

Action Research Examples and Process

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The Basic Process Overview

Differences between Action Research and Traditional Research

What?	Traditional Research	Action Research
Who?	Conducted by university professors, and scholars.	Conducted by teachers and principals.
Where?	In environment where variables can be controlled.	In schools and classrooms
How?	Using rigorous research design to show a cause-effect relationship. Major attention is given to reducing error and bias	Using less controlled procedures to understand the effects of some educational intervention. Changes are made during the study.
Why?	To obtain knowledge that is generalizable and to develop and test educational theories.	To obtain knowledge that can be applied directly to the local classroom situation and to give the participating teachers inservice training.

(Adapted from Mills E.G. 2000)

Taken from

<http://www.accessexcellence.org/LC/TL/AR/>

Borrowing heavily from Hollingsworth (1994) and Hopkins (1985) I offer the following practical suggestions for the teacher research process:

- **Decide on a focus**

- Start with autobiographical data by locating your best professional self. Some questions you might ask - What are your broad interests in teaching and learning? What are your specific interests? What are manageable questions? Choose something you feel passionate about.
- Justify that the project is your best solution to the problem.

- **Develop a plan to gain insights**

- Develop a time-line to gather evidence or data to examine what you are trying to accomplish/resolve/do in light of "what you do not know yet".
- Decide what evidence you want to collect. Evidence includes such things as questionnaires/surveys, observations (video or written notes), collaborations (i.e. video or audio tape of meetings, peer coaching) interviews, tests and records, student work, video and audio tape transcripts, personal journal, library readings, etc.

- **Analyze the data by looking for patterns, or themes across the evidence**

- keep logs and journals, periodically read over the evidence, code data from themes and patterns, draw or chart patterns, try to summarize what you have learned as you go, by noting images, metaphors, and any new questions.
- check out your understandings by triangulating evidence (same theme, code, pattern appears in more than two types of data), and by talking to peers, students, friends.

- **Report on what you have learned**
 - to your colleagues, to parents, at conferences, in journals.

 - summarize what you learned -- in an essay, narrative, poster, video, . . . poetry.

 - tell how the problem changed, didn't change, or became worse because of changes in your practice.

- A key component of Action Research is sharing what you have learned. A number of techniques ranging from videos to formal presentations have already been suggested, but consider the following as potential audiences as well:
 - Colleagues at a staff development day
 - Parents and students
 - Email discussion groups (see On-line Resources)
 - Publications from professional organizations
 - Journals such as "Teacher Research: The Journal of Classroom Inquiry" - a journal by teachers, for teachers. [Brenda Power](#)

- Once teacher research is shared it allows for further action on the part of the teacher, or the broader educational community to continue. The educational community has become increasingly supportive of teacher research. At a recent meeting on science education in California that I attended Bob Polkinghorn, the Director of the Statewide Subject Matter Projects in California called for the documentation of evidence of change in practice at the classroom level by teachers. If you have not undertaken teacher research in your classroom now is the time to try!

From

<http://teachingtoday.glencoe.com/howtoarticles/teacher-as-researcher-taking-action-research-to-task>

- 1. Identify the question, issue, or problem.**
This is always your starting point. You may need time to determine the right focus for your question.
- 2. Define a solution.**
The solution will be a new instructional technique, strategy, new environment, or new material that you feel has potential to correct the problem.
- 3. Apply the solution and collect data.**
Here you will need to define how you will apply the technique and the method you will use to collect your data. If possible, it is helpful to have at least two groups that you can use for your research, one acting as the test group and one for the control group (the group that doesn't use the strategy or technique). You will need to define in advance how you will record reactions to your intervention.
- 4. Analyze your findings.**
Determine whether the solution had an impact on learning. This is where having a control group to compare your test groups can help you determine whether the technique has caused a desirable change, an undesirable change, or no change at all.
- 5. Take action.**
This can be either in the form of revising your intervention and returning to Step 2 to test another intervention, or by changing your practice to reflect a successful new technique.

Examples

- **Examples of Action Research**

- The science standards have become a focus of reform for many science teachers. Teachers who want to bring about such systemic reform in science teaching are now engaging in research into their own practice and sharing the outcomes with others. Two illustrations of on-going teacher research projects where teachers are engaged in exploring ways to increase inquiry based science instruction in the classroom come from CSP-SENA (California Science Project - Science Education Network Academy):

- [Merle Boxill](#) (Chemistry) and Sandy Waston (Biology) at Andrew Hill High School, San Jose are exploring how to introduce open-ended inquiry science into their teaching.
- [Norma Rodriguez](#) at San Antonio Elementary School, San Jose is exploring ways to increase inquiry based science instruction at her school site for all students (not just her own class).
- [Carolyn Csongradi](#) at Burlingame High School, Burlingame has explored how to involve more writing and female participation in her chemistry classes

Action Research Discussion Groups

- <http://www.accessexcellence.org/LC/TL/AR/ardiscuss.php>

Action Plan

Reading Comprehension

During the 2006-07 school year, non-proficient students (as indicated by the ITBS reading comprehension subtest) at Taft Middle School will improve their reading comprehension skills as measured by an increase in the percentage of students scoring in the “high” and “proficient” levels on the ITBS reading comprehension assessment.

Goal Champion:

Description of Proposed Action/Activity (What is going to be done to address this goal?)	Research/Rationale For Activity (Explain how best practices and research justify this activity)	Results (What will be the evidence of the impact on the goal)	Person(s) Impacted (Who will be involved?)	Resources (Funding Source & Cost)	Timeline (When will the activity occur?)
<p>The Communication Action Research Team will apply the Plan, Do, Study, Act (PDSA) cycle to their SMART goal to make improvements. The following steps will be followed:</p> <ul style="list-style-type: none"> • Define the system • Assess the Current Situation • Analyze the Causes • Try out the Improvement Theory • Study the Results • Standardize the Improvement • Plan for Continuous Improvement 	<p>Effective schools research (Leitow and Ball 2003) indicates a correlation between increased student achievement and the following characteristics:</p> <ul style="list-style-type: none"> • Clear and shared focus • High levels of collaboration and communication • Frequent monitoring of teaching and learning • Focused professional development <p>Action Research includes collaboration, focus on student achievement, and a shared direction for Continuous Improvement. Therefore, through the process of data collection and analysis of root cause, a research-based improvement theory will be implemented.</p>	<p>PDSA storyboards/displays will be posted in the building and the PDSA Team Assistance Guide (TAG) will be completed by the Communication Action Research Team.</p>	<p>Communication Action Research Team</p>	<p>Cost of storyboards. (\$50.00)</p> <p>Substitutes = \$1650.00 2 half day per team member</p>	<p>During the 2006-2007 school year.</p>

More Examples K-12

- <http://cadres.pepperdine.edu/ccar/projects.school.html>
- Suggested APA 5th ed. citation for any Action Research Project.
 - Last Name, First Initial. (date). Title of action research. The Center for Collaborative Action Research, Retrieved on 5/27/10 from <http://cadres.pepperdine.edu/ccar/projects.school.html>

Action Research Planners

- Australia -

[http://www.swell.org.nz/documents/Action
ResearchTemplate.doc](http://www.swell.org.nz/documents/ActionResearchTemplate.doc)

Getting Started

Problem Formulation Steps

- Define the problem by isolating the real problem from other confounding variables that affect the problem.
- Select the strategies that would be more appropriate to solve the problem.
- Narrow down the problem to a few questions to be answered.
- State the problem as an action research question.
- Review the literature and revise your question.

Three Action Research Questions

- What did I or we actually do?
- What changes occurred in student achievement?
- What were the relationships, if any between the actions taken and the changes in performance?

Sagor (1995)

Questions to Ask

- Who is affected by this problem?
- Is this an important and practical problem?
- What/who is the possible cause of the problem?
- What are some of the issues related to the problem?
- What is my goal for changing this situation?
- What will I do about the problem?

Data Collection

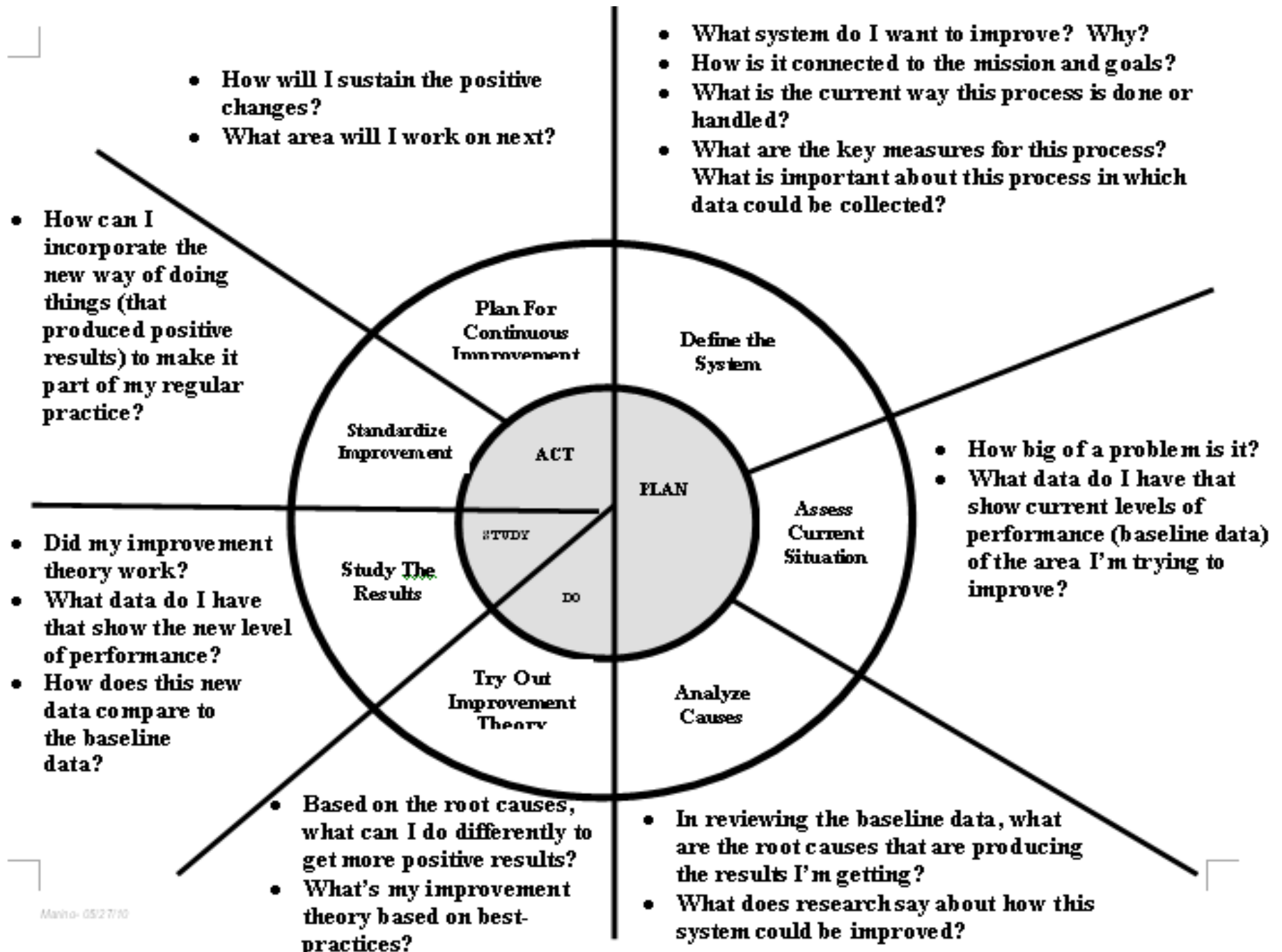
- The information should be compelling.
- The credibility of the research effort will depend on the quality of the data used to support its conclusions.
- There must be three sources of data collection for each of the specific research question(s).

Focusing the Data Collection

- What types of data should you try to collect in order to answer your question?
- How will you ensure that you have multiple perspectives?
- What resources exist and what information from others might be useful in deciding on types of data to collect?

Data Analysis

- Analysis means making sense of the information you have collected.
- What can you learn from the data?
- This step involves looking systematically at all the data collected to see what trends or patterns emerge and what conclusions if, any can be drawn.
- What meaning these results, insights and new understanding have for your practice and for your students?



Lesson Plan

Effective Instructional Strategies- Action Research Model

Module 1 http://quality.cr.k12.ia.us/documents/Lesson_PDSA.doc

Planning for Instruction with PDSA

PLAN

Defining the System

- Which standard(s) do I wish to address? Why?
- What improvement in student learning and reading & writing am I looking for?
- How am I currently planning for instruction? How is my current planning impacting student learning?
- What data could I collect to measure my current method of planning and its impact on student achievement?

PLAN

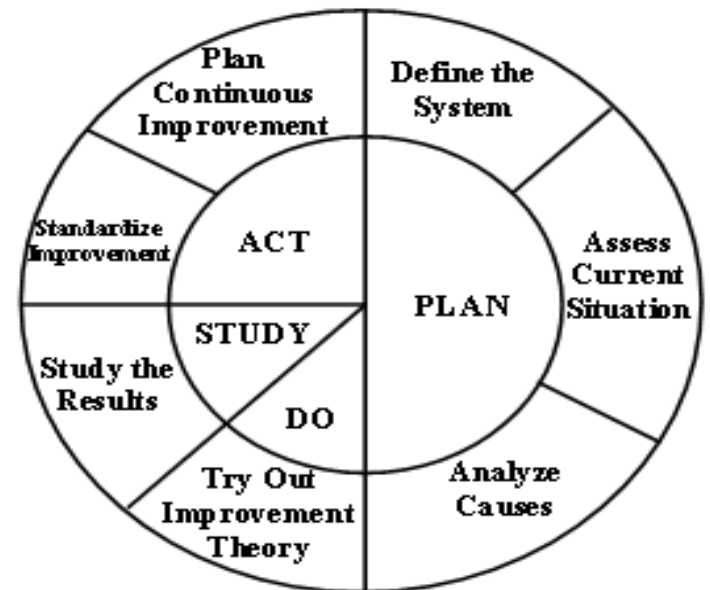
Assess the Current Situation

- What do I know about my students' current level of learning? How are students currently performing?
- Collect baseline data according to the measures selected in "Defining the System".

PLAN

Analyze the Cause

- Regarding my planning for instruction, what could be causing the student results that I am currently getting?
- Can I identify the root cause that is producing the results I am getting?
- Developing a theory- What planning strategies will improve student learning?



DO

Try Out the Improvement Theory

- Develop an action plan based on root causes identified & the improvement theory created in the previous step. Determine the necessary steps to carry out the action.
- Collect data again after several weeks of implementing the action plan and compare to the baseline data.

STUDY

Study the Results

- Did my improvement theory work? What improvement in student learning has occurred?
- What changes have occurred in my planning for instruction?

STUDY

Standardize Improvement

- How has my professional planning changed? How will I sustain these changes?
- How have changes in my professional planning improved student learning? How will I sustain these changes? How will I measure the future impact of planning on student learning?

ACT

Plan for Continuous Improvement

- How will I plan future instruction? What is the next area of instruction to use the PDSA cycle to improve?

- Sample Action research Proposal - <http://www.csun.edu/~dla16236/coursework/600/Action%20Research%20Proposal.pdf>