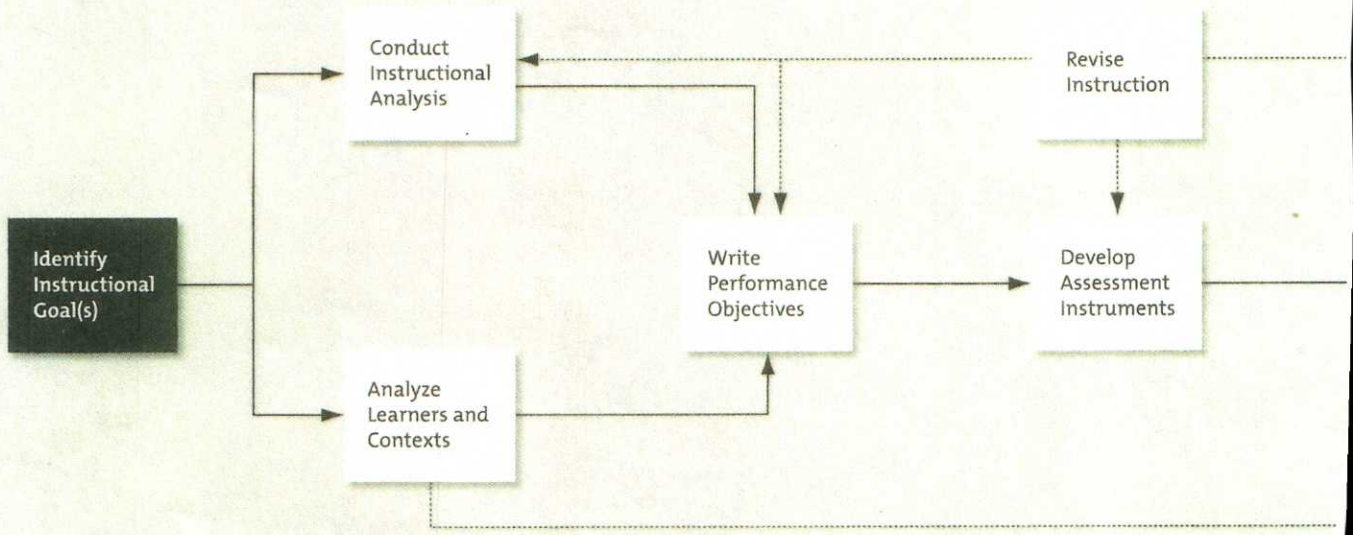
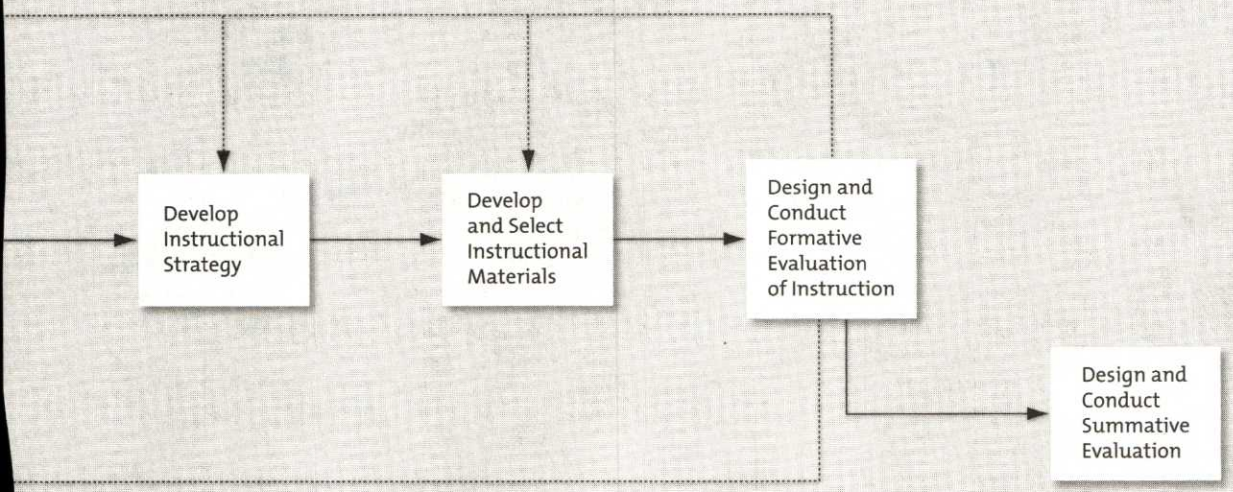
chapter TWO



objectives

- Define performance analysis, needs assessment, needs statements, and instructional goals.
- Identify an instructional goal that meets the criteria for initiating the design of effective instruction.
- Write an instructional goal that meets the criteria for initiating the development of instructional materials.
- Evaluate instructional goals for congruence with learner characteristics, learning and performance contexts, and tools available for learners.

Identifying Instructional Goals Using Front-End Analysis



Background

Perhaps the most critical event in the instructional design process is identifying the instructional goal. If done improperly, even elegant instruction may not serve the organization's or the intended learners' real needs. Without accurate goals designers run the risk of planning instructional solutions for which needs do not really exist. There are many ways to identify instructional goals, but four common methods that come to mind are the subject-matter expert approach, the content outline approach, the administrative mandate approach, and the performance technology approach.

Every reader of this book could be considered a subject-matter expert (SME, pronounced S-M-E or smee) in some area. You have completed, or will complete, an undergraduate degree in some field. Your knowledge of that field now greatly exceeds that of the general public, so you would be considered a SME. When SMEs are asked to develop instruction in their areas of expertise, they will most likely consider their own learning on the subject. Depending on their evaluation of their own knowledge, they try either to replicate it for students or to improve it. The instructional goals established by SMEs often contain words such as *know* and *understand* with regard to content information. This approach to the teaching–learning process assumes that students need to learn what the SME knows and emphasizes the communication of information from instructor to student in the instructional process.

A second way to identify instructional goals is the content outline approach, in which convincing evidence that a performance problem exists is assumed to be caused by students not having learned the right type or amount of content. This approach often occurs when the "right type and amount of content" are outlined in predefined curriculum standards and frameworks, corporate policies, equipment manuals, training manuals, and so forth. One danger with this method is being locked into content standards that may no longer be relevant or that never were adequate solutions for organizational or social needs. Another danger is assuming that new instruction or more instruction will solve the problem when, in fact, the problem may be due to lack of accountability, lack of incentives, outdated tools, organizational culture, or some other factor.

It often happens that goals are identified for initiating the ID process simply because a person, a panel, a board, an agency, a work team, a supervisor, a program manager, or some other administrative authority issues a mandate that training for the selected goals *will occur*. Goals selected by mandate can be valid if appropriate planning and insight were exercised by the administrator on whose authority the training is based, or if an instructional designer can exercise political savvy and negotiating skills to confirm or redirect goals after the fact. Unfortunately there often is little latitude for negotiation, and this "ready-fire-aim" approach frequently misses the mark. Note that some goals selected through mandate can be valid by definition when required by federal or state law, by union contract, by safety requirements for new employee hires, and so forth. Such goals are true mandates and usually go straight to the training department. The student performance standards enacted by state legislatures are also examples of true mandates in public education and are passed down to school districts and schools for implementation.

Instructional designers favor a fourth approach, performance technology, in which instructional goals are set in response to problems or opportunities within an organization. There are no preconceived notions of what must be learned, of what will be included in an instructional package, or that, in fact, there is any need for instruction at all. Designers attempt to work with those responsible for ensuring that an organization is meeting its quality and productivity goals. These concerns apply to any organization, private or public. Private organizations are motivated to meet productivity goals and their clients' and customers' needs. Public agencies, including public schools, share this motivation and also strive to meet the needs for which taxpayers have mandated the expenditure of public funds. To the extent they are not doing so, changes must be made, and the crucial issue becomes determining the correct modifications.

Designers engage in performance analysis and needs assessment processes to identify the problem precisely, which is not always an easy task. The real problem is not always as it initially appears. After the problem is identified, the designer attempts to discover the causes of the problem, and then enumerates an array of solutions that could be implemented to solve the problem. One step toward a solution could be identifying a set of instructional goals for initiating the ID process, but seldom is instruction the single answer to a problem. Usually a combination of changes is required to solve the problem effectively.

Concepts

The model we use throughout this text is to guide the design, development, and revision of instruction. It has long been accepted that careful analysis is absolutely critical prior to initiating the design of instruction. This analytical work is sometimes referred to as front-end analysis and typically includes performance analysis, needs assessment, and in some cases job analysis. We will provide an overview of these three planning processes in this concepts section, but front-end analysis is not an activity

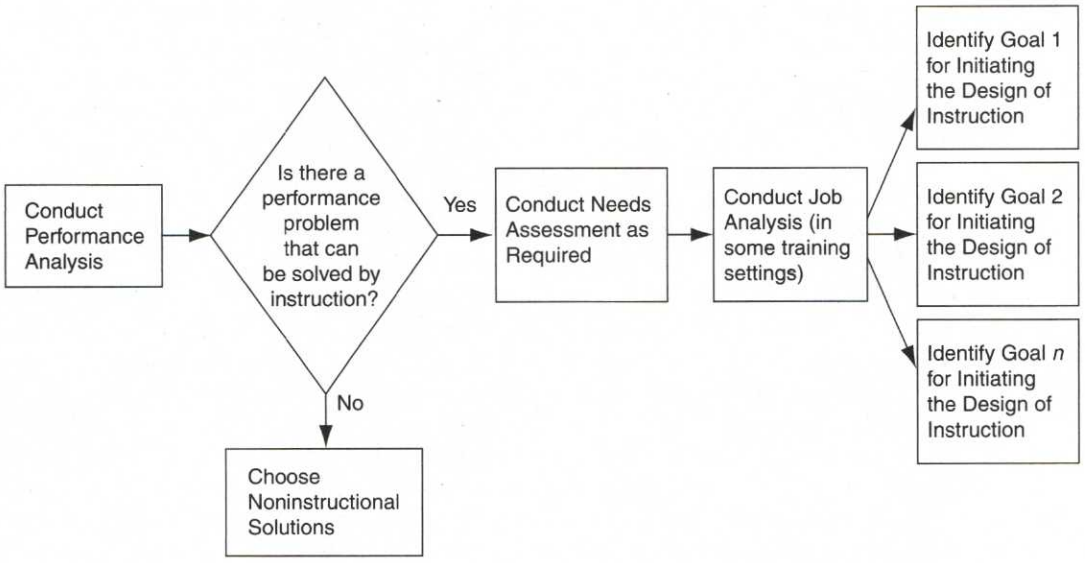


figure 2.1 **Front-End Analysis for Complex Training and Curriculum Development Contexts**

for which we provide detailed procedures and examples. Figure 2.1 will help to clarify how the skills that you are learning in this text fit into more complex, larger-scale training and curriculum development projects. For most instructional design efforts in school and university settings and for many professional and technical training projects, the brief overview and examples of front-end analysis in this chapter will serve the novice designer well.

Those readers who are using this book as part of a graduate degree program in instructional systems design or instructional technology may find that coursework in evaluation, performance analysis, and needs assessment is part of their programs of study. Others wanting in-depth preparation in front-end analysis are referred to books by Brown and Seidner (1998) for evaluation; Rossett (1999), Mager and Pipe (1997), and Robinson and Robinson (1995) for performance analysis; Kaufman (1998), Kaufman et al. (2002), and Rossett (1987) for needs assessment; and Jonassen, Tessmer, and Hannum (1999) for job analysis. If you are a student using this book you may be designing and developing a unit or lesson of instruction as one of the requirements for your class. If that is the case, you might start your project at the "Conduct Needs Assessment as Required" step in Figure 2.1 and go straight to "Identify Goal 1 for Initiating the Design of Instruction." To provide a broader context for instructional design, the discussion that follows includes an overview of performance analysis with examples from business and public schools.

Performance Analysis

Performance Analysis in a Business Setting Public and private organizations are continually faced with problems that senior officers and managers must identify and solve. Problems reflect a failure to achieve certain organizational goals or to take advantage of opportunities. Those failures are often seen as resulting from a lack of or improper use of skills; thus, it is not unusual for an officer to identify a problem and assume that training is the solution. Such problems are often presented to the training department with the request that they develop training to solve the problem.

Even when a direct request for training has not been made, the response to someone saying, "I've got a problem!" has often been, "OK, let's do a needs assessment and find out what training we can provide." Needs assessment is an indispensable tool for solving problems, but a performance technologist would take a different mind-set into the problem situation and do some analysis before deciding that training should be provided. In common terminology this mind-set is called critical thinking. Being a critical thinker is both attitude and intellectual skill; that is, one must *choose* to act like a critical thinker and *master* the analytical techniques employed by a critical thinker. Some of these attitudes and techniques include being open-minded, being objective, seeking root causes, viewing a problem from multiple perspectives, giving a fair hearing to evidence on multiple perspectives, suspending judgment until all pertinent information has been heard, listening to contrary views, and changing a conclusion in the face of compelling information. Applying critical thinking attitudes and skills is more difficult from within an organization than from outside. That is why outside consultants are often hired to conduct strategic planning and performance analysis activities. Instructional designers, however, are most often part of the organization in which they practice their profession, so must cultivate this critical thinking mind-set to be effective performance analysts.

To explain performance analysis further we will consider an example from professional and technical training. In our example the head of a large information systems (IS) division came to the training manager and said, "The customer service call center has grown so fast that we can't keep up with all of the service orders on their computer workstations. Instead of hiring more service technicians, corporate personnel wants me to accept six transfers from other divisions who are scheduled for termination due to downsizing. I'm going to start screening candidates for transfer, but I know they won't have the skills we need. I want you to decide whether we should train them ourselves in desktop troubleshooting and repair or send them outside for training." The training manager replied, "Thanks for the heads-up. I'll check with the customer service manager and get back to you tomorrow morning." The training manager did some homework that night, and the next morning she diplomatically proposed a performance analysis rather than a quick jump into a training program. The director of information systems agreed to hold up the screening process, but only for a week and a half, saying, "Go ahead and see what you can do." Some of the steps she took and information she learned over the next ten days are as follows:

- The computer breakdown problem was in the customer service call center, which had expanded rapidly with many new customer representatives and computer purchases. Current staffing in IS was not sufficient to keep up with the workstation troubleshooting and repair needs.
- One of the business goals for the customer service unit was to improve customer relations.
- One operational target for improved customer relations was customer satisfaction with 96 percent of telephone contact opportunities.
- To reach the satisfaction target, the customer service division had set performance standards of "maximum of three automated call menu selections before reaching a live representative" and "maximum average wait time of 90 seconds before reaching a live representative." (There were other performance standards but these are the only ones we will consider here.)
- When the training manager checked the most recent customer follow-up data she found that satisfaction with telephone contact was running at 76 percent, and when she checked telephone log tracking reports she found that average wait time was just over two and a half minutes and wait time for 17 percent of calls was over five minutes. Clearly, a business goal of the customer service unit and a target performance standard were not being met.

- The training manager checked computer workstation problem reports, downtime, and repair logs in IS and found that hiring and training new computer techs to get workstations repaired and back online sooner would, indeed, decrease service interruptions in the call center and thereby lower average caller wait time.

But were there other solutions? Here is what the training manager found when she suspended judgment pending additional information, began to analyze the system of components and relationships among components that could be contributing to the performance problem, and entertained the possibility of alternatives to a training solution.

- She took another look at the telephone logs and checked a sample of transaction records. She discovered that fully a quarter of all calls going to the experienced customer service representatives with specialized training were simple information requests that could be handled by a receptionist-level person without a computer workstation.
- She looked again at the workstation problem reports and repair logs and found that 16 percent of downtime was due to simple configuration fixes and crash reboots with which inexperienced customer service representatives were not familiar.
- She found that computer purchases had barely kept up with the growth of the customer service call center and that IS did not have much shelf inventory to swap a working computer for a broken computer.

At the end of her ten days of performance analysis, the training manager, the head of information systems, and the customer service manager had a meeting and decided to try the following strategies for solving the performance problem and helping the customer service unit achieve its business goal.

- The training manager agreed to work with the telephone systems person in IS to improve call screening by clarifying the contents of the menu choices in the automated answering scripts and by adding another choice in two of the three menu levels. These changes would route a greater percentage of simple information requests to a pool of the newer, less-experienced customer service representatives.
- The training manager agreed to work with IS on a job aid for each workstation, a small laminated card with a decision tree of simple "if this happened, then do that" suggestions for computer "first aid." She also agreed to do a brief interactive training piece that would be available on the company's intranet to step the customer service representatives through the terminology and the process in the decision tree.
- IS decided to accelerate its computer purchase schedule to create some shelf inventory of machines that could be configured and available for service while broken units were being repaired.
- All agreed that it would be a good idea to allow some time for implementing and evaluating the proposed solutions and, in the mean time, to hire temporary computer technicians as needed from an outside employment services agency.

In solving the performance problem described in our example, the training director followed a "performance relationship map" formulated by Robinson and Robinson (1995) for organizing performance analysis efforts. The strategy of the relationship map is to relate a problem that has been voiced to a core organizational or business outcome and then check operational goals and performance standards related to that outcome. Table 2.1 is a summary in question and answer form of the relationship map process for performance analysis.

The purpose of a performance analysis study as depicted in Table 2.1 is to acquire information in order to verify problems and identify solutions. The outcome of a performance analysis study is a clear description of a problem in terms of failure to achieve desired organizational results and the corresponding desired and actual

table 2.1 Application of the Robinson and Robinson (1995) Performance Relationship Map

Performance Analysis Question	Performance Analysis Answer
1. What is the problem that was originally voiced?	1. A training program for six new computer techs for desktop troubleshooting and repair in the customer service call center.
2. Is the voiced problem related to a core organizational outcome?	2. Yes: Improve customer relations.
3. Are there established operational goals for this outcome?	3. Yes: 96 percent customer satisfaction with service contacts by telephone (desired status).
4. Is the operational goal being met?	4. No: 76 percent customer satisfaction with service contacts by telephone (actual status).
5. Is there an operational need?	5. Yes: Eliminate the twenty percentage point gap between the desired status and the actual status.
6. Have job performance standards been set for achieving the operational goal?	6. Yes: Maximum of three automated call menu selections and maximum average wait time of ninety seconds before reaching a live service representative (desired status).
7. Are job performance standards being met?	7. No: Average wait time over two and a half minutes and wait time for 17 percent of calls over five minutes (actual status).
8. Is there a job performance need?	8. Yes: Eliminate the sixty-second gap between the desired status and the actual status.
9. Are there external factors outside the control of local management that are contributing to operational and job performance needs (e.g., government regulations, corporate hiring freeze, labor contract, corporation's national contract with telephone service provider, and so forth)?	9. No: Operational and job performance needs appear to be within the control of local management.
10. Are there internal factors within the control of local management that are contributing to job performance needs?	10. Yes: Work flow, logistics, employee skills, man hours.
11. Are there solutions for the performance needs?	11. Yes: Work flow—redesign call routing. Logistics—accelerate computer acquisitions. Employee skills—create job aid with training. Man hours—hire technicians from temp agency.

employee performance, evidence of the causes of the problem, and suggested cost-effective solutions. Note that while an instructional designer may guide or participate in a performance analysis study, there is no assumption that instruction will be a component of the solution. These studies are often team efforts, and the results reflect what is possible given a wide range of organizational resources. An important consideration in selecting a solution is cost, and instruction is often one of the more expensive alternative solutions. Experience has shown that under careful analysis, many organizational problems that previously were addressed by training are now solved via multicomponent solutions that may or may not include training. If part of the solution is training on new skills or rejuvenating existing skills, then plans for a needs assessment and an instructional design project are made.

Performance Analysis in a Public School Setting The term *performance analysis* is seldom used in public schools, but the same kind of critical thinking is applied routinely to solve problems involving administrator, teacher, and student performance. For an example focusing on student performance, assume the principal of an elementary school was reviewing results from the state standards test and saw that fifth-grade students were well below the state average for finding and using information resources, and low performance on this section of the test was pulling down the overall fifth-grade performance profile. The principal explained the student performance problem to the assistant principal (AP) for curriculum and said, "We need in-service training for the fifth-grade teachers and the media specialist in information literacy skills. Will you please arrange it?" The AP said she would take care of it, but before she looked into scheduling in-service training she did some investigating. Here are some of the steps she took and information that she found:

- She checked the state standards and found that an information literate person "can recognize when information will help solve a problem, choose the best sources for valid and timely information, organize and synthesize the new information, and write and display the information appropriately for the problem." (*Information literacy* is the current term for library skills or research skills.)
- She compared the state benchmarks and skills in information literacy with sample test items and old exams that had been released to the public. The benchmarks and test items required both recall of information and application of information and concepts to solve problem scenarios. The test items seemed to be valid measures of the skills.
- She looked at scheduling and found that each class rotated through the media center once a week for forty minutes of contact time. She observed several fifth-grade classes during their media center visits and noted that the students had only fifteen to twenty minutes for learning information skills after getting organized and settled down, checking books in, browsing for new books, checking new books out, and taking Accelerated Reader quizzes. The fifteen to twenty minutes of instructional time did seem to be relevant, focused, and on task, but she didn't observe much follow-up when the students went back to their classrooms.

After her investigation, the AP briefed the principal on some tentative conclusions and decided to meet with the fifth-grade teachers and the media specialist. In the meeting she became convinced they all had a good grasp of information literacy skills, but none were very pleased with how they were teaching the content. They all felt they did not have time to go beyond a simple descriptive level and work with the students on applying the skills. The teachers admitted they didn't spend much time in the classroom following up on the instruction in the media center because of pressure to keep test scores up in reading, writing, and arithmetic, confirming the AP's observations of what was happening in the media center and the classrooms. The group concurred on the need for raising students' state test performance on using information resources and, agreeing they had to change their instructional practices, decided on the following action plan:

- Free the media specialist to attend the fifth-grade teachers' group meetings for collaboratively planning a strategy for embedding information skills within classroom language arts instruction.
- Free the media specialist for team teaching time in the fifth-grade classrooms.
- Upgrade from the desktop to the networked version of Accelerated Reader software so students could take AR tests and monitor progress in their own classrooms, thus freeing up instructional time during class visits to the media center.
- Implement an intensive learning improvement program with instruction containing embedded assessments, remediation, and enrichment.

The AP reported to the principal that she and the teachers believed they had a plan for solving the state test performance problem, but it would require some resources. The principal concurred and said the money was available for the software upgrade. Freeing the media specialist would be more difficult but money for a part-time media center clerk might be available from the PTA, the School Improvement Team's discretionary funds, a district budget for performance improvement projects, or from a combination of those sources.

Although the AP would not have described her investigation as performance analysis, she was using good, solid problem-solving methods to look for root causes of the students' poor test performance. In-service training would not have improved student test scores, because the media specialist and teachers knew the content and how to teach it; the constraints in their school schedule prevented them from doing so. The need was for changes freeing sufficient time for students to learn application of the information literacy skills.

The examples from business and education both illustrate instances where instruction was not the primary solution for a problem. *Analyzing Performance Problems* by Mager and Pipe (1997) describes a useful decision process for identifying performance problems caused by circumstances other than instruction. Their process is distilled into a straightforward flowchart that is easy to understand and apply. When instruction is indeed the solution or part of the solution, then needs assessment is an important tool for getting the instructional design process on track for effective results.

Needs Assessment

The processes involved in conducting a large-scale needs assessment can be very sophisticated, but the logic of needs assessment is simple. Needs assessment logic was used as a tool in the performance analysis in Table 2.1. For example, look at steps 3 through 5 and then at steps 6 through 8. There are three components of needs assessment logic. The first is establishing a standard or goal that is referred to as the *desired status*—for example, ten fiction books in the school library for each student enrolled, 90 percent on-time arrivals for city busses, a 40 percent gross profit margin on hardware sales, or 95 percent success rate for students in the school district passing the functional literacy examination. The second component is determining the *actual status* or existing level of performance on the standard or goal—for example, eight fiction books per student, 77 percent on-time arrivals, 43 percent gross profit margin, and 81 percent of students passing. The third component is identifying the *gap* between *desired status* and *actual status,* thereby describing a *need*. Following our examples, the school library needs two more fiction books per student; the city bus system needs 13 percent more on-time arrivals; gross profit margin is fine because actual status exceeds desired status; and the school district needs to increase the percentage of students passing the functional literacy examination by 14 percent. The logic of needs assessment can be summarized as a simple equation: *desired status – actual status = need.*

It has been noted that managers or executives often describe problems in terms of actual status, or the way things are now. Examples would be "Our deliveries are late," "Not enough of our students got to the district spelling bee," "Our sales are down," and "Too many of our students are failing the basic skills test." For actual status and performance to have meaning in needs assessment, the investigator would have to establish standards for a desired status and then further identify exactly *how* late the deliveries are, *how many* students made the district spelling bee, *how far* sales are down, and *what percentage* of the students are failing the basic skills test.

Careful descriptions of both desired and actual status are required, because a *gap or need* is defined as a comparison between the two. The gap of greatest consequence is that in organizational results. If it turns out that there is no gap, then there is no need

and no change is required, and obviously there is no requirement for new instruction or training. This is the situation whenever any organizational officer (including a school board member) surveys a situation and indicates that it is satisfactory—the desired and actual are the same and there is no need for change.

We have seen that needs assessment logic is one of the tools used in performance analysis. If performance analysis indicates that training is one of the best solutions for a performance problem, then needs assessment will be used again. This would be called *training needs assessment* or *learning needs assessment* and would result in instructional goals for beginning an instructional design project. Recall that in the example of the customer service performance analysis the training director noted that 16 percent of computer downtime was due to simple configuration fixes and crash reboots with which inexperienced customer service representatives were not familiar. She decided that this was a training problem and volunteered to develop a job aid and training for workstation "first aid." At this point she would probably turn the task over to an ID project manager whose first thought would be "What is the real scope and nature of the performance problem that I want to solve through training?" Training needs assessment would help him answer his question. He would apply the three components of needs assessment logic by (1) working with subject-matter experts in IS to develop realistic standards for workstation first aid performance by customer service representatives (desired status); (2) studying work orders and maintenance logs and observing, interviewing, and perhaps testing customer service representatives (actual status); and (3) describing the gaps between standards for performance and actual performance levels (needs). Through this needs assessment work, the project manager could state a job performance standard for use by management in tracking the success of training and an instructional goal for beginning an ID project. The job performance standard could be "Customer service representatives will solve 95 percent of simple desktop configuration and crash reboot problems," and the instructional goal could be "Using a decision tree job aid, customer service representatives will diagnose simple desktop configuration and crash reboot problems and fix the problems without help from coworkers, supervisors, or IS technicians."

Kaufman (1998), Kaufman, Herman, and Watters (2002), and Kaufman, Oakley-Brown, Watkins, and Leigh (2003) have provided many insights into the needs assessment process, including the distinction between means and ends in terms of what organizations do and areas in which organizations have problems. Consider the following example from the public schools.

It is not unusual to hear principals say their teachers "need" to know more about computers. As a result, a workshop is provided so teachers can all become more competent. In this situation, teacher skills should be viewed as a means to an end, to turn out more competent students. If the real needs assessment issue is "What are the desired computer skill levels and the actual computer skill levels of the students?" and "If there is a gap and a need here, then what are the various solutions to upgrade those skills?" a workshop for all teachers may or may not be the best solution. Kaufman urges us to examine gaps in organizational results rather than internal processes when we begin to identify needs and make plans for spending organizational resources to meet these needs.

Needs assessment is a critical component of the total design process. Trainers and educators must be aware that the creation of unnecessary instruction has a tremendous cost in dollars and encourages detrimental attitudes in students involved in pointless learning activities. Therefore, more emphasis is being placed on front-end analysis, performance analysis, and other approaches for identifying needs more accurately. In the past it was common for survey instruments to be the major means of identifying and documenting training needs. Today surveys are being supplemented or supplanted with more insightful interviews and direct observations of performers.

Job Analysis

For the sake of completing our overview of front-end analysis, we include a brief look at *job analysis,* the process of gathering, analyzing, and synthesizing descriptions of what people do in their jobs. Job analysis is a managerial activity that gained popularity in the late 1800s and early 1900s with time-and-motion studies. It has evolved to serve many roles within the human resource development function, including (1) human resource forecasting and planning, (2) selecting and recruiting personnel, (3) ensuring equality of employment opportunity, (4) designing performance reviews, (5) developing compensation plans, (6) designing and redesigning jobs, and (7) planning training, job aids, performance support systems, and employee development. Current descriptions of what people do in their jobs are particularly useful in an era of constant, rapid, technological change and job dislocation, because descriptions of what people do provide a baseline for making decisions about redesigning jobs for organizational effectiveness, personal productivity, and job satisfaction.

In a typical job analysis, a particular job is characterized in general terms according to the people who work in the job and the environment surrounding the job. Then an inventory is developed of the tasks thought to comprise the job, and these tasks are grouped according to common characteristics into categories called *duties.* After the task inventory is assembled, it is screened by asking subject-matter experts and job incumbents whether the tasks really are a part of the job. After revision, the tasks are formatted as a survey, response scales and directions are added, and the survey is pilot tested. Following a final revision, the survey is duplicated and distributed to a sample of job incumbents. Respondents are typically asked to respond to questions such as: "Is this a task that you perform as part of your job?" "How frequently do you perform this task?" "What percentage of your workday do you spend on this task?" "How critical is this task to the success of your job?" and, "How difficult is this task to perform?" After return of the surveys, responses are summarized on a task-by-task basis, and high-priority tasks are chosen for further review. All of the processes described thus far in this general sequence are called *job analysis.* The process of *task analysis* begins when the tasks chosen for further review are broken down into component elements, the relationships among elements are detailed, the tools and conditions involved in performing each element are described, and standards for successful performance are written. Task analysis work is complex, very labor intensive, and time consuming; therefore, it is usually done only when specifically required for job design and redesign and for the design and development of critical training. When job analysis is conducted in professional and technical training contexts, it is usually to answer questions about what job performance *really* is and to focus training resources on tasks that offer a high probability of gains in job efficiency, effectiveness, and satisfaction.

In summary, instructional goals are ideally derived through a process of performance analysis that establishes rather broad indications of a problem that can be solved by providing instruction. Then a needs assessment is conducted to determine more specifically what performance deficiencies will be addressed, and an instructional goal is stated. Sometimes further examination of that goal is undertaken, either in the context of a curriculum or a job analysis. As a result, more refined specific statements of instructional goals emerge that focus on what learners will be able to do and the context in which they will be able to do it. Regardless of the procedure that is used to generate a goal, it is almost always necessary for the designer to clarify and sometimes amplify the goal in order for it to serve as a firm starting point for the instructional design process. Many goals are abstract or fuzzy, and designers must learn how to cope effectively with them.

Clarity in Instructional Goals

Mager (1997) has described a procedure that the designer can use when a vague, nonspecific goal is encountered. A fuzzy goal is generally some abstract statement

about an internal state of the learner, such as "appreciating," "having an awareness of," "sensing," and so on. These kinds of terms often appear in goal statements, but the designer doesn't know what they mean because there is no indication of what learners would be doing if they achieved this goal. Designers assume that at the successful completion of their instruction, students should be able to demonstrate that they have achieved the goal; but if the goal is so unclear that it is not apparent what successful performance would be, then further analysis must be undertaken.

To analyze a vague goal, first write it down. Then indicate the things people would do to demonstrate that they had achieved that goal or what they would be doing if they were performing the goal. Don't be too critical at first; just write everything down that occurs to you. Next, sort through the statements for those that best represent what is meant by your unclear goal. Now incorporate each of these indicators (there may be one or quite a few) into a statement that tells what the learner will do. As a last step, examine the goal statement and ask yourself this: If learners achieved or demonstrated each of the performances, would you agree that they had achieved your goal? If the answer is yes, then you have clarified the goal; you have developed one or more goal statements that collectively represent the achievement of an important goal. In the Examples section of this chapter we demonstrate how this process can be used with vague goals.

The designer should be aware of this type of goal analysis procedure because many critical educational and training goals are not initially stated as clear, concise descriptions of performances of learners. They often are stated in terms that are quite meaningful (in general) to the originator, but have no specifics that the designer can use for developing instruction. Such goals should not be discarded as being useless. An analysis should be undertaken to identify specific performance outcomes that are implied by the goal. Often it will be helpful to use a number of knowledgeable people in the process so that you see the range of ideas that can emerge from the goal and the need for consensus on specific behaviors if truly successful instruction is to be developed.

Learners, Context, and Tools

Whereas the most important aspect of an instructional goal is the description of what learners will be able to do, that description is not complete without an indication of (1) who the learners are, (2) the context in which they will use the skills, and (3) the tools that will be available. A preliminary description of these aspects is important for two reasons. First, they require the designer to be clear about exactly who the learners will be rather than making vague statements or allusions to groups of learners. It is not unheard of for a design project to come to a halt when it is discovered that there are no learners available to receive the instruction. In essence, the instruction has no market.

Likewise, from the very beginning a project designer must be clear about the context in which the skills will be used and whether any aids or tools will be available. We will refer to this as the *performance context*. For example, if learners are going to be using computational skills, will they have access to calculators or computers? In the performance context, will they be working at a desk, or will they be on their feet talking to a customer? Must information be available from memory, or can a computer-based performance support system be used? Information about the performance context and the characteristics of the people who will be receiving the instruction is extremely important as the designer begins to analyze exactly what skills must be included in the instruction. Eventually, the information will be used to select instructional strategies to promote the use of the skills, not only in the learning context but also in the context in which they are eventually intended for application.

A complete goal statement should describe the following:

- The learners
- What learners will be able to do in the performance context
- The performance context in which the skills will be applied
- The tools that will be available to the learners in the performance context

An example of a complete goal statement would be the following: "The Acme call center operators will be able to use the Client Helper Support System to provide information to customers who contact the call center." All four components of a goal statement are included in this statement.

Criteria for Establishing Instructional Goals

Sometimes the goal-setting process is not totally rational; that is, it does not follow a systematic needs assessment process. The instructional designer must be aware that instructional design takes place in a specific context that includes a number of political and economic considerations as well as technical or academic ones. Stated in another way, powerful people often determine priorities, and finances almost always determine the limitations of what can be done on an instructional design project. Any selection of instructional goals must be done in terms of the following three concerns:

1. Will the development of this instruction solve the problem that led to the need for it?
2. Are these goals acceptable to those who must approve this instructional development effort?
3. Are there sufficient resources to complete the development of instruction for this goal?

These questions are of great importance to the institution or organization that will undertake the development.

We cannot overemphasize the importance of being able to relate logically and persuasively the goals of instruction to documented performance gaps within an organization. When instruction is developed for a client, the client must be convinced that if learners achieve the instructional goals, then a significant organizational problem will be solved or an opportunity will be realized through the use of the new skills. This kind of reasoning is as applicable to the development of instruction in public schools as it is to business, military, and public agencies.

The rationale for an instructional goal may help garner support from decision makers, but the designer and managers must be assured that there is sufficient time and resources for both the development of the instruction and its delivery. Most designers would agree that there seldom is sufficient time for either. One reason is that predicting the amount of time required to carry out a project is difficult. Another is that organizations often want something "yesterday!"

Not only is it difficult to predict how long it will take to develop instruction, but it is also difficult to predict how long learners will take to master the instructional goals (i.e., how long will the instruction last?). No readily accepted rules of thumb relate instructional (or learning) time to skills mastered. So many factors are involved that time estimates are difficult to make.

The most likely scenario is that the designer is told, "You have three weeks to develop a four-hour workshop." Until an organization has experience in making these decisions, they are based on immediate conditions in the work setting. Certainly the designer can shorten or lengthen instruction to fit the time available, but the primary instructional concern is to select the best possible instructional strategies for teaching the skills that must be mastered and then determine how much time is

required. Obviously, we can make more accurate learning-time estimates after several tryouts of the instruction.

The designer should examine additional questions when contemplating an individual project. Assuming that a need has been established and that time and resources are available, then the designer should determine whether the content is stable enough to warrant the cost of developing it. If it will be out of date in six months, then extensive instructional development is probably not warranted.

In addition, the instructional design process depends heavily on the availability of learners to try out the instruction. Without access to appropriate learners, the designer will be unable to implement the total design process. A few learners are needed to try out rough draft versions of the instruction. If they are not available, then the designer will have to alter the ID process and may want to reconsider the validity of the need.

The final concern is the designer's own expertise in the subject matter of the instruction that will be developed. Experienced professional designers often work in teams involved in a content area that is, at least initially, totally foreign to them. The ability and willingness to work in teams is one of the most important characteristics of a successful designer. A great deal of content learning must take place before the designer can work effectively. For those just learning the design process, it is preferable to begin with a content area in which they already have subject-matter expertise. It is a lot easier to learn one new set of skills, namely instructional design skills, than it is to learn two new sets of skills—both content and process—at the same time.

If you have chosen (or are required) to design an instructional package as you work through the chapters of this book, the process will consume many hours of your time. Before you select or identify an instructional goal, review the criteria listed in this chapter. It is particularly important (1) that you have the expertise to deal with the subject matter, (2) that learners are available to you to help evaluate and revise the instructional materials, and (3) that you have selected a goal that can be taught in a reasonable amount of time.

Examples

Three examples of the procedures used to develop instructional goals may help you formulate or evaluate your own goals. All three examples are based on an identified problem, needs assessment activities, and a prescribed solution to a problem. Each example has its own scenario to help clarify the context of the problem and the process used to identify the goals. The first example concerns providing friendly customer service in a banking context. The second example on group leadership training is the Case Study for this chapter. For a third example from a school learning context, see the School Learning Case Study: Sentence Variety in Appendix A.

Providing Customer Service

For this example a local bank noticed a problem with low customer satisfaction ratings in its branch offices, primarily from customers completing lobby transactions with tellers and with customer service representatives. Informal performance analysis indicated that a satisfaction problem did indeed exist, stemming from customers' perceptions that bank personnel were often impersonal and sometimes short in their dealings. Unable to immediately determine whether bank personnel *didn't know how* or *didn't take the time* to interact in a polite, friendly, businesslike manner, further investigation revealed a common feeling of needing to hurry through a transaction so that other customers would not be kept waiting. However,

an even more significant factor was that many employees did not know simple routines for courteous business interactions and did not have strategies for maintaining personalized contact with customers during high-volume times in the lobby. Training would certainly be part of an effective solution and the following instructional goal was identified:

Personnel will know the value of courteous, friendly service.

Although we can all agree that the intentions of this goal are sound, it can be classified as fuzzy and should be clarified. Simply because a goal is fuzzy does not mean it is not worthwhile. Just the opposite—it may be very worthwhile, as in this particular case of a goal that is common to many banks, even though it may still need some work.

First, the phrase *will know the value of* can be changed to *will demonstrate* in order to communicate better what is expected of personnel. Second, we must determine exactly what personnel are expected to demonstrate. We can begin this task by dividing the comprehensive term *service* into more interpretable main parts. We chose to define service as (1) a greeting to the customer, (2) a business transaction, and (3) a conclusion. Even with these two relatively minor changes, the goal is much clearer.

Original Goal	Restated Goal
Personnel will know the value of friendly service.	Personnel will demonstrate courteous, friendly behavior while greeting customers, transacting business, and concluding transactions.

Although the goal is much better in the new form, there are still two terms, *courteous* and *friendly,* that remain to be clarified. By relating these two concepts to each of the three stages of service that have been identified, we can further clarify the goal. Before continuing, remember the five steps included in making a fuzzy goal clearer:

1. Write the goal on paper.
2. Brainstorm to identify the behaviors learners would demonstrate to reflect their achievement of the goal.
3. Sort through the stated behaviors and select those that best represent the goal.
4. Incorporate the behaviors into a statement that describes what the learner will be able to do.
5. Evaluate the resulting statement for its clarity and relationship to the original fuzzy notion.

To help with the brainstorming process of identifying behaviors implied by *courteous* and *friendly,* we described behaviors specific to each of the three stages of service. We also decided to consider behaviors that could be classified as discourteous and unfriendly in a bank setting. The behaviors bank personnel *could* demonstrate and *should not* demonstrate to be considered courteous and friendly are listed in Table 2.2. The descriptions of courteous and discourteous behaviors can be given to bank administrators for additions, deletions, and further clarification.

When the list of representative behaviors is as complete as you can make it, review it at each stage of service to identify key behaviors that best represent the instructional goal. Based on the sample list, we restate the instructional goal as follows. All three forms of the goal are included to enable comparisons for completeness and clarity.

Original Goal Personnel will know the value of courteous, friendly service.

Revised Version Personnel will demonstrate courteous, friendly behavior while greeting customers, transacting business, and concluding transactions.

table 2.2 Friendly and Courteous Behaviors During Business Transactions with Customers

DO	DON'T
Greeting the Customer	
1. Initiate greeting to customer (e.g., "Hello" or "Good morning.").	1. Wait for customer to speak first.
2. Say something to customer to make service appear personal: (a) use customer's name whenever possible, (b) say, "It's good to see you again," or "We haven't seen you for a while."	2. Treat customer like a stranger or someone you have never seen before.
3. If you must complete a prior transaction before beginning work, smile, verbally excuse yourself, and say you will only need a moment to finish your current task.	3. Simply continue working on a task and fail to look up or acknowledge a customer until you are ready.
4. Inquire, "How may I help you today?"	4. Wait for customer to initiate conversation about service needed.
Transacting Business	
1. Attend to the customers currently waiting in your line. If you must leave your station, simply inform *newly arriving* customers that your line is closing and invite them to *begin* waiting in an alternate line.	1. Shuffle customers to another line after they have waited in yours for a while.
2. Listen attentively to customer as he or she explains problem or service desired.	2. Interrupt customers, even though you believe you know what they are going to say and can see by the paperwork the type of transaction they wish.
3. Keep customer's business as the primary focus of attention during transaction.	3. Chat with employees or other customers, thereby delaying current customer.
4. Complete any missing information on the form yourself, explaining to the customer what you have added and why.	4. Simply inform customers they have incorrectly or incompletely filled out a form, thereby making it their problem.
5. Give complete, clear instructions for additional forms that the customer should complete.	5. Simply say, "Complete these other forms and then come back."
Concluding Transaction	
1. Inquire whether they need any additional services today.	1. Dismiss a customer by focusing your eyes on the next customer in line.
2. Thank the customer for his or her business.	2. Act like you have done him or her a favor by completing the transaction.
3. Verbally respond to any comments that the customer may have initiated (e.g., the weather, a holiday or upcoming vacation, your outfit or haircut, new decorations, etc.).	3. Let customer-initiated comments drop as though unnoticed.
4. Conclude with a wish for their well-being (e.g., "Take care," "Have a nice trip," "Have a nice day," or "Hurry back.").	4. Allow customers to walk away without a final comment or wish for their well-being.

Final Goal

- Personnel will demonstrate courteous, friendly behavior while greeting customers, transacting business, and concluding transactions by initiating conversation, personalizing comments, focusing attention, assisting with forms, and concluding with a "thanks" and a wish for the customer's well-being.
- *Learners, contexts, and tools:* The learners (personnel) are all bank employees who work directly with customers either in person, by telephone, or through written correspondence. The context is most typically the bank facility and spontaneous, interactive work with customers. Personnel will have no communication aids available to assist them in interacting with customers.

Although the final goal reflects only a subset of the behaviors generated during the brainstorming process, those selected convey the basic intention of the instructional goal. The complete list of courteous and discourteous behaviors that was generated should be saved as input for subsequent instructional analysis activities.

This example related to clarifying a fuzzy goal demonstrates that although taking a first step toward goal clarification can result in a clearer instructional goal, it may still be open to interpretation by instructional designers or instructors. Sometimes the goal must be clarified further by defining the actual behaviors to be demonstrated within each of the general categories included in the instructional goal.

A final concern when identifying instructional goals is the context in which the behavior will be performed. The instructional goal for bank personnel implies that the ultimate performance will be with customers in a bank. The performance context in which the goal is accomplished will have important implications for the instructional strategy.

Case Study: Group Leadership Training

This case study on group leadership training will serve as a running example to help the reader put the ID process together and will be included toward the end of every chapter between the Examples section and the Summary. Training effective group leaders is a common need in organizations ranging from community volunteer groups to business, industry, military, government, and education. Regardless of the context, any course of action dependent on productive group process requires effective group leadership. The setting for our case study is a community volunteer context wherein a need is found for preparing Neighborhood Crime Watch group leaders. The following paragraphs describe planning decisions based on needs assessment, the instructional goal, information for clarifying the instructional goal, and criteria for establishing instructional goals.

Leading Group Discussions

Performance Analysis In response to rising neighborhood crime rates, a task force was constituted by the state department of law enforcement to conduct an extensive statewide performance analysis of neighborhood policing. In the course of its analysis, the task force documented significant disparities between ideal community policing levels and the actual level of policing that local city and county departments were able to provide. Following a thorough analysis of resources available to local police departments and the constraints under which they operate, one possible solution suggested for improving neighborhood policing services was increasing support for Neighborhood Crime Watch (NCW) organizations. It was noted that across the United States and England, active NCW communities bolstered the

effectiveness of local police, improved community–police communications, and reduced the number of crimes committed within their neighborhoods. The panel studying this data called for finding ways to help neighborhoods better help themselves and targeted the Neighborhood Crime Watch Association as an organization worthy of further support.

Needs Assessment A second task force was appointed to conduct a needs assessment study for Neighborhood Crime Watch organizations to determine how to increase the number of active NCW organizations within an area and improve the effectiveness of existing organizations. This panel concluded that (1) the NCW leader was the key person in determining the effectiveness of NCW groups, (2) leaders of the most effective groups had well-developed group discussion leadership skills, and (3) there was a chronic deficit of effective NCW leaders.

The state, on the recommendation of the two task forces, decided to sponsor a grant to develop training for NCW leader volunteers throughout the state. The instruction was to focus on group discussion leadership skills, and training materials were to be provided to all counties within the state. Support would also be provided to the staffs of local county government in-service training centers who would recruit, manage, and deliver the instruction. Training stipends were provided for one group of twenty NCW leaders per county for each of three years.

Clarifying the Instructional Goal The instructional goal is (1) a clear, general statement of learner outcomes that is (2) related to an identified problem and needs assessment and (3) achievable through instruction rather than some more efficient means such as enhancing motivation of employees.

What is the instructional goal? In this instance, the instructional goal is for NCW leaders to demonstrate effective discussion group leadership skills in a neighborhood meeting. These discussions should be focused on encouraging neighbors to attend meetings, helping them identify crime problems in their community, and planning programs to help reduce identified problems.

What is the relationship between the goal and the needs assessment study? The instructional goal is directly linked to the law enforcement needs assessment study and to the task force recommendations about effective NCW leadership at the community level. It is also directly related to evidence that effective discussion group leadership was highly correlated with active NCW groups.

Does instruction appear to be the most effective way to achieve the goal? Developing effective discussion group leadership skills is directly related to instruction and practice, and these competencies are not likely to be developed through incentive programs for community volunteers.

Who are the learners? The learners are community volunteers who have agreed to provide leadership for their community NCW organization. They have attained varying levels of education, from high school diplomas to advanced college degrees, and they have developed varying group leadership skills, through community and church organizations, membership in quality teams at work, or formal employment as company owners, department chairs, managers, or supervisors. Most will have had no formal instruction in small-group leadership. They are representative of the citizens living throughout the state who choose to become involved in improving the quality of life for their families and communities.

In what context will the skills be used? NCW leaders will use their group discussion skills in planning for neighborhood NCW meetings and in providing

leadership for the discussions that occur during the meetings. These meetings may occur in members' homes or in community centers within the neighborhood.

What tools are available to aid learners' performance in the actual context? There are no formal tools available to the leaders. They do have access to neighborhood police officers, crime prevention experts with the police department, and national, state, and local neighborhood-level crime statistics. Books are available that describe NCW groups, programs, and activities. There is, however, no formal support for further developing and refining discussion group leadership skills other than practice, practice, practice.

Criteria for Establishing Instructional Goals Instructional designers can use certain criteria to help ensure that instructional goals warrant the cost and effort of designing, developing, and field-testing instruction. The group leadership instructional goal is examined in the following paragraphs using these criteria.

Is the instructional goal acceptable to administrators? In this instance, the design team interviewed local police agencies, county and state NCW association coordinators, and personnel in the county learning centers to determine their perceptions of the importance for and the feasibility of the training. They also interviewed several local NCW leaders concerning their desire to participate in the NCW leadership training sessions. Positive responses about the possibility of the instruction were received from all interviewees.

Are there sufficient resources (time, money, and personnel) to develop instruction? The state grant appears to provide sufficient resources for the instructional development team to develop and field-test the materials. Resources are also available to support the county training centers in managing and delivering the instruction and for trainees to receive the instruction.

Is the content stable? The content and skills underlying effective group discussion leadership are very stable. In fact, traces of John Dewey's 1910 book, *How We Think,* can be seen interwoven in modern texts on problem-solving discussions and productive teamwork in business, education, government, service, and recreation organizations.

Are learners available? Learners are available for participating in both the development and implementation of the instruction. Most current NCW leaders have received no formal leadership training and would therefore provide good feedback to the designers on instructional effectiveness. NCW coordinators have agreed to identify and contact NCW leaders for formative evaluation activities. They will also contact and select the new volunteer members within a county area who will receive the instruction each year.

This case study example demonstrates that instructional goal definition and refinement can be a lengthy, complex process that incorporates many people in the identification of problems, performance analysis, needs assessment, and statements of clear instructional goals. However, if instruction is to address real problems faced by an organization and reflect actual goals, then this process is necessary.

Readers are reminded that a case study focused on school learning is available in the Appendixes. These materials are beneficial in part because they are collected together rather than spread through the chapters of the text. Readers can easily progress from one design document to the next and see the progress of the design. Appendix A provides examples of front-end analysis and determination of instructional goals relevant to this chapter. For additional case studies in instructional design, readers are referred to Ertmer and Quinn's *ID Casebook* (2003).

SUMMARY

Instructional goals are clear statements of behaviors that learners are to demonstrate as a result of instruction. Typically derived through a front-end analysis process and intended to address problems that can be resolved most efficiently through instruction, instructional goals provide the foundation for all subsequent instructional design activities.

Instructional goals are selected and refined through a rational process that requires answering questions about a particular problem and need, about the clarity of the goal statement, and about the availability of resources to design and develop the instruction.

You should answer several questions about the problem and need:

1. Is the need clearly described and verified?
2. Is the need foreseeable in the future as well as currently?
3. Is the most effective solution to the problem instruction?
4. Is there logical agreement between the solution to the problem and the proposed instructional goals?
5. Are the instructional goals acceptable to administrators and managers?

Questions you should answer related to the clarity of the instructional goal include the following:

1. Do the behaviors reflect clearly demonstrable, measurable behaviors?
2. Is the topic area clearly delineated?
3. Is the content relatively stable over time?

Questions to be answered related to resources include the following:

1. Do you have expertise in the instructional goal area or reliable access to those who do?
2. Are the time and resources required to complete the project available to you?
3. Is a group of learners available during the development process in order for you to evaluate and refine your instruction?

Frequently, the instructional goal will be a very general statement of behaviors and content that must be clarified before some of the preceding questions can be answered. The procedure recommended for clarifying instructional goals includes the following steps:

1. Write down the instructional goal.
2. Generate a list of all the behaviors the learners should perform to demonstrate that they have achieved the goal.
3. Analyze the expanded list of behaviors and select those that best reflect achievement of the goal.
4. Incorporate the selected behaviors into a statement or statements that describe what the learners will demonstrate.
5. Examine the revised goal statement and judge whether learners who demonstrate the behaviors will have accomplished the initial broad goal.

RUBRIC FOR EVALUATING INSTRUCTIONAL GOALS

The rubric that follows contains a summary of the criteria you can use to evaluate and refine your instructional goals. It includes the main areas of congruence with the organization's needs, the feasibility of the goal, and its clarity.

Designer note: If an element is not relevant for your project, mark NA for not applicable in the No column.

No	Some	Yes	**A. Congruence with Organization Needs** Is/are the instructional goal statement(s):
___	___	___	1. Linked clearly to an identified problem in the organization?
___	___	___	2. Linked clearly to documented performance gaps?
___	___	___	3. Clearly a solution to the problem?
___	___	___	4. Acceptable to those who approve the instructional effort?

No	Some	Yes	
			B. Feasibility Does the plan include:
___	___	___	1. Stable content/skills over time to warrant investment/resources?
___	___	___	2. Sufficient designer expertise in instructional goal area?
___	___	___	3. Sufficient *people* to design/develop/deliver instruction?
___	___	___	4. Sufficient *time* to design/develop/deliver instruction?
___	___	___	5. An adequate number of learners for development/delivery?
			C. Clarity Do the instructional goal statement(s) describe the:
___	___	___	1. Actions of the learners (what they will *do*)?
___	___	___	2. Content clearly?
___	___	___	3. Intended learners?
___	___	___	4. Performance context?
___	___	___	5. Tools available to learners in performance context?
			D. Other
___	___	___	1.
___	___	___	2.

An appropriate, feasible, and clearly stated instructional goal should be the product of these activities. Using this clarified statement of learner outcomes, you are ready to conduct a goal analysis, which is described in Chapter 3.

PRACTICE

The following list contains several instructional goals that may or may not be appropriate based on the criteria for writing acceptable instructional goals stated in this chapter. Read each goal and determine whether it is correct as written or should be revised. If you believe it can be revised given the information available, revise it and compare your work with the revisions provided in the Feedback section that follows.

1. The district will provide in-service training for teachers prior to the administration and interpretation of standardized tests.
2. Students will understand how to punctuate a variety of simple sentences.
3. Salespersons will learn to use time management forms.
4. Teachers will assign one theme each week.
5. Customers will understand how to balance a checkbook.

The first step in developing a unit of instruction is to state the instructional goal. Several criteria can be used to help you select a suitable goal statement. From the following list of possible considerations for selection, identify all those that are relevant to a designer's selection of an instructional goal.

_____ 6. Personal knowledge and skills in content area

_____ 7. Stable content area

_____ 8. Time required for writing instruction versus the importance of students possessing that knowledge or skill

_____ 9. Students available to try out materials for clarity and revision purposes

_____ 10. Areas in which students have difficulty learning

_____ 11. Few materials available on the topic though instruction is considered important

_____ 12. Content area is fairly logical

An instructional goal must be stated as clearly as possible. From the following lists of considerations select all those within each section that are important for writing instructional goals.

13. Clear statement of behavior
    a. Behavior required of the student is obvious in the goal.
    b. Behavior in the goal can be observed.
    c. Behavior in the goal can be measured to determine whether students have reached the goal.
14. Clear versus fuzzy goals
    a. Instructional goal includes a clearly stated behavior.
    b. Any limitations that will be imposed on the behavior are stated clearly.

15. Time
    a. Approximate instructional time required for students to reach goal.
    b. Approximate time you can devote to developing and revising instruction.
16. Following a districtwide needs assessment on middle school students' writing skills, teachers decided to design special instruction that focused students on:
    - Writing a variety of sentence types based on sentence purpose.
    - Using a variety of sentence structures that vary in complexity.
    - Using a variety of punctuation to match sentence type and complexity.

    Through instruction focused directly on the problems identified in the needs assessment, they hoped to change the current pattern of simplistic similarity found in students' compositions. Write an instructional goal for the instruction that can be used in the special unit on writing composition.
17. Write an instructional goal for which you would like to develop a unit of instruction.

FEEDBACK

1. The instructional goal should be revised because it describes what the district is expected to accomplish rather than the teachers. The goal could be rewritten in the following way to reflect two units of instruction commonly provided by school districts. Notice the behavior to be exhibited by teachers has been clarified.
    - Teachers will administer selected standardized tests according to the procedures described in the test manual.
    - Teachers will interpret student performance on both individual and class profile sheets that are provided by the test maker.
2. The goal should be revised because the words "will understand" are too general. The goal could be rewritten to clarify exactly the behavior students will use to demonstrate that they understand how to punctuate sentences. Additionally, the specific punctuation marks to be included in the lesson and used by students are included in the goal.
    - Students will punctuate a variety of simple sentences using periods, question marks, and exclamation points.
3. "Learn to use" states the intended outcome of instruction, but behavior used to describe what sales personnel will actually do might be clarified as follows:
    - Sales personnel will complete time management forms using daily, weekly, and monthly schedules.
4. This is not an instructional goal but a description of the process teachers will use to enable students to practice composition skills; it totally ignores the nature of the skills students are expected to acquire during practice. Not enough information is included in the statement to enable the instructional goal to be rewritten.
5. The phrase "will understand" in the goal is imprecise. The instructional goal could be clarified as follows:
    - Customers will balance a checkbook using canceled checks, a check register, and a monthly bank statement.

6–12. If you selected all of the criteria, you are correct. Each criterion is an important consideration in developing an instructional goal. With regard to personal knowledge of the topic, experienced instructional designers often work with SMEs from a variety of context areas in which the designer has no expertise.

13–15. All of the considerations listed are important.

16. Compare your instructional goal for writing composition with this one: In written composition, students will: (1) use a variety of sentence types and accompanying punctuation based on the *purpose* and *mood* of the sentence and (2) use a variety of sentence types and accompanying punctuation based on the *complexity* or *structure* of the sentence. You will want to examine all the information related to the front-end analysis for the school curriculum case study located in Appendix A, which reflects the beginning point for a complete instructional design case study in a school context. Readers currently working in schools or planning to work in schools should benefit from this school-based example.
17. Refer back to the criteria for evaluating instructional goals listed in the rubric for evaluating

instructional goals shown earlier. Evaluate your topic using each criterion statement.

- Does your goal meet each criterion?
- If it does not meet a particular criterion, can it be revised to do so?
- If it does not meet a particular criterion and cannot be revised to do so, you may want to write another instructional goal and try again.

You may need help in determining whether your goal meets some of the criteria for topic selection such as need or interest, possibly by discussing these issues with colleagues and students. Libraries and the Internet are good sources for determining whether materials on your topic are available and the nature of the available materials. Revise and rewrite your instructional goal as needed to meet the above criteria.

You may check the clarity of your goal by asking colleagues and intended learners to interpret verbally the instructional goal you have written. Do they interpret the goal and the required behavior exactly as you intended? You may need to revise.

If your goal is too big for the instructional time available (thirty minutes, one hour, two hours, etc.), you may want to divide the goal into its logical major parts, reword each part as an instructional goal, and then select the part most suited to your needs and time constraints.

If your goal is too small for the amount of time you desire, consider the skills the student will need to enter your instruction and the skills the student will be ready to learn as a result of completing it. By considering skills related to your goal in this fashion, you can identify the appropriate instruction to include for a specific period of time. Of course you will want to revise your instructional goal to include more skills or information as required.

Rewrite your instructional goal if necessary and begin Chapter 3 after you have developed a clear, behaviorally stated instructional goal that you estimate will fit the desired amount of instructional time.

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