Action Research and Practical Inquiry: An Overview and an Invitation to Teachers of Gifted Learners

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Action research is a method of systematically investigating classroom procedures and practices with an eye toward improving the quality of action in the schools. Teachers may use action research or practical inquiry in the course of their professional practice as a way of understanding teaching more fully, identifying and addressing classroom problems, extending their professionalism, and contributing to the field of education. This article provides background on, definitions of, and guidance for conducting action research. It also serves as a call for submitting to this journal reports from action research and practical inquiry for review and possible publication in JEG.

This article serves a dual function: (a) to provide an overview of an emergent and potentially powerful form of research, and (b) to invite participants in it to consider the Journal for the Education of the Gifted as one potential source for sharing findings and experiences derived from that form of research with other professionals who share an interest in both the process and its products. The form of research is often called "action research" or "practical inquiry," and it is based on the long-standing practice teachers have used to observe their own teaching with an eye to understanding it better and to strengthening their repertoire of skills. Action research simply formalizes this teacher sense-making and implementation process by encouraging classroom practitioners to take center stage in a full range of investigative activities including reflecting on practice, identifying problems, systematically studying the problems, generating action to solve the problems, examining results of the action, and sharing findings with others in the field.

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What is Action Research and Practical Inquiry?

A Brief Background

The label "action research" is actually a cover term for an array of approaches used to link practice and research in the social sciences. It is called action research because of its goal to empower persons (in our case, teachers, students, parents, counselors, and administrators) who are directly affected by the research and thus to improve life in classrooms. Its variety of forms makes it difficult to define with absolute precision, but the variety also provides much of the flexibility it offers to probe the complexities and puzzles of life in schools and classrooms. Even its name is not universal. Some students of the process prefer the term "practical inquiry". (Richardson, 1994), others use "practitioner research" (e.g., Anderson, Heir, & Nihlen, 1994). Still others employ "reflective inquiry" as a term that is used to cover both less formal and more formal approaches where teachers act as students and problem-solvers in their own educational practice (e.g., Brubacher, Case, & Reagan, 1994).

In fact, the idea of action research and practical inquiry is not entirely "new," not specific to the United States, and did not find its birthright in the field of education. An interest in teachers as frontline data gatherers was evident by the end of the 19th century. Later, noted American educators such as Taba, Dewey, and Lewin refined the idea of teachers engaged in research by envisioning reflective thinking as a tool that teachers could use to link research and teaching in ways that seemed both logical and fruitful. Early action research in this country was located in the social sciences, and social scientists studied problems that existed in industries, health, and in discrimination against minority groups in communities. While there were robust examples of action research in education in this country in the 1950s, its promise was muted for several decades by strong criticism from researchers who held a positivist stance and validated. Further, a long-standing gulf between educational research and educational practice continued to expand and left teachers with the sense that research findings were often removed from their immediate concerns. Some educators decided to try to make research more relevant to their practice (Schon, 1983). For example, teachers who took part in the national network of writing projects (e.g., Bay Area Writing Project) became researchers as a way to address their own pedagogical concerns about developing and testing effective methods of helping students see themselves as writers. Work such as this developed a rapid respect and following among educators and gave credence to their research methods as well as to their recommendations regarding the teaching of writing. Also, a growing array of school reform efforts has urged returning the power of teaching to teachers. These reforms support teachers in drawing on and applying their professional knowledge rather than adhering to painting by-number curricula and unquestioningly subscribing to top-down policies. Influential educational groups such as the Holmes Group (1990) have encouraged teachers to become reflective inquirers so that they can move "beyond the pat answers and formulas that come to teachers in instructional materials and curriculum kits in order to understand the particular demands of an actual (teaching) situation" (Patterson & Shannon, 1993, p. 8). The net effect of many such events and trends in American education has brought action research to the forefront of current educational investigation and practice (Anderson et al., 1994; Mickernan, 1991; Patterson & Shannon, 1993).

Defining and Describing Action Research

While action research takes varied forms, there are some standard markers that are helpful in understanding the nature of such research and how it is both like and different from other forms of research. At its core, action research is a type of applied research in which participants who experience problems in a particular social situation are directly involved with a systematic and sustained search for solutions, with the intent of improving the quality of action in that setting (Anderson et al., 1994; Elliott, 1991; Rapoport, 1970).
Teachers grow naturally as professionals by looking at a classroom situation, developing a practice in response, trying out the practice, observing what happens, and revising the practice as necessary. Put another way, teachers study their past and present actions to guide their future actions. Action research simply translates this sort of intuitive and informal process into one that is more systematic, focusing it both on problem solving and on possible dissemination of findings to a larger professional realm. Action research and practical inquiry thus casts teachers as both consumers and producers of knowledge (Altrichter, Posch, & Somek, 1993; Anderson et al., 1994; Wellington, 1991).

There are a number of characteristics of action research that are generally subscribed to by its practitioners and those who describe its practice (e.g., Altrichter et al., 1993; Anderson et al., 1994; Brubacher et al., 1994; McKernan, 1991; Richardson, 1994). Action research and practical inquiry:

- stem from practical questions that arise from teaching, counselling, and parenting;
- are undertaken by a practitioner in the educational setting;
- assume that the natural surroundings in which a problem occurs is the best place to study the problem;
- make no distinction between the practice being researched and the process of researching it (the practitioner becomes a part of what is studied);
- have as their driving goal the solving of immediate and pressing problems of teachers, counselors, and parents;
- are systematic;
- require presentation of evidence to support assertions;
- involve reflection by the action researcher as well as groups of colleagues, thus it (action research/practical inquiry) is both an individual and a collaborative endeavor;
- employ numerous appropriate methods, with qualitative methods being particularly well suited to the sorts of problems and settings characteristic of teaching, counselling, and parenting;
- report findings using the language of the practitioner, and;
- base their effectiveness more on their ability to help practitioners become more effective and skillful in their practice rather than on scientific tests of truth.

Systematic Reflection: The Beginning of Action Research and Practical Inquiry

A Scenario— from the Initial Phase of Action Research

Margaret taught high-ability middle school students in advanced math classes. She suffered often as her students had their first encounters with low grades and complex ideas defying easy solutions and instant mastery. She felt conflicted because she believed these high-ability students needed to be challenged, but she heard admonitions from colleagues that it was inappropriate to "push" middle school students. She was uncomfortable with the periodic discomfort of some of her students as well, and she was worried that student tensions would result in a deteriorating classroom environment and in decreased student learning. For a while, she found herself puzzling and worrying over students' negative responses to challenge.

An experienced teacher who was unafraid of what she might find, Margaret began keeping a reflective journal that included her observations about student responses to challenges they encountered through discussions, tasks, projects, and grades. As related situations arose with various students, she reread previous journal entries and made notes of her reactions after the rereadings. After a time, she wanted to know more about high-ability students and their responses to complexity and challenge. She developed a list of several possible research questions that she discussed with two colleagues who shared many of her students. The question she initially posed for an action research project was, "How do high-ability students perceive challenge in middle school math?" After several months of data collection, her question evolved, becoming, "What facilitates high-ability math students learning to cope with challenge?"

A Description of the Initial Phase of Action Research and Practical Inquiry

Practical inquiry stems from a teacher's hunger to probe classroom meanings, to move beyond following prescriptions, and into making more meaningful decisions about practice. The teacher may feel a sense of discomfort with the way a particular strategy affects students, a tension between what is commended as effective practice and what he or she observes when that practice is implemented, a sense of uncertainty about how students understand a procedure, or scores of other ambiguities that typify classrooms. When the teacher begins to ask questions such as what do I do at this point in a lesson,
how did I make the decision to do it, who does the decision affect and how, and how might I modify what I do so that it is more effective, teacher reflection begins. From that reflection, action research can emerge. The teacher starts to be a serious student of his or her own teaching.

From this point, an action researcher will move from sporadic (or even more routine, but informal) thought to systematic reflection. The teacher may begin to take notes on a clipboard during class discussions, videotape lessons and study the tapes, keep a teaching journal on a daily basis, or use some other systematic way to think about what is going on at a particular time in class or in regard to a particular facet of instruction. A goal of this early systematic observation is to focus teacher attention on what may become an interesting question for further study. By describing the situation; clarifying events, actors, and actions in it; and understanding others' reasons for action in the situation, the teacher can begin to generate focused questions for later study. Bissex (1987) talks about this early phase as moving from "wondering" to hypothesizing.

The "wondering stage of practical inquiry should not be rushed. It may take weeks or even months of reflecting on classroom events and practices to find the focus that is most interesting and compelling to you. During that time, it is helpful to discipline yourself to systematic observation by writing, or other forms of inquiry, perhaps 10-15 minutes a day. It is also important to periodically re-read or re-examine your earlier observations. What patterns do you see? What questions arise over time? What intrigues you? Keep a running list of topics or questions you might like to investigate. Share ideas or thoughts with a colleague whom you respect. Be patient and continue the cycle of looking and thinking. Even the early phases of teacher action research are stimulating and revealing. They also help avoid a headlong plunge into shallow waters by ensuring that you have examined existing background information; clarified ambiguities in key ideas; and gone beyond the surface in probing possible approaches to the issue, problem, or dilemma.

Ultimately, you will be ready to develop a research question that is interesting and important to you. The question should be open-ended, narrow enough to be manageable, and framed in such a way that it gets at what you really want to know. Hubbard and Power (1993) suggest ways to think about beginning your questions: What is the role of...? How do...? What procedures...? What happens when...? What is the difference between...? It is important also to understand that the initial research question may shift over time.

As you move further into the action research process, you may find that you want to reshape the question to be a better reflection of your evolving insights.

Gathering Data in Action Research and Practical Inquiry

A Scenario in Action Research Data Gathering

Once her initial research question was framed, Margaret invited a professor from a nearby university to be her partner in the action research project. (This is not a requirement for doing practical inquiry.) In an initial conversation, the professor provided her with an overview of data-collection methods that might be useful to her, referred her to some books that provided samples and guidelines for using the data-collection methods, and shared with her some guidelines for thinking about practical inquiry. In the early weeks of her research, Margaret periodically initiated telephone conversations with her university colleague. Later the professor visited Margaret's classroom; made some observations at her request; reviewed and discussed with her notes from her observations, interviews, and journals; and helped her construct a survey that she would use with students and parents.

At first, Margaret drew heavily on observations of students and interviews with her students for data collection. She also (with permission) audiotaped interviews with parents during parent conferences. Later she reviewed several years of student report cards, used dialogue journals with a few students, and conducted a survey with parents and students. She also interviewed several teachers in the school about their experiences with a few of the students about whom she had initial concerns.

Data collection spanned several months. While the research was important to her, she was also focused on her teaching and found that she worked best when she planned data collection to happen gradually and at times when the school calendar was not at its most demanding for teachers. She also found that prolonged data collection gave her time to think deeply about the information she gleaned and to observe changes in students over time—an important element in understanding the question that she was exploring.

A Description of Data Gathering in Action Research

Research is based on observations and systematically collecting those experiences. We can verify observation if the experience can be re-
peated, the event has left some traces that can be corroborated by the researcher and others, or if the researcher has used some means to represent the experience in a way that allows it to be shared with others (Altrichter et al., 1993). Data gathering is the process of capturing or preserving observations to a degree that they can be studied and shared with others. In this phase of practical inquiry, the teacher makes systematic records of events rather than depending on spontaneous impressions, makes permanent records rather than relying on memory, and collects detailed information from key participants in the situation rather than relying on a single perspective (Winter, 1989). Among data gathering procedures that allow for purposeful and systematic gathering of information are:

- keeping a detailed journal of events related to the question being studied;
- using dialogue journals in which teacher and students write back and forth;
- collecting related anecdotes;
- collecting documents or other artifacts related to the question;
- taking observational notes of events, lessons, conversations, etc., related to the question;
- using questionnaires with key players in the situation being studied;
- using checklists and/or rating scales;
- using attitude surveys;
- conducting interviews with key players (individually or in small groups);
- conducting shadow studies of key players by following or observing them over time in varied situations; and
- making tape recordings and/or video recordings of related events (Altrichter et al., 1993; Anderson et al., 1994; Elliott, 1991; McKernan, 1991; Winter, 1989).

It is not the goal of data collection to perfectly preserve events. That cannot be done. Nor is it possible (or desirable) to remove the perspective of the teacher-researcher from the process of data collection. Rather, data collection attempts to sample situations and events systematically and from alternative perspectives. "Triangulation of sources" and "triangulation of method" are important in ensuring varied perspectives. Triangulation typically refers to approaching data from "three corners." Triangulation of sources refers to using multiple data sources where possible. The teacher-researcher might conduct interviews with students as well as with parents and/or teachers; he or she might use observation by teacher, by student, and by a neutral third party. Triangulation of method refers to using more than one data-collection strategy. For example, one might use teacher observation of students, plus review of video recordings, plus interviews with students; or the teacher-researcher might use interviews, plus surveys, plus reports of other documents. Triangulation is important in comparing varied perspectives of the same events, in identifying discrepancies that can help with interpretation of events, and also making action research more credible or believable to potential audiences (Altrichter et al., 1993; Elliott, 1991).

Some teacher-researchers select to invite university researchers to join them in designing and/or carrying out data collection and analysis. Not only might this partnership prove to be a time saver for the teacher in learning about options for data collection and analysis, but the partnership can also provide another perspective on events and information that lend credibility to data and ultimately findings from the action research. However, collaboration with university personnel is not essential for action research. Fellow teachers, other school personnel, and students might be partners in this enterprise. The need for the research, the research question, data collection and analysis, and application and sharing of findings should be driven by the teacher (McKernan, 1991; Sagor, 1991) or persons conducting the inquiry.

**Analyzing Data in Action Research and Practical Inquiry**

*Scenario* in *Action Research Data Analysis*

Throughout data collection, Margaret spent at least 30 minutes at least twice a week looking over her data and thinking about what she saw. To help herself systematize her thoughts, she kept a personal reflective journal in which she made notes about her impressions, noted questions which came to her, and reminded herself of things to look for in future data gathering.

When she began to see repeated events in her data, she kept a running list of possible categories or organizing concepts. She occasionally discussed her notes and ideas with her university colleague who suggested the usefulness of looking for both confirming and contradictory evidence to expand her thinking and to increase her confidence that her conclusions had been tested. The university colleague suggested that this was particularly important as Margaret moved from categories to themes in data analysis. For example, in a
A Description of Data Analysis in Action Research and Practical Inquiry

While it is convenient to discuss data analysis as a stage in action research and practical inquiry that is separate from data gathering, the two stages are actually interwoven. Almost as soon as the action researcher begins to accumulate data, he or she begins a process of sifting the data in search of patterns, ambiguities, questions, and curiosities. Many action researchers keep journals in which they make tentative lists of ideas that come to them as they read and review data, record impressions, jot down tentative themes that appear to be emerging from the data, and make notes to themselves about the direction of further data collection. In fact, data collection and analysis are parallel cycles of constant comparison in which each strand feeds the other.

Early goals of data analysis are (a) evolution of conceptual labels or "codes" that organize the data in a meaningful way, and (b) "testing" the codes by gathering and analyzing additional data. At this stage, the researcher looks for examples that might affirm or expand codes and examples that might contradict codes. Looking for negative or contradictory examples builds credibility by ensuring that the researcher has looked for alternate explanations of events rather than single-mindedly following preconceived or early ideas (Lincoln & Guba, 1985). Ultimately, data analysis will progress from unanalyzed data to tentative conceptual labels, to tested and affirmed codes, to tentative themes that seem to emerge from the codes, to final themes and then to presentation of findings. McKernan (1991) refers to the stages of data analysis as processing the data, mapping the data, interpreting the data, and presenting the results.

During the data collection and analysis phases, it is helpful to draw on the perspectives of others as well as one's own knowledge of systematic analysis. Not only can the involvement of others in the process of analysis expand the thinking of the action researcher, but it also aids in giving credibility to findings. A critical friend (Altrichter et al., 1993) or respected colleague who can play devil's advocate can also be an invaluable resource for making the familiar seem unfamiliar and even problematic (Patterson & Shannon, 1993). An invited university researcher can often be a valuable sounding board at this stage. As a trained researcher, the university colleague can provide guidance in data analysis strategies as well as asking probing questions that may focus the thinking of the action researcher.

"Quadrangulation" can be a useful analysis tool as well. Described
as a bringing together of methods, actors, perspectives, data, and theories, quadrangulation ensures that the action researcher encounters a multifaceted interpretation of ideas and events. For example, side one of the quadrangle might occur when the teacher-researcher and university colleague view and discuss a video of a class discussion. The second side occurs when students involved in the discussion are asked to look at the video and respond to it. A third side might occur when the teacher-researcher plays the video for colleagues, explains what he or she feels it suggests, and asks for their feedback and discussion. Finally, a fourth approach to analysis could occur when the teacher-researcher discusses with a critical friend or group of colleagues all of the documents, field notes, tapes, and any other pertinent research materials as a means of discussing the entire case (McKernan, 1991).

Because practical inquiry implies studying classroom events or other situations with an eye toward improving practice and empowering practitioners, it is likely that early stages of data collection and analysis will lead to making modifications in practice and that later stages of data collection and analysis will focus on studying the impact of the changes. Some experts on action research suggest that such an intervention should be envisioned at the outset of the research process and that the focus of the practical inquiry will be analysis of the impact of the intervention. Other action researchers are more comfortable with the premise that beginning the study will determine what intervention[s] will be appropriate and that changes in practice will come naturally later in the action research cycle (Winter, 1989). It is also possible, as in Margaret's case, that an entire cycle of action research will be focused on understanding events and developing intervention strategies and that a second cycle will follow in which effects of the interventions will be studied at length (Patterson, Shannon, 1993). Action research takes many forms, and action researchers should feel comfortable following a direction and pace appropriate for their interests and circumstances.

Sharing Findings born Action Research and Practical Inquiry

A Scenario in Sharing Insights

Margaret's primary motivation in conducting practical inquiry was improving her classroom practice and extending her sense of professionalism. She was also excited about the insights she gained from her action research project and about the response of her teaching colleagues as she shared informally her findings with them. In addition, she was convinced that the action research process was a powerful tool that gave her a sense of informed ownership of classroom decision making. Margaret wanted to share its potential with interested peers. Because of the nature of her project and findings, she also knew that it would be important to share her findings with parents and students.

Margaret presented her first-year findings and second-year plans to her department and to a year-end meeting of teachers of advanced-level courses in her school. That led to an invitation to present to the district-wide math council and also to do a workshop for interested teachers of advanced classes from throughout the district. Several teachers in the various meetings asked her to share her research process with them, which she did both in writing and plans to continue in a series of small group meetings during the next year so that she and others could learn together about the process of practical inquiry.

Her university colleague asked her to join him to discuss presenting the project at a math educators' conference. She also plans to submit a proposal to a state-level gifted education conference after her year-two research when her action strategies have been implemented and studied. At the top of her list of important ways to share both her early and on-going findings are the plans she has and will continue to formulate in order to help parents and students benefit from what she learned.

A Description of Sharing Information from Action Research and Practical Inquiry

There are numerous reasons why sharing action research findings is important. Formal sharing:

- preserves what has been learned,
- continues to engage the participant-researcher in reflecting on and sharpening insights on the situation studied and actions taken,
- helps the teacher-researcher develop formal reasoning that can influence educational policy,
- increases self-confidence and professionalism of the teacher-researcher,
- involves the teacher-researcher in professional development for others in the field, and
improves the reputation of the profession (Altrichter et al., 1993). There are also many methods of reporting and audiences who would benefit from the sharing of information. Sharing can occur as the teacher-researcher:

- involves students in an examination of data and/or conclusions;
- discusses processes and outcomes with a critical friend;
- engages in collaborative practical inquiry with other colleagues;
- makes oral, graphic, and/or audiovisual presentations at faculty meetings, workshops, conferences, community meetings;
- sets up exhibitions of the action research process and findings;
- works for policy or procedural change that facilitates implementation of findings;
- disseminates through computer networks; and
- creates written reports such as letters to the editor, journal articles, case studies, digests for practitioners, etc. (Altrichter et al., 1993).

While action to improve practice supersedes dissemination of findings as a goal of practical inquiry, there are clear benefits to both the person and the field of education through sharing process and products of action research. Among implications of formal sharing of insights is that classroom action resulting from the investigation may have a ripple effect beyond the individual classroom and practitioner at the core of the research endeavor.

Judging the Quality of Action Research and Practical Inquiry

The goal of action research is not generalizability of results to other settings; rather, the goal is increasing one’s understanding of events in the school in order to empower practitioners to make informed professional decisions that will facilitate teaching and learning. Rigor in action research comes from a clear and well-articulated point of view that guides reflection, data gathering, data analysis, and implementation (Patterson & Shannon, 1993). Among standards that can aid in directing and assessing the quality of practical inquiry are the following suggested by Lincoln and Guba (1985):

- Credibility. The report of the study should be believable to audiences as well as to participants. Using multiple data sources, implementing multiple ways of analyzing data, having a university colleague and/or a critical friend, and looking for negative examples to conclusions can enhance the credibility of the study.
- Transferability. Reports of the study should include detailed accounts of the situation studied, participants, and activities of the action researcher throughout the process so that audiences can determine the suitability and value of findings for their practice.
- Dependability. Activities and decisions of the action researcher should be consistent and dependable as documented in the research reports and records.
- Confirmability. The data and conclusions should be carefully supported by what the researcher did as recorded in journals and/or notes documenting the research process (Lincoln & Guba, 1985).

Taking into account the unique goals of action research, Anderson et al. (1994) suggest the following criteria for assessing the quality of action research:

- Democratic validity. The research should involve participants in the process of analysis and should take into account differing perspectives on the situation studied.
- Process validity. The research process should be thoroughly documented.
- Outcome validity. Actions taken as a result of the research should be effective in leading to a solution to the problem studied.
- Catalytic validity. The process should reorient the researcher in a quest for professional sense making and may also foster dialogue among a broader community of educators.

Practitioners who choose to conduct an action research project should reflect on the standards for assessing the quality of practical inquiry. By attending to these criteria, efforts to solve problems of practice are more likely to be effective.

An Invitation to Share Action Research Findings Related to Gifted Learners

Practical inquiry is a promising process for educators and education. It addresses the complexities of the classroom, links inquiry and
practice, moves education from "they say" to "I know," and provides a vehicle for proactive decision making by teachers at work in their classrooms. It moves teachers from the role of technician to decision maker, designer, and architect (Canning, 1991).

Action research seems to be especially fruitful for those with an interest in teaching gifted learners because it:

- simulates the instructional model advocated for gifted learners with the learner (in the case of practical inquiry the learner is the teacher-researcher) generating knowledge by addressing real problems for real audiences, engaging in a creative problem-solving process, and functioning as a professional in the field would function;
- provides a vehicle for studying issues related to advanced achievement that are often inadequately studied with traditional research methods and instruments because of the complexity of student processes, individual nature of learning goals, and subtleties of affective impacts on learning;
- encourages documentation, now scant in the literature of gifted education, of effective (and ineffective) curricular and instructional actions with high-ability learners;
- encourages developing and taking informed action beneficial to high-ability learners;
- invites study of ways in which gifted learners are like and unlike other learners in cognition and affect;
- provides a vehicle for engaging a wide range of practitioners in systematic and careful observation of gifted learners in a classroom setting;
- is a tool for participation in reform efforts that put the practitioner at the center of educational decision making; and
- offers an opportunity for shaping policy related to gifted learners at building levels and beyond.

It would be beneficial for local, state, and national organizations that advocate appropriate education for gifted learners to encourage and support teacher-practitioner practical inquiry through technical support, monetary support, opportunities for sharing findings, and use of findings from effective action research in advocacy and policy making. The Journal for the Education of the Gifted has a strong interest in considering for publication reports of practical inquiry projects related to high-ability learners. Action researchers are invited to submit manuscripts to JEG that have been prepared according to standards appropriate for practical inquiry such as those noted in this article and others sources on this research process. It is a goal of JEG to begin regular publication of findings from action research and practical inquiry that offer promise of benefiting classroom practice both in general and as it specifically relates to high-ability learners in a variety of settings.

There are many print sources available to practitioners who want to learn more about engaging in practical inquiry, a number listed in the reference section of this article. Particularly "user-friendly" to first-time action researchers is Teachers Are Researchers: Reflection and Action (Patterson, 1993).

References