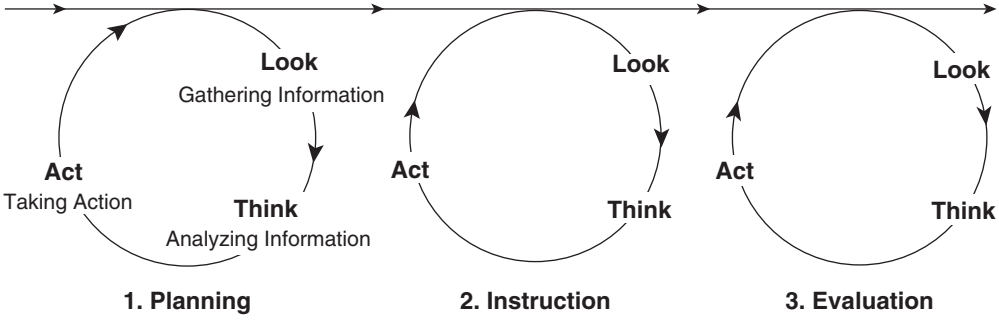
CHAPTER 1

Action Research in Teaching and Learning



Action Research in Phases of Teaching

This chapter shows how *action research* can be used to *enhance the craft of teachin*g by assisting teachers to organize and facilitate effective programs of student learning.

It describes how action research can assist teachers to take into account the *characteristics and abilities* of their students—intelligences, personalities, emotional states, stages of development, and family backgrounds.

Action research is presented as a *cyclical, repetitive process of inquiry* that guides teacher preparation and instruction:

Look: Gathering information

Think: Reflecting on, or analyzing, the information

Act: Planning, implementing, and evaluating student learning

Action learning is presented as a similar process of inquiry that guides student learning—Look, Think, Act.

Action research and action learning *are parallel processes* that enable teacher and student to work in tandem to accomplish effective learning processes.

The chapter then briefly describes how action research can be applied to three phases of instruction—*planning, instruction, and evaluation.*

Myself as Teacher: The Reflective Practitioner

As a classroom teacher I would start the school year thinking about the classroom that was to emerge in the coming weeks—the students that would come to me, and the task of teaching them. Who are the children? What will they be like? What will they need to learn? How will I plan and organize the learning that my students must accomplish? There would be so much to do! Although initially a little daunted by the task, my professional preparation and experience provided the set of resources with which to systematically construct a syllabus and organize my classroom so that I was ready for the arrival of my students.

The students would arrive in class on the first day of school eager to see what their teacher had in store for them. For the more able, excitement and expectation at the possibilities of engaging in interesting and rewarding activities fed the positive experience they expected from school. Others were more wary, conscious of the sometimes precarious demands that are made of them, and the possibility of embarrassment or feelings of inadequacy that accompany them as they enter the classroom.

As I gained experience, I became more aware of the many dimensions of my students that I had to take into account as I planned lessons for my class. They often came from quite diverse backgrounds, the racial, ethnic, and national diversity evident in their dress, behaviors, interests, attitudes, and responses. These, in turn, were clearly influenced by their family circumstances, the television shows they watched, the type of parenting they had received, and the quality of their community life, as well as their individual dispositions and abilities, and their relationships with their peers.

But I also learned that I couldn't take anything for granted, and that often my "eyeballing" of students could lead to quite mistaken conclusions. I remember "Max," whose slouched body and scruffy clothes, together with a rather sullen appearance, masked a little "gem." Although initially somewhat reticent, he could transform the class with insightful, witty, and ultimately informative remarks, and his knowledge of the inner workings of a computer became legendary in the class.

As I built my understanding of my students, I became increasingly sensitive to their different needs, capabilities, and attitudes and the creative teaching strategies I could employ to engage them in learning activities that not only held their attention but, in the best of times, excited them greatly. Becoming frustrated with the tired response of one class to the social studies program I had planned, I gave them their head and asked them to explore a topic of their own choosing, asking only that they provide an interesting presentation to the class that used a variety of media. The outcomes were quite spectacular, resulting in a parents night in which students proudly presented their projects to an assembled group of family members.

As I reflect on my work with students, therefore, I am reminded that teaching, such a rewarding profession when done well, requires me to engage all aspects of my professional self—my head, my heart, and my hands. To do it well, I need to quite consciously employ reflective processes of inquiry that enable me to answer the questions in the first paragraph of this section. I now see this reflective process as action research—a process of systematic inquiry that provides a clearly defined body of concepts and ideas with which I can accomplish the wonderful art and craft of teaching.

—E.S.

The Craft of Teaching: Organizing and Facilitating Student Learning

Common views of teaching see it as a relatively straightforward process, selected content being organized into a lesson plan that sets out the sequence of activities required to accomplish student learning objectives and outcomes. Preservice teachers soon learn that there is much more involved, however, and learn to accomplish the rather complex task of preparing a lesson plan. Typically, this will incorporate:

Objectives/Outcomes: What students will know and be able to do by the end of the lesson

Standards: State requirements for student learning

Procedures: A sequence of learning activities

Assessment: Tasks that demonstrate student levels of performance on each of the standards

Materials: Materials and equipment required during the lesson

Teachers commonly encompass lesson plans within a grid or table (see Figure 1.1) that enables them to check the progress of the lesson as students move through the sets of learning activities and assessment tasks.

Grade Level: **Subject:** **Unit Title/Lesson Title:** **Key Standards:** **Time/Duration:** **Special Needs and ELL Modifications:**			
Materials			
Objectives/Outcomes & Standards	**Teacher Procedures**	**Student Procedures**	**Assessment**

Figure 1.1 A Typical Lesson Planning Grid

A well-planned and -executed lesson provides both teachers and students with high degrees of satisfaction, and is the basis for a successful and rewarding classroom experience. As we highlight below, however, the ability of teachers to accomplish these professionally desirable outcomes requires them to take into account the many facets of children and learning that comprise the art of teaching. Teaching is not just a mechanical process of presenting lessons and testing students, but a real craft that requires systematic and creative work to achieve the educational outcomes required of the diverse students that face teachers in their classrooms. Further, it is a social production that requires teachers to consciously build a learning community that nurtures children and enables them to work together in highly productive ways.

THE COMPLEXITIES OF TEACHING AND LEARNING

Planning a lesson is more than just setting out a program of learning, however. A teacher must take into account not only the information or skills to be learned, but also the characteristics and capabilities of the students in the class. A successful program of learning requires careful alignment of what is to be learned with the qualities of the learner.

STUDENT CHARACTERISTICS AND CAPABILITIES

Think of the different classrooms in which you have taught or which you have visited. Students in a typical classroom come from a broad range of family and community backgrounds. Some may come from very traditional families comprised of mother, father, and children. Many children, however, may live in single-parent families lacking either a father or a mother, may be part of a blended family with children from two previous families, may have parents of the same sex, may live with relatives, or may be housed in a foster home. In some high schools, students may be self-supporting, or have responsibilities for caring for their siblings. Any of these situations may vary in the degree to which they provide an environment in which children can grow and develop. Some may be stable and nurturing, the children experiencing lives that are generally harmonious and organized, while others may live in homes where parents are often in conflict, or where the dysfunctional relationships are not conducive to the experience of a happy childhood.

But differences in experience go even deeper, as some children will be raised in contexts where the parents are fully employed with adequate incomes that enable them to provide for the everyday needs of their children. Others will experience families that struggle almost from day to day to make adequate provision for food, dress, and housing. Aligned with these differences are differences in employment that characterize the

broad cross-section of any society, from unskilled workers in service industries, through tradespeople, clerical, professional, and business and industry. Parental occupations provide a broad range of differences in lifestyle, aspirations, attitudes, values and behaviors, and social orientations (e.g., see the box "Occupational Preferences").

Occupational Preferences

When I was a teenager, my father, a working-class man, used his social contacts to arrange a clerical job for me. From his perspective, this was a "plum" occupation that would set me up for life, and he was totally surprised when I rejected his offer, indicating that I wished to continue my schooling and become a teacher. Teaching, to him, who had left school very early, was a mysterious job that seemed outside the reach of his son. It was only by strenuous argument that he allowed me, somewhat begrudgingly, to take up a path that seemed, from his perspective, to lack the promise so evident in the clerical position he had arranged. Despite my later success in my chosen occupation, he never really understood or accepted the wisdom of my choice, and I never felt that I had, in his eyes, been successful.

—E.S.

But differences in experience and orientation go even deeper than this. The racial and ethnic diversity that is part of almost any neighborhood in today's modern society means that children will come from families that have deep-seated differences in attitudes, behaviors, and outlooks. These differences are not always evident, but have the potential to greatly affect children's learning. Teachers need to provide learning activities that not only take account of these cultural characteristics, but take advantage of them to enhance the learning environment of their classroom community.

Children from these different contexts, therefore, come to school with a variety of behaviors and responses that derive from their family and community experiences. The differences, however, go even deeper, since children will also differ in their behaviors and responses according to the individual characteristics that are part of their genetic inheritance. Some will have abilities that enable them to easily accomplish the academic tasks that are part of school life, while others will struggle with the complexities of the written word and the intricacies of numbers. Some will have keen eyesight, or good hand–eye coordination, while others are near- or farsighted, and struggle with the small physical tasks—writing, drawing, cutting, throwing, catching, and so on—that are part of regular classroom and school activity. Students will also differ in their emotional makeup, their growth and development, and their ability to interact with others. Many classrooms contain children whose degree of difference—emotional, physical, intellectual, language—is so marked that they require particular attention to accommodate their special needs.

Any classroom, therefore, is a veritable "zoo" of abilities, orientations, responses, behaviors, and potentials. The students comprise a diverse body of individuals whose characteristics and qualities need to be taken into account as teachers strive to provide an effective and enjoyable education for the children in their charge. The excitement of teaching is grounded in the rich potential encompassed by the students, the bubbling energy that is nascent in any group of young people, and the task of providing them with learning experiences that "make a difference" in their lives. A teacher's main task is to construct an ongoing set of learning experiences that not only provide students with the knowledge and skills that enhance their understanding of the social world in which they live, but provide them with skills they will need to live happy and productive lives in a complex, modern society.

What Is to Be Learned: Domains of Knowledge

The teaching task is also made more complex by the wide array of knowledge and skills that comprise the curriculum. The purpose of schooling is to pass on to students that vast body of knowledge that is the accumulated wisdom of modern societies, and is the product of many centuries of development and learning. Some people act as if "learning" this body of knowledge is merely an act of memorization and retrieval—remembering pieces of knowledge and retrieving them in response to appropriate questions—or applying a memorized formula to acquire a correct answer. From this perspective, the major tasks involved in learning are presentation and recall.

"Knowing," however, entails much more than merely being able to remember a specific piece of knowledge. Knowing, at a deeper level, entails the ability to use that knowledge in a range of different ways; knowing is related to "understanding." Understanding indicates the ability a person acquires to creatively apply and use that piece of knowledge—to extrapolate from it, to link it to other discrete pieces of information, to use it to solve problems, and so on. These different domains of knowledge have been clearly articulated by Benjamin Bloom and his colleagues (Bloom & Krathwohl, 1956), whose Taxonomy of Educational Objectives has for many years provided a useful way to conceptualize the different forms of knowing, enabling us to understand how human learning is not merely a process of memorization, but entails a number of different types or *domains* of knowledge:

- **Knowledge:** Remembering and being able to recall information
- **Comprehension:** Grasping the meaning of informational materials
- **Application:** Using that information in new situations
- **Analysis:** Breaking down information into component parts, developing divergent conclusions, making inferences, and finding evidence to support arguments

- **Synthesis:** Applying prior knowledge and skills to produce a new arrangement of the knowledge
- **Evaluation:** Judging the value of a product

These cognitive skills form the basis for much of our educational endeavors, so that as students move through school, they extend their capacity to engage these types of activity. Their knowledge increases in breadth, and they become increasingly adept at performing more complex cognitive tasks. The above taxonomy emphasizes cognitive or intellectual functioning, but equivalent taxonomies describe knowledge in the affective domain (feeling and emotion) and the psychomotor domain (motor skills). As teachers plan and implement their lessons, therefore, they need to keep track of the multitude of learning tasks required to accomplish a very diverse set of learning outcomes.

The purpose of incorporating action research routines into teaching, therefore, is to provide teachers with a framework or scaffold that enables them to systematically take into account these diverse issues. Action research as a simple process of systematic inquiry provides the means by which teachers can organize the complexity they face and assists them to incorporate the diverse elements of instruction into a carefully articulated program of learning for their students.

Action Research in Teaching

Although teaching is often viewed as the simple procedure of presenting students with a body of subject matter that is learned and tested, experienced teachers know that much more is involved. They understand the need to take into account the diverse abilities and characteristics of their students, the complex body of knowledge and skills that students must acquire, and the diverse learning activities that need to be engaged. In many respects, also, each class is different from any other, and requires a carefully planned program of activities to ensure that students achieve successful learning outcomes. Action research provides the means for teachers to incorporate these diverse elements into their instruction, and to organize their work so that they effectively accomplish the demanding task of teaching.

There is nothing magical or particularly complex about action research. It is merely a systematic routine that enables teachers to keep track and take account of the many aspects of their work with students. Action research is similar to steps we take as we investigate very ordinary problems and issues in our everyday life. If we can't find our socks, we might first "Look" for them, or even ask our partners, "Have you seen my blue socks?" We then "Think" about them, asking questions like, "Where did I put them?" "When did I last use them?" "Did I put them in the wash?"

thereby examining alternative explanations for their possible location. If we are successful in these activities, the final "Act" is to find the socks, and the problem is solved.

In a similar vein, action research enables teachers to answer the basic instructional questions described above. The fundamental research question, however, can be stated as "How can I provide a successful lesson for this particular group of students?" As we reveal in the coming chapters, this question requires teachers to engage in systematic inquiry that enables us to take into account the many issues that are part of any classroom learning process—the nature of our students, the outcomes to be achieved, the content to be learned, the learning activities involved, and the means for assessing that learning.

The approach to action research as applied to teaching in this book is based on a simple LOOK > THINK > ACT heuristic[1] that frames both the instructional work of the teacher and student learning activities. The three components act as a compass or map that guides teachers through the systematic steps of a process of inquiry:

LOOK Acquire information (data)

THINK Reflect on the information (analyze)

ACT Use outcomes of reflection and analysis (plan, implement, evaluate)

This simple process is repeated in an ongoing fashion, providing a constant guide to ongoing processes of teaching and learning (Figure 1.2).

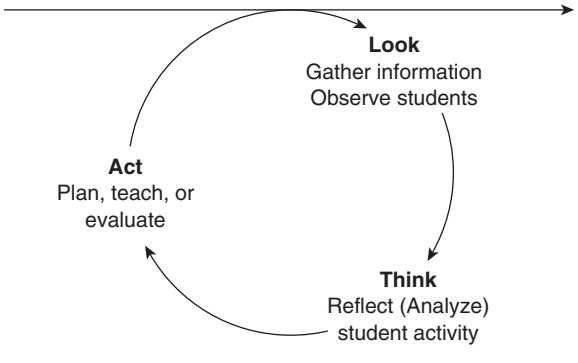


Figure 1.2 Action Research Cycle

Action research is often used to investigate specific issues or problems associated with classroom or school life (Atweh & Burton, 1995; Atweh, Christensen, & Dornan, 1998; Baldwin, 1996; Kincheloe, 2005; Malaguzzi, 1994; Stringer 2008). In this text, however, we show it may be continuously applied to ongoing classroom teaching and learning routines. Action research therefore becomes an integral part

of classroom lessons, providing a scaffold on which to build creative and effective lessons that consciously engage the students' full learning potential. It assists teachers to link student learning to real-life contexts, interests, and experiences, and provides an approach to experiential education that boosts student learning while promoting social outcomes related to participatory democracy.

Action Learning for Students

This book is based on the assumption that students learn more and better when they are actively engaged in processes of inquiry that stimulate their imagination and their interest. Action learning envisions learning, like action research, as a systematic process of inquiry and investigation that encompasses a wide range of interesting and effective learning activities. Action learners are, in effect, action researchers, as will become apparent in the following sections.

When teachers ask students to "research a topic and write a paper," they are asking them to gather information and report on a topic or issue. Students typically use a variety of methods to acquire information from a variety of sources—books, magazines, papers, the Internet, television, and so on. From all they gather, they select interesting or relevant pieces of information to construct their report that summarizes the central concepts, issues, and events and presents them in a carefully organized form. A good report provides readers with a clear understanding of the topic or issue studied.

This common event encapsulates some fundamental features of the processes of investigation that is the hallmark of scientific, social, and behavioral research. Using processes of investigation that are similar to those used in these types of research, students explore a topic or issue by conducting systematic processes of inquiry that

- **Focus:** Clarify the issue, topic, or problem to be studied
- **Gather Data:** Collect information relevant to that issue, topic, or problem
- **Analyze Data:** Process that information by selecting and sorting to identify key elements
- **Action:** Perform some action or activity that uses the information thus acquired

Action learners move through continuous cycles of this inquiry process to improve their understanding, extend their knowledge, or refine their skills (see Figure 1.3).

Action learning enables students to apply active learning processes to any area of the curriculum—reading, writing, mathematics, social studies, science, and so on. In the following pages we demonstrate how student action learning activities are clearly linked to outcomes embodied in state courses of study or core content curricula standards.

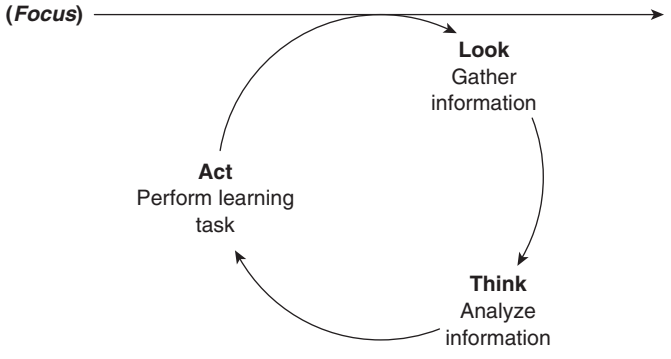


Figure 1.3 Action Learning Cycle

ACTION RESEARCH AND ACTION LEARNING: PARALLEL PROCESSES

The above frameworks describe how action research—a process of systematic inquiry—assists teachers to formulate lessons and evaluate the outcomes of the learning processes they contain. It enables teachers to systematically sort through the range of issues they need to accommodate in their lessons in order to accomplish effective outcomes with their students. A process of inquiry requires a teacher to start with questions about their students:

- What are the characteristics and qualities of the students I am teaching?
- What must they learn?
- How can they learn it?
- How can I know the extent to which they have learned it?

These are *research questions* that provide the basis for a continuing process of exploration that enables a teacher to plan effective classroom learning strategies. As these lessons are implemented, he or she monitors student progress using ongoing cycles of the action research process, observing student activities, assessing student performance, and providing appropriate feedback (see "Teacher" column in Figure 1.4).

A similar process of inquiry—action learning—assists students to frame their activities in terms of a series of questions. Starting with a topic, an issue, or a problem that focuses on a particular body of knowledge or set of concepts and/or skills, they may ask:

- What do I need to learn? What do I need to *know* or to be able to *do*?
- How can I learn those things?
- How can I show that I have learned them?

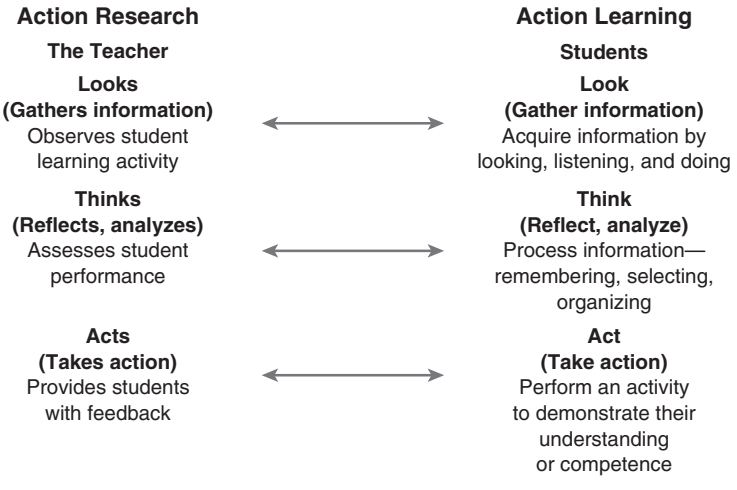


Figure 1.4 Parallel Teaching/Learning Processes

The learning processes that merge exploration of these questions provide the means to assist students to more effectively accomplish the outcomes that are the purpose of the lesson (see the column for "Students" in Figure 1.4).

Teachers and students are therefore engaged in parallel processes of inquiry that enable students to accomplish their learning, and assist teachers to engage more effective teaching practices. As Figure 1.5 indicates, the teacher's reflective research routine mirrors the learning routine of students, providing the context for creative and engaged instruction and learning.

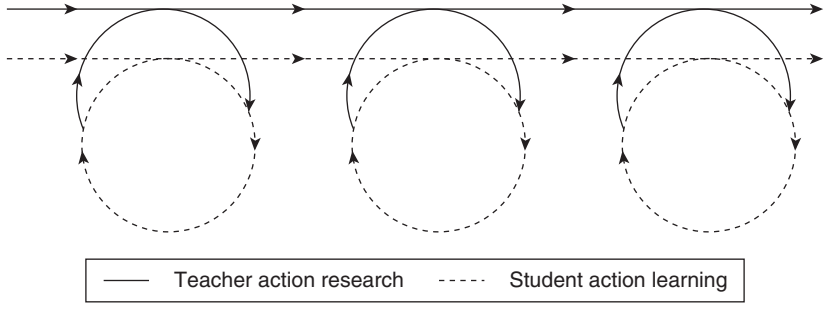


Figure 1.5 Action Research/Action Learning Double Helix

The following chapters therefore describe how action research and action learning work in tandem to provide students and teachers with the means to implement an

approach to learning that is dynamic, engaging, and educationally effective. In a fundamental way teaching and learning, as a transactional process, require both teachers and students to engage in ongoing acts of systematic inquiry that enable them to successfully accomplish learning outcomes that are the true purpose of classroom life.

The relationship between teaching and learning can be envisaged as a double helix, the parallel processes of teacher instruction and student learning working as complementary parts of the same process. In the following chapters we describe how these interacting spirals of activity provide a framework of concepts upon which to scaffold teaching and learning to produce enhanced outcomes in the classroom.

APPLYING ACTION RESEARCH TO PHASES OF INSTRUCTION

As described above, action research is not an "add-on" to the regular work of teaching but a set of procedures or a scaffold—a structured way of thinking—that assists teachers to engage their regular teaching routines in a more systematic and organized fashion. A lesson plan, for instance, is presented not merely as a standardized recipe for instruction, but the product of systematic inquiry that assists the teacher to deal with the complex array of issues that must be taken into account in planning and implementing effective teaching/learning processes.

Action research is not just applied to lesson planning, however, but can be incorporated into all aspects of teaching. The chapters that follow describe how to use action research to enhance each phase of instruction—planning, teaching, and assessment and evaluation (see Figure 1.6):

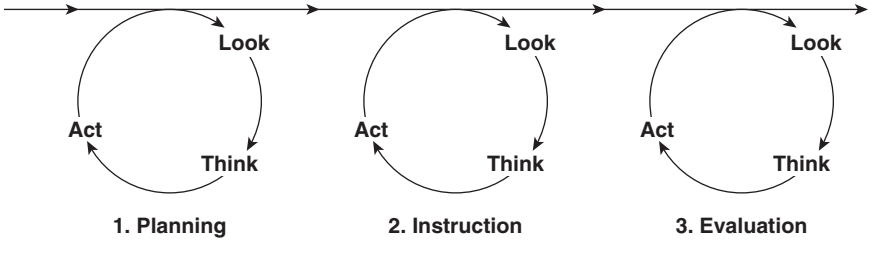


Figure 1.6 Phases of Instruction

- **Phase 1—Lesson planning and preparation:** Reviewing information and resources (Look); selecting, sorting, and organizing information (Think); formulating a lesson plan (Act).
- **Phase 2—Instruction:** Initiating activity and observing student responses (Look); reflecting on their learning processes and performances (Think); providing feedback and information (Act).

- **Phase 3—Assessment and Evaluation:** Reviewing lesson outcomes, reviewing student performance (Look); identifying successes and strengths; identifying weaknesses and gaps (Think); Planning remedial actions; planning ways of improving instruction and learning (Act).

The cyclical Look–Think–Act steps of action research thus are incorporated into each phase of instruction, providing carefully articulated processes that enhance both teacher instruction and student learning.

Conclusion

This chapter has described how action research and action learning can enhance teacher instruction and student learning. It shows how systematic processes of inquiry can assist teachers to learn more about the fundamental attributes and capacities of their students, and use that information to enrich and enhance the teaching/learning processes in their classrooms. In doing so, teachers are able to take into account some of the fundamental conditions that enable students to engage the full potential of their learning capacities and capabilities. The following chapters provide detailed descriptions of how action research can provide the basis for incorporating this complex array of issues into each phase of the teaching process—planning, implementing, and evaluating lessons.

Learning Resources

Reflection

1. **Look:** Review the material on action research in this chapter.
   Think: Identify the major features of action research.
   Act: Prepare a short presentation that describes the way you understand action research. Present it to some of your colleagues or classmates.
2. **Look**: Review the material in this chapter on action learning.
   Think: Identify the major features of action research. Identify how it is similar, and how it differs from action research.
   Act: Plan a short presentation on your findings to a small group of colleagues or classmates.
3. **Look**: Review material in this chapter that describes how teachers can enhance their instruction by the use of action research.
   Think: Identify the framework(s) presented that you feel would be most useful to you, as a teacher.
   Act: Plan and implement a short presentation that describes these frameworks to a group of colleagues or classmates.

Web Sites

Action Research Resources:
www.scu.edu.au/schools/gcm/ar/arhome.html
The site provides an online journal, access to an online course, useful papers, and other general resources.

Jack Whitehead's Home Page:
http://www2.bath.ac.uk/~edsajw/home.html
Offers a wide range of resources to schools and education. Information includes many examples of action research projects, and links to other home pages.

Research for Action (RFA):
www.researchforaction.org/index.html
Educational research and reform to improve educational opportunities and outcomes for all students. A rich range of resources.

Action Research at Queen's University:
http://educ.queensu.ca/~ar
Links to programs, conferences, sites, resources, publications, and student and faculty reports related to action research.

A Beginner's Guide to Action Research:
http://ousd.k12.ca.us/netday/links/Action_Research/begin_guide_action_research
A very useful and comprehensive guide to action research from Bob Dick.

Classroom Action Research Overview:
www.iusb.edu/~gmetteta/Classroom_Action_Research.html
Assists the teacher to find out what's happening in her or his classroom.

Additional Reading

Holly, M., Ahar, J., & Kasten, W. (2004). *Action research for teachers: Traveling the yellow brick road* (2nd ed.). Upper Saddle River, NJ: Pearson.

McNiff, J., & Whitehead, J. (2006). *Action research for teachers: A practical guide.* Abingdon, UK: David Fulton Publishers.

Mills, G. (2007). *Action research: A guide for the teacher researcher* (3rd ed.). Upper Saddle River, NJ: Pearson.

Stringer, E. (2007). *Action research* (3rd ed.). Thousand Oaks, CA: Sage.

Stringer, E. (2008). *Action research in education* (2nd ed.). Upper Saddle River, NJ: Pearson.

Note

1. As a heuristic, the words are not meant as literal translations of the term, but merely signal a phase of exploration. The Look phase, for instance, may entail observation, listening, reading, and so on. Think may signal processes of reflection, remembering, analysis, sorting and selecting, and so on. The important issue is to focus on the intent of the process, as signaled by the terms. They are merely devices that act as signposts to keep us on track and clarify the nature of each type of activity.