4

Articulating a Theory of Action

In your work with Stage 1 of the action research process you identified your priority achievement targets and examined what you thought would constitute appropriate growth on those targets. You are now ready for the second stage of the action research process, articulating a theory of action. When we choose to become action researchers, *action* became more than just our first name. Our passion about providing the very best professional *action* is the rationale for investing our finite energy in this work. The products you've produced up until this point are very important; in fact, the work you have already accomplished in Stage 1 will prove essential to your ultimate success. But it is here at Stage 2 that the really creative intellectual work begins: It is with the work of theory development that you will be crafting original strategies and designing innovative techniques with promise for producing better results than you have been able to achieve in the past.

Action research, often referred to by other terms, is a key aspect of the systems approach to continuous improvement pioneered by W. Edwards Deming (1986/2000). Deming asserted that ninety-five percent of organizational performance could be attributed to the tactics, strategies, and processes used to accomplish the organization's work. Increasingly, research has shown that organizational success is not the result of the inherent goodness or badness of the personnel working there. Performance is not a factor of *who* is doing the work but, rather, how things are being done (Deming,

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1986/2000; Senge, 1990). Consequently, when an improvement in performance occurs, the credit belongs to the theory of action that was developed and implemented by those carrying out the work. So if we find ourselves disappointed in student or program performance, it doesn't mean we are bad people or less-than-competent professionals. It indicates that our actions and the particular theories that informed those actions weren't adequate to the challenges we faced, and consequently those actions will need to be changed if we are to expect better results.

Action research is an empowering strategy. Exercising our control over the theory of action that informs our work is the most powerful thing a professional can do. But the idea of having educational practitioners take responsibility for the critique of their own practices and the design of innovative solutions for their own problems, while at the heart of this process, still generates some controversy. The two criticisms most often voiced against empowering educators with this authority are the following:

1. Full-time educators aren't able to focus on theory development and program design while attending to their other responsibilities.
2. An adequate professional knowledge base already exists, and educators ought to be expected to simply implement those practices with fidelity (Los Angeles Unified School District, 2010; Century, Freeman, Rudnick, & Leslie, 2008; O'Donnell, 2006) in their classrooms.

IF NOT US, WHO?

The first argument—that practicing educators aren't the ones who should be doing this work—flies in the face of a reality that educators face on a daily basis. All professional work is complex. And education is arguably the most complex, with hundreds of variables influencing each practitioner decision (see the discussion in Chapter 1). Due to the complexity involved in all professional decision making, the development and maintenance of each discipline's knowledge base has always been considered the responsibility of the profession itself. Furthermore, in most professions, the people who are taking the action are expected to be the ones designing the innovations, conducting the research, and consequently producing the evolving body of professional knowledge. This makes sense. After all, who is in a better position to identify the problems, understand the context, and integrate new insights into prevailing routines than those working on the front lines?

I have two dogs that I love dearly. Every time I take one of my retrievers to the vet, I am literally betting their lives on the treatment protocol that the veterinarian elects to follow. On these occasions I am comforted by the knowledge that it was veterinarians who conducted the research that informs the decisions of the veterinarian who is working with my dogs.

When tasks are simple and straightforward, it is often efficient to separate responsibility for the design and approval of implementation strategies

from the actual conduct of the work. This is why supervisors are frequently hired to direct blue-collar work. However, when the work is complex, when it requires an understanding of nuance and idiosyncratic behavior and calls for constant assessment by a trained eye followed by continual adjustments in the operative theory of action, it must be informed by the insights of those taking the action: the practitioners themselves.

AN ADEQUATE KNOWLEDGE BASE ALREADY EXISTS

The second criticism leveled at practitioner research in education is a bit bizarre. For several years the stated goal of educational policy throughout most of North America has been getting every student to a high level of performance on a set of meaningful standards. If a knowledge base exists that documents how to accomplish this, why has this research been so widely ignored? Personally, I know of no evidence reporting the success of any city, state, or country in getting all of its children to high levels of performance on meaningful objectives. So unless there has been a worldwide and intergenerational conspiracy to deny the children of the world access to a good education, it would appear that the answers on how to accomplish universal student success have continued to elude the best and brightest throughout history. Therefore, it is safe to say that the current educational knowledge base is inadequate to get us to our shared goal of universal student success.

So, in the words of the Hebrew sage, Hillel,

If not us, who?

If not here, where?

If not now, when?

GOING BEYOND PROVEN PRACTICES: BUILDING A THEORY OF ACTION

In Chapter 3's discussion of the literature review, a careful reader may have noticed that I avoided a phrase that has become part of the current school improvement vernacular: *scientifically proven practice.* It is a term that rolls nicely and easily off the tongue. The words *scientifically proven* deliver a good public relations punch, but shopping for and adopting those proven practices is a strategy that doesn't work nearly as well as its name might suggest.

Obviously, there is nothing wrong with making use of successful strategies. When a practice has been shown to work in a context similar to your own and the results that were obtained met your expectations, then adopting that practice for your school or classroom makes perfect sense.

External Pressure and Proven Practices

In a desire to encourage educators to make use of the best available practices, many government agencies and publicly supported programs now mandate the use of what have been labeled as scientifically proven practices. On the surface, policies like these seem quite rational. After all, if a strategy has been scientifically proven to be effective, it ought to be employed whenever and wherever appropriate. To ignore a proven practice would constitute educational malpractice, since it would mean denying a student a clearly beneficial educational experience. In other aspects of our lives, it is easy to think of proven practices that are always wise to follow, such as the following:

- File your taxes on or before April 15.
- When arguing a legal case, show respect for the presiding judge.
- Avoid contact with other people if you have a contagious disease.

Failing to adopt these proven practices would be irresponsible. In fact, not doing so could put you and/or others at risk.

But what of these so-called proven practices in teaching and learning? Repeatedly we hear of programs that were proven to be successful. Furthermore, when we examine data on these programs, we will frequently encounter impressive statistics, such as the following:

- With this program, attendance improved for eighty percent of the students.
- While using this program, seventy-five percent of the students posted gains in comprehension.

It is only right that we are impressed with gains like those. But simply adopting and faithfully implementing programs, even ones with such positive results, won't prove that satisfying for most educators in the long run. This is because in the opinion of most dedicated teachers, a seventy-five to eighty percent success rate simply isn't adequate. While at first blush those statistics might sound impressive, stated in another way, the same data says the following:

- Attendance showed no improvement for twenty percent of the students.
- While using this program, one out of four students showed no improvement in comprehension.

Logically, a faithfully adopted program can only be expected to work as well for others as it did where it was first proven successful. Therefore, the teacher or faculty adopting programs like these should expect to leave school every day knowing that twenty to twenty-five percent of their students won't likely be prospering. Few dedicated teachers will find this a very inviting prospect. Simply adopting a program that hasn't produced

universal student success and then considering your school improvement work to be complete means accepting an intolerable degree of failure as inevitable. Having to go along with such an assumption is both emotionally and morally untenable for most educators.

This is not an argument against using or even adopting practices that have worked with many students. However, it does alert us to a set of critical questions that should be raised whenever a review of research or a reconsideration of a school policy directs us to implement a scientifically proven practice.

The first question is *With whom has this been proven to work?* As professionals concerned with promoting universal student success, we need to know about the characteristics of the groups who prospered as well as the characteristics of those who didn't. Were there patterns of performance that might help us to predict success or failure for some of our students? For example, did boys and girls succeed equally well in the past, or fail in equal proportions? Was this program successful with gifted students? How about kids with dyslexia?

If a proposed or adopted program appears to be beneficial for your students, then by all means, you ought to use it. However, if there is a type of student for whom the program has not succeeded in the past, and you have similar students in your classes, then you may have identified an excellent focus for your action research. Such an observation might cause you to investigate the question,

> What *alterations, modifications,* or *alternatives* to this program would make it likely that more students will succeed, especially those students that hadn't experienced success with this program elsewhere?

This question highlights the challenge for any inquiring educator who is hoping to isolate techniques with promise to increase the percentage of students experiencing success. There is no escaping the truth of the saying, "If we keep doing what we've been doing, we will keep getting what we've been getting."

Even if we were willing to accept the status quo as good enough, doing so now violates U.S. education policy. The No Child Left Behind Act (2001) requires that every identifiable subcategory of students in each school make AYP on their state's standards. Just obtaining the same level of success achieved the previous year is not enough. Students in each cohort need to be doing better than they were in past years.

Since continuing to get what we've been getting won't meet our own high expectations, and it will likely place our school outside of compliance with federal education regulations, we would be wise to turn that old saying around and restate it in reverse:

> If we want to get *more than* we've been getting, then we must figure out how to *do things differently* than we've been doing them in the past.

While this doesn't mean you will forever be engaged in conducting full-blown action research projects, it does mean that to some degree you will probably be involved with the four stages of the action research process—*envisioning success, clarifying a theory to get you there, collecting data while implementing your theory, and reflecting on the results obtained*—for as long as you are working in education.

One of the benefits of using the best practices developed by others is that it helps us construct boundaries around our inquiries. When we build a revised theory of action on top of an existing theory of action (one that has already succeeded with a significant number of students), we aren't trying to solve the entire riddle all by ourselves and we aren't starting from scratch.

Whether we are building on a strong program that has been implemented elsewhere or creating a brand new program, being *innovative* in the development of a theory of action isn't a choice; it is essential. Since things must be done differently than they were before, creativity will be required for us to figure out what needs to be changed. If the theory of action we develop is to succeed, it will need to take into account three factors:

1. What is known about the context where it will be implemented?
2. What is reported in the professional knowledge base?
3. What have we come to understand through the wisdom of practice, our professional experience?

TWO KINDS OF VARIABLES

In Chapter 3, you established success criteria and created rating scales for measuring changes in performance on your priority achievement targets. Researchers refer to a phenomenon they are trying to improve or change as their *dependent variable.* The word *dependent* is used because the researcher is positing that changes in performance will be *dependent* on something specific happening. When doing action research, we will consider the term priority achievement targets as synonymous with dependent variable. For example, if I desire to lose weight, my achievement target (dependent variable) is how much I weigh. The criteria I would establish to determine change on this target will be my weight in pounds and ounces as measured by my bathroom scale. Since I believe that changes in my weight will be dependent on my choices of behavior and diet, my weight is the dependent variable in my search for a lighter me.

The other category of variables researchers are concerned with have to do with those phenomena that the researcher suspects might influence changes in the dependent variable. These phenomena are called the *independent variables.* The term *independent* is used because the person carrying

out the research is free to adjust the independent variables however he or she thinks best. Later the researcher will determine if those adjustments were shown to be worthwhile by looking for changes in measurements on the dependent variable. The independent variables that I might choose to adjust, in my investigation of weight loss, are my specific behavioral choices (what I eat and my exercise regime). This relationship is illustrated in the following table.

Choice of Independent Variables =	→	*Change* in the Dependent Variable
(our actions)		(achievement target)

The rating scales you have already developed will be used in your action research to measure changes in your dependent variables, your achievement targets. From this point on, we will use the terms *achievement target* and *dependent variable* interchangeably. Up until now, we have been concentrating on the dependent variables, your priority achievement targets. Now we will shift our focus and begin the process of identifying the critical independent variables that you have reason to believe hold the greatest potential for producing the positive changes you desire to see on your dependent variable.

CREATING MILEPOSTS ON THE ROUTE TO MASTERY

As we worked our way through Stage 1, we broke down our global visions into component parts that we called achievement targets. We moved from a general improvement focus to a defined vision of success on specific priority achievement targets. Then we broke down the achievement targets into subcomponents (traits) that could be effectively assessed. Now, as we develop a theory of action, we will engage in a similar sequential process but do so in reverse order. In constructing your theory of action, you will build a comprehensive theory by starting with the parts (like pieces of a puzzle) and then systematically assembling them to illustrate the big picture.

Discerning the components of your target (the traits) was important because performance on the target was defined as the sum of performance on its constituent traits. Likewise, when you have completed your theory of action, we will see that the efficacy of your comprehensive theory is the sum of a defined set of strategies and actions, the independent variables.

INFERRING INDEPENDENT VARIABLES

The first step in the process of building your theory will be to combine what you already understand from personal experience with what you've gathered from your review of the literature. The process begins by generating a

list containing all the key factors (independent variables) you think will need to be addressed through your actions if significant improvement is to occur on the identified achievement target.

Let's put ourselves in the position of Dr. Hernandez, the elementary principal who was hoping to increase the problem-solving capacity of her faculty. Reflecting on the key variables that she could influence as the school's principal, she might well have generated a list like the following:

- Provide adequate time for teachers to meet.
- Provide faculty with easy access to pertinent data on student performance.
- Clarify and keep the faculty focused on our priority school goals.
- Be personally engaged with each faculty work group.

The identification of critical independent variables is an important step for action researchers like Dr. Hernandez, but it isn't enough to provide her with specific direction on the day-to-day actions she could or should take to achieve the desired results. In addition, this list wasn't prioritized, nor did it provide any insight into how these separate actions might influence each other. Consequently, Dr. Hernandez would have a hard time articulating a reasoned and coherent strategy for succeeding with her target without thinking through the answers to two additional questions:

- What is the relative importance of the identified independent variables?
- How do they relate and interact with each other?

In this and the next chapter, we examine two strategies that, when taken together, will allow you to respond to both of those questions. The first is a technique called the *priority pie*. The second technique, *the graphic reconstruction*, will be the focus of Chapter 5.

USING THE PRIORITY PIE TO IDENTIFY, CLARIFY, AND WEIGH INDEPENDENT VARIABLES

Thirty years of educational research have clearly established the relationship between time and learning. Both the allocation of time and the time spent on task have been shown to be key correlates of learning (Stanley, Spradlin, & Plucker, 2007; Aronson, Zimmerman, & Carlos, 1999). Time is, without a doubt, the most valuable resource under our control. And since class time is a zero-sum commodity, the decisions we make on how to spend this scarce resource are crucial. It isn't an overstatement to assert that in large measure, our effectiveness in hitting our targets is determined by the wisdom of our choices regarding the expenditure of the time and energy available to us. The priority pie is a simple strategy, one that will help you determine how you could most effectively allocate this critical resource.

To demonstrate the use of the *priority pie* strategy, let's follow two hypothetical action researchers as they work their way through the theory-building process. One is Dr. Hernandez, who is trying to enhance the problem-solving capacity of her faculty. Her target, changing the organizational approach to professional problem solving at her school, could be classified as a program target. The second project is the work of Mr. Seeker, a middle school English teacher who wants to increase his students' success with a specific academic performance target: He wants his eighth-grade students to develop the ability to write unified, sequential, and persuasive five-paragraph essays.

The priority pie process that they will be using has four steps:

1. Brainstorming
2. Summarizing
3. Evaluating
4. Graphing

Step 1: Brainstorming the Critical Independent Variables

If we are to succeed in improving performance on our priority achievement targets, we need to identify and attend to *each key independent variable.* The process of identification must occur consciously and deliberately because, should an essential variable be overlooked, it will have an impact on our ultimate success. Therefore, the first step is thinking through and answering the following question:

> What are the issues, factors, programs, and processes that *must* be addressed to achieve success with this target (success meaning everyone performing at or above expectations)?

As you recall, Dr. Hernandez's four items were the following:

1. Provide adequate time for teachers to meet.
2. Provide faculty with easy access to pertinent data on student performance.
3. Clarify and keep the faculty focused on our priority school goals.
4. Be personally engaged with each faculty work group.

Mr. Seeker generated the following list of independent variables:

> I need to provide both *instruction* and *feedback* for my students on the following skills:
>
> - Organization
> - Persuasive voice
> - Editing
> - Vocabulary
> - Grammar and mechanics

Step 2: Summarizing the Independent Variables

Once action researchers feel confident that they have identified the key independent variables, they can begin to articulate an emerging theory of action. At this stage, Dr. Hernandez could articulate her theory as follows:

> For our faculty to succeed in becoming an effective problem-solving team, I need to ensure that adequate time is provided for teachers to meet and work collaboratively. I also need to make sure that they have access to all the pertinent data and information needed to make successful decisions. Since a sense of common purpose is essential, I need to take steps to achieve clarity on our school goals and to see to it that our collective attention stays focused on schoolwide priorities. To build support for this process, I must become a partner with each faculty work group as they work on addressing school goals.

Mr. Seeker might summarize his emerging theory this way:

> For my students to produce proficient, persuasive five-paragraph essays, they will need direct instruction and feedback from me. I must teach them how to develop their organizational skills, editing skills, word choice skills, skills in the use of mechanics and grammar, as well as a persuasive voice. And I need to provide them with timely feedback on their work in each of these areas.

Since time and energy are limited, both of these action researchers realize they need to apportion their limited time between each of the actions (independent variables) mentioned in their emerging theories. This brings them and us to Step 3.

Step 3: Conducting an Intuitive Regression Analysis

The next step in the priority pie process is determining the appropriate amount of attention to be paid to each identified factor. Determining the relative importance of each item (independent variable) on our lists is a judgment call, one that the action researcher will ultimately have to make for himself or herself. It is an informed judgment based on a combination of the review of the literature, past experience, and intuition.

One strategy to determine the relative importance of the independent variables is by dividing the time and energy available to be expended across the list of factors, based on the perceived importance of each factor to the realization of the whole—that is, excellent performance on the achievement target. This can be accomplished using the Intuitive Regression Analysis Worksheet, as shown in Figure 4.1. When using this worksheet, each item brainstormed in Step 1 is assigned a percentage based on how critical the researcher feels that item is to the achievement of

Figure 4.1 Intuitive Regression Analysis Worksheet

Using the following form, make a judgment regarding the relative importance of each of the factors that you had identified as critical to success on this achievement target. Use a separate form for each target being pursued.

Achievement Target: _____

List each factor deemed critical to fostering success with this achievement target	*Importance of this factor (%)*
	Total: 100%

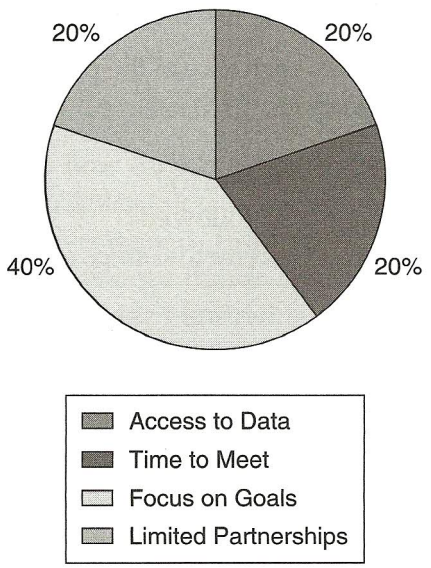
the whole. There is no limit to the percentage that can be assigned to any one item; however, the total must equal one hundred percent.

Step 4: Graphically Displaying the Emerging Theory

Once you have completed your analysis using the Intuitive Regression Analysis Worksheet, you will be able to draw your emergent theory as a pie graph and write a summary paragraph explaining the reasoning behind your proposed allocation of resources. Figures 4.2 and 4.3 show Dr. Hernandez's and Mr. Seeker's graphs and narratives, respectively.

The development of a priority pie is an extremely important part of our work in Stage 2. It forces us to do the hard intellectual work of determining what we believe is of critical importance, and it also causes us to reflect on the relative importance of each piece of the puzzle. As important as this is, it still lacks the detail and precision necessary to provide adequate direction to our work. There are still several other crucial things that need to be considered before we could confidently declare our theory of action to be complete and proceed with implementing it. Even the best priority pie can't provide the clarity and direction needed to proceed to the

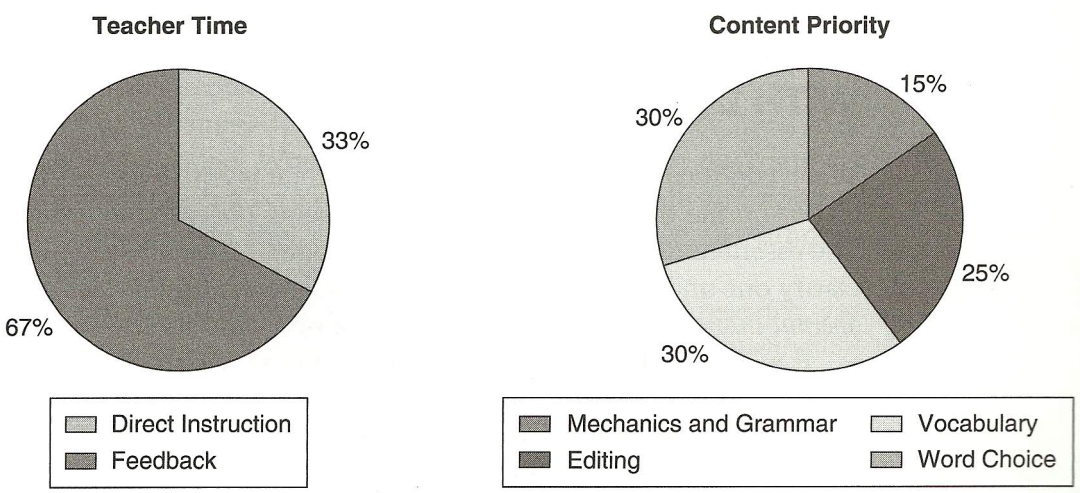
Figure 4.2 Enhancing Problem-Solving Capacity



For the faculty to succeed in becoming an effective problem-solving team, I need to ensure that adequate time is provided for teachers to meet and work collaboratively. I also need to make sure that they have access to all the pertinent data and information needed to make successful decisions. Since a sense of common purpose is essential, I need to take steps to achieve clarity on our school goals and work at keeping our collective attention focused on schoolwide priorities. To build support for this process, I need to find a way to become a partner with each faculty work group as they work toward addressing a school goal.

I believe the most critical of all these actions will be my efforts to keep a clear and consistent focus on our school goals (forty percent). The three other critical factors that I must attend to as building principal are providing adequate and convenient times for problem-solving meetings (twenty percent), ready access to all the pertinent student and school data (twenty percent), and engaging every faculty work group as a limited partner (twenty percent).

Figure 4.3 Five-Paragraph Persuasive Essay



For my students to produce proficient, persuasive five-paragraph essays, they will need ample direct instruction and feedback from me as they develop their organizational skills, editing skills, facility with word choice, skills in the use of mechanics and grammar, and the skillful use of a persuasive voice.

I feel that the most critical of these skills is the development of voice and the related areas of word choice and vocabulary. Together, these elements account for sixty percent of the proficiency needed by my students. Proficiency with mechanics and grammar amount to fifteen percent, with editing skills being twenty-five percent of the equation. I believe that my students' success will be dependent on my providing appropriate direct instruction and feedback. Since I believe that becoming an effective writer requires practice, I suspect my students will need to spend two-thirds of their time and energy in the act of writing. For this reason, sixty-seven percent of my work will be devoted to providing students with feedback on their writing and thirty-three percent on the provision of direct skill instruction.

action phase. If we want to be confident of the likelihood that our "theory" will produce universal success, we will need to know and incorporate the following into our theory development:

- What specific actions are needed to satisfy each slice of the priority pie?
- Who is involved in each of these actions?
- When should those actions occur?
- Will multiple actions need to occur simultaneously?
- Is there a sequence of events that should be followed?
- If problems are encountered, what types of remedial steps should be undertaken?

When conducting scientific experiments as well as all other forms of exploration, it is necessary that the explorer work from as detailed a plan of action as possible. The process of clearly and unambiguously articulating one's plan of action serves several purposes:

- A detailed plan provides guidance and direction for the work.
- If and when success is achieved, the plan provides a road map that others can use as they attempt to reach the same destination.
- If and when the results aren't as expected, the plan can be meticulously retraced to find out where problems were encountered.

USING THE PRIORITY PIE WITH DESCRIPTIVE RESEARCH

When conducting *descriptive* action research, it is equally important to have clarity on the theories of action that are being observed and documented. The essential difference is that with descriptive research, the purpose is to clarify our understanding of the way things are currently being done—*the operant theory*—rather than to articulate a proposed theory of action.

It is hard to imagine an action occurring in the schoolhouse that isn't being done for a reason. But oftentimes, things have been done a certain way for so long that it has been years since anyone stopped to consider and reflect on the underlying rationale. To make these implicit theories of action explicit, action researchers who are conducting descriptive studies go through the same four-step process but do so in a slightly different manner.

Step 1: Brainstorming the Critical Independent Variables

Generate a list of independent variables by responding to the following question:

> What issues, factors, programs, and processes are currently consuming most of our time and energy with this target?

Step 2: Summarizing the Independent Variables

Explain in a brief narrative statement the actions that are currently being taken in pursuit of the target.

Step 3: Conducting an Intuitive Regression Analysis

Ask how time is currently being spent. Look over the list of independent variables (Step 1) and the narrative statement (Step 2) for each target being investigated. Estimate the approximate percentage of the available time and energy that *is currently being devoted to* each variable. The total must equal one hundred percent.

Step 4: Graphically Displaying the Operant Theory

Draw the information from Step 3 in the form of a pie graph and do your best to explain the percentages. Be careful to avoid using interpretive language. Rather than saying, "We are spending an enormous amount of time on *x*" or "We are overly emphasizing the use of worksheets instead of teacher-generated examples," try to say it like this: "We are spending seventy-five percent of our time on *x*" or "Of the assignments used, eighty percent involve publisher-supplied worksheets while less than ten percent are teacher-developed assignments."

Occasionally, someone anticipates that he or she will be doing descriptive research, but then as the action researcher makes the operant theory explicit, he or she becomes so uncomfortable with the current state of affairs that he or she immediately decides that a better theory must exist or could easily be created. When this occurs, it is wise to go back and see if another priority pie can be created, one that will illustrate an improved and novel theory. To do this it is suggested that you use the Intuitive Regression Analysis Worksheet (Figure 4.1).

Whether you are doing descriptive or quasi-experimental research, you will need to use a second visual technique called the *graphic reconstruction* to assist you with the detailed action planning and clarification needed for articulating your emerging theory of action. In Chapter 5, we will explore the creation and use of this essential research and planning tool.