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Improving Teaching through Classroom Action Research

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Teaching and learning centers provide an array of programs and services to assist the instructor who is struggling or the excellent teacher looking for something new. The pedagogical tools suggested can range from collaborative group work to problem-based learning to on-line instruction (see, for example, Nilson, 1998). The dilemma facing the individual instructor is choosing from a myriad of teaching strategies to use in a particular classroom situation. Factors such as class size, content area, and student demographics play a role. The instructor's own skills and style are also critical factors. Classroom Action Research (CAR) is systematic inquiry with the goal of informing practice in a particular situation. CAR is a way for instructors to discover what works best in their own classroom situation, thus allowing informed decisions about teaching. CAR occupies a midpoint on a continuum ranging from teacher reflection at one end to traditional educational research at the other. It is more data-based and systematic than reflection, but less formal and controlled than traditional educational research. Instructors use data readily available from their classes in order to answer practical questions about teaching and learning in their classrooms. Further CAR integrates the two faculty roles of teaching and scholarship and is one form of the scholarship of teaching and learning (Cross & Steadman, 1996). Methods of conducting classroom action research projects are diverse, and easily mastered by faculty from any discipline.

Steps of Classroom Action Research The CAR process includes seven manageable steps. Instructors may complete small

projects within a single semester, while projects more ambitious in scope might require planning ahead or collecting data over several semesters. Step 1: Identify a question. A good question has three major qualities. First, the question is significant to your classroom situation; that is, you think that it might make a difference in student learning. Second, the research findings will lead to action, such as keeping or changing a teaching strategy. Third, the question should lead to a project that is feasible in terms of time, effort, and resources.

Some questions seek to describe, such as, "How many of my students read the assignments before coming to class?" Other questions may look for relationships, such as, "Do students who participate frequently in class do better on the exams?" Many questions take the form of "How does X affect student learning?" For example, "Are students' test scores higher when I use case studies?" Or "Do students pay more attention and perform better on exams when I use presentation software (such as PowerPoint)?" Good questions might involve using a particular teaching strategy, a change in course structure or materials, or different assessment techniques. Step 2: Review the literature. You need background information on your question, but a brief review of secondary sources is adequate for these purposes. One good source of information is general books on teaching, often available through your teaching and learning center. Another excellent source is the Educational Resources Information Center (ERIC) database, which indexes teaching-related publications of all types. You can search the database at http://ericir.syr.edu/. The information from these sources may help refine your question and choose your method of research. Step 3: Plan a research strategy. There is no single best strategy for data collection. Depending on your research question, you might gather data about individual students or an entire class.

You might describe a single situation (e.g. skills of entering students), look at the relationship between different types of data (e.g. student age and use of on-line office hours), or look for cause and effect relationships (e.g. the impact of homework assignments on test performance). Although a tightly controlled experimental design is usually impractical, you can use a quasi-experimental design such as comparing student outcomes from two sections of the same course. You should check with your Institutional Review Board about

policies regarding human subjects. Your project may qualify for expedited review if it uses regular classroom procedures, adult students, and does not identify individual students. Step 4: Collect data. This data could be quantitative (e.g. test scores, grades, survey results) or qualitative (e.g. dialogue from focus groups or class discussions). Start with data that you already have, such as assignments, exam scores, and teacher evaluations. If more information is needed, chose data that is fairly easy to collect and analyze. Angelo and Cross (1993) provide a comprehensive set of assessment tools, along with excellent advice on their use.In general, you should try to collect several different types of data to see whether results are consistent. This triangulation provides a measure of validity. For example, you might assess the effectiveness of your new group activity on student learning by looking at exam grades, comments during a class discussion, and observations of behaviors while in the groups. Student evaluations of teaching also yield useful information. Comparisons between data from students who were taught in different ways (usually in different course sections) can also be informative. Step 5: Analyze data. The goal of data analysis is to look for patterns. Did your teaching strategy result in better student performance on exams compared to their pre-tests or to another group of students? Were their comments in class more in-depth? A simple grouping of comments by themes or a table of average test scores will reveal any major trends in the data. If statistical tests are desired, Bruning and Kintz (1997) offer a very user-friendly guide. Step 6: Take action based on results. Your research findings should inform your teaching decisions. If the new strategy increases student learning, you would continue to use it in that teaching context. If it does not increase student learning, you might return to your old strategy, or continue to test new strategies. You might also consider the time and effort required for a new strategy—is a small learning increase worth the trouble? Step 7: Share your findings. Teaching can be a solitary activity, with successes and failures rarely acknowledged to others. Sharing your CAR findings can provide an exciting forum for discussions on teaching. Results can be shared informally, through departmental or teaching center brown-bags, or more formally at teaching conferences. Many projects are suitable for inclusion in the ERIC database. (See the ERIC website for submission information.) CAR findings might be submitted for publication, particularly when they describe more extensive projects

or a series of related projects. General journals such as College Teaching or teaching journals within the discipline might be appropriate venues. Another forum is the Journal of the Scholarship of Teaching and Learning (http://www.iusb.edu/~josotl), which includes a section for Classroom Action Research.

Why you should try Classroom Action Research

Improve your teaching. CAR will help you discover what works best in your own classroom situation. It is a powerful integration of teaching and scholarship that provides a solid basis for instructional decisions. CAR's easily mastered techniques provide insights into teaching that result in continual improvement.Document your teaching. Course materials and teaching evaluations are a good beginning for documentation, and peer observations and student work samples add depth. CAR adds a new dimension to documentation by providing both a measure of teaching effectiveness and a record of continuous improvement. These projects are particularly appropriate for teaching portfolios, where they complement descriptions of teaching strategies and student learning.Renew your excitement in teaching. CAR provides a new lens for examining your teaching. Learning the methods of conducting CAR projects can provide an interesting challenge, and discussing your project findings can open a whole new area for teaching discussions with colleagues.

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