

Improving Teaching through Classroom Action Research

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Teaching and learning institutes provide an array of programs and services to assist the teacher 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 teacher 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 teacher'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 continuous 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. Teachers use data readily available from their classes in order to answer practical questions about teaching and learning in their classrooms. 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. Teachers may complete small projects within a single term, while projects more ambitious in scope might require planning ahead or collecting data over several terms.

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 books before coming to class?" Other questions may look for relationships, such as, "Do students who participate frequently in class do better in 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 in 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 centre. Another excellent source is the report by teachers who taught the class in previous years. 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 internet research), or look for cause and effect relationships (e.g. the impact of homework 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 school councillor 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, choose data that is fairly easy to collect and analyse. 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 behaviours while in the class. Student evaluations of teaching also yield useful information. Comparisons between data from students who were taught in different ways (usually in different subjects) can also be informative.

Step 5: Analyse data

The goal of data analysis is to look for patterns. Did your teaching strategy result in better student performance in 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, among teachers or more formally in a panel meeting.

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 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.

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.