecting on one's teaching practice and the student learning which follows. The scholarship of teaching shares these characteristics of excellent and scholarly teaching, but in addition involves communicating and disseminating about the teaching and learning practices of one's subject. It also entails investigating questions relating to how students learn within a discipline.

Generally speaking, drawing on the work of Boyer, Martin et al. (1998, 1999) identify a consensus that the scholarship of teaching involves three essential and integrated elements:

- engagement with the scholarly contributions of others on teaching and learning
- reflection on one's own teaching practice and the learning of students within the context of a particular discipline
- communication and dissemination of aspects of practice and theoretical ideas about teaching and learning in general and teaching and learning within the discipline.

Scholarship in teaching has five characteristics

1. It reflects the natures, values, fundamental concepts and modes of enquiry specific to the discipline.
2. It considers learning assessments and outcomes.
3. It inquires into the effectiveness of aims and research into teaching and learning.
4. It responds to the need for continuous improvement resulting from reflection and inquiry.
5. It communicates new questions and knowledge about teaching and learning.

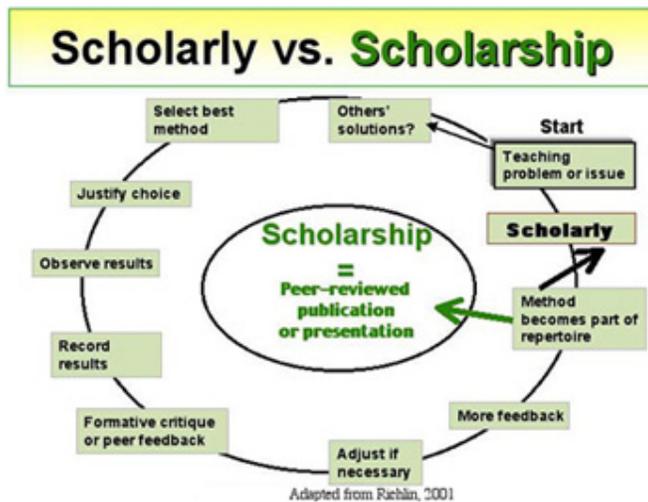
For more information on how these principles of scholarly teaching can be translated into practice and documented, visit [*The Australian Scholarship in Teaching Project*](#) web site.

SoTL – Debates over meaning

'The scholarship of teaching has become an amorphous term, equated more with commitment to teaching than with any concrete, substantive sense of definition or consensus as to how this scholarship can be recognized'
(Menges, Weimer and Associates, 1996: xii)

'Despite an increasing number of articles and books on teaching-scholarship published in recent years ... the notion of teaching scholarship remains an elusive yet intriguing concept'
(Kreber, 1999: 323)

Scholarly Teaching vs. the Scholarship of Teaching



There is some debate in the literature over the distinction among excellent teaching, scholarly teaching, and the scholarship of teaching. Foremost among those who distinguish between scholarly teaching and the scholarship of teaching is Laurie Richlin. Richlin presents a process that begins with a teaching issue or problem, the search for a theoretical and practical solution, and review by students and peers. This process has two possible fulfillments. The first is improved practice (scholarly teaching). What Richlin calls "the scholarship part of the process" is contingent upon the findings being "submitted to an appropriate journal or conference venue".

Most researchers agree, however, that not all excellent teachers are scholarly teachers (see for example Kreber, 2001; Weimer, 1997; Healey, 2000). Hutchings and Shulman express the distinction correctly when they say that the scholarship of teaching and learning is not just excellent teaching, "a responsibility that all teachers share," but rather a situation in which faculty pose and "systematically investigate" questions related to teaching improvement and student learning.

Boyer's Paradigm

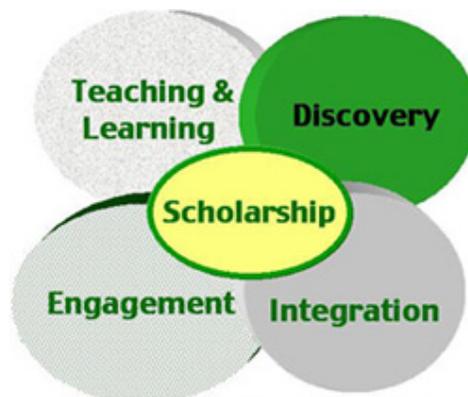
REF - http://www.usask.ca/gmcte/sotl/how_do.php

The practice of scholarly teaching is not new, but it is just over a decade since the term became part of the lexicon. In 1990, Ernest Boyer, former President of the Carnegie Foundation for the Advancement of Teaching, wrote **Scholarship Reconsidered: Priorities of the Professoriate**. Seeking to overturn the dominant view that to be a scholar is to be a researcher, Boyer argued, "*Faculty must assume a primary responsibility for giving scholarship a richer, more vital meaning.*"

Boyer's paradigm posits four overlapping and interdependent scholarships:

- The scholarship of discovery
- The scholarship of integration
- The scholarship of engagement (first called "application")
- The scholarship of teaching

See a fuller discussion of these on this [SoTL page](#).



Ernest Boyer's fourfold vision of Scholarship

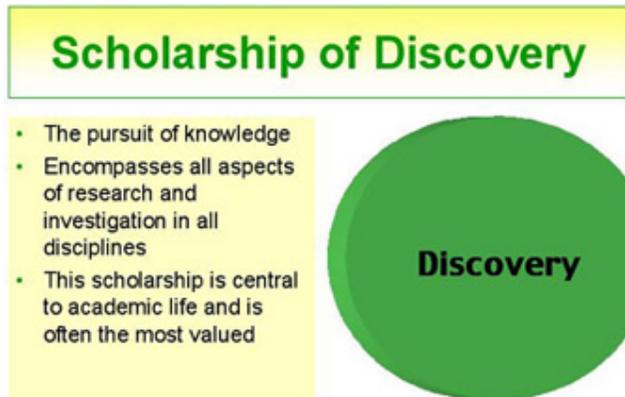
In recent years, Boyer's Scholarship of Teaching has been renamed the Scholarship of Teaching and Learning, (SoTL), for as Mick Healey argues, teaching and learning in higher education are "inextricably linked, so the scholarship of teaching is as much about learning as it is about teaching" and its aim should be to make the processes by which we have achieved that aim "transparent" (2000:170-171).

Ernest Boyer's *Scholarship Reconsidered: Priorities of the Professoriate* (1990) was written, in part, to put an end to the false polarity between teaching and research in the academy and to recognize and reward the vast array of faculty responsibilities. Boyer offered a new paradigm of scholarship. He sought to overturn the dominant view that "*to be a scholar is to be a researcher and publication is the primary yardstick by which scholarly productivity is measured.*"

Many have embraced Boyer's work, calling it seminal, and crediting him with rejuvenating the concept of scholarship by validating teaching and service as scholarly activities. Their endorsement, especially with respect to the scholarship of

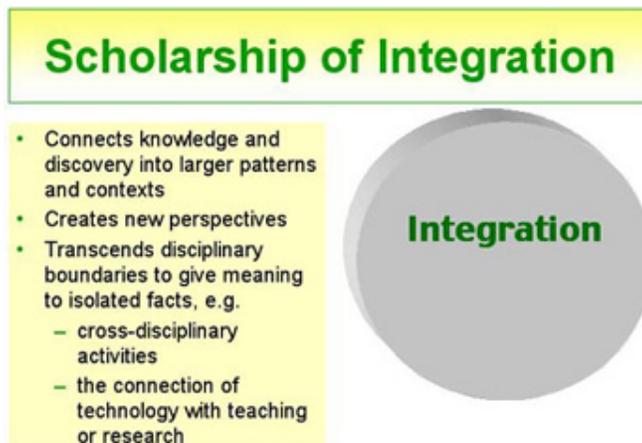
teaching, is reflected internationally in university mission statements, the movement towards certification in university teaching, and the ever-growing interest in teaching portfolios.

The Scholarship of Discovery or Inquiry



Encompassing all aspects of research and investigation in all disciplines, the scholarship of discovery is the pursuit of knowledge. This scholarship is central to academic life.

The Scholarship of Integration



By connecting knowledge and discovery into larger patterns and contexts, creating new perspectives, the scholarship of integration may transcend disciplinary boundaries to give meaning to isolated facts. Integration includes, for example, cross-disciplinary activities and the connection of technology with teaching or research.

The Scholarship of Application or Engagement

Scholarship of Engagement

- Related to the concept of service
- Involves the scholar's engagement in problems that affect individuals, institutions, and society
- The rigorous application of one's academic expertise to what Boyer calls "consequential problems"



Relating most closely to the concept of service, application involves the scholar's engagement in problems that affect individuals, institutions, and society. This scholarship is the rigorous application of one's academic expertise to what Boyer calls "consequential problems."

The Scholarship of Teaching

Scholarship of Teaching

- Renamed "scholarship of teaching **and** learning"
 - Involves planning, assessing, and modifying one's teaching
 - Applying to teaching and learning the same exacting standards of evaluation that are used in research.
- "Excellence in the classroom is all too often undervalued."



The scholarship of teaching involves planning, assessing, and modifying one's teaching and applying to it the same exacting standards of evaluation that are used in research. According to Boyer, "Excellence in the classroom is all too often undervalued".

ACTIVITY:

On the handout provided align your scholarly activities to the appropriate areas in Boyer's Paradigm of Four Scholarships.

Activities of Scholarly Teachers

Adapted from Herteis, E. (August, 2003). Reflections on the Scholarship of Teaching & Learning

What is scholarly teaching? What activities do scholarly teachers engage in? How can scholarly teaching be identified, critiqued, and valued?

According to Boyer, the scholarship of teaching means *"transforming and extending"* knowledge, not merely transmitting it

Scholarly teaching is more than simply incorporating one's research into teaching (although that can be part of it). Scholarly teachers consciously reflect on their teaching, asking themselves questions such as these, which David Baume (1996) suggests:

"What am I doing? Why? Is it working? How do I know? What theories, principles and values underpin or spring from my practice?"

Scholarly teachers

- Create a teaching portfolio as a scholarly document
- Are always willing to make changes in their practice
- Participate in program review and in instructional development opportunities
- Share both successes and disappointments so others will learn from them
- Continuously evaluate their own teaching to check student outcomes
- Are open and responsive to feedback from peers and students

One source gave the following rich definition:

"Scholarly teaching is intentional, studied, prepared, monitored, reviewed, shared, revisited, revised, and revived."

ACTIVITY:

Which of the following activities are you already engaged in?

- Create a teaching portfolio as a scholarly document
- Are always willing to make changes in their practice
- Participate in program review and in instructional development opportunities
- Share both successes and disappointments so others will learn from them
- Continuously evaluate their own teaching to check student outcomes
- Are open and responsive to feedback from peers and students

DISCUSS your responses with the person next to you.

Conducting teaching scholarship – Part I

(ref - http://www.usask.ca/gmcte/sotl/how_do.php)

Practitioners of SoTL read the pedagogical literature, likely starting with the literature in their own disciplines, and then branch out into the broader field choosing such material as the National Teaching and Learning Forum, Journal on Excellence in College Teaching, The Successful Professor, or *inventio*. They'll attend instructional development workshops. After trying out some of the solutions or ideas they've discovered in their research, they will test whether they have been successful by doing some formative evaluation with their students, adjusting their approach, asking a peer to come into their class to review their changes, and so on.

For many of these teachers, the process will end there with improved teaching, better student learning, and positive solutions all round. In this example, scholarly teaching is informed, reflective, continuously developing. Its product is improved teaching and student learning outcomes:

If more university teachers reflected on, evaluated and researched their practices, more scholarly teaching should result and, more significantly, the quality of learning of our students should be enhanced (Healey, 2002).

Other teachers will go further, however, and share the results of their research and classroom practice with their colleagues in more formal ways. They will talk to their teaching committees, send a description of their activities to a listserv or post it on a web site, present a session in their department or college, give a conference presentation on it, or write a paper for publication. This latter case more closely meets the criteria for scholarship outlined in numerous sources including the University of Saskatchewan Standards for Promotion and Tenure:

Research and scholarly work is creative, intellectual work which is in the public realm and which has been subjected to external peer review.

See a fuller discussion of these on [SoTL page](#).

Hutchings and Shulman give a succinct description of the three characteristics of the scholarship of teaching: being public ("community property"), open to critique and evaluation, and in a form that others can build on (11). So while most teachers may embark on the scholarship of teaching and learning to effect improvements in their own classrooms, many will succeed in having an effect beyond their local setting "by adding knowledge to-and even beyond-their disciplinary field" (Cambridge, 1999) <http://www.aahe.org/dec99f2.htm>

Whether it is in inquiry, teaching, integration, or engagement, to be scholarly, work must satisfy these six criteria:

Standards for Scholarly Work

1. Clear goals
2. Adequate preparation
3. Appropriate methods

4. Significant results
5. Effective presentation
6. Reflective critique

- Glassick et al., 1997

Look back at the scholarly work you have listed [on the grid](#) [PDF file]. How are you going to document it in an honest and persuasive way to show its value to you, your students or colleagues, the university, your profession?

Conducting teaching scholarship – Part II

Above all, it is important to recognize that the Scholarship of Teaching and Learning is not restricted to those with expertise in educational research. *Anyone* involved in teaching can become a Scholar of Teaching and Learning.

In *Classroom Research: Implementing the Scholarship of Teaching*, Cross and Steadman write,

Classroom Researchers are, by definition, not methodologists with technical research competence in the social sciences. Their great strength as researchers lies in their understanding of the classroom context, their closeness to the learning problems, their experience in the practical realities of teaching, and their knowledge of the subject matter being taught. More often than not, Classroom Researchers will opt for careful observation, interviews with students, and understanding in the swamps of the natural environment over working on the high ground of experimental and statistical methods. (1996:16)

Classroom research is practical. It investigates issues faced by the investigator in his or her own classroom. Its primary purpose is to deepen personal understandings rather than to augment general knowledge. It is undertaken in one's own classroom, with one's own discipline and with students who are familiar to investigate a question of interest to the investigator.

Obviously, one way to become a scholar of teaching and learning is to undertake an original research project. Two ways to plan such a research project are provided below and are based on:

1. Weston and McAlpine's three phases in a continuum of growth toward the scholarship of teaching and learning
2. Theall and Centra's activities characteristic of teaching scholarship.

Ref - Weston, C.B. and L McAlpine. 2001. Making Explicit the Development Toward the Scholarship of Teaching. In *Scholarship Revisited: Perspectives on the Scholarship of Teaching*, ed. C. Kreber, 89-97. *New Directions for Teaching and Learning*, No. 86. San Francisco: Jossey-Bass.

Weston and McAlpine suggest that there are three phases in the scholarship of teaching and learning. They suggest activities that faculty can undertake at each phase.

Phase One:

- Reflect on teaching
- Engage in institutional teaching development activities
- Engage in innovation in teaching
- Intentionally evaluate own teaching to make improvements
- Read about teaching and learning
- Develop an understanding of principles underlying teaching and learning decisions
- Demonstrate the validity of knowledge of teaching they hold, through assessment by others, including students, peers, and administrators

Phase Two:

- Engage colleagues in the discipline in conversations that make explicit their pedagogical content knowledge
- Mentor other teachers in the discipline
- Provide leadership in teaching at disciplinary level (for example, organize events for department, faculty)
- Provide leadership in teaching at university level (for example, work as member of teaching and learning committee, faculty developer)
- Engage in disciplinary and multidisciplinary teaching associations
- Develop an understanding of the complexity of teaching and learning

Phase Three:

- Draw on literature and research on teaching to inform institution and field
- Publish and make presentations about teaching (may or may not be based on research)
- Obtain funding for research on teaching
- Carry out research on teaching using an approach to inquiry consistent with understanding teaching and learning
- Publish and make presentations about research on teaching
- Mentor others in doing research on teaching
- Gain a comprehensive knowledge of the research and literature on teaching and learning

REF - Theall, M and J Centra. 2001. Assessing the Scholarship of Teaching: Valid Decisions from Valid Evidence. In *Scholarship Revisited: Perspectives on the Scholarship of Teaching*, ed. C. Kreber, 31-43. New Directions for Teaching and Learning No. 86. San Francisco: Jossey-Bass.

Theall and Centra identify activities characteristic of teaching scholarship.

Contributing to a Shared Public Account of Teaching

- Invite peer assessments of your teaching

- Visit colleagues' classes to offer useful suggestions
- Prepare publicly available course outlines and examinations that reflect course objectives, instructional methods, and expected student learning
- Talk about course content, teaching, or students with colleagues at lunch or other informal gatherings
- Invite discussions with faculty development or other advisors (for example, media, computer, or testing specialists)
- Discuss new findings in the discipline with colleagues
- Show a willingness to share or discuss publicly his or her student evaluations
- Mentor students or young colleagues on teaching or research activities
- Participate in conferences, workshops, and seminars on teaching and learning
- Write articles on teaching or student learning

Demonstrating an Emphasis on Learning Outcomes and Relevant Teaching Practices

- Conduct classroom research and use the results to modify teaching
- Employ a variety of methodologies to supplement or replace lecturing
- Take into account different student learning styles in designing instruction, exams, and assignments
- Read extensively about student learning styles and innovations in teaching
- Discuss classroom research results at seminars or conferences

Reflecting Disciplinary and Pedagogical Knowledge and Innovation

- Read extensively in the literature of the discipline and on how to connect with students
- Design courses and assignments that reflect active learning and examinations with real-world applications
- Design course content that includes a synthesis of new knowledge in the field
- Encourage students to conduct research or scholarly inquiry in the field

Guidelines for the Design of a Scholarly Teaching Project

This section provides some guidelines for developing your own classroom research project.

1. Problem, issue, or question

What is the problem or issue you wish to address with your project?

Describe what you see in your students' behaviour that you wish to better understand or change, for example, aspects of content (such as test scores), process (such as ability to work in a group), or climate (such as morale). Be as specific as possible in describing the situation.

List the learning objectives that students will be able to better achieve after you implement your project. Put them in active statements, such as, "students will be able to define (analyse, identify, and so on) ..."

2. Context

What have others done to address this problem?

Early into your project, you may not have much of an answer here; in fact, investigating the literature may be part of your project. What topics will you address? What resources will you use?

3. Proposed solution

How do you plan to address the issue, solve the problem, or answer the question?

Are you doing anything differently than others have attempted? Why or why not?

Describe what you will do to change or improve the behaviour you described in 1, above. Explain why your planned approach, with your students in your course, will likely succeed better than prior similar attempts.

4. Evaluation

How will you determine the success and effectiveness of your solution and the impact of your project?

Describe how you will know that student behaviour has changed or improved and/or that student learning is up to the desired standards (as described in 1). While you may not be able to achieve your results in the short term, you should have a plan in place to evaluate your project and report on your results.

5. Communication

How/where will you share your results with colleagues? How will you obtain peer feedback on your results?

Although peer-reviewed articles often come to mind first when we think of the dissemination of research, there are other ways to make your research public:

- Workshop
- Conference presentation
- Teaching dossier/portfolio
- Website
- Peer mentoring/review
- Grant proposal
- Other publications (e.g., campus or teaching)

6. Timeline

Indicate the dates of project initiation and completion for each step of your design, implementation, and evaluation.

Narrowing the Question: SoTL Case Studies

REF – http://cndls.georgetown.edu/sotl_module/index.html

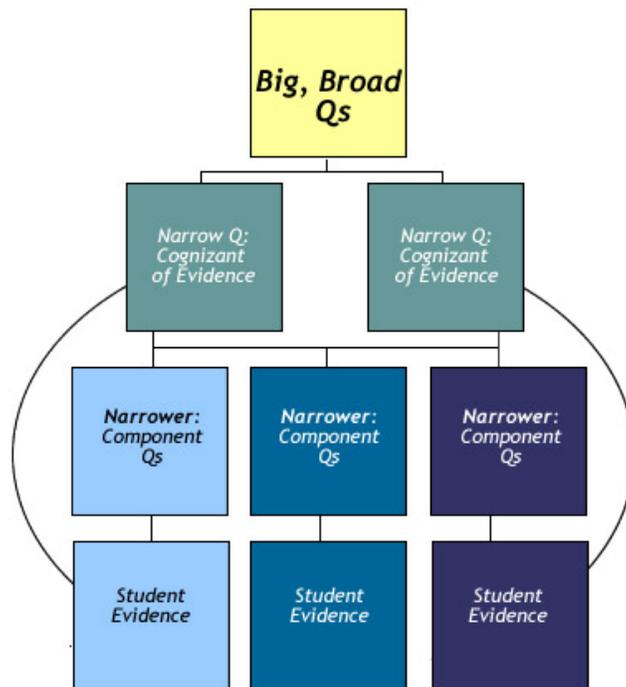
In doing the scholarship of teaching and learning, faculty researchers often have too many questions about what they want to know about teaching and learning: effectiveness of activities, impact of course environment, changes in students, etc. Sometimes the questions are few, but the few may be too broad. These initial questions often lead to more questions:

- *How do I know which ones to pursue?*
- *Which questions really speak to what I want to know about student learning?*
- *How do I focus on one question when they are all important?*
- *What more do I need to know before I can answer one question?*

This module contains a case study that demonstrate the process undertaken by one professor, Lee Bennett. He began by asking fairly broad questions about student learning and then narrowed those questions to the point where they could be answered.

This example demonstrate the possible paths the faculty researcher may take. The representation looks something like an upside down branching tree. The researcher's primary question rests at the top of the tree. This question leads to possible narrower questions representing a particular path. These narrower questions would then be followed by data that could be collected as evidence to respond to the narrower questions.

There are a series of reflective questions asked in each case study to guide you in understanding each SoTL Process.



Big, Broad Questions

As faculty researchers begin to ask questions about teaching and learning, their initial questions are often too broad, vague, or unreachable.

Narrow Question: Cognizant of Evidence

The broader question could be refined to a number of more refined questions that are more cognizant of student evidence. To narrow the question further, faculty members could consider a range of criteria:

- **Disciplinarity:** Focus on methodologies or characteristic skills of the discipline,
- **Relevance:** Focus on the significance or applicability of the question to the course, the major, or the department, or
- **Granularity:** Focus on particular aspects of a course, such as activities in which students display deep understanding, instead of the entire course.

By focusing on a specific activity and possible outcomes of this activity, faculty begin to ask more specific questions about students' learning as well as consider where evidence of this learning may be found.

Narrower, Component Questions

Faculty continue to narrow questions into smaller components by considering various factors. These factors take into account:

- ways for faculty to observe the learning process for the course or one student
- the role of technology in the course, an activity, or for the students

- the scope of an activity or assignment,
- assessment of the activity,
- students, or student performance in activities or assignments

Evidence Linked to Narrow Question

At this level, faculty consider where they may begin to understand how their students are learning desired concepts, behaviours, and understandings in their course.

Evidence of this learning directly reflects the intentions of the broad questions, the expectations of the learning activity, and the requirements of the narrower component.

CASE STUDY EXAMPLE

Course Context:

Lee began his teaching career as an assistant lecturer at the Hong Kong Polytechnic University and currently teaches a 1st year mathematics course. *This SoTL research described below has been adapted from an existing study.*

The course was a mathematics course in the major. It addresses disparate mathematical topics. At PolyU, all students in the AMA faculty complete the course to fulfil the requirement of the mathematics major.

One of the challenges:

To engage students in studying mathematics as a way of thinking and problem solving, not just a set of formulas or tricks to regurgitate to future math students.

Lee felt that his particular teaching challenge was to engage students in studying mathematics as scholars. *"Unengaged students do not learn to make connections, as they see little value in it. Students with no intention to study advanced, authentic mathematics may have little interest in this idea of a course."*

Lee had observed that students in these courses were normally above average, but few of them understood what mathematics was. They had had no experience *doing it* in previous courses, and thus they never became fully engaged in studying mathematics. Lee felt

that students treated work in the course as tedious or a set of hoops to jump through instead of as a scholarly pursuit.

When Lee arrived at PolyU to teach the 1st year course, he decided to assign semester-long, open-ended mathematical research projects in an attempt to engage students in mathematics scholarship.

Students had no experience doing mathematics.

"Roughly speaking, I view the content of the course as answering these questions:

1) Why do we have all these numbers anyway?

2) How does mathematics get done? (Both by the students and by mathematicians), and

3) How does advanced mathematics inform teaching?"

Curtis Bennett

SoTL Question: Starting with Broad Questions

Lee' plan to include a semester-long project in the capstone course led to further thinking about how this type of project could have an impact on how students engaged or "did" mathematics.

In turn, if students became more engaged in learning mathematics, what sort of effect could that have on how these students would eventually teach mathematics in a high-school setting? If they were able to think like mathematicians, they would teach like mathematicians.

The initial focus of his research was to see whether the projects were successful in getting the students to *"think like mathematicians."*

Semester-Long Project Description in Lee Bennett's words:

"The first day of the course, I hand out a list of 17 potential project questions (these come from a variety of sources - many of them from my colleagues) and ask the students to return a list of their top 5 choices from the list, together with students that they would like to work with.

I then assign groups of three students to a question. Each group, however, does a different question. I try to pair up students that want to work together, although I make no promises about doing so. As part of the syllabus, they are handed out a rubric for the grading of the paper as well as instructions for the paper. One included assumption on the projects is that the question that is asked is only the starting point for the project.

The projects play a major role in the class, as is shown by their 30% of the grade requirement. They work to satisfy four of the five process objectives of the class."

ACTIVITY:

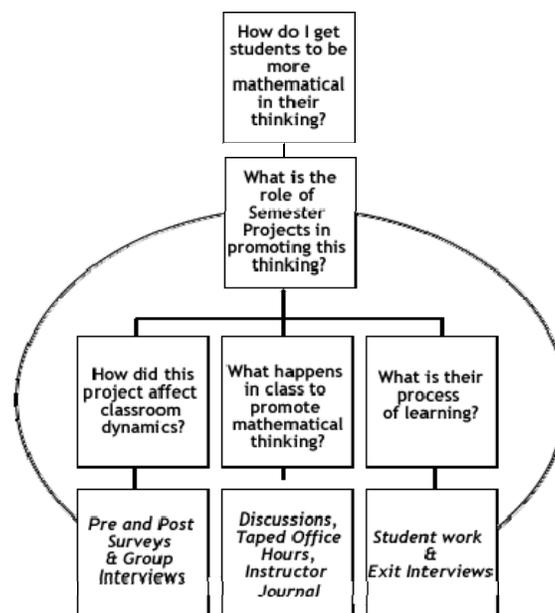
What are your assessment items in the courses you teach?

DISCUSS your responses with the person next to you.

Project Objectives

- *For students to successfully experience mathematical research on their own.*
- For students to learn the value of asking richer mathematical questions. *"I want them to see how the richer mathematical questions can provide them with greater understanding on working on the projects."*
- For students to gain a deeper understanding of themes of mathematics, and how various subjects in mathematics can relate to a common theme.
- For the students to experience solving a mathematical problem similar to how mathematicians might do so. *"The main goal for me is that the students learn to attack problems on their own."* Thus it is particularly important that they do not look answers up in outside sources.
- For students to be able to look at advanced mathematics topics (Numbers as lengths: constructible numbers. Numbers as sums, products, quotients, and differences of radicals: Solving quadratic and cubic equations. Algebraic versus transcendental numbers. Dedekind Cuts and the real number line) and see how they are reflected in the curriculum

SoTL Process: Narrowing the Question by Thinking about Observable Evidence



SoTL Questions: Big, Broad Questions

How do I get students to be more mathematical in their thinking?

"I want students to understand that good mathematical questions/problems don't necessarily have final answers, but rather they lead to more interesting problems, and that part of the role of a mathematician is to ask those questions. Moreover, I want them to see that as part of their job as a teacher.

So, I was originally interested in determining whether semester long student research projects in the course were effective in getting students to be more mathematical in their thinking."

SoTL Questions: Narrow Question Cognizant of Evidence

How do I get students to be more mathematical in their thinking?

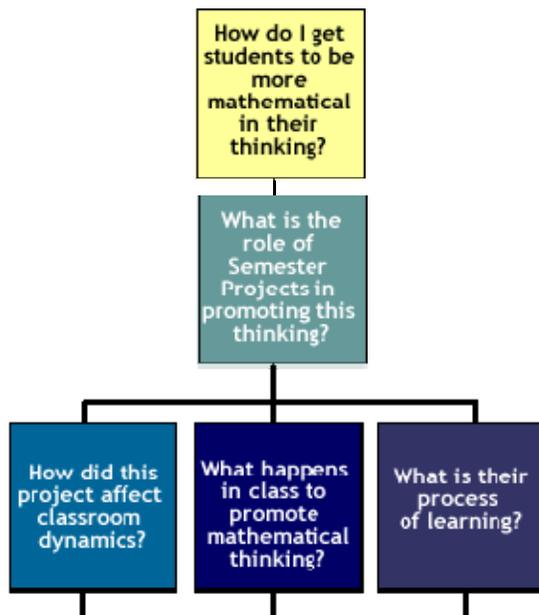
"As is common in research, however, my investigation of the question led me to understand that the question needed to be refined and changed.

What is the role of Semester Projects in promoting this thinking?

As a teacher, I knew that the projects were valuable for the class, and in my desire to prove this, I wanted to show that the projects were working.

What became clear to me, however, was that the question should not be were they valuable, *but rather the right question was why did I find them valuable?"*

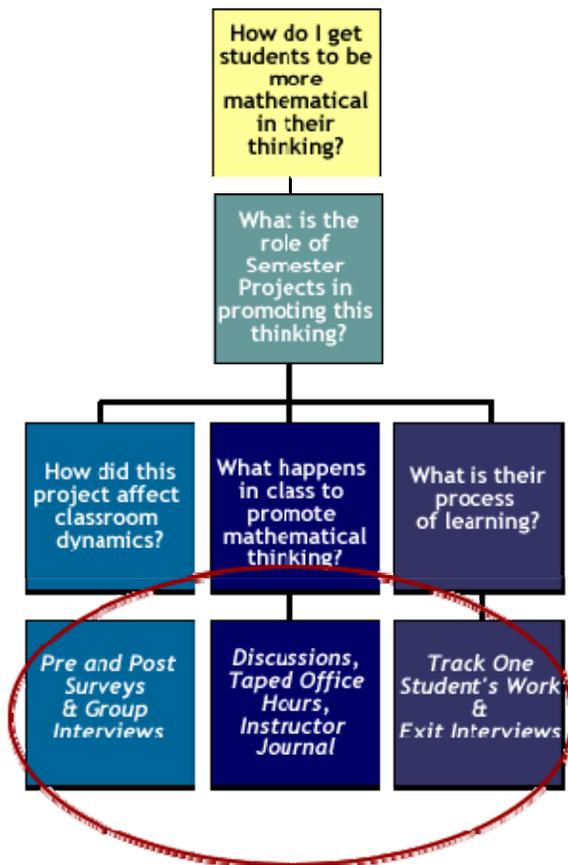
SoTL Questions: Third Level: Narrower Questions



Keeping in mind the semester-long projects, Lee considered three questions to investigate the role of his projects further.

This sub-set of component questions stem from his question about the semester projects and are more directly tied to the type of evidence he is looking for in the student projects.

SoTL Questions: Fourth Level: Evidence



Evaluating the SoTL

To ensure that standards are protected the different forms of scholarship need to be evaluated. Glassick et al. (1997: 10) argue that *'whatever the scholarly emphasis, the approach deserves dignity and respect, insofar as it is performed with distinction. Excellence must be the only yardstick.'*

They go on to identify six criteria that can be applied to scholarship in all its different forms:

- clear goals
- adequate preparation
- appropriate methods
- significant results
- effective presentation
- reflective critique.

Glassick et al. (1997: 25) suggest that, taken together, the criteria provide 'a powerful conceptual framework to guide evaluation'. The Hong Kong University Grants Committee provide an interesting application of this because they explicitly use Boyer's four forms of scholarship as a framework in their RAE (Research Assessment Exercise). The application to teaching of those evaluation criteria and quality enhancement processes associated with research is a theme that runs through several of the ideas for developing the scholarship of teaching through the disciplines (Gibbs, 1999; Healey, 2000b).

http://www.ugc.edu.hk/eng/doc/ugc/publication/prog/rae/rae_2006.pdf

Evaluation to improve teaching is best done through informal activities that take place during the semester. Remember, feedback will only be valuable if you are prepared to engage in self-assessment. One way to do this is to answer the same questions that you pose to students and to compare your answers to theirs.

EDC can provide help and advice to evaluate your teaching, both formally and informally. We provide a consultation service for individual instructors, including confidential advice on strategies for improvement, help with course design and new teaching approaches, and assessment of teaching effectiveness.

Some of the more common approaches for evaluation of teaching are listed below.

Teaching Portfolio

Teaching portfolio's are intended to provide a summary of a lecturer's major teaching accomplishments and strengths, in the form of selected short descriptions of activities and achievements that convey the scope and quality of the individual's teaching through multiple sources of evidence.

Feedback from Peers

Feedback from peers can come in the form of teaching observation and teaching peer interviews.

Feedback from Students

i.e. – SFQ's

THE EVALUATION COOKBOOK

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

Recipe pages

◆ [a list of the methods with summaries](#) or

◆ [a page grouping recipes by their uses](#).

Step by step guides to the time, resources and process involved in different evaluation methods, with hints relating to the stages of the process and links to related pages.

Evaluation Resources

<http://www.geocities.com/Athens/Agora/1476/evallib.html>

Evaluation Checklists

<http://www.wmich.edu/evalctr/checklists/>

The site's purpose is to improve the quality and consistency of evaluations and enhance evaluation capacity through the promotion and use of high-quality checklists targeted to specific evaluation tasks and approaches.



[Checklists](#)

Question Time ... and Resources

The Scholarship of Teaching and Learning: A selected bibliography

Readers new to the scholarship of teaching and learning may find it helpful to start with the references listed. For a larger bibliography on SoTL, with approx 150 items, including items cited above, plus key web sites from UK, North America and Australasia see: Healey, M (2006) *The Scholarship of Teaching and Learning: A selected bibliography* <http://www.glos.ac.uk/ceal/resources/litreview.cfm>

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

<http://www.pedagog.lu.se/utbildning-vt05/ped206/Scholarship%20Reconsidered.pdf>

* The Boyer Commission on Educating Undergraduates in the Research University 1998: *Reinventing undergraduate education: a blueprint for America's research universities*, State University of New York at Stony Brook.

notes.cc.sunysb.edu/Pres/boyer.nsf.

- * D'Andrea, V. and Gosling, D. 2005: *Improving Teaching and Learning in Higher Education: A whole institution approach*. Buckingham: Open University Press, McGraw-Hill.
- * Cross, K. P. and Steadman, M. H. 1996: *Classroom research: implementing the scholarship of teaching*. San Francisco: Jossey-Bass.
- * Healey, M. 2000: Developing the scholarship of teaching in higher education: a discipline-based approach, *Higher Education Research and Development*, 19 (2), 169-189.
- * Healey, M. 2003: The scholarship of teaching: issues around an evolving concept, *Journal on Excellence in College Teaching*, 14 (2/3), 5-26.
- * Healey, M. 2005: Linking research and teaching exploring disciplinary spaces and the role of inquiry-based learning, in Barnett, R (ed) *Reshaping the university: new relationships between research, scholarship and teaching*. Maidenhead: McGraw-Hill/Open University Press.
- * Healey, M. and Jenkins, A. 2003: Discipline-based educational development, in Macdonald R. and Eggins, H. (eds.) *The scholarship of academic development*. Buckingham: Open University Press/SRHE, pp.47-57.
- * Huber, M. T. 2002: Disciplines and the development of a scholarship of teaching and learning in the United States of America. Higher Education Academy Discussion Paper <http://www.heacademy.ac.uk/984.htm>
- * Huber, M. T. and Hutchings, P. 2005: *The advancement of learning: building the teaching commons*. A Carnegie Foundation Report on the Scholarship of Teaching and Learning in Higher Education, San Francisco: Jossey Bass.
- * Huber, M. T. and Morreale, S. (eds.) 2002: *Disciplinary styles in the scholarship of teaching and learning*. Carnegie Foundation for the Advancement of Teaching, Menlo Park.
- * Hutchings, P. and Schulman, L. S. 1999: The scholarship of teaching: new elaborations, new developments, *Change*, September/October, 31, 11-15. Also available at: www.carnegiefoundation.org/eLibrary/sotl1999.htm
- * Jenkins, A., Breen, R., and Lindsay, R. with Brew, A. 2003: *Re-shaping higher education: Linking teaching and research*. London: Kogan Page /SEDA.
- * *Journal on Excellence in College Teaching*, 14 (2/3), 2003 (Theme double issue on SoTL).
- * Kreber, C. 2005: Charting a critical course on the scholarship of university teaching movement, *Studies in Higher Education* 30 (4), 389-405.
- * Meyer, J.H.F. and Land, R. (eds) 2006: *Overcoming barriers to student understanding: threshold concepts and troublesome knowledge*. Abingdon, Oxford: RoutledgeFalmer.
- * McKinney, K. 2004: The scholarship of teaching and learning: past lessons, current challenges, and future visions; *To Improve the Academy*, 22.
- * Pace, D. and Middendorf, J. (eds) 2004: *Decoding the disciplines: helping students learn disciplinary ways of thinking*, New Directions for Teaching and Learning No 98 San Francisco: Jossey-Bass.
- * Trigwell, K. and Shale, S. 2004: Value and validity in competing conceptions of scholarship of university teaching, *Studies in Higher Education* 29 (4), 523-536.

Key Web Sites

Carnegie Foundation for the Advancement of Teaching
<http://www.carnegiefoundation.org>. An annotated bibliography (largely North American literature) developed in 2003 is available at:
www.carnegiefoundation.org/eLibrary/docs/bibliography.htm
 Carnegie Academy for the Scholarship of Teaching and Learning:
<http://www.carnegiefoundation.org/CASTL/highered/index.htm>

Centres for Excellence in Teaching and Learning (CETL) initiative: 74 centres funded by HEFCE (up to £4.5m each over 5 years)

<http://www.hefce.ac.uk/learning/TInits/cetl/>;

Deliberations on Learning and Teaching in Higher Education For new site see:

<http://www.londonmet.ac.uk/deliberations/> For archive of original site see:

<http://www.lgu.ac.uk/deliberations/> (includes a list of discipline-based journals)

Developing scholarship in teaching

http://www.clt.uts.edu.au/Scholarship/Home_Page.html

Higher Education Academy <http://www.heacademy.ac.uk> (incl resources from former ILTHE and LTSN)

Academy Connects <http://www.connect.ac.uk/ixbin/hixltp?page=home>

Research and Scholarship

http://www.heacademy.ac.uk/resources.asp?section=generic&process=filter_fields&type=all&id=20&history=

Subject Network <http://www.heacademy.ac.uk/474.htm>; covers every subject in 24 centres

Supporting New Academic Staff (SNAS) www.heacademy.ac.uk/SNAS.htm

Illinois Scholarship of Teaching and Learning site <http://www.sotl.ilstu.edu/> Includes

Kathleen McKinney's SoTL Bibliography

<http://www.sotl.ilstu.edu/resLinks/SELBIBL.shtml>

Indiana University at Bloomington Library list of SoTL Journals by subject area

<http://www.libraries.iub.edu/index.php?pageId=3213>

International Journal for the Scholarship of Teaching & Learning (IJ-SoTL) at

<http://www.georgiasouthern.edu/ijstol/> will be published by the Center for Excellence in Teaching at Georgia Southern University (Statesboro, Georgia, USA) with the inaugural issue scheduled for January 2007

International Society for the Scholarship of Teaching and Learning (ISSoTL)

www.issotl.indiana.edu

ISSOTL Scholarship of Teaching Database <http://www.issotl.org/database.html>

Inventio a journal of the scholarship of teaching from the department of instructional improvement and instructional technology, George Mason University

<http://www.doiit.gmu.edu/inventio/>

The Journal of Scholarship of Teaching and Learning (JoSoTL) on-line journal

published by Indiana University. Available at: <http://titans.iusb.edu/josotl/>

Linking Teaching and Research in the Disciplines

<http://www.brookes.ac.uk/genericlink/>

MountainRise – an electronic journal dedicated to the scholarship of teaching and learning. Edited from Western Carolina University, USA. <http://mountainrise.wcu.edu>

Nelson, C E (2000) How to find out more about college teaching and its scholarship:

A not too brief, very selective hyperlinked list

<http://php.indiana.edu/~nelson1/TCHNGBKS.html>

Peer Review of Teaching Project www.unl.edu/peerrev/index.html

Periodicals in the Area of the Scholarship of Teaching and Learning

<http://www.acu.edu/academics/library/sotl.html> Christian Abilene University

(includes a list of mainly American discipline based journals)

Reinvention Center at Stony Brook, New York

<http://www.sunysb.edu/Reinventioncenter/index.html>

Research and Teaching Symposium (2004) Research and Teaching: Closing the divide? An international colloquium, Marwell, Winchester, February 13-14

<http://www.solent.ac.uk/rtconference/SEDA> www.seda.ac.uk

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<p>Subject Guides provide users with timely help when researching their disciplines. http://www.lib.polyu.edu.hk/collser/libguides/subguides/</p> <p>Library Guides For Associate Degree Students [English Traditional Chinese Simplified Chinese] For Undergraduate Students [English Traditional Chinese Simplified Chinese] For Postgraduate Students [English Traditional Chinese Simplified Chinese] For Staff</p> <p>Remote Access to Library Resources: PolyU Dial-up Modem PolyU VPN (Virtual Private Network) : Guide [English Chinese] Tutorial WAM (Web Access Management) for Library Registered External Users</p> <p>Search for Audiovisual Materials Finding audiovisual materials Finding local television programs Finding AV materials on fashion & textiles</p>	<p>Online Computer Training Courses</p> <p>Course Categories:</p> <ul style="list-style-type: none"> • Chinese Inputting Method • Microsoft Office • Web Design Tools • Windows and Linux Operation Systems • Programming • Cisco • Networking, Internet / Webmaster • PDA's <p>Online English Courses</p> <p>The Online Information Literacy Programme is a self-paced online interactive tutorial. Staff and students of PolyU who successfully completed the programme will be awarded a certificate.</p>
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