



Effective Problem Solving & Decision Making

Participant's Manual

Comprehensive Public Training Program (CPTP)

Sponsored by the Louisiana State Civil Service

EFFECTIVE PROBLEM SOLVING AND DECISION MAKING

Course Description

This class teaches participants effective problem solving and decision making skills. The instructor will guide participants through the process of identifying root causes of problems, generating solutions to problems, establishing decision-making criteria, and using those criteria to select the best alternative solution to problems. Participants will learn to evaluate the benefits and risks of individual versus group decision-making approaches. Case situations will be used to help participants learn how to apply the problem solving and decision making processes to their own work situations.

Job Outcomes

- Identifies and analyzes problems.
- Uses sound reasoning to arrive at conclusions.
- Finds alternative solutions to complex problems.
- Distinguishes between relevant and irrelevant information to make logical judgments.
- Develops new insights into situations and applies innovative solutions to make organizational improvements.
- Designs and implements new or cutting-edge programs and processes.
- Exercises good judgment by making sound and well-informed decisions.

Learning Objectives

- Diagnose potential and actual problems.
- Demonstrate the ability to identify the root causes of problems.
- Use creative problem solving techniques to generate multiple solutions.
- Evaluate alternative solutions and select the best one based on available data.

DEFINING PROBLEM SOLVING AND DECISION MAKING

Definition of a Problem: A problem exists when there is a gap between what you expect to happen and what actually happens.

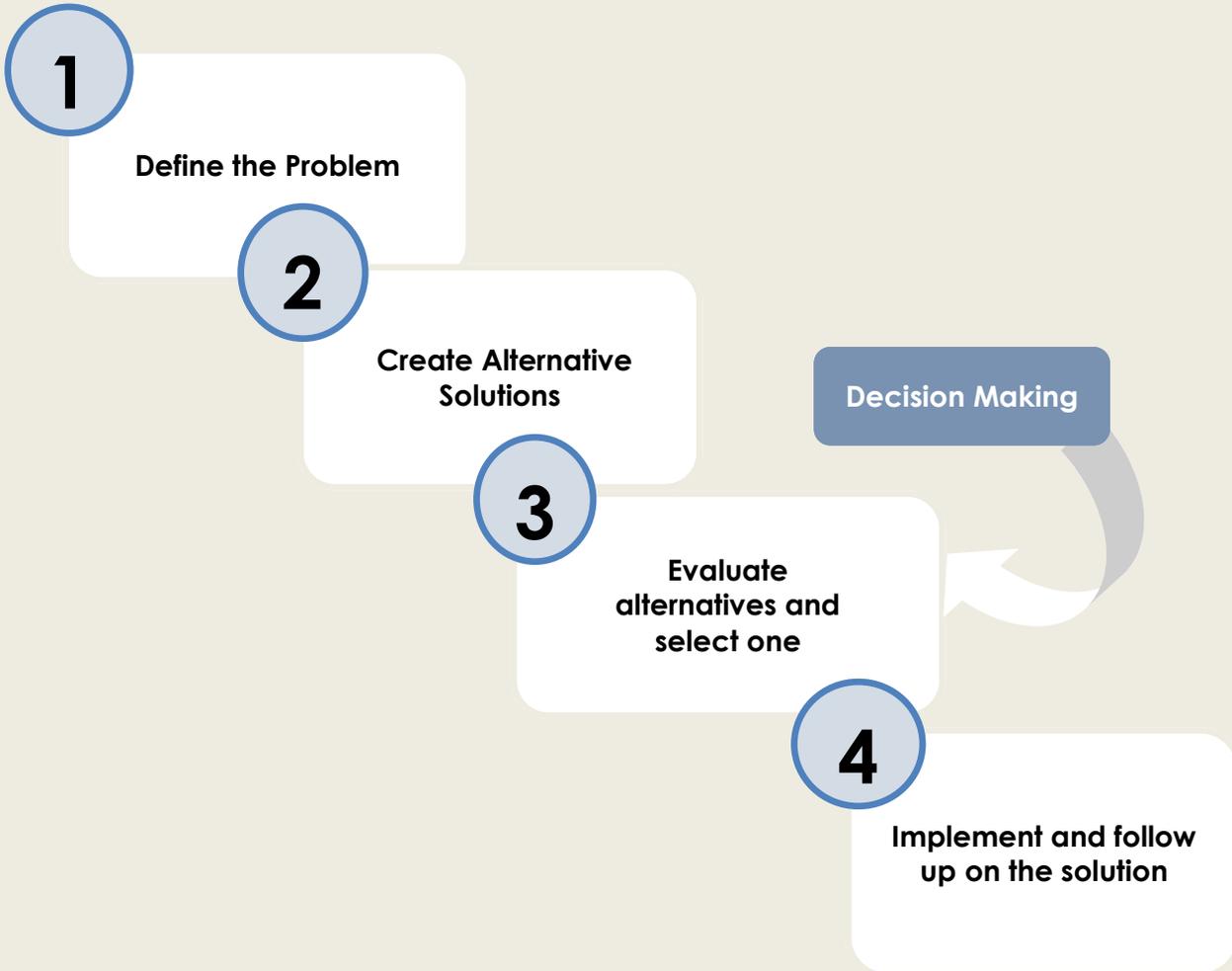
Definition of Decision Making: Decision making is selecting a course of action from among available alternatives.

The Difference between Decision Making and Problem Solving

While both processes are systematic, problem solving involves defining a problem and creating solutions for it. Decision making is selecting a course of action from among available alternatives. Problem solving (Steps 1—4) always involves decision making (Step 3). However, not all decision making involves solving a problem. For example, a supervisor may have to make decisions about employees, resources, workload, etc. without having a problem to solve.

STEPS IN THE PROBLEM SOLVING PROCESS

Four steps are involved in problem solving:



CASE STUDY: THE FRUSTRATED MANAGER



Small Group Exercise

Manuel Talbot does not approve of what he saw this morning, and it frustrates him. What he saw when he looked out of his office window in the agency's building this morning was mud-splattered storage buildings, dirty state-owned vehicles, and even some spider webs. Manuel is a manager for the state and is in charge of the ZYXW work group for the Region. He is a second-line manager, which means four other ZYXW supervisors report to him in the Region. For the last few months, Manuel has looked out of his window and has seen the buildings, vehicles, and equipment in the same condition that they were this morning. Unfortunately for Manuel, another work group is in charge of the storage buildings, state-owned vehicles and other equipment that can be seen from Manuel's window. The other work group, the one in charge of the buildings, vehicles, and equipment is the VUTS group. Jeff Gnash is in charge of VUTS, and he is a second-line manager just like Manuel.

Manuel is frustrated by this situation. In his mind, he runs an orderly ZYXW work group and is upset that Jeff seems to run the VUTS group with no concern for the impression it makes when people see the buildings, vehicles and equipment in such condition. This is especially frustrating to Manuel because the agency's work is divided up as follows:

- Manuel's ZYXW group is responsible for designing the work to be done by the agency for this Region.
- Jeff's VUTS group is responsible for physically completing the work that the ZYXW group designs.
- Then, the ZYXW group inspects the completed work done by the VUTS group after it is finished.

For the last few months Manuel's frustration peaks whenever he looks out of his window and sees the VUTS group's storage buildings, work vehicles and equipment in such a sad state. Sometimes, he wonders how they can do their jobs with all the mud, dirt and spider webs all over everything. Manuel has to admit that the VUTS group does good work—after all, ZYXW inspects VUTS's work. Still, he's not sure how long he can handle the situation.

One day the agency announces a big change. The two departments, ZYXW and VUTS, are going to be merged into one group as part of an agency-wide reorganization plan. Manuel is now going to be in charge of the new, single group in the Region, called the ZYTS group. Jeff Gnash is being transferred to a different Region to do the same thing.

- **Now that Manuel is in charge, what are some things he should do in the next few weeks?**

DEFINING THE PROBLEM

1

Define the Problem

Diagnose a situation so that the focus is on the real problem, not just on its symptoms. Symptoms become evident before the problem does.

- Separate fact from opinion and speculation**
- Specify underlying causes**
- State the problem explicitly**
- Avoid stating the problem as disguised solution**
- Identify what standard is violated by the problem**

SELECTING THE RIGHT PROBLEMS TO DEFINE

As a practical matter, this means that most of the problems we face (and decisions we make) are done in “one step” fashion. We use existing knowledge, experience and skill to address issues that are usually similar to – but not identical – many of the problems, decisions and issues we have faced over time.

If a problem-solver can handle 75% to 80% of the issues he or she faces using experience and current knowledge, doing so allows the problem solver to address issues efficiently. Put another way, there is not enough time nor energy to use a structured, time-consuming problem solving process to address each and every problem faced over a working career.

Efficiency in Step 1/Define the Problem means using the 4-step problem solving process on the right problems in the first place.

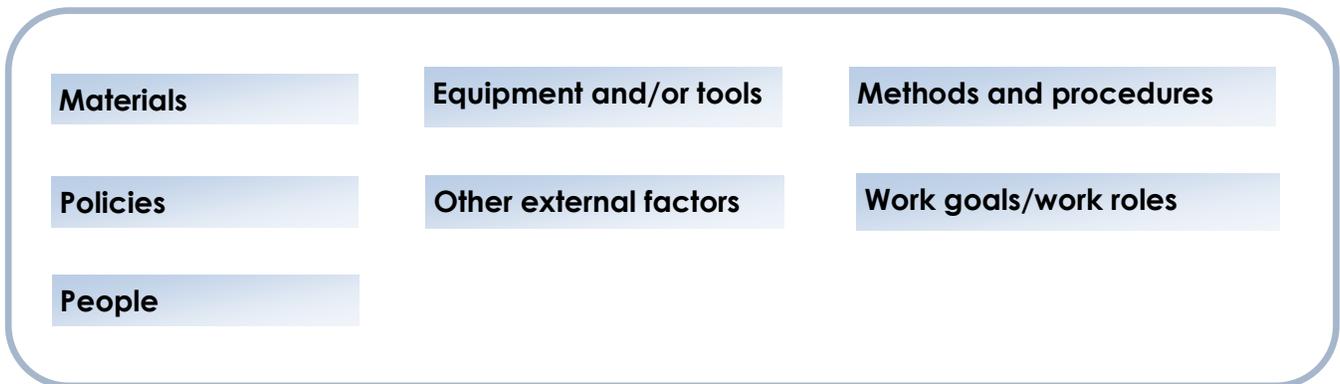
Two guidelines to help problem solvers “choose the right problems” to solve:

- Spend time calculating data and defining problems to avoid working to solve the wrong problem.

- Do not overspend resources on small scale problems.

Causes of Problems

Common categories of problem causes include:



Problem solvers need not limit themselves to these categories. There may be more or fewer categories, depending on the work group.

DISTINGUISHING BETWEEN SYMPTOMS & CAUSES OF PROBLEMS

A useful tool to help problem solvers distinguish between symptoms and causes of problems is using the “5 Whys” with your work group.

Ask “5 Whys”:

The First Why

- Pick the symptom where you wish to start.
- Ask the first why: “Why is such-and-such taking place?”
 - You will probably get 3 or 4 answers.
 - Put the answers to the first why on some flip chart paper for all to see, with plenty of space between them.

The Next Whys

- Repeat the process for every statement on the wall, asking why about each one.
 - Record each answer near its parent (the “why” that it came from).
- Most likely, the answers will begin to converge—where 10 or 12 separate symptoms may be traced back to the root cause.
- As the whys are traced back to their root causes, it may become clear that the problem is not just a single event or a single person’s decision—it is larger than that and has been around for quite a while.
- Avoid being distracted by blame-related answers—handle each answer by recording it and saying, “OK, is that the only reason?”

To be most effective, the answers to the “5 Whys” must not blame individuals. No real change occurs when blaming happens, and the root cause of the problem will still exist.



Group Discussion

Identify the cause(s) of a group member's work-related problem. Use the worksheet on page 39 to record this information. The problem you select may be used later to complete the problem solving process.

Listen to several problems from your group and select one to use for practice. The one you select should be one that the "problem owner" has some influence over. The problem selected must be a real-life issue, not a hypothetical one and not a combination of several group members' experiences.

Use the 5 Why's to backtrack from the symptoms of the problem to its cause. It may be helpful to look at the factors that brought it about (see the table of problem categories on the page 8).

SKILL PRACTICE



Group Skill Practice: Solve a Group Member's Problem

In your group, discuss ongoing problems and select a problem to address. If appropriate, use the group member's problem you already defined yesterday, and continue the process on the next several pages. If that problem has already been given enough attention, pick another one.

- Define the problem
- Generate alternatives
- Select a solution
- *Plan* the implementation

Use the following sheets to complete the problem solving process — except actual implementation — using the 4 steps covered in class.

Follow the guidelines shown in the manual on how to decide which group member's problem to solve and what type of problems to avoid for this skill practice (e.g., avoid budget issues, Civil Service issues, and things you cannot influence).

FACTORS TO CONSIDER FOR PROBLEM SOLVING & DECISION MAKING

After accurately defining the problem, problem solvers should determine who should be involved in the problem solving process. Problem solvers must decide how to decide. Even if the question never comes up, a choice has still been made.

When determining who should be involved in the problem solving process, **four situational factors** should be considered.

Situational factors

- Time** – The problem-solver must determine if there is enough time to use the work group as participants in the process.
- Information** – Does the problem-solver have enough information to make a quality decision alone?
- Capability** – Does the work group have the ability and willingness to be involved?
- Group Acceptance** – Is the group's acceptance of the decision critical to its implementation?

Notes

OPTIONS FOR PROBLEM SOLVING & DECISION MAKING

To decide the appropriate amount of group participation to use, supervisors/problem-solvers should choose an appropriate problem solving/decision-making option. There are **four main options for problem-solving and decision making**. The option chosen should match the situational factors affecting the problem. Note that an organization's culture and the work group's climate might emphasize or de-emphasize these factors and options.

The four decision-making options are:

- **Option 1: Problem-solver decides alone.**

"I'll decide." The problem-solver makes the decision alone and announces it after the fact. An explanation of the reason for the decision may be given. This option is also used when the supervisor has no choice or flexibility regarding the problem to be solved—he/she is following orders and transmits the orders to the work group.

- **Option 2: Problem-solver consults the group and then decides alone.**

"Let's talk, then I'll decide." The problem-solver consults the group for information and then makes the decision. Consulting the group could be done all at once at a meeting, or one-on-one if necessary. Before implementing the decision, the supervisor explains the rationale behind it, and attempts to convince the work group of the benefits. The problem-solver may invite questions and have a discussion.

- **Option 3: Participative decision by group members and problem-solver.**

"Let's talk, then we'll decide." The problem-solver may present a tentative decision to the group and ask for input. If the decision needs changing, it is changed based on group participation and input. This option does not require voting, yet voting is one way to use the participative option. Another way could be that the group convinces the problem-solver of something, and he/she makes changes based on that strong belief by the (capable) group.

- **Option 4: Problem-solver lets someone else decide.**

"You decide." The problem-solver presents the situation to the group and describes the criteria, resources, or outcomes limiting it. The group does the problem solving and decision making. The problem-solver may join the group in the process.

DECIDING HOW TO DECIDE



Small Group Exercise

Read the five (5) situations below and then, as a group, select the appropriate problem-solving or decision-making option that would be most appropriate for the situation. Refer back to the table on the previous page for help, if necessary.

____ 1. Flextime has become popular in your agency. Some work groups let each employee start and end work when he or she chooses. However, because of the nature of the work in your work group, your employees must all work the same eight hours. You are not sure of their level of interest in changing work hours. Your employees are a very capable group and like to make decisions.

____ 2. Top management has decided to make a change that will affect all of your employees. You know the employees will be upset because it will cause them hardship. One or two may even quit. The change goes into effect in 30 days. Your employees are very capable.

____ 3. You believe that productivity in your work group could be increased. You have thought of some ways to increase productivity that may work, but you are not quite sure. Your employees are very experienced; almost all of them have been in the work group longer than you have.

____ 4. You are the supervisor of a five-person work group. Your own manager has approved the purchase of one new computer for your work group. The computer will arrive in one week. The computer will go to one of your five employees since you already have a laptop that works fine. As individuals, your employees' capability levels vary, but as a group they are highly capable under normal circumstances.

____ 5. Your agency has completely reorganized how it delivers services to the public. This change occurred 6 months ago. The new, larger work group you now supervise is made up of your original employees from before the change, and a few others from different program specialties. You are now responsible for supervising four different programs, where only 6 months ago, you focused on just one program. A problem has come up concerning how to handle the increased workload. Your original employees are skilled in only one program area. The newer employees are also skilled in only one program area each, although their experience is in the different programs that were added 6 months ago.

Adapted from: Robert N. Lussier, *Human Relations in Organizations: Application and Skill Building*. Boston: Irwin/McGraw Hill. 1999

CREATE ALTERNATIVE SOLUTIONS

2

Create Alternative Solutions

Once a problem has been defined, the next step is to create alternative solutions.

- Generating possible solutions is a creative process.
- Good alternative solutions take into account both short and long-term issues.
- To effectively create solutions, postpone the process of selecting any one solution to the problem until Step 3.

If more than one person is involved in solving a problem, alternatives can be proposed by all of those involved. Using a group problem solving process usually takes more time, but identifying the larger variety of ideas that a group can create may be worth the extra time.

A common problem with generating alternatives is the tendency to evaluate the alternatives as they are created. This tendency may lead to selecting the first acceptable, though frequently not optimal, solution.

- Assure alternatives are consistent with work group goals.
- Have alternatives build on each other—modify, combine with, and “hitchhike” on other alternatives.

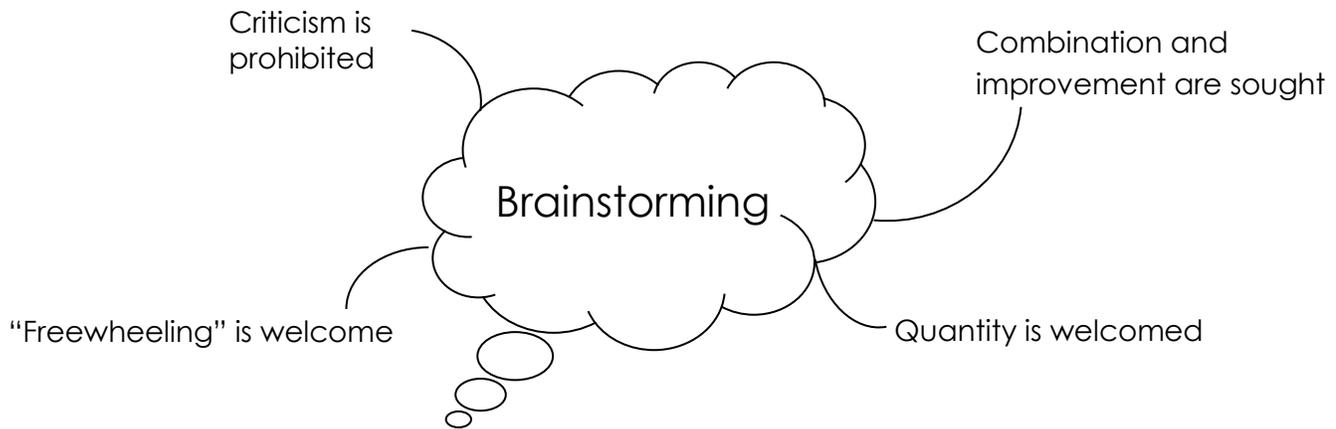
Techniques to Create Alternatives

Problem solvers can use many approaches to create alternative solutions. The focus here is on two techniques:

- Brainstorming
- Nominal grouping



BRAINSTORMING



Brainstorming Guidelines

- Criticism is prohibited.
- "Freewheeling" is welcome.
- Quantity is wanted.
- Combination and improvement are sought.



Group Activity

Brainstorm ways that you can cope with the changes that are occurring at work.

- Brainstorm ways to cope
- Look for duplication
- Arrange ideas into related groups
- Look for ways to combine and/or improve ideas



Group Discussion

Review the process used in the case study, *The Frustrated Manager* (on page 6). Look for success (or lack of it) with the initial idea-generating process during that case. Look for what went well, and what to do differently next time.

NOMINAL GROUPING



This approach to identifying creative alternative solutions uses the variety of ideas available from a group of problem solvers; however, it differs from brainstorming in two ways:

- Alternatives are created *and* evaluated in the same meeting, though not at the same time.
- The technique is highly structured and it intentionally restricts verbal communication during the idea-generating phase.

The primary benefit of nominal grouping is that it reduces the inhibiting effects of group interaction when generating alternatives. Also, it is proactive rather than reactive because it requires people to create their own ideas. Using this technique may help when a group is brand-new (i.e., have not had time to develop as a group). Nominal grouping is also useful when the work group is a mix of new employees and veterans because it tends to limit the “us vs. them” dynamic that sometimes occurs in groups.

Nominal Grouping Rules

- Individuals (fewer than 10) are brought together and familiarized with a problem, such as “What alternatives are available for increasing a certain output of the work group?”
- Each group member is asked to work silently and alone to prepare a list of ideas to solve the problem.
- After 10 to 15 minutes members share their ideas, one at a time, in a round-robin manner. Ideas are recorded on a flip chart or other visual aid large enough for all to see. The round-robin process continues until all ideas are presented and recorded.
- A period of structured interaction follows during which group members openly discuss and evaluate each recorded idea. At this stage ideas may be reworded, combined, deleted, or added.
- Each member votes, privately ranking the recorded ideas in order of perceived importance. Following a brief discussion of the outcome of the vote, one more private vote is conducted. The group's preference is finally determined by the total of the ranked votes.

NOMINAL GROUPING



Group Discussion

NASA Exercise — Instructions

You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot some 200 miles from the rendezvous point. During the landing, much of the equipment aboard was damaged, and since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Listed below are the 15 items left intact and undamaged after landing.

Your task is to work with your team and rank these undamaged items in order of their importance to your crew in allowing them to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on through number 15, which would be the least important item. You have 15 minutes to complete this phase of the exercise.

Rank	Correct Answer	Diff.	Undamaged Items
			Box of matches
			Food concentrate
			50 feet of nylon rope
			Parachute silk
			Portable heating unit
			Two, .45 caliber pistols
			One case dehydrated pet milk
			Two, 100-pound tanks of oxygen
			Stellar map (of the moon's constellation)
			Life raft
			Magnetic compass
			Five gallons of water
			Signal flares
			First-aid kit containing injection needles
			Solar-powered FM receiver-transmitter

SKILL PRACTICE: CASE STUDY



Group Skill Practice (Part One)

- Read the case study, "*The Benign Approach Is Not Working*" on the next page.
- Define the problem first as a small group activity. **Do not discuss solutions**, just focus on what the root cause(s) of the problem are. The effects of the problem are the current productivity issues the manager has — to define the problem you need to determine the cause of those effects. Please keep the scope of the definition within the manager's influence (i.e. do not dwell on past decisions of senior agency staff, Civil Service issues, nor budget issues.)
- Finish this exercise by creating a written definition of the problem. This definition will be used by your group in the next skill practice.

THE CASE: THE BENIGN APPROACH IS NOT WORKING

Background

Paul Bearer is a supervisor in Region B9. He supervises 8 employees who are Field Inspectors (FIs), and a few others who are office support staff. The FIs travel within the Region to survey other state-occupied buildings for compliance with state policies and guidelines for risk management.

The risk management policies and guidelines are relatively complex, so there is a need for these FIs to be skilled at interpreting the policies and understanding how the policies and guidelines apply in a wide variety of risk management circumstances found in the various state-occupied buildings. In other words, a new FI doing an inspection soon finds out that applying the policies and guidelines necessary to complete his/her work is not just a cookie-cutter approach (one size fits all). Given the nature of the work, it takes knowledge, skill and experience to see if something is in compliance or not.

The Field Inspectors

These 8 FIs are all relatively new. The most senior among them has 18 months of experience, and most have less than that. Half are very new and have not achieved permanent employee status yet, which for this agency means they have less than 6 months of time on the job. Of the remaining half, one has 18 months of experience and the rest have around one year of experience each.

There is high turnover among the FIs. Paul has overheard the FIs complaining to one another about the trouble they have in completing job expectations. Their work pace is slow and they have a higher-than-acceptable error rate.

The Situation

Most of the performance problems began about 2 years ago when the state policies and guidelines were overhauled. The amount of time necessary to complete each inspection has increased, even for experienced FIs around the state, because of the increased level of detail required to do a quality job on a field inspection.

The turnover among FIs in Paul's group is not unusually high compared to other areas of the state, though Paul's Region seems to have had more trouble with turnover than many regions. The turnover in this office forces Paul to spend more time (than he did 2 years ago) interviewing and selecting FIs. Also, due to the relative inexperience of his FI staff, Paul has to travel in the Region and do a fair amount of the field audit work himself: (1) assessment, (2) interpretation, (3) decision-making, (4) and completing a FI report for each site visited.

(Continued on the next page)

THE CASE: THE BENIGN APPROACH IS NOT WORKING

The Issues

- The employees are having difficulty in several areas, depending on their own educational backgrounds, ability to adapt, and learning styles.
- Morale is down and performance has been down for a while. There does not appear to be an end in sight. The field inspections must be done on a regular basis; a certain state-mandated level of acceptable risk must be maintained in the various state-occupied buildings, producing a need for regular inspections. If those inspections are not done in a quality manner within state-mandated time frames, the state will be at risk for large claims.
- Paul is at the maximum number of employees (both FIs and support staff) on the Table of Organization and Equipment (TOE)—meaning, he already has the maximum number of people he can have employed in his work group. Therefore he cannot hire more than the 8 FIs that he has, even if he had time to do so. The budget situation for the state in general and for Paul's agency in particular is such that he will not be able to add more FIs to his staff, nor can he swap positions (e.g., try to make do with fewer support staff in order to hire another FI).
- Training currently given to the FIs is less thorough than it used to be 2 years ago, since Paul believes that there isn't time to have staff going through training for the length of time that was possible in the past. Paul needs the FIs out there in the field, doing inspections, even if the quality and quantity of inspection isn't very good at the present time.
- Training for these FIs has seemed to work in the past, but in the past Paul never had the multiple problems of turnover, low morale, and absence of any experienced veterans.
- Training consists of 2 weeks of reading/studying the various policies, guidelines, rules and regulations as well as studying a collection of reports from prior years. Fortunately, most of these reports that are used in the training process reflect the current policies and guidelines modified 2 years ago. These reports are complex, have a lot of variety among them, and the new FIs find it hard to transfer their study of policies, guidelines, and prior reports into usable skills and abilities to help their current performance on the job.

Current Reality

So, Paul has a turnover problem and a morale problem with the FIs who are still with him. Also he has no senior staff/lead workers he can effectively delegate things to at the moment, unless you consider his 18-month FI a “veteran,” and the overall performance of his Region is barely adequate only because he is out in the field himself.

THE CASE: THE BENIGN APPROACH IS NOT WORKING



Individual and Group Skill Practice (Part Two)

- Individually generate a few alternatives to the problem. Use the problem definition specified by your group in the earlier exercise (Part 1). (10-15 minutes)
- Then in a group refine your list of alternatives, creating new ones, and evaluating the ideas at the end of the process. (15-20 minutes)
 - Have each participant explain his/her alternative solutions to the others in round-robin fashion, so everyone hears all of the solutions. Take turns presenting only one alternative at a time. Continue around the group until all alternatives from all members have been heard. It is perfectly OK to ask questions to clarify, but do not evaluate the alternatives until each group member's alternatives have been heard and your group has had a chance to generate new alternatives.
 - Group leader facilitates this by writing each alternative on paper for all to see, making sure to capture the main points—not necessarily word-for-word. Another way to do this activity would be for each group member to keep his/her own list, or if appropriate, the group could use flip chart paper so everyone can see the list.
 - Groups engage in a period of structured interaction, openly discussing and evaluating each recorded alternative. During this discussion, alternative solutions may be reworded, combined, deleted, and/or added. You are not limited to the original alternatives now, so you may end up with something new that no one had thought about previously.
 - At the end of the time allowed, the group votes on which alternatives (plural) to choose out of all the alternatives presented and discussed. The end result is the group chooses several alternative solutions to the problem. (With this case, it is expected that the group will agree on several alternatives out of the larger number of alternatives discussed due to the nature of the problem.)

EVALUATING ALTERNATIVES AND SELECTING THE BEST ONE

3

Evaluate alternatives and select one

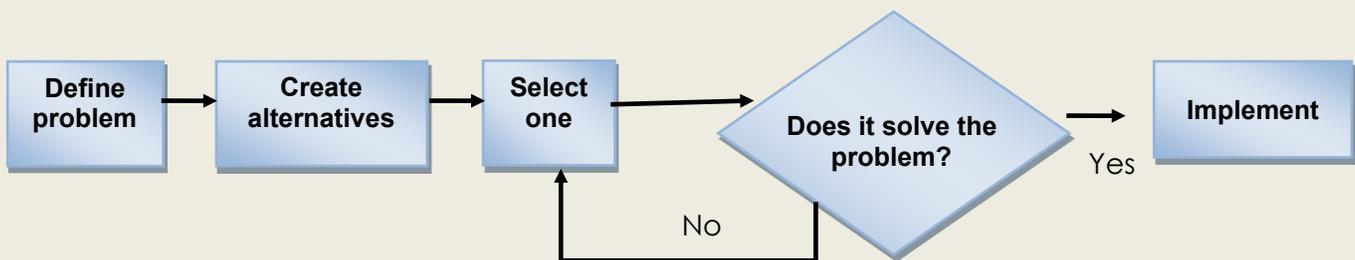
This step involves the careful weighing of the pros and cons of the proposed alternatives in order to make a final selection. Decision makers need to be sure that the alternatives are judged in terms of the extent to which they will solve the problem without causing other unanticipated problems. Judging alternatives means that people are using criteria –standards or requirements that are important to solving the problem – in order to select the best alternative(s).

Satisfactory and Optimal Decisions

Satisfactory approach

Once the decision maker finds an alternative that meets some minimum standards of acceptability, that alternative is chosen and implemented, even if all of the alternatives have not been reviewed.

- Alternatives are evaluated only until one is found that is “satisfactory,” then it is implemented. This means there are likely to be alternatives that do not get evaluated, since the process is finished when one that is “good enough” is found.
- This process is usually faster, since the decision maker is trading quality for speed on purpose. The risk is a lower quality decision that is less effective.



EVALUATING ALTERNATIVES AND SELECTING THE BEST ONE

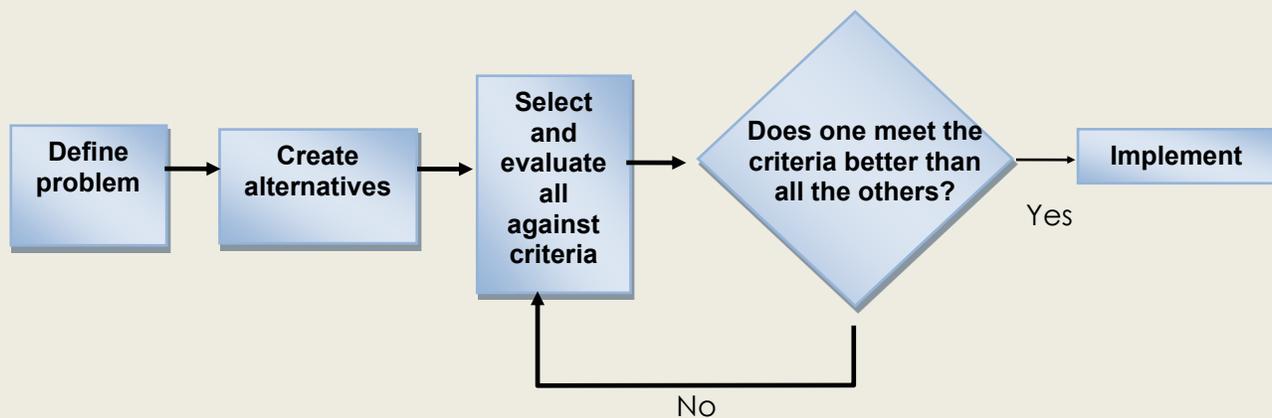
Optimal approach

To achieve the best decision in a given situation, alternatives are identified and evaluated with respect to decision criteria, and the best available alternative solution (the optimum one) that meets those criteria is chosen.

Critical data is analyzed, alternatives are identified, then each alternative is compared to the criteria.

Choosing the optimum solution takes more time than the other approach (the satisfactory approach), yet in the long run the quality and effectiveness of the decision is likely to be higher since the decision maker is examining all of the available choices.

This process is slower than the satisfactory approach, since the decision maker is trading a longer amount of time in order to gain quality. The risk is a higher quality decision that is too late.





Group Discussion

List the criteria and assumptions made by the group when first attempting to solve the case, "*The Benign Approach Is Not Working*," (pages 21-22) then discuss the pros and cons of those criteria and assumptions.

Consider assumptions discussed, and assumptions that all or most participants made without discussing them. Also consider "blind spots" now evident with hindsight.

DECISION CRITERIA

Decision Criteria

The function of criteria is to provide a detailed description of what is required for a successful decision and to serve as a performance check on the alternatives created in Step 2.

Most individual decision-making is done in a “semi-automatic” way, that is, without a lot of conscious thought given to the standards and requirements that exist around an issue that will lead us to choose one alternative over another. This is normal and necessary for a lot of individual decisions. It is also often done in a work setting, where the decision-maker has to make many small or medium decisions in a work day. The rapid pace and semi-conscious nature of such decision-making will probably not benefit from a change toward some other decision-making approach.

When agency issues face us in a way that indicates a decision is going to involve many factors, a more open and sturdy process is necessary. A process that involves discussing and writing criteria so all the necessary information is out on the table — in writing — allowing for a free flow of information.

Sources of Decision Criteria

- Properly defined problem statement from Step 1.
- The experiences of the decision maker, good and bad.
- The policies, rules, regulations, goals, objectives, etc. of the agency and the work unit.

Characteristics of criteria

- Each criterion is a specific, measurable item.
- Criteria reflect expected end results.
- Includes consideration of factors that affect the decision, e.g., how likely is it that X will happen or how much risk is there if we do X or do not do Y?

Written criteria is probably not necessary for most individual decisions and for small decisions with few alternatives and few separate characteristics of the alternatives. However, when decision-making is part of 4-step problem solving, or is a standalone activity that will affect the work unit's productivity, employee morale, the work processes at work, or the budget, the decision criteria should be plainly written, specific enough to measure, and done in writing.

TWO CATEGORIES OF CRITERIA: LIMITS & DESIRABLES

Limits

- These criteria are requirements used to make an initial go/no-go decisions about alternatives. Limits are used to make a first pass through the original list of alternatives.
- They must have clear, measurable statements of limitation, so that the elimination of unsatisfactory alternatives is quick and relatively painless.
- There are specific boundaries and constraints necessary for making a successful choice.
- They are a form of protection for the decision maker because they restrict the decision to alternatives that provide at least minimal success (i.e., failure to satisfy a limit makes an alternative impossible to consider).

Desirables

The factors that are left over after the decision maker chooses the factors that are limits.

- “Nice to have” instead of “need to have” (see the table below where there is a decision to be made about renting an apartment)

STEP 3	Considering elements of renting an apartment:	L	D	Rewording the elements into decision making criteria
	Closer to the grocery store		X	<u>Identify criteria that are limits:</u> <ul style="list-style-type: none"> • Minimum 2 bedrooms • Minimum 1 year lease • Maximum of 1650 rent per month
	Security people on site at the right time		X	
	2 bedrooms	X		
	1 year lease	X		
	Close enough to the bus routes		X	<u>Identify criteria that are Desirable:</u> <ul style="list-style-type: none"> • Security staff 24 hrs • Lowest price • Close to bus routes • Close to grocery store
	No more than spending \$1650 rent per month	X		
	Lowest price for monthly rent of the place that has these things		X	

How to Begin Writing Decision Criteria

- List the general factors to be considered.
- Once this list is built, convert it to criteria by completing this phrase for each of the factors on the list: **“Whatever I (or we) choose should . . .”**

MAKING AN OPTIMAL DECISION

STEP 3 Evaluate alternative solutions and pick one.					
Limits	Employee Information	Employee Information	Employee Information	Employee Information	Employee Information
Desirables (ranked by priority)	Use Desirables to make a final decision if more than one alternative remains after using the go/no-go Limits. If there is a tie for the highest ranking on Desirables #1, go on to #2, #3, etc., until you have one alternative that wins.				
1)					
2)					
3)					
4)					
5)					

IMPLEMENT THE SOLUTION & FOLLOW UP

4

Implement and follow up on the solution

Implementing a solution to a problem introduces change into the workplace. Since almost any change creates some resistance, implementing a solution requires sensitivity to possible resistance from those who will be affected by the solution. Supervisors who consider possible work group resistance in Step 1 will probably have less friction than those who wait until Step 4 to think about it.

During implementation, problem solvers must be both proactive and reactive: *proactive* to ensure the problem gets solved, and *reactive* to make sure they can adjust the implementation when faced with delays, obstacles, and surprises.

Follow-up not only sustains implementation, but also serves as a way to get feedback and gain information that can be used to improve future problem solving. Below are some guidelines for implementation:

- Implement solutions at the right time and in the right sequence.
- Provide opportunities for feedback on how well the solution is addressing the problem.
- Gain acceptance of the solution by those who are affected by the problem.
- Establish an ongoing monitoring system for the solution.
- Evaluate success based on how well the solution solved the problem, not on some side benefits which may have left the problem unsolved.

The Role of the Supervisor in Step 4

Two roles must be performed at the same time — (1) managing the tasks necessary for implanting the solution, and (2) leading the work group that will be completing the tasks.

Managing the tasks

The table on the next page shows a format for planning the steps necessary to implement a solution.

IMPLEMENTATION STRATEGY

Strategy to implement the solution:			
Steps– what to do	Person's Responsible	Time Frame	Resources Needed
Task 1			
Task 2			
Task 3			
Task 4			
Task 5			

Sample table format for planning the implementation

The tasks to be managed are the steps that complete the implementation. Following up on these tasks with a written plan helps to assure that necessary deadlines are met. Follow-up is easier to do when steps are written down in a format that helps the problem solver easily identify what will be done, who will do it, when it will be done, and what resources are needed.

Leading the work group

Leading people is different from managing things. In Step 4 of problem solving, the primary issues that problem solvers will face concerning people are:

- Gaining acceptance by those affected by the solution or its implementation
- Providing opportunities for feedback from those affected, when necessary

These issues are also dealt with earlier in Step 3. If the work group members are capable, they will want some input into the problem solving process. Experienced, capable people will accept the responsibility that comes with participating in decision making. However, even when these experienced, capable people don't have any decision-making input they will still demonstrate understanding (acceptance).

SKILL PRACTICE: STEP 1

STEP 1: Define the problem.

- Pick the right problem to solve — a problem that, if solved, has an important effect that contributes to work group success.
- Differentiate symptoms from causes.
 - Ask “5 Whys.”

SKILL PRACTICE: STEP 2

Step 2: Create alternative solutions.

- Brainstorming
- Nominal grouping
 - Use one or the other, not both.

SKILL PRACTICE: STEP 3

Step 3: Evaluate and select one alternative.

- List the general factors to be considered.
- Once this list is built convert it to decision criteria by completing this phrase for each of the factors on the list:

Whatever I choose should . . .

- Separate the criteria into limits and desirables.
- Prioritize the desirables, not the limits, since all limits are critical.
- Run the alternatives through the limits criteria; if more than one remains, use the desirables criteria to pick one.

SKILL PRACTICE: STEP 4

Step 4: Implement and follow up on the solution.

Note: It is not expected that you and your group members will implement the solution while in class. You should identify as much of the action plan as possible (see below), and be prepared to discuss how the solution would be followed up.

Strategy to implement the solution:			
Steps — what to do	Person(s) responsible	Time frame	Resources needed
Task 1			
Task 2			
Task 3			
Task 4			
Task 5			

Sample table format to plan the implementation

- Steps of “what to do” may also need another category, “how-to-do it,” which this sample format does not show.
 - If “how-to-do-it” is needed, create a format that includes this information.

JOB AID: PROBLEM SOLVING

1

DEFINE THE PROBLEM

Ask "5 Whys."

2

CREATE ALTERNATIVE SOLUTIONS

- **Brainstorming**– group creates alternative solutions through verbal interaction (no evaluating, unstructured).
- **Nominal Grouping**– individuals create alternatives nonverbally, then group evaluates the alternatives (highly structured).

3

EVALUATE ALTERNATIVES AND SELECT ONE (DECISION MAKING)

- List factors affecting decision.
- Generate limits and desirables decision criteria, and prioritize the desirables.
- Use limits criteria to eliminate the unacceptable alternatives, then use desirables criteria to pick the optimal one.

4

IMPLEMENT THE SOLUTION AND FOLLOW UP

- Manage tasks involved in implementation. (Who, what, when, and the resources needed)
- Lead the work group that will be doing the tasks. (Determine how much group involvement is appropriate before you go to Step 4.)

4 FACTORS AFFECTING PARTICIPATION

1. Time
2. Information
3. Capability of the work group members
4. Acceptance

4 DECISION MAKING OPTIONS

1. Problem Solver decides alone
2. Problem Solver consults the group and then decides alone
3. Participative decision by group members and problem solver
4. Problem-solver lets someone else decide.

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