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Engaging in the Scholarship of Teaching and Learning: A Guide to the Process and How to Develop a Project from Start to Finish

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**1. GENERATING THE RESEARCH QUESTION**

The goal of this step is to transform the hunches and ideas you’ve had about your teaching and student learning into research questions and hypotheses that can be answered empirically (See Table 1). You likely already have these questions or hunches or hypotheses. For example, you might have wondered why your students did not seem to engage as much as you wanted in a class discussion about an important topic. Or, you believe that the use of clickers in the classroom has increased participation levels among your students. The point of this first step is to take those questions and hunches and create interesting, meaningful research questions.

**2. DESIGNING THE STUDY**

The goal of this second step is to consider which type of research design best matches your research question. Basically, your research design will provide you with the mechanism with which to answer your research question. The research question will influence all of the other steps in your process including the specific strategies you will use to answer your question. The strategies for answering your question generally fall into two categories: quantitative and qualitative.

**3. COLLECTING THE DATA**

The goal of step three is to actually collect data that will ideally provide you with an answer to your question. It is likely that you’ve already thought about and used this step. For example, how do you know what “works” and what doesn’t work in your classes (of course, sometimes we do not know until we’ve tried)? We use “data” (e.g., comments from students, performance on a group project, exams) from our students all the time to inform what we do in class. In this step, we will make the process of data collection a little more systematic.

**4. ANALYZING THE DATA**

The goal of this step is to look carefully at the data and determine the answer to our research question. Again, this is likely a step that you have familiarity with – how do you know that students did not achieve the intended learning outcomes? Perhaps because you recognized the puzzled looks on their faces when completing an activity; or maybe the level of critical thinking you expected to see in their papers was not observed.

**5. PRESENTING AND PUBLISHING**

The goal of this step is to share your research with peers at conferences and/or in journals. We all probably spend a lot of time talking with colleagues and students about teaching and learning. This likely includes seeking ideas about new teaching methods, talking about a technology that can enhance learning, or discussing something that happened in class that leaves us puzzled, for example. In this step, the goal is to report on the answer to your SoTL question to a larger audience and ideally, contribute to the body of SoTL knowledge.

**TABLE 1. TRANSFORMING EVERYDAY TEACHING INTO A SOTL PROJECT**

<table>
<thead>
<tr>
<th>Step</th>
<th>Everyday Teaching</th>
<th>SoTL Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the Research Question</td>
<td>Will this new teaching technique (the think-pair-share method) help students understand the do while loop?</td>
<td>Review prior research and put this question in the context of other work in this area. Clearly identify how this question builds on the work of others in either the think-pair-share method or what is known about teaching the do while loop.</td>
</tr>
<tr>
<td>Design the Study</td>
<td>Use the think-pair-share technique, observe how it goes, and see how students do on a subsequent quiz, and compare those quiz scores to scores in previous years when the think-pair-share was not used.</td>
<td>Identify the best research approach to answer the question at hand. Observe and record learning using the think-pair-share technique in a careful and systematic way. If possible, consider teaching two sections of the same course. In one section use the think-pair-share technique, in the other do not. Measure knowledge before and after the unit of study.</td>
</tr>
<tr>
<td>Collect the Data</td>
<td>We will use the quiz we used last term.</td>
<td>Research whether standardized and validated instruments exist in the field to measure learning in your particular area. If not, design your own instrument. Before using the instrument in the course, pilot that instrument.</td>
</tr>
<tr>
<td>Analyze the Data</td>
<td>Visually compare the mean score of the quiz using the think-pair-share with the mean score in previous terms when you did not use the think-pair-share technique.</td>
<td>If the data is quantitative and you did use a pre-test and post test design, use an appropriate statistical test to compare whether your measure of content knowledge is significantly different from the pretest to the post test.</td>
</tr>
<tr>
<td>Present and Publish your SoTL project</td>
<td>Present our experience in the faculty lounge or in a department meeting.</td>
<td>Present the results of the SoTL study in a peer-reviewed journal or a conference relating your work to the existing work on the effectiveness of the think-pair-share.</td>
</tr>
</tbody>
</table>