

## **The What, Why and How of Classroom Action Research**

The editors of JoSoTL have received many inquiries about classroom action research (CAR). What is it? Why should you consider doing it? How do you do it? How does it differ from traditional research on teaching and learning? This essay is an attempt to answer those questions. I will also discuss why CAR is an excellent expression of the scholarship of teaching and learning, accessible to teachers in all disciplines.

### **What is Classroom Action Research?**

Classroom Action Research is a method of finding out what works best in your own classroom so that you can improve student learning. We know a great deal about good teaching in general (e.g. McKeachie, 1999; Chickering and Gamson, 1987; Weimer, 1996), but every teaching situation is unique in terms of content, level, student skills and learning styles, teacher skills and teaching styles, and many other factors. To maximize student learning, a teacher must find out what works best in a particular situation.

There are many ways to improve knowledge about teaching. Many teachers practice personal reflection on teaching; that is, they look back at what has worked and has not worked in the classroom and think about how they can change their teaching strategies to enhance learning. (Hole and McEntee (1999) provide useful steps for enhancing such reflection. A few teachers (most notably Education professors) conduct formal empirical studies on teaching and learning, adding to our knowledge base. CAR fits in the center of a continuum ranging from personal reflection at one end to formal educational research at the other. CAR is more systematic and data-based than personal reflection, but it is more informal and personal than formal educational research. In CAR, a teacher focuses attention on a problem or question about his or her own classroom. For example, does role-playing help students understand course concepts more completely than lecture methods? Which concepts are most confusing to students? (See comparison chart at [http://www.iusb.edu/~gmetteta/Research\\_about\\_Teaching\\_and.htm](http://www.iusb.edu/~gmetteta/Research_about_Teaching_and.htm) )

Action research methods were proposed by Kurt Lewin in 1946, as a research technique in social psychology. More recently, Donald Schön (1983) described the reflective practitioner as one who thinks

systematically about practice. Classroom Action Research is systematic, yet less formal, research conducted by practitioners to inform their action. The goal of CAR is to improve your own teaching in your own classroom (or your department or school). While there is no requirement that the CAR findings be generalized to other situations, as in traditional research, the results of classroom action research can add to the knowledge base. Classroom action research goes beyond personal reflection to use informal research practices such as a brief literature review, group comparisons, and data collection and analysis. Validity is achieved through the triangulation of data. The focus is on the practical significance of findings, rather than statistical or theoretical significance. Findings are usually disseminated through brief reports or presentations to local colleagues or administrators. Most teachers, from pre-school through university level, can be taught the methods of action research in a single course, a series of workshops, or through extensive mentoring (Mettetal, 2000). For more information on traditional educational research, see texts such as *Educational Research* (Gay and Airasian, 2000).

The boundaries between these categories are not distinct. Some CAR projects may become comprehensive enough to be considered traditional research, with generalizable findings. Other CAR projects may be so informal that they are closer to personal reflection. In this essay, I will describe the prototypical CAR project.

### **Why do Classroom Action Research?**

First and foremost, classroom action research is a very effective way of improving your teaching. Assessing student understanding at mid-term helps you plan the most effective strategies for the rest of the semester. Comparing the student learning outcomes of different teaching strategies helps you discover which teaching techniques work best in a particular situation. Because you are researching the impact of your own teaching, you automatically take into account your own teaching strengths and weaknesses, the typical skill level of your students, etc. Your findings have immediate practical significance in terms of teaching decisions.

Second, CAR provides a means of documenting your teaching effectiveness. The brief reports and presentations resulting from CAR can be included in teaching portfolios, tenure dossiers, and other reports at the teacher or school level. This information can also help meet the increasing requirements of the assessment movement that we document student learning.

Third, CAR can provide a renewed sense of excitement about teaching. After many years, teaching can become routine and even boring. Learning CAR methodology provides a new challenge, and the results of CAR projects often prompt teachers to change their current strategies. CAR projects done as teams have the added benefit of increasing peer discussion of teaching issues.

### **How do you conduct Classroom Action Research?**

Classroom action research follows the same steps as the general scientific model, although in a more informal manner. CAR methods also recognize that the researcher is, first and foremost, the classroom teacher and that the research cannot be allowed to take precedence over student learning. The CAR process can be conceptualized as a seven-step process. (For more detailed information about conducting CAR research, see authors such as Bell, 1993; Sagor, 2000; and Hubbard and Power, 1993)

Step one: Identify a question or problem. This question should be something related to student learning in your classroom. For example, would a different type of assignment enhance student understanding? Would a strict attendance policy result in better test scores? Would more time spent in cooperative learning groups help students understand concepts at a higher level? The general model might be "what is the effect of X on student learning?"

Since the goal of CAR is to inform decision-making, the question or problem should look at something under teacher control, such as teaching strategies, student assignments, and classroom activities. The problem should also be an area in which you are willing to change. There is no point in conducting a CAR project if you have no intention of acting on your findings. Larger institutional questions might be tackled, if the institution is committed to change.

Finally, the question or problem should be feasible in terms of time, effort and resources. In general, this means to think small--to look at one aspect of teaching in a single course. Angelo and Cross (1993) suggest that you NOT start with your "problem class" but rather start with a class that is progressing fairly well. As you become more comfortable with CAR methods, you may attempt more complicated projects.

#### Step two: Review Literature

You need to gather two types of information, background literature and data. The literature review may be much less extensive than traditional research, and the use of secondary sources is sufficient. Sources such as Cross and Steadman (1996) or Woolfolk (2000) will often provide background information on learning, motivation, and classroom management topics. Another source is the Educational Resources Information Center (ERIC) database, which contains references to a huge number of published and unpublished manuscripts. You can search the ERIC database at <http://ericir.syr.edu/> Your campus' teaching and learning center should also have many useful resources.

#### Step three: Plan a research strategy

The research design of a CAR study may take many forms, ranging from a pretest-posttest design to a comparison of similar classes to a descriptive case study of a single class or student. Both quantitative and qualitative methods are appropriate. The tightly controlled experimental designs of traditional research are rarely possible in a natural classroom setting, so CAR relies on the triangulation of data to provide validity. To triangulate, collect at least three types of data (such as student test scores, teacher evaluations, and observations of student behavior). If all data point to the same conclusions, you have some assurance of validity.

#### Step four: Gather data

CAR tends to rely heavily on existing data such as test scores, teacher evaluations, and final course grades. You might also want to collect other data. See Angelo and Cross (1993) for a wonderful array of classroom assessment techniques.

(Be sure to check with your Institutional Review Board for policies regarding the use of human subjects. Most CAR with adult students will be exempt from review as long as you do not identify individual students.)

#### Step five: Make sense of the data

Analyze your data, looking for findings with practical significance. Simple statistical analyses of quantitative data, such as simple t-tests and correlations, are usually sufficient. Tables or graphs are often very helpful. Qualitative data can be analyzed for recurring themes, citing supporting evidence. Practical significance, rather than statistical significance, is the goal.

#### Step six: Take action

Use your findings to make decisions about your teaching strategies. Sometimes you will find that one strategy is clearly more effective, leading to an obvious choice. Other times, strategies may prove to be equally effective. In that situation, you may choose the strategy that you prefer or the one that your students prefer.

#### Step seven: Share your findings

You can share your findings with peers in many ways. You may submit your report to JoSoTL, which has a special section for CAR reports. These articles will typically be from 4 to 8 pages--shorter than the typical traditional research report. Most CAR reports are appropriate for submission to the ERIC database (instructions for submission can be found on the ERIC website at: <http://ericfac.piccard.csc.com/submitting>). You might also share your work at conferences such as the International Conference for Teacher-Researchers ( <http://www.educ.ubc.ca/ictr2001/> ) or at regional conferences for your discipline. Most disciplines sponsor a journal on teaching, although CAR may be too informal to meet publication requirements.

### **Judging the quality of CAR projects**

Although CAR projects are not as comprehensive as traditional educational research, their quality can still be assessed using the guidelines of Glassick, et al (1997) in *Scholarship Assessed*. I recently worked with colleagues to develop an evaluation plan for the CAR projects of K-12 teachers in a local school district (Mettetal, Bennett and Smith, 2000). The resulting rubric has been adapted for JoSoTL and is used by our reviewers for CAR, traditional research, and essay (<http://www.iusb.edu/~josotl/rubric/rubric.htm>).

### Classroom Action Research Rubric

#### Criteria for Quality Proposal and Projects

	<b>Needs Improvement</b>	<b>On Target</b>	<b>Exemplary</b>
<b>Goals</b>	Goals are not clearly identified.	Goals are identified and relate to teaching and learning.	Goals are clearly stated, relate to teaching and learning and will inform action.
<b>Background Information</b>	No reference to previous research or theory.	Two to three references to relevant research or theory.	Integrates and synthesizes four or more sources of relevant research or theory.
<b>Methods</b>	Less than three sources of data.	Three sources of data from current classroom.	Many sources of data from current classroom (case study) or data that are compared with data from another relevant source (i.e., last year's class, another class in the school, state data).
<b>Results</b>	Results are not communicated in an appropriate manner.	Communicate results through themes, graphs, tables, etc.	Results identify key findings. Communicate results clearly and accurately through themes, graphs, tables, etc.
<b>Reflection</b>	Little or no relevant discussion of teaching and learning related to one's own classroom.	Discusses how results affect one's own teaching and learning in classroom.	Discusses how results affect own teaching and learning in classroom and implications for teaching setting (i.e., other classroom, schools, district, etc.). Also, identifies future research questions.
<b>Presentation</b>	<ul style="list-style-type: none"> <li>• Paper not clearly written</li> <li>• Results are not shared with other audiences.</li> </ul>	<ul style="list-style-type: none"> <li>• Paper clearly written</li> <li>• Results shared with a local colleagues</li> </ul>	<ul style="list-style-type: none"> <li>• Paper is clear, insightful, and comprehensive</li> <li>• Results are shared with a wider audience.</li> </ul>

This rubric shows that it is possible to meet the standards of Glassick et al (1997) within the context of a classroom action research project. One of the most difficult criteria to meet is that of presentation, since there have been few forums for the publication of CAR projects. JoSoTL hopes to correct that problem.

### **Conclusion**

Classroom Action Research fits comfortably under the umbrella of Scholarship of Teaching and Learning. Along with traditional educational research and course portfolios, CAR is a way of systematically examining teaching to gain new insights. One can certainly be an excellent teacher without engaging in CAR (or other types of SoTL), but participation in some version of SoTL enhances one's knowledge of the profession of teaching.

CAR is very attractive to faculty at all types of institutions. Those at primarily research institutions may welcome the opportunity to look at teaching with the same scholarly eye that they use for disciplinary research. Those at primarily teaching institutions (including vocational tech and community colleges) usually lack support for disciplinary research. They may find that their institutions provide a rich source of CAR data and that administrators appreciate these research endeavors.

The editors of JoSoTL agree that Classroom Action Research is an appropriate form of the scholarship of teaching and learning. JoSoTL is eager to receive submissions of CAR articles and will evaluate them using the rubric provided here.

### **References**

- Angelo, T.A. and Cross, K.P. (1993). *Classroom assessment Techniques: A Handbook for college teachers*, 2<sup>nd</sup> edition. San Francisco, CA: Jossey-Bass.
- Bell, J. (1993). *Doing your research project*, 2<sup>nd</sup> edition. Philadelphia: Open University Press.
- Chickering, A.W. and Gamson, Z.F. (1987). "Seven principles for good practice in undergraduate education." *AAHE Bulletin*, 39 (7), 3-7.

- Cross, K.P. and Steadman, M.H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco, CA: Jossey-Bass.
- Glassick, C.E., Huber, M.T., and Maeroff, G.I. (1997). *Scholarship assessed: Evaluation of the professoriate*. San Francisco, CA: Jossey-Bass.
- Hole, S. and McEntee, G.H. (1999). "Reflection is at the heart of practice." *Educational Leadership* 56(8), 34-37.
- Hubbard, R.S. and Power, B.M. (1993) *The Art of classroom inquiry*. Portsmouth, NH: Heinemann.
- McKeachie, W.J. (1999). *Teaching tips: Strategies, research and theory for college and university teachers*. Boston: Houghton Mifflin.
- Mettetal, G. and Cowan, P. (2000), Assessing learning through classroom research: The Supporting Teachers As Researchers Project (STAR). Classroom Leadership Online, 3 (8) at <http://www.ascd.org/readingroom/classlead/0005/1may00.html>
- Mettetal, G., Bennett, J., and Smith, J. (unpublished manuscript) Educate Indiana grant proposal, 2000.
- Palmer, P. (1998) *The Courage to teach*, San Francisco, CA: Jossey-Bass.
- Sagor, R. (2000). *Guiding school improvement with action research*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Schön, D. (1983). *The Reflective practioner*, Basic Books.
- Weimer, M. (1996). *Improving your classroom teaching*. Newbury Park, CA: Sage.
- Woolfolk, A. (2000). *Educational psychology, 8<sup>th</sup> edition*. Needham Heights, MA: Allyn and Bacon.

**Other useful books:**

- Bruning, J.L. & Kintz, B.L. (1997). *Computational handbook of statistics. 4<sup>th</sup> ed.* New York: Longman.
- Burnaford, G., Fischer, J., & Hobson, D. (1996). *Teachers doing research: Practical possibilities*. Mahwah, NJ: Lawrence Erlbaum.
- Cresswell, J.W. (1994). *Research Design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Glesne, C. (1999). *Becoming qualitative researchers: An Introduction, 2<sup>nd</sup> ed.* New York: Longman.
- Hopkins, D. (1985). *A Teacher's guide to classroom research*. Philadelphia: Open University Press.



McNiff, J., Lomax, P. & Whitehead, J. (1996) *You and your action research project*. New York: Routledge.

Mills, G.E. (2000). *Action Research: A Guide for the teacher researcher*. Columbus, OH: Merrill.

Yin, R.K. (1994). *Case study research: Design and methods*, 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage.