

# Processes Experienced Through Action Research

Voices from Teacher-Researchers

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Action research has been employed for various purposes: for school-based curriculum development, as a professional development strategy, in preservice and inservice teacher education, and in systems planning and policy development. This article describes a qualitative study examining the process of action research experienced by inservice teachers through their reflective practices along the phases of the research. In particular, this article examines the evolution of the research process, documents the frustrations, excitement, and reflection by the teachers as researchers, and explores how teachers were able to overcome and resolve problems encountered in the process. The article first addresses the significance of the research and then explains the constant comparative research methods for analyzing the multiple sources of data collected for the study. The findings of the research indicate that inservice teachers in the study went through a great deal of frustrations, excitement, and reflection. Different problems and issues arose when they moved along the different phases of the action research model, namely the phase of finding a research topic, the phase of conducting a literature review, the phase of collecting data, and the phase of making meaning of the data collected. The article concludes with a discussion of implications for conducting action research with inservice teachers. The main implication is that action research will be a very effective tool for teacher learning and improving their teaching practices only when teachers are properly nurtured during the research process.

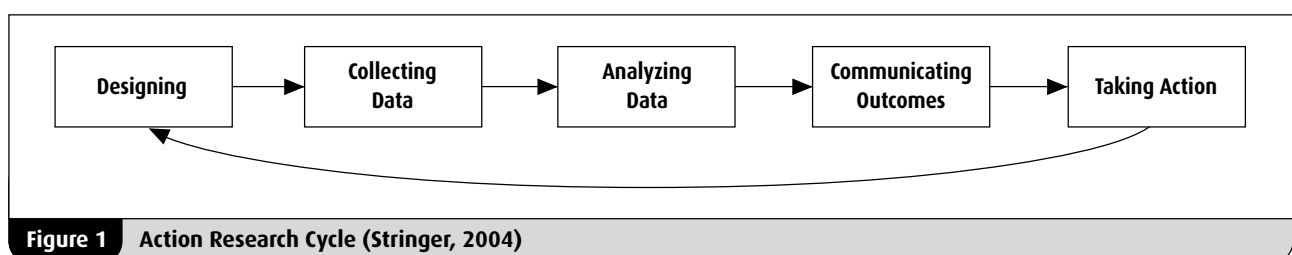
## ■ Introduction

Action research has been employed for various purposes: for school-based curriculum development, as a professional development strategy, in preservice and inservice teacher education, and in systems planning and policy development (Arhar, Holly, & Kasten, 2001; Holly & Southworth, 1990; Jacullo-Noto, 1992; Lieberman, 1988; Oja & Smulyan, 1989; Sagor, 1992; Stringer, 2004). However, the frustrations, the excitement, and the reflection experienced by teacher researchers have not been extensively studied in the field of action research (Mills, 2002; Stringer, 2004).

Holly, Arhar and Kasten (2005), using the metaphor from *The Wonderful Wizard of Oz*, have described action research as "a journey on our own yellow brick road with all its surprises and intriguing adventures." Action research, as emphasized by Creswell (2005), has an applied focus. The definition by Mills (2000) is that action research "follows systematic procedures by teacher-

researchers to gather information about, and subsequently improve the way their particular educational setting operates, their teaching, and their student learning." Hancock (1993), Royer (2002) and Stringer (2004) stated that action research is a cycle of continuous movement. The teacher-researcher makes a plan, collects and analyzes data, communicates outcomes and takes action (see Figure 1). Based on the reflection, a new plan is created and the cycle begins anew.

This article describes a qualitative study examining the process of action research experienced by teachers through their reflective practices along the phases of the research. In particular, this article examines the evolution of the research process, documents the frustrations, excitement, and reflection by teachers as researchers, and explores how teachers were able to overcome and resolve problems encountered in the process. The article will conclude with a discussion of implications for conducting action research with inservice teachers.



## ■ Procedures

This study focused on 24 elementary, middle, and high school teachers from private and public schools in the Midwest region of the United States. These 24 teachers were registered in a graduate level course that would lead to a master's degree in education. They were dominantly female and Caucasian and had a range of teaching experience from 2 to 20 years. The action research project was part of the course requirement. Since two of the teachers were not teaching at any school during the time of the course, a different project was arranged for the two. The first author was the course instructor. The action research was introduced as a journey with its cycle to the inservice teachers.

The action research as a journey with its cycle was the guideline for introducing the research project, which consisted of five phases: 1) designing the action research, 2) collecting data, 3) analyzing data, 4) communicating outcomes, and 5) taking action. A variety of methods were used to introduce and demonstrate each phase of the action research. For instance, students were provided with in-class opportunities to identify and critique the different phases in published action research articles and those written by fellow students of the previous semester. The timeline for the action research consisted of the first two weeks for designing the action research and forming the research questions, followed by a week of literature review. For the next two months the inservice teachers collected and analyzed the data. In the final week of the course, the inservice teachers presented their action research through posters they designed.

Communication between the instructor and 22 inservice teachers was established via class discussions, research logs, reflection journals, action research progress reports, and on-line discussions. A communication network with regular discussions and interactions was also established among the inservice teachers. Small groups of similar research interest were set up for more focused peer evaluation and discussion.

## ■ Methods of data analysis

With the focus of this study on exploring the process of action research process experienced by inservice teachers, multiple sources of data were used with an effort to strengthen believability, credibility, and trustworthiness of the findings. The data sources included: informal observation and field notes, interviews with the inservice teachers, research logs and reflection journals by the inservice teachers, and online discussions among the inservice teachers. The multiple pieces of evidence provided source triangulation (Patton, 2002) for analysis. The authors of the article adopted an inductive stance and strived to derive meanings from the data (Merriam, 1992; Wolcott, 1994). The authors began by using constant comparative methods to analyze the multiple sources of data, looking for general themes to emerge. During the analysis, data were coded and categorized thematically (Spradley, 1979) and then compared one segment of data with another to determine similarities

and differences (Strauss & Corbin, 1994), allowing emerging patterns to come into focus and strengthening the validity of this inductive research process (Strauss & Corbin, 1998).

Data were grouped together on a similar dimension. This dimension was tentatively given a name and later became themes in the building of the research findings. The emerging themes from the data analysis drew parallel with the phases of the action research cycle. Though there was some overlap in the themes, in general the inservice teachers' research process was centered around the five phases of the research cycle: 1) generating ideas, 2) setting up the framework, 3) choosing the tools for data collecting, 4) negotiating the meanings of the data, and 5) communicating and taking action.

In the transcriptions that follow, voices from the 22 inservice teachers were set in excerpts with their names omitted. All excerpts were selected from the interviews with the inservice teachers, their research logs, reflection journals, and online discussions. Excerpts were organized around themes representing phases of the research process experienced by the participating teachers. Each theme was followed by an interpretive discussion to analyze teachers' thinking and decision making as they conducted different phases of action research.

## ■ Emerging themes from the action research journey

### Theme one: "How to start"—generating ideas

Forming the research question is perhaps the most difficult part of the action research. Sound questions arise from teachers' classrooms (Hubbard & Power, 1993). According to O'Dell (1987), the research question comes from a sense of conflict and uncertainty.

Inservice teachers' initial doubt and growing confidence in conducting the action research from the very beginning and throughout the process of the action research project were documented through their reflection journals and interactions with the instructor. At the beginning of the proposal writing, there were strong reluctance and uncertainty among the teachers. Here are some of the thoughts expressed through the reflection journals and communication with the instructor:

*"I do not see any necessity of conducting action research for this class."*

*"I don't know how to do an action research."*

*"I have never done any research and I don't see myself doing one well."*

*"Can we do some other project instead of this action research project?"*

After many mini-sessions of discussion on the nature and advantages of conducting action research and reading of sample action research articles, the inservice teachers overcame the initial apprehension and found their own voice in such a research. Particularly they began to realize the initiative they had in choosing their own research

topics. As a result, a great variety of research questions were explored in terms of classroom management, strategies for different subjects in elementary and middle schools, parental involvement, students with special needs, and effective communication between the teachers and students. Here is the reflection by the inservice teachers on their learning experience on generating research ideas:

1. Thinking more deeply of the concerns in their classrooms:

*"Choosing a research topic for the action research project really made me think a lot about my teaching, my students, and my school."*

*"I have been interested in finding better ways to effectively teach my special needs students in math."*

2. From being overwhelmed to being self-assured:  
*"I was very worried about the project, particularly finding a research topic in the first class. Through the class discussion and critiquing the research questions from other students I feel much more comfortable and started developing a few possible topics. I think it will be very interesting to see the result to determine which type of math instruction is more effective."*

*"The process of selecting a research focus seemed overwhelming. Once my area of action was decided on, the pieces seem to all fall in place."*

### Discussion one

These excerpts show the uncertainty the inservice teachers experienced about forming research questions. But the process somehow prompted them to see their role differently. They saw themselves as researchers and how they could impact their students' learning. The new perspective made them think more deeply of the concerns they normally have about their teaching, and more self-assured of what action could be taken to address the issues.

As the inservice teachers started the action research project, their concern about the assignment in general and the research question in particular was apparent and the overall feeling was of apprehension. There was resistance and reluctance. They tried to negotiate their way out of the assignment. This initial resistance seemed related to their special process of socializing in that teachers are expected to be authoritative in their instructional roles and be experts (Whitney, 2005; Bunting, 2005). Students, parents, other teachers, and society as a whole communicate this expectation in a variety of ways. Therefore, an inservice activity that involves asking teachers to admit that they have questions about what they are doing, to entertain doubts about its effectiveness, or to consider possible alternative ways of doing things would be easily resisted. It conflicts with the "authoritative stance" that teachers feel they must maintain at least until they trust that their doubts will not become public. Our observation is that the "problems" the inservice teachers were initially willing to consider involved actions or policies they believed had been

imposed on them by others rather than investigating changes in actions and policies they had adopted.

When the inservice teachers were generating ideas for their research questions, they began to see the connection between the action research and their daily classroom teaching. They began to see the problems they have always had and problems that just occurred due to new policies. They realized that this might be a good opportunity to thoroughly examine the problems and that they might walk away with some solutions or at least a better understanding of the issues.

### Theme two: "Why reviewing the literature"—setting up the framework

Moving along the cycle of the action research, all inservice teachers in the course worked on "what others know about the topic" as the second phase of the action research. They engaged in individual Internet and library research on their research topic. They also engaged in an online discussion during the week. Here are some of the perceptions revealed through the online discussion:

1. Enlightened by research studies conducted by others through the literature review:

*"Through the literature review, I have learned that there are simple and effective techniques that may be presented to students for maintaining classroom behaviors."*

*"The literature review has been a positive experience. I wish I had additional time to spend just searching. It is very interesting to read all the different opinions and actual research findings."*

*"In reading the various articles on token economies, I am impressed by the results they were reporting."*

*"I found that research articles were very helpful in many areas. They gave me ideas for a format for class meetings as well as ideas on how to conduct my action research project on teacher and student communication."*

*"I found quite a few articles of my research interest. Each article has just a little bit different view than the other which really gives a multi-dimension of the topic. I am really excited."*

2. Overwhelmed by the large amount of information available versus not being able to find related information:

*"I was overwhelmed at the amount of information on the topic I have chosen (computer application in classrooms). My fellow teachers want me to have a better focus and I will try in that direction."*

*"In reading many articles and searching the library I feel like I am not finding quite the information I need. None of the articles that I have read have mentioned the particular area I am trying to work on. I will try different key terms and combinations of key words."*

*"I found absolutely no research on 4-square writing approach. The only information is on the web site"*

*that sells the book. I was wondering if such writing approach is research-based."*

3. Literature review helping modify the action research focus:

*"As I searched the literature, I developed a better understanding of my own research area and I realized that the focus of my question changed. I feel more focused on my topic now."*

*"The literature review provided me with some valuable information and insights. It changed some of my ideas of how to conduct my action research."*

*"I think the articles I reviewed gave me some good insights on what to try. I would like to revise the action research by adding, 'modeling the differences between easy readers and beginning chapter books for the third graders' to the action part of the research."*

### Discussion two

This part of the cycle in action research seemed to go rather smoothly. The inservice teachers saw the benefit of literature review even though everyone had a totally different experience with their topics. While some found too many related research studies, others were not able to locate sufficient related studies. This provided a good opportunity for them to refine their research skills as well as research focus. The overall experience about the literature review was positive. The most obvious benefit seemed to be that through the literature review the inservice teachers could really see the significance in others' research studies and feel a close connection between their own research plans and the studies found through the literature review.

The inservice teachers had many opportunities to be engaged in doing literature research and compiling annotated bibliography. They were to find out what research studies had been conducted in relation to their research topic. Some were quite amazed to find that the research topics they had been working on for days had been researched numerous times in slightly different formats. As a result, the inservice teachers became very careful readers of these research studies, their designs, and their findings. Some got really frustrated at not being able to find any published articles related to their studies and later realized that they might be doing some pioneering research in this particular field.

The literature review might have involved a deeper learning process in that the inservice teachers experienced a less absolute and less particular attitude towards the research literature. They learned to interpret the findings from studies as examples of probabilities rather than absolutism. An inservice teacher who was looking for the "4-square writing approach" could not find research studies for her literature review. The inservice teacher reconceptualized "4-square writing approach" program as being an innovative approach to teaching writing; therefore, research studies of other innovative approaches on teaching writing should be considered relevant. Findings and recommendations from such research

studies were highly valued and treated as an important part of the literature review.

### Theme three: "How to collect data"—choosing the proper tools

In addition to formulating a research question, the teacher-researchers were required to develop a research plan that included the data collecting instruments. Based on the questions raised during the first phase of the project, the inservice teachers chose, modified or constructed a great variety of instruments partly due to the interaction among the peers and the instructor, and partly due to the increasing competence and knowledge gained through the regular coursework during the cycle of action research.

This phase of the research cycle brought out more nervousness and frustrations from the inservice teachers than the phase of literature review. As a result, many teachers realized that the research questions they formulated at the first phase seemed either too general or too narrow. It would be very difficult for them to design legitimate tools for data collecting unless they modified their research questions. Some of the frustrations included the complaint that the instructor did not point out the complications at the time the research questions were formed. It was only after many discussions and reflections that the inservice teachers recognized the importance of both the learning process and the action research's cyclical process. The following excerpts depict some of the process experienced by the inservice teachers during their journey of choosing data collecting instruments.

1. From being concerned with possible problems of designing, choosing, and modifying instruments to being able to enjoy the process:  
*"I thought that from forming my research question to deciding on the instrument for data collecting should be a breeze. Once I really started on the instruments I did not know where to begin. I was looking for ready-made ones but they are very hard to come by."*  
*"It was fun and interesting to come up with data collection tools. I am curious and excited to have the students fill them out and collect the data."*
2. Designing, choosing, and modifying action research instruments helps better organize the thought of the action research:  
*"Working on the data collecting techniques helped me organize my thoughts and clarify what I want to do."*  
*"This phase of action research caused me to really think about the mechanics of the research. I thought I knew what I wanted to learn from the kids before I tried the action; now I have to decide the best way to go about collecting the data."*
3. From what data to collect to the need of triangular measurements:  
*"It is absolutely necessary to study my research topic*

*both from my perspective and that of my students. If I did not, the data would be really thin."*

*"Yes, I really understand the triangulation of data collecting methods now. The stool with three legs we discussed in class made absolute sense to me. In my case, I will not only measure my student achievement but also their attitudes towards the activities."*

### Discussion three

Choosing the means to collect data was a struggle for some inservice teachers. The root of the concern is the correct understanding of the relationship between the research question and the way data would be collected. Through lengthy discussion and analyzing published action research studies the inservice teachers came to understand that data were to be collected to answer the research questions. Data would be meaningless if they were not related to the research questions. The teachers further realized that data from a single dimension might not be enough to answer the research question. This was when the concept of triangular measures began to make good sense. At this moment, interaction among the teachers became more focused and significant. They evaluated each other's planned means of data collecting, pointing out the critical areas to collect data and ways to collect data.

At this phase, the inservice teachers' concerns were how successfully they would be able to collect data. This was the time when they were back to their own school setting and proceeding on their own with no fellow classmates and course instructor being around. The data collecting process was literally a test of how they interacted with their students in a way they never did before. They corrected problems upon spotting them. They had to help their students develop a serious and honest attitude towards the instruments used during the data collection. Some teachers had to modify some survey items after a few interviews. Some had to rewrite the whole questionnaire when they realized that the original format did not take enough consideration of the students' language and cognitive development. The inservice teachers showed a strong ability to monitor the process of data collecting and were able to pay attention to the validity and reliability of the data.

### Theme four: "What do data mean?"—negotiating meanings

In-class discussion on the concepts of validity and reliability had been going on for a few weeks. Such concepts still sounded somewhat unrelated to the action research the inservice teachers were conducting. Then the phase of data collecting followed. Some teachers teaching kindergarten and early grades, upon starting the field data collection process, realized that their students could barely understand the questionnaire they designed due to their reading level. The answers provided by these students were obviously inaccurate. Immanently the concept of "reliability" popped up into their minds. They called it an "enlightening" moment on the online-discussion board.

1. The data collecting process made some teachers give a second thought about the instruments chosen: *"Much more time was needed in data collecting than expected. My paraprofessional and I had to read aloud the questionnaire to my first graders and wait for them to complete it. It is also difficult to maintain students' attention."*

*"Since I have to explain the survey items to my kindergarteners, I immediately realized the mistakes I made in designing my instrument after trying three of my students. I had to modify the instrument. I am glad I simplified the instrument."*

2. Learning to anticipate problems rather than being anxious about the possible problems:

*"With the experience of the first two phases of the action research cycle, I would expect to run into problems in this part of the project."*

*"I think challenges are beneficial because there probably aren't very many research projects that are carried off without a hitch or two."*

*"Data analysis involves both techniques and personal observations."*

3. The issues of validity of the data:

*"One of the challenges I encountered while conducting the survey was that a few of my students seemed to be taking it lightly and were circling the answers they thought would be the most humorous. I immediately thought about the issues of validity discussed in class."*

*"When I looked through the surveys, a few questions jumped into mind: Did they answer the questions because they were trying to make me happy? Did they really understand the questions that I was asking them?"*

*"There were some students who were gone when I was conducting the post-survey. The number of the students is different and I need to mention it in the final report."*

### Discussion four

The phase for data collecting and analyzing was the most complex of all. First, the inservice teachers felt less able to support each other due to the special nature of each study. Second, they felt less certain over what they were doing due to the fact they were alone in their own school setting. Inservice teachers were concerned with the data collecting process. They were not sure how students would respond to their interviews. On the positive side, most inservice teachers at this phase of the action research cycle had learned to expect problems rather than being anxious about the occurrences of problems. When students responded to their survey questions irresponsibly, they stopped the process and demanded honest responses from students to raise the data's validity level. Meanwhile some inservice teachers, when testing the data collection, realized the weaknesses in their instrument and engaged in prompt modification to guarantee the validity of the data.

### Theme five: “I got it”—communicating the outcomes and taking action

This phase brought a conclusion to all the hard work. It was a moment of joy and celebration. With the poster session the teacher researchers truly enjoyed each other's research finding. The conversations on reflection went with a lot of laughter.

1. Full of surprises and excitement:

*“I was both nervous and happy to see the outcomes of my action research. It may not mean too much to others but it brought insights to the issue I have been thinking about for years.”*

*“The findings truly surprised me. I thought the new strategies were effective but it did not work well with this group of students who seemed to struggle more than the students I previously had. It makes good sense of the class discussion on what ‘best practices’ really meant.”*

*“The findings made me very excited because the new strategies did motivate students more for writing than the traditional strategies.”*

*“Providing drinking water to students did not cause more bathroom breaks but made them more concentrated in the afternoon class activities. How exciting is that!”*

*“It is not that middle school students’ parents don’t want to communicate with teachers; teachers need to expand the ways and forms of communication.”*

2. Sharing the outcomes with colleagues and looking forward to a new cycle:

*“I have already told the findings to my teacher aid. We were really excited about the findings. We started planning the follow-ups.”*

*“The poster session of sharing our action research was great fun. I had a chance to see the other projects and the conversations with the classmates were meaningful and to the point.”*

*“I plan on further exploring the motivational benefits of e-books in my classroom. Over the summer I will gather new and relevant e-book titles for students to choose from. I have also been revising my surveying method. At the beginning and end of the coming school year I plan on having my students complete a more extensive survey comprised of two parts: one that uses a five point scale to rate students’ attitudes toward reading and a second part that asks for comments similar to the ones used during the previous school year.”*

### Discussion five

The experiences the inservice teachers had at this phase of the research were rather mixed. They were nervous about the outcome of the result and what the results really meant. They were also excited that they completed the cycle and all 22 of them successfully completed the research. When the research posters were on display on the last day of the semester, the inservice teachers talked confidently about the research process they had

experienced and shared the findings of their research. Inservice teachers showed that they were able to step back and reflect on how their work was done through the phases in the cycle of the action research project, on its quality and how it could be proved, and on what they would do after the project was over.

### ■ Implications for action research with teacher researchers

This study examined the action research process experienced by a group of inservice teachers. The study particularly analyzed the evolution of the research process, documented the frustrations, excitement, and reflection by teachers as researchers, and explored how teachers were able to overcome and resolve problems encountered in the process. Results of the study supports the literature that characterizes teachers engaging in research as a viable activity for solving problems of teaching and learning generated in their own classrooms (Briscoe & Wells, 2002).

The following are the implications of the study:

1. Action research is an effective tool to connect professional development with teaching practice. Action research provides an effective opportunity for teachers to seriously examine their teaching philosophy, teaching practice, and explore a variety of teaching strategies in all school subjects. As a result, the inservice teachers start to pay more attention to their teaching and its effectiveness (Feldman, Mason, & Goldberg, 1992).
2. The process of conducting action research projects is as important as the finished products. With proper conditions and support, inservice teachers will actively engage in action research. Particularly, as a required part of the course, inservice teachers tend to invest more time, make more effort and deeper commitment in their teaching career (Morris, Chrispeels, & Burke, 2003; Raisch, 2005).
3. Action research provides a variety of ways for teachers to engage in reflection (research log, research journal, informal action research progress report, and online discussion) and cooperation (individual and group critique among teacher researchers with similar research focus), which open channels for active communication and build up confidence and belief in teachers as researchers. The reflection is the main force in the journey with all its surprises and intriguing adventures (Holly, Arhar, & Kasten, 2005).

While this study did reveal the frustrations, the excitement, and the growth of teacher researchers going through their journey of action research, the study has certain limitations. The main limitation is that the major source of the data is from the inservice teachers’ reflection journals and such reflection is considered a retrospective report (Ericsson & Simon, 1980; 1993). Retrospective reports are made after a task or part of a task has been done; because they are after-the-fact descriptions of prior thinking, they may involve a change in working memory

content. Therefore, the reflection may not be as accurate. Other limitations include the small sample and short duration. Further studies with larger samples, multi-cycles, and other research venues are called for.

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