Part Three: TNA TOOLS

Chapter Eleven: WRITING QUESTIONNAIRES AND SURVEYS

Brief Description

A questionnaire or survey is a **written** and **disseminated** effort to acquire information from **sources**. The questionnaire or survey is prepared for specific reasons, distributed to sources, usually anonymously, returned to the sender, and then analyzed.

Purposes of Questionnaires and Surveys

Written surveys are a popular TNA tool, a method frequently used to find out what large numbers of people think and feel about the problem or new technology. Questionnaires may be used to gather anonymous information in regard to all TNA purposes. They are, however, most frequently used to solicit opinions on **actuals, feelings and causes**.

The Benefits of Surveys and Questionnaires

1. **You can reach many people at less cost than it would take to call or meet with them.** This is the first reason people usually give for relying on print needs assessment instruments. While I agree that this is usually true, there are instances where the time it takes to plan, print, pilot, distribute, harass to get returns, and analyze large numbers of surveys, winds up costing just as much as conducting fewer interviews.

2. **You can promise and deliver anonymity.** This is a strong plus of print. Interviews, observation and group TNA tools are often threatening to participants. Surveys which enable people to express themselves without any fear of recrimination have a better chance of revealing what sources think about the nature and cause(s) of problems.

3. **Respondents get time to ponder.** The problems with which we deal are often sticky and complex. While a source might see it one way on the phone, when the trainer is waiting eagerly for an answer, they may choose to respond differently with time to consider their answers.

4. **Surveys are public, tangible efforts by the training, industrial relations, or personnel group to involve others and incorporate their opinions.** Do not underestimate the public relations value of *effective*, widely disseminated instruments.

5. **They are easier to score and analyze, if properly constructed.** Widespread availability of computers makes this an even more dominant benefit. In Chapter 13, there is some discussion of the uses of computers for the analysis and presentation of results.

The Challenges in Surveying Through Print

Just as an effective questionnaire can be a boon to your career, an ineffective one can be a disaster. Imagine this situation:

In your eagerness to find out what kinds of training middle managers want, you whipped out an extensive needs study. This document queried them on their problems and interests. But it had two typographical errors. And because you knew that long instruments diminish response rates, you squished it into five pages and wound up with insufficient white space. It had good ideas, but didn't look so great, you now must admit. And then there was a little problem with what you meant in item 29.

What happened? Did this instructional designer enjoy the benefits of an effective survey? Hardly. In fact, the good ideas, the comprehensive options and clear directions were lost in the cluttered lay-out. And some sticklers for details were unable to appreciate the quality of the content so fixated were they with the spelling glitches and the ambiguity in item 29.

The foremost challenge of surveying through print is **getting it just right for public consumption**. If you don't, your mistakes or insensitivities are out there for all the world to see. While you can alter a miscue or clarify a murky question during an interview, the print instrument lingers and doesn't improve with time. Sources might continuously note that the training specialist confused *their* and *there*.

You are challenged to find the right words and items. Payne, in a classic 1951 work on questionnaire design, describes research that found question writing to be the biggest problem in survey research. Payne cites Howard T. Hovde, who asked a sample of researchers what they saw as the principal defects in commercial research. Improperly worded questionnaires ranked as the number one defect, with faulty interpretation and inadequate samples lagging just behind. Three experts out of every four mentioned poorly worded items as a problem! That holds true today, I suspect.

Once conceived, printed and duplicated, your questionnaire stands as it is. You may come back with another questionnaire at a latter stage of TNA, or you may use an interview or a group meeting to follow-up. But the following-up, the digging deeper or interacting with sources' responses must come later. **Print is not an immediately interactive tool, the way an interview or group meeting is.** There is no opportunity to clarify, pursue an intriguing idea or seek substantiation. **You need to know what you need to know before you send the TNA tool out.** After that, the survey is what it is, not what you wish it was.

Once you have conceived and disseminated an effective questionnaire, you want to enjoy a hearty response rate, and often won't. In addition to the democratic desire to involve large numbers of people in your efforts, you need high response rates to employ tests of statistical significance. Even if you intend to use nothing more elaborate than percentages, it is absurd to state that "60 percent report some or strong concern with their ability to learn to hanglide" when only 10 out of a total population of 165 senior citizens sent back the survey. Zemke and Kramlinger (1982) claim that a usual response rate for front end analysis surveys is 15-35 percent. We'll talk about strategies for assuring responses later in this chapter.

A Step by Step Approach to Effective Questionnaires

Here are the stages for getting a good survey out and back:

Step 1: Figuring Out What You Need and From Whom

Step 2: Writing Effective Items

Step 3: Writing Good Directions

Step 4: Writing Good Cover Letters

Step 5: Applying a Writer's Checklist

Step 6: Piloting the Instruments

Step 1: Figuring Out What You Need and From Whom

1. KNOWING THE PURPOSES FOR THIS QUESTIONNAIRE

It is essential to know why you are sending out this survey. Statements like, "to get a feel for the situation," or "to see where people are on the new system," or "just to let people know I care" are the harbingers of ineffective print instruments. The statements are far too broad and reflect the good intentions of trainers who aren't sufficiently clear about the problem or innovation to be writing questionnaires. **A print survey is not the place to begin a foray into a new problem or topic**; widely disseminated print must be reserved, in almost all cases, for **later stages of front end analysis**, when you have a pretty good fix on the situation, and can confidently write questions and options for answers.

The training professional who confronts a blank screen and a blinking cursor, or a virgin legal pad, shouldn't be thinking about **what** to write. Rather, think about **why** you are doing this. The **what** will follow naturally.

Concern about the purposes of the particular stage of TNA takes us back to the concepts that are the basis for this book: **purpose-based front end analysis**. What information are you seeking? How does what you want to know **now** flow from what you have found out **before**? Here are the familiar **purposes** which you might have for this stage of your inquiry. The purpose(s) then lead directly into the questionnaire items.

□ Finding OPTIMALS
• what respondents think ought to be going on
• how the system should work
• what they know about it

□ Finding ACTUALS
• the details of how employees are and are not performing
• the way the system is operating
• whether respondents perceive a problem

□ Finding FEELINGS
• how this person feels about the situation
• how they think others feel
• confidence regarding the topic
• whether they value/like the topic

□ Finding CAUSE(S)
• what is causing the problem
• which of causes detailed in Chapter 4 are in effect here

□ Finding SOLUTION(S)
• options for how to solve the problem or implement the innovation

2. ESTABLISHING A SAMPLE

Who is going to get the questionnaires? Everyone? People you can depend upon to send it back? The exemplary performers? Lackluster performers? People who pick up their mail? The ones who are planning to attend a certain meeting? Or a random sample of the population? The first and last options are the most desirable; they are the ones which will allow you to make the strongest statements about *all the people in the target learner group*.

There are some terms we need to get straight if we are going to seek the most desirable of sources. The first is **population.** It is the universe about which you are concerned. It might be major league baseball players with a documented history of drug abuse, field engineers who maintain mainframes, or bank tellers from the Bank of America. If you can, it is desirable to send print instruments to to entire population. That will cost in time and energy. It might be reasonable for the ball players and field engineers, presuming

limited numbers; it is probably not feasible for the large population of tellers.

The other desirable practice is to send the instruments to a **sample** of the population. A sample is a small portion of the population which possesses the same characteristics as the larger group from which it is drawn. The way you assure this congruence between total population and sample is through **randomization.** Randomization is the process by which you make sure that **all** members of the total population have an **equal** and fair chance of being selected to receive the survey. That must be accomplished by the blind assignment of numbers to **everyone** in the total population and then the use of some computerized or *blindly drawn from a hat* system to select from that population in an unbiased fashion. A random sample is *not* being drawn when you send the survey out to all the middle managers and then wait to see what you get back. What you get back may well be the middle managers who perceive themselves as most expert or the ones who are most dismayed with upper management.

How many do you select for your **randomly drawn sample**? That takes us to the issue of **sample size.** Every statistics textbook presents a table of the minimum number of individuals who must be sampled to make generalizations about the larger population. The larger the total population, the smaller the **percentage** of individuals which must be queried.

A small portion of a National Education Association table illustrates the point:

Population Size	Sample Size
100	79
200	132
500	217
1,000	278
3,000	341
8,000	367
15,000	375

If we want to survey bank tellers prior to launching a major product knowledge program and there are 8,000 tellers in the population, we will need a sample size of 367 randomly drawn

respondents. And we will need an excellent response rate from them if we seek to use inferential statistics to add weight to our findings, to assure management that what we found out could not be attributed to chance.

3. ASSURING NUMEROUS RESPONSES TO QUESTIONNAIRES

You can increase the likelihood that you will receive a high or perfect percentage of returns by:

- Writing an instrument which deals with **issues of concern** to the sample. Instruments which treat topics of interest only to you or upper level management are most likely to get tossed. The annual survey on telephone customer relations will get fewer responses than a questionnaire linked to extant data like recent breakdowns or sales figures.
- Clearly stating the **purpose(s)** for this instrument. Once again, avoid, "To get a feel for the thing," or "To see where you all are." Say that you want to know the strategies people are most likely to use to sell the product or the causes for dips in sales. Tell them if there is concern about a problem and identify the survey as part of the effort to figure out the best solution.
- **Following through** on the purposes and enjoying a reputation for doing so. There are few virgin sources out there; many of the people who will get your questionnaires have received them before. If you get a reputation for feigning interest in gathering data, or for not using what you find out from your surveys, then you are less likely to enjoy healthy response rates. Cultivate a credible history of using what you learn and, insofar as possible, of reporting back to people about what you are learning from TNA.
- Making it **easy to respond**. Provide self-addressed envelopes, where possible, for attractively constructed, laser printed, forced-choice instruments. Attach a stamp, if internal mail isn't an option. Remember that most sources will toss this survey at the first hint of inconvenience or confusion.
- Providing a **reason** to send it back. This isn't always possible, and it does conflict with confidence in anonymity, but it helps to give respondents something for their efforts. The results of the survey is the standard return for their effort. I try to go beyond that. My colleague, Farhad Saba, and I conducted research

on the ways that TNA is carried out in international settings. In order to encourage responses, we offered those who chose to respond a TNA job aid as a gift. The price we pay will be suspicion that our responses were from the neediest professionals or the most serious professionals or . . . . But since it is a small population from which we draw to begin with and since we did not randomly select a sample from it, we are acknowledging the weaknesses of our sample in favor of getting descriptive information from a unique and elite cadre of training and development professionals who work abroad.

- **Harrassing** non-respondents until they finally turn the instrument in. Sometimes it helps a little, if you use an impersonal system of writing to all members of your sample to remind them to *please* send the survey back. Personalized nagging, however, makes sources wonder just how anonymous they really are, no matter how much you assure them that a secretary is handling this part of it in a blind fashion, or that the questionnaires are numbered with a computer generating letters to non-respondents. They know and you know that the computer or secretary that begs for returns can also generate a list linking returns with respondents.

Step 2: Writing Effective Items

THE CONTENT FOR QUESTIONS

Chapter 6 includes the section, Step 3: Creating Items. That section details the purposes which initiate surveys. Based on these broad purposes, an item typology is proposed which facilitates the generation of individual items for questionnaires or interview guides. The typology that I developed solves the problem of **what to ask**. When training professionals pound a stack of returns and say, "I still don't know . . ." or "I didn't get what I needed," or "Now what do I do with all this?"; they probably are suffering from having asked the wrong questions. **Problems of content can be addressed through the item typology presented in Figure 6.2.** A brief summary of the typology follows:

Type 1 items ask WHAT NEED.
Type 2 items ask for DETAILS.
Type 3 items provide PROOF.

Type 4 items ask for FEELINGS and MOTIVATION.
Type 5 items ask for CAUSE(S) OF THE PROBLEM.
Type 6 items ask about the RESPONDENT.

Every item should bear an obvious relationship to one type question or another, but every instrument need not seek every type information. It is more likely that you would have, for example, an instrument with 30 percent Type 2's, 30 percent Type 3's and 40 percent Type 5's, than that you would have 20 percent of each type item. And you are asking for trouble if you include many Type 1's in a print format. The open-ended nature of Type 1 items seeks general problems and areas of need that should already be known to the training professional who is contemplating print surveys.

Print is usually the wrong tool for a fishing expedition. A question like, *"What are the problems your people are confronting with this equipment?"* will go over much better in an interview than it will in a print survey. You need to know about the problem and the situation before you construct a PRINT survey.

For example:

> When faced with preparing a pizza on our new computerized equipment, which of the following creates the **greatest** problems? Mark only one.
> .....a. setting the heat control
> .....b. altering the homeostasis unit for deepdish vs. other
> .....c. order of assembly of the optional garnishes

There are two dozen things that are done in the preparation of a pizza, not just a, b and c. This latter stage questionnaire only focuses on the three problems which earlier TNA stages (examination of extant data and interviews) highlighted. The pizza item is a type 2 question seeking details of a problem about which much is already known. It is likely that it would be followed up with a Type 5 question seeking the cause of the problem or a Type 4 which looks for feelings about the system. Or maybe you will only use print for the Type 2's and 5's, deciding to make phone calls to solicit information on feelings about computerized pizza making and the training to do it better.

In addition to questions which directly relate to the problem or new system, you might want to ask for information about the respondent. You might want to know in which regions he works or how many people she supervises. You might want to know what training she has taken and which job aids he uses to do his job. Or you might want to know if the respondent is male or female. Demography is sought in *Type 6* items.

Why do you want to know? If you have a good reason, like the desire to eventually look at whether sex has an impact on the ability to conduct performance appraisal interviews, or if the extant data is showing some differences in the appraisals based on gender, then by all means go ahead and ask about gender. Don't query about sex, age, years of service, etc., unless you know what you intend to do with the data, unless you have a good reason for the question. Make every question and inch of space count.

Be certain to use the topic and the way it breaks down to cluster your items. **Rather than clustering by purpose (e.g., asking three questions about the causes of the problems), chunk into the natural components of the subject matter or job.** The pizza oven example might involve questions about entering data, closing down, monitoring pizzas and daily maintenance with Type 2's, 3's, and 4's in all four clusters. Use the purposes and typology to generate your items, then be sure to **arrange the questionnaire on the basis of the *content* of the subject or job.**

The Formats for Questions

The two basic question types are **forced choice and open-ended items. A forced choice** item will say "which" or "what one of the following" or "rank this list" or "rate these according to . . ." You provide respondents with a fixed set of options from which they must choose. Here is an example:

> Which of these has caused problems when you've made pizza **prior** to installation of the new ovens? Check **all** those that have been a problem.
> ..... maintaining the equipment
> ..... setting up
> ..... temperature control
> ..... judging texture
> ..... doing more than 12 pies at a time
> ..... cleaning the sensors
> ..... cleaning surfaces

An **open-ended item** is just what it sounds like. It in no way narrows the range of possible responses. This is an example of that format:

> In what areas did you experience problems making pizza **before** the computerized ovens were installed?

You may use forced choice and open questions for item types 2-4. Obviously, type 1 questions are best asked in an open format. It is possible to achieve all TNA purposes through either forced or open-ended queries. **However, unless you wish to be driven mad by a flood of written data or by vague and general statements as responses to surveys, I strongly urge you to lean heavily on forced choice items for questionnaires and surveys.**

A compromise format is to combine forced choice and open-ended items. This gives you the benefits of forced questions while still leaving the door open for alternative responses. Constructed after you are pretty sure about the problem, you give the respondents choices **and** allow them to fill in something you may have left out. Here is an example of a **combination** item, an item which gives a list of choices **and** an opportunity for open response.

> Wiring in ovens is causing more problems than ever before. Circle the number which reflects your opinion on the **cause** of the wiring problems. Rate the list below as:
>
> (2) major contributing factor
> (1) some factor
> (0) no factor
>
> 2 1 0 (a) poor quality wires
> 2 1 0 (b) faulty installation
> 2 1 0 (c) ineffective maintenance
> 2 1 0 (d) inappropriate maintenance scheduling
> 2 1 0 (e) if wires don't break, technicians lose jobs
> 2 1 0 (f) other:

Think about the pizza wiring example. Imagine that you had sent out surveys to all 160 store managers. Would you rather con-

template 160 answers to the above item or to the following item, *"What are the causes of the problems you are confronting with the wiring of the new computerized equipment."* Certainly an open-ended version of this example is appropriate for use in *early stages* as you meet with regional groups of managers or as you conduct telephone surveys. But in latter stages of assessment you want to **confirm**. That leaves you with the challenge of knowing enough about the problem to provide realistic choices and to be able to present them in a useful and appropriate format. The combination format leaves you with a way of capturing additional data without confronting 160 written paragraphs.

In **closed or forced questions**, the item constructor has three choices with implications for data analysis:

1. **Nominal** scales name or describe who the respondent is. If there is no order inherent in the categorization, then it is a nominal scale. For example:

> Check the one that applies to **you** .....male .....female
>
> Which best describes the area in which you work? Check only one.
>
> ..... sales and marketing
> ..... personnel and training
> ..... manufacturing

A question which asks you to check given IQ categories or pay ranges or number of courses that you have taught would *not* be a nominal scale because a *rank order* is perceivable.

2. **Ordinal** scales ask respondents to select a category which reflects some ranking but lacks guaranteed, standard differences between ranks. For example, look at these Type 4 questions:

> Which best describes your confidence in your ability to clean the new computerized pizza making equipment?
>
> ..... very confident
> ..... confident
> ..... somewhat confident
> ..... not at all confident

"The corporation selected the right computerized pizza makers for our stores." Check only one.

..... strongly agree
..... agree
..... undecided
..... disagree
..... strongly disagree

The problem with these Likert type items is the question about what constitutes the differences between options. Bradburn *et al.* (1979) pointed to how often we create scales like these assuming that everyone will know and share precise meanings for words like *very* and *often* and *above average*. In fact they don't. His research suggests that people vary in their definitions of words like rarely, sometimes and often, and that even individuals will vary in how they **rate** from topic to topic. There is no easy solution to the problem beyond recognition of the *caveats* appropriate to the use of such rating scales.

Training professionals often want sources to **rank not rate** the options. As long as you provide **no more than four choices**, people usually like to do it. For example, here is another ordinal scale, a Type 5:

Our stores are reporting double the number of equipment breakdowns than documented manufacturer's experience with other pizza stores. Why do you think this is happening to our chain? Below is a list of reasons that store managers have suggested. Will you please rank them from 1 to 3 with 1 representing the greatest cause of breakdowns and 3 the least cause, in your opinion?

.....a. improperly installed equipment
.....b. poor materials in manufacture of units
.....c. improper daily maintenance in stores

3. **Interval** scales provide options in which the difference between units is equal and predictable. These are often used to gather demographic data:

How many times have you attended equipment related training in the past five years?

..... 0
..... 1-3
..... 4-6
..... 7-9
..... 10-12
..... more than 13 times

How much money have you spent on equipment repair in the past year?

..... $0-500
..... $501-1000
..... $1001-1500
..... $1501-2000
..... $2001-2500
..... more than $2500

There are several other concerns which relate to effective formats for items. The first is **scale consistency. Avoid switching rating scales and devices in the middle of an instrument unless there is a good reason.** While Zemke and Kramlinger (1982) encourage changing to combat monotony, especially in lengthy instruments, I don't agree. Instead, I would abbreviate the instrument and maintain as much consistency as possible. Respondents want to focus on the content of the questions; the scale type should be almost transparent.

Two other format issues are **highlighting and the use of white space.** I rely heavily on the use of bold letters and underlining to inform sources about what I think is essential in an item. I also will highlight if I think a source might get confused. Here is an example of a Type 3 question which checks up on what respondents actually know:

The pizza dough that is coming out of the ovens is soggy and has been that way **since the evening rush hour.** The temperature meter reads normal for the number of pizzas being baked. Which of the following commands should be entered into the control panel *first*?

.....a. REHEAT
.....b. REDIRECT
.....c. DISPLAY
.....d. CONCENTRATE

It is important to produce instruments which look like you know what you are doing. White space contributes to that, as does quality copying, careful font selection and lay-out of items and scales on the page.

The Words for Questions

The characteristics of the population should influence your search for the right words. Select words which are **familiar, without being loaded with controversial meanings.** Phrases like *corporate image, cooperation, and sufficient productivity* have the potential of eliciting an emotional response from one source and confusion about what you mean from another. In an interview you can elaborate, in print you confront denotation *and* connotation. Another issue is the reading grade level of the population. Keep reading grade level down by avoiding poly-syllabic words, lengthy sentences and jargon.

Payne (1951) advocates brief questions, stating that if you need more than 20 words for your question, it is too long. Sometimes, however, I've seen situations where you will want to set up situations in questions which take more than 20 words. The soggy pizza is an example. You can imagine other Types 3's and type 5's which would be **appropriately** lengthy. The key is **appropriateness**, again. Aim for brevity but recognize you may need to establish a question or situation in order to get meaningful responses.

Step 3: Writing Good Directions. It seems like a simple thing. Once you have gotten clear about your purposes and have crafted items **appropriate to those purposes and your audience**, just put in some **directions** which tell respondents how to complete the items. Easy, right? Wrong.

Directions are supposed to clarify things for respondents. Effective directions are crisp, not redundant. Definitions are included when necessary. Directions use words which are appropriate to the audience (see Step 2) and that tell you exactly what you need to know.

What do you need to know?

- what you will be expected to do
- whether we are talking about rating, and if so, what the rating scale is

- whether we are talking about ranking, and if so, what the different numbers signify
- whether you get to fill in your own ideas, as in a combinational item or in a totally open-ended query

In those **rare** instances where you include open-ended questions in surveys, you might choose to provide model answers. Not everyone would even consider this as a possibility. The danger is that you will bias your sample by providing them with a model acceptable answer. The way I address this concern is by offering an example that is on a different topic, but which exemplifies the **level of detail and specificity** that I seek. For example:

> In the questions that follow you will be asked to express your feelings about the pizza making equipment you are now using. Here is the kind of answer that will help us understand how you feel: **"I am very impressed with the performance of my Toyota MR2. It has excellent acceleration and better than 33 miles per gallon," or "That Nagasawa has never worked right. It jerks and heaves when I shift from 1st to 2nd and failed to start up 2 out of 7 days last week."** Please try to provide answers which are as specific as these two automobile reactions.
>
> 1. Will you please describe your feelings about the new computerized pizza ovens?
>
> 2. How do the people on your staff react when you train them to operate this equipment?

Only provide examples when you anticipate inaccurate or inadequate responses to your open questions. Be sure to use an example **from another subject and to illustrate both ways.** I spoke of the excellent features of the MR2; I also exemplified with specific weaknesses of the Nagasawa.

Step 4: Writing Good Cover Letters. This is usually the first thing that the sample sees and it has to be good. What does *good* mean? It has to include the following:

- why they have received this questionnaire

> The Industrial Relations group is sending this survey out to all store managers in the New England area.

- a clear statement of the purpose of the questionnaire

Sales figures and repair costs indicate there are problems with the computerized ovens. We are writing to you to find out what you think about the problem.

- a reason for responding

There are many ways we could solve this problem ranging from removing the ovens to training all store staff in maintenance procedures. Your answers will help us figure out which option to select.

- directions about how and when to respond

An envelope with my address on it is attached to the instrument. Please make sure that you put it in internal mail by the *last* day of *this* month.

- say what you've done before to research the situation

The ideas and choices in this questionnaire are based on repair and sales figures and interviews with 6 regional managers.

- be direct, relying upon words and tone which indicate that a *real person* is concerned with how other *real people* see this issue.

This survey attempts to gather details about your experience using this equipment in the field. Only you and the other store managers can provide us with that kind of information.

- express appreciation for participation

I appreciate the time that you will spend filling out this survey. Thank you in advance for your participation.

Here is a cover letter which was written by Judy Duffield and attached to a needs assessment she distributed to teachers-in-training for a language training program:

I am studying **second language acquisition** as part of a project for a graduate class at San Diego State. Specifically I am trying to find out *why more prospective teachers aren't interested in learning Spanish*.

I've interviewed several students and teachers, but now I need more detailed information from more people. As someone who is about to become a teacher and who speaks only English, I hope you will give me the information that I need.

The attached questionnaire gives you a chance to express your opinions and feelings about learning a second language. Please remove this cover sheet, answer the questions and return it in the enclosed, stamped envelope by March 15th.

Please give a few moments of your attention to this questionnaire. I intend to look carefully at your responses to see if and how we can make the prospect of learning a second language more desirable and practical for prospective teachers.

Thank you very much for your time and effort.

Note that this example tells what qualifies the individual to be included in the population, the purpose of the survey, and how and when to respond. She obviously needs their responses in order to make important decisions, and she expresses appreciation for their time and effort.

Step 5: Applying the Questionnaire Writer's Checklist. Here is a heuristic which exemplifies the survey writing concepts covered in this chapter. Use this checklist to look at a questionnaire which was developed previously or to help you generate a new one.

The cover

- ☐ Purpose
- ☐ Direct address
- ☐ Appropriate words for audience
- ☐ How selected to receive survey
- ☐ Reason for responding
- ☐ How and when to respond
- ☐ Expression of appreciation

The directions

- ☐ Brief
- ☐ Clear
- ☐ Appropriate to the audience

- ☐ Defining when necessary
- ☐ Providing examples when necessary

The items

- ☐ One purpose per item
- ☐ Each item linked to an item type
- ☐ Primarily forced choice items
- ☐ Reliance upon combinational items to include open ended option
- ☐ Appropriate use of highlighting, underlining and white space
- ☐ Consistency in scales and question types
- ☐ Content clustering by meaningful portions of the job or task
- ☐ Numbered items and pages
- ☐ Words and sentences appropriate to reading level and interests
- ☐ Communication with data processing professional, if appropriate
- ☐ Sufficient piloting to revise and feel confident

Step 6: Piloting the Questionnaire. Pilot your instrument before you distribute it. What you must decide is how complicated and *real world* you want to get about it. Two variables are involved as you think about piloting: with **how many** will you pilot and from **where** you will get them. It is different to try it out on three training professionals in your office than it is to send it to three store managers.

I encourage both an *intimate* and *expanded* piloting of surveys. An *intimate* pilot uses the opinions of other training professionals and managers to make improvements in the questionnaire. Ask these colleagues to read the questionnaire and give you specific suggestions as to how it might be made more effective. Consider letting them look at the checklist in Step 5 as they scrutinize your work. An *expanded* pilot actually sends the thing out to some store managers or bank tellers, not randomly selected ones or as large a group as will constitute the final sample, but some people who are probably similar to your eventual respondents. If you can, try it on several members of the population from representative locations.

Oppenheimer (1982) describes a pilot of a needs assessment in an article in *Training and Development*. After systematic efforts to derive optimal categories for management behavior, categories which the sample would eventually rate, Oppenheimer piloted the instrument. First he distributed it to seven people from other parts of the company and made revisions. Then he sent it to some managers from across the company. Based on their comments, new and simplified directions were added. After these two cycles of piloting, Oppenheimer was able to confidently distribute his questionnaire across the corporation.

Another Print TNA Tool: The Delphi

Cass Gentry (1985), in a paper delivered to the Association for Educational Communications and Technology, encouraged the use of a Delphi as a needs assessment survey tool. Though I've never done it, I agree that training professionals can use a Delphi to systematically involve experts in definition of **goals (optimals)** and descriptions of **actual conditions**. I think it would also be useful for gathering a broad range of opinions on the **cause(s)** of performance problems.

During a Delphi, trainers seek information from sources about optimals, actuals and causes through repeated stages of contact based on disseminated, carefully constructed print surveys. The unusual part about the Delphi is that a chosen, elite panel of experts is repeatedly involved in offering their opinions on a narrow topic.

The Delphi involves **recurring submissions** of a series of questions to *selected* individuals who remain unknown to each other. Usually, but not always, the people who receive the questionnaires are considered **expert** in the field. They comprise a panel which is questioned about a particular topic on several different occasions.

There is an initial series of open-ended questions which solicit opinions from respondents. The answers to the original survey are then used to enlighten the construction of the next survey, which once again is sent back to the original panel. This continues over

and over again until the person who is sending out the instruments is convinced that some **clear picture or consensus has been achieved.**

Here is how it might be expressed in steps contributing to TNA:

1. Clarify **purposes** for this Delphi. Are you seeking opinions on current performance? what performance ought to be? future directions? causes of impediments to performance or progress? several of these? Generate **items** which will accomplish these purposes.

2. Select a **panel**. Most often this is a panel of **experts**. But not always. I would lean towards a panel of experts if the purpose of the Delphi is to define optimals. If the reason for the surveys is description of current practices or causes, I see no reason to insist that everyone be considered expert in the area. Experience would be sufficient in this case.

3. **Distribute** questionnaires to panel. The Delphis in which I have participated have always involved a lengthy and flattering cover letter which emphasizes the *crackerjack, honored* nature of membership on the panel. Maybe that increases the number of responses. The real reason that I have chosen to respond is that I usually get asked questions about topics that interest me.

4. **Analyze** responses. Cluster content so that trends and disagreements are prominent.

5. Use analyzed data to **develop and refine questionnaires** in light of the purposes established in Step 1.

6. **Distribute again** to the original panel.

7. **Repeat** steps 4-6 until purpose(s) of the Delphi are fulfilled.

A brief example might look like this:

> The McKinley Corporation manufactures and sells advanced electronic equipment throughout the world. They feel that they are, however, not sufficiently using microelectronic technology to enlighten **their own management practices.** They decide that they want to purchase systems appropriate for all management functions and then to train their people to use them. The Vice President for Personnel decides that a Delphi with handpicked external and internal consultants will help her answer these questions:
>
> - What might we be using technology for today, given the functions of middle management throughout the world?
> - What hardware and software do we need to anticipate and incorporate in our plans?
> - What can we hope that an effective middle manager will be able to do with microelectronic technology in the middle and late 80's? in the early 1990's?

She returned to her experts four times. Each time she went back to them she refined her original instrument and pressed them for more details where there was controversy or a lack of clarity. Her last survey presented detailed results of the first three and focused on technology and international management practices, since opinions and trends in that area was lacking. Fourteen months after she commenced the Delphi, she was pleased that she finally possessed a panel of experts' opinions on optimals for middle management skills relating to high technology here and abroad.

Conclusion

In this chapter we've looked at an important tool in the TNA arsenal: the print survey. We have examined the steps involved in creating and sending out a questionnaire and we have linked that process to the purposes for conducting front end analysis. The numerous examples of items and formats should enable you to generate more effective instruments as well as tastier pizzas.

Resources

Baker, R.L., and Schutz, R.E. (1972). *Instructional Product Research.* New York: Van Nostrand.

Best, J.W. (1970). *Research in Education.* Englewood Cliffs, NJ: Prentice-Hall.

Bradburn, N.M., Sudman, S., and Associates. (1979). *Improving Interview Method and Questionnaire Design.* San Francisco, CA: Jossey Bass.

Gentry, C. (1985). Needs Analysis: Rationale and Technique, paper presented at the Association for Educational Communications and Technology, Anaheim, CA.

Flanagan, J.C. (July 1954). The Critical Incident Technique, *Psychological Bulletin, 51*, 327-358.

Oppenheim, A.N. *Questionnaire Design and Attitude Measurement.* New York: Basic Books, 1966.

Oppenheimer, R.J. (March 1982). An Alternative Approach to Assessing Management Development Needs, *Training and Development*, 72-76.

Payne, S.L. (1951). *The Art of Asking Questions.* Princeton, NJ: Princeton University Press.

Roid, G.H., and Haladyna, T.M. *A Technology for Test Item Writing.* New York: Academic Press.

Zemke, R., and Kramlinger, T. (1982). *Figuring Things Out: A Trainer's Guide to Needs and Task Analysis.* Reading, MA: Addison-Wesley.

Part Four: CONCLUSION

Chapter Twelve: PLANNING TRAINING NEEDS ASSESSMENT

Summary of the Book

This is the beginning of the last part of this book. The purpose of this part of the book is to bring it all together for readers.

In Chapters 1-4 of TNA we looked at familiar phrases: front end analysis; needs assessment; pre-training analysis; needs studies; problem analysis . . . followed by my conceptualization for investigating performance problems and innovations.

In Part Two we examined extant data analysis, needs assessment and subject matter analysis. These analysis techniques are defined and linked to the front end purposes for which they are appropriate.

Part Three of TNA presented the tools we use to carry out these analyses: interviews, observations, group meetings and surveys. Detailed examples illustrate a step-by-step approach to their use.

You've encountered the concepts . . .

- of **purpose-based TNA**, where we are seeking
  - ☐ **optimals**
  - ☐ **actuals**
  - ☐ **feelings**
  - ☐ **cause(s)**
  - ☐ **solutions**
- of **analysis techniques**
  - ☐ **extant data analysis**
  - ☐ **needs assessment**
  - ☐ **subject matter analysis**