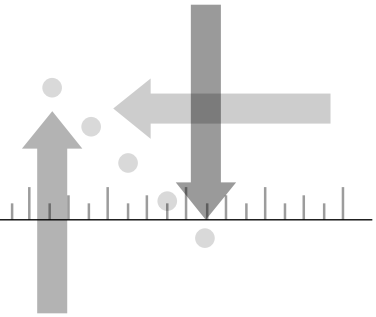


SECTION 3

Needs Assessment: Tools and Techniques

Introduction

Though needs assessments are akin to many other organizational processes from a project management perspective, the characteristics that make needs assessments unique (such as guiding decisions before they are made and focusing on results rather than on solutions) are those that also require a distinctive set of tools and techniques. Although many of the tools you use are not exclusive to a needs assessment—with many being borrowed from scientific research, evaluation, and other disciplines—their application in assessment projects often uses a slightly different perspective from how you may have encountered them before.

In section 3, we have identified 23 tools and techniques that are often applied at varying stages of a needs assessment. The approaches do not represent all of the tools that you might find useful, but rather they are a sample that we believe can expand your options and improve the quality of assessment projects. Rarely would any organization's decision-making culture support the use of each and every technique we describe, though most would benefit from trying tools beyond simple surveys or interviews.

We have broken the tools into two parts for different purposes in the needs assessment process. *Part 3A. Data Collection Tools and Techniques*

03--Section 3--81-164.indd 81 12/14/11 9:20 AM

provides options for you to consider using when you are collecting data to inform your needs assessment. But after you have collected information for the needs assessment, another important step involves making decisions about that collected information. And there are tools to support the decision-making process.

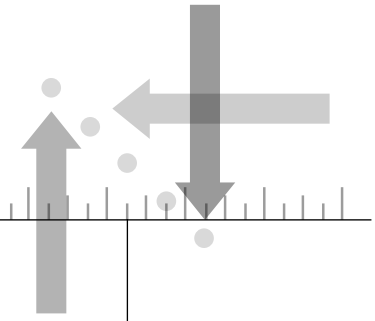
Part 3B. Decision-Making Tools and Techniques offers suggested tools for analyzing and prioritizing issues in the needs assessment process and for ultimately deciding to take action. Prioritizing information and making choices can be a difficult task for both individuals and groups. Instead of making decisions through an informal, ad hoc process, tools are available that can be helpful in ensuring that issues are given due consideration in a participatory decision-making process.

For each tool and technique described in this section, we have applied a needs assessment perspective to its application. That is, we have viewed it from the standpoint of how it is best used to identify and analyze needs so you can make decisions about what to do. In several cases, this perspective required simplifying the tools as they are applied for other reasons, as well as adding new "twists" in other cases to ensure that the goals of your needs assessment can be met. In all cases, our descriptions are intended to introduce tools and techniques rather than provide "the definitive explanation" on how they are to be used. Therefore, at the end of each description, we have included websites, books, and articles that can further guide your use of each tool.

Try a few of them; see how it goes. Learn more about the ones you are most interested in. Build a variety of techniques and tools into your assessment plan. Customize the tools for your organizational context. In the end, you will likely find that a number of tools can improve the quality of assessment projects and the subsequent decision making. Keep those tools, use them again, and improve on them.

Note: For the convenience of our readers, copies of the individual tools are available and can be downloaded as single PDF files at http://www.needsassessment.org.

03--Section 3--81-164.indd 82 12/14/11 9:20 AM



Part 3A

DATA COLLECTION TOOLS AND TECHNIQUES

Part 3A. Data Collection Tools and Techniques provides options for your consideration as you collect data for your needs assessment. After you have collected information for that assessment, you must consider another important step that involves making decisions about your collected data. There are also tools to support the decision-making process. We will explore those tools in *Part 3B. Decision-Making Tools and Techniques*.

DOCUMENT OR DATA REVIEW

Purpose

The purpose of conducting a document or data review is to review a variety of existing sources (for example, documents, reports, data files, and other written artifacts) with the intention of collecting independently verifiable data and information.

Needs Assessment Applications

Many times the information required to complete a needs assessment has already been collected for other purposes. For example, similar data to what you are looking for may have been previously collected for generating other reports, papers, or research. Ministries, government agencies, nongovernmental organizations (NGOs), and other organizations often collect and/or produce the valuable data or reports that can supplement your own data collection as part of your needs assessment. The document and data review process provides you with a systematic procedure for identifying, analyzing, and deriving useful information from the existing documents so you can make informed decisions.

Today, many government agencies, multilateral institutions, and other organizations are making documents and data sets available to the public (see box 3A.1). In 2011, the World Bank, for instance, expanded its access to information policies, thereby making many of its databases and project reports available on its public website. What is available varies widely, ranging from, for example, (a) planning documents related to small development projects in Africa, to (b) evaluation reports on a country's progress toward achieving the Millennium Development Goals, to (c) global information system maps showing crime hot spots in a city, to (d) health sector indicators for a particular nation.

03--Section 3--81-164.indd 84 12/14/11 9:20 AM

Box 3A.1 Source Samples

Sample Sources for Documents

- World Bank project reports (including monitoring and evaluation reports) are available at http://go.worldbank.org/0FRO32VEI0.
- United Nations Development Programme reports can be found at http://www.undp.org/publications/.
- Publications from the Center for Global Development are at http://www.cgdev.org/section/publications.
- Country-level progress reports on the Millennium Development Goals can be found at http://mdgs.un.org.

Sample Sources for Databases

- Finance and project data from a number of development institutions are integrated at http://www.aiddata.org.
- Data and data sets from a vast array of U.S. government projects are now available at http://www.data.gov.
- World Bank data sets are available at http://data.worldbank.org/.
- United Nations databases are largely available through http://data.un.org/.
- The Organisation for Economic Co-operation and Development also provides data resources at http://stats.oecd.org/.

Access to information is, nevertheless, an essential starting place for any document review process. Look broadly for resources that already have the data you require to make decisions. Such resources can save you lots of time and money.

In the context of international development, the documents and data available are heavily biased toward the English language, as well as toward those with ready access to the Internet and basic skills to navigate the databases. Nevertheless, such initiatives are a start toward putting useful information in the hands of the public across the globe. We expect that this trend will grow with governments and organizations that are investing in establishing policies and information systems toward that end.

Advantages and Disadvantages

Advantages

- The information contained in extant data or documents is often independently verifiable.

03--Section 3--81-164.indd 85 12/14/11 9:20 AM

- The document or data review process can be done independently and without having to solicit extensive input from other sources.
- A document or data review is typically less expensive than collecting the data on your own.

Disadvantages

- Information in the documents or data may represent a perspective that is not aligned with your needs assessment project. For example, the perspective of government reports may not be aligned with those of development organizations.
- Data in the document sources may not be exactly what you want for your needs assessment. For instance, you may want environmental records by village but extant records may document only by province.
- Obtaining and analyzing necessary documents can be a time-consuming process.
- You will not be able to control the quality of data being collected and must rely on the information provided in the documents as you assess quality and usability of the sources.

Process Overview

1. From a list of information required to complete your needs assessment, identify those elements or indicators that may be contained in previously written reports, planning papers, research synopses, or other documents. For instance, if you require statistics on the population growth within a region, then identify several government (or potentially United Nations) reports that provide the necessary information. Both published and unpublished sources can be considered for inclusion, though the validity of unpublished materials can make your quality assurance efforts more difficult.
2. Consider developing a list of characteristics (or attributes) that you are looking for in an existing record; that approach can help you identify a comprehensive list of available resources. For example, (a) do you want to use only data that were collected through internationally funded efforts, or (b) do you want only information that has been published with full disclosure of the participants and of the methods used to collect the

03--Section 3--81-164.indd 86 12/14/11 9:20 AM

data, or (c) do you want only records from the past 10 years, or (d) do you need a combination of those elements?

3. For each item of required information that could potentially be found in an existing document, list three to five potential resources for obtaining that information. For instance, imagine that your needs assessment requires information on the number of current employees within a government agency who have the qualifications to perform financial audits. In this case, you want to determine which currently available agency documents or data monitoring systems may include such information, where those documents might be located, and from whom the documents can be obtained.

4. Identify the individual(s) who will be invited to participate in the document review. Most often, you want to invite at least two people to review each document, and you can also be a reviewer when appropriate. Having two or more reviewers improves the reliability of the reviews and gives you the opportunity to compare across reviews.

5. Develop a document or data review protocol, checklist, or examination form that can be used systematically by each reviewer to ensure that valuable information is identified, analyzed, coded, and documented. Be sure to include space at the top of each protocol, checklist, or examination form for the reviewer to describe the document and to state where it is stored if additional information is required later. As appropriate in the protocol, you should ensure that required information regarding both the current results and the desired results will be represented, along with the required information at each level of the program or project results chain.

6. Generate guidelines for using the protocol or checklist or the examination form in the review process. Consider providing a "positive example" of a completed review protocol, checklist, or examination form. Be sure to highlight how information can be recorded on the form to maximize its clarity and usability in the needs assessment process.

7. As each document or data set is reviewed, have the reviewer(s) complete the protocol, checklist, or examination form to verify that all useful information is documented.

8. When all of the relevant files have been reviewed, have all reviewers meet to collectively document the findings of their reviews (or what information has been collected through the document review process). In particular, the reviewers should identify specific instances where informa-

03--Section 3--81-164.indd 87 12/14/11 9:20 AM

tion from different documents may disagree, where there are instances of multiple documents containing similar information, where additional information may be located, and what information may have to be collected directly through the needs assessment.

9. Collect the reviewers' documented findings from the review process, and codify the findings for inclusion in the needs assessment. Identify any conclusions regarding needs, root causes, and recommendations for addressing identified needs.

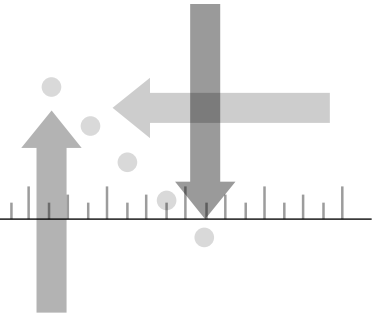
Tips for Success

- Be systematic in your review processes. From identifying potential documents and developing a review protocol to collectively reviewing the information attained through the review of multiple documents, systematic processes should ensure that valuable information is not missed during the review.
- Triangulate data to the extent possible. In other words, when the document review yields data or information that may directly feed into the needs assessment, attempt to locate the confirmatory data or information by examining other independent sources. If the data or information can be triangulated, it can increase your confidence in its accuracy.
- When multiple reviewers are tasked with the role of reviewing document sources, provide clear and consistent guidelines to all reviewers on the procedures for completing the protocol, checklist, or examination form. Ensuring that all reviewers receive the same guidelines for the protocol, checklist, or examination form will make certain that the information is identified, analyzed, coded, and documented in a consistent and reliable manner.

Reference

Witkin, Belle Ruth, and James W. Altschuld. 1995. *Planning and Conducting Needs Assessments: A Practical Guide*. Thousand Oaks, CA: Sage Publications.

03--Section 3--81-164.indd 88 12/14/11 9:20 AM



GUIDED EXPERT REVIEWS

Purpose

The purpose of conducting guided expert reviews is to gain informed perspectives from valued experts who are outside the system (for example, education system, transportation system, and so on) on which the needs assessment is focused.

Needs Assessment Applications

Under certain circumstances, you or others associated with the needs assessment can be too familiar (or too unfamiliar) with the processes, procedures, people, tools, resources, performance data, or other variables that influence either current or desired performance to be able to adequately complete a needs assessment. In this situation, reviews by experts (for example, public financial management experts, environmental engineers, organizational development specialists, and so on) provide valuable external perspectives that can inform your decisions.

You should also use expert reviews to provide balanced perspectives when there are even minimal possibilities of internal predisposition or bias that could influence any needs assessment processes or stages. The expert reviews may include collecting data, analyzing information, reporting findings, and conducting other activities that lead to program or project recommendations.

In your needs assessments, guided expert reviews can provide external perspectives on the following:

- Needs (that is, the performance gaps that are the focus of decisions to be made)

03--Section 3--81-164.indd 89 12/14/11 9:20 AM

- Decisions (that is, the results and recommendations of the assessment itself)

Advantages and Disadvantages

Advantages

- Expert reviews allow you to have a fresh set of eyes that can provide new ideas and insights that might not have come about without the expert's participation.
- The involvement of expert reviewers in the needs assessment process can increase the credibility of the assessment process and findings, thereby potentially increasing stakeholder buy-in.
- The use of expert reviews may allow you to pursue strategies and approaches that make inherent sense for the context in which you may be working but that you might not normally pursue if you did not have the assurance of the expert's careful review.
- Because experts generally bring insights and experiences from other (outside) contexts in which they have worked, the involvement of an expert in the needs assessment may make it possible for you to formally or informally benchmark against other, similar systems or contexts.
- Expert reviews, especially those focused on documents or data files, can often be done at a distance, thereby saving time and resources. For example, you may want expert review performance data to confirm your conclusions, or you may request a review of a pending project proposal; in either case, you could likely e-mail the relevant files or provide access to online databases.

Disadvantages

- It can be a challenge to identify reliable criteria (such as years of development experience, particular technology knowledge, work with specific at-risk populations, and so forth) for selecting experts to involve in the expert review process.
- If the context in which the needs assessment is being conducted is significantly different from the one in which the expert normally works, the extent to which the expert's observations and recommendations are relevant can be diminished.

03--Section 3--81-164.indd 90 12/14/11 9:20 AM

- As is the case for any other individual, an expert's subjectivity and prior experience may affect the outcome of the expert review process (the effect of this expertise can potentially be mitigated somewhat through the involvement of more than one expert).
- Soliciting insight from experts can be expensive, and it may be difficult to find experts who are able to contribute large amounts of time responding (particularly if the area of expertise is one for which there is high demand).

Process Overview

Getting Started

1. Identify either a need (a gap between current and desired results) or a needs assessment decision (such as prioritizing needs or determining which mix of improvement activities or interventions will work best within your organization) that will be the focus of the guided expert review.
2. Determine what type of expert review you would like the expert to conduct, such as a peer, relevance, or benchmarking review. (a) A *peer review* involves judging the quality of something. For instance, a peer review could involve engaging a public-private sector development expert to assess the quality of a plan developed by a community and its business leaders to help them to address economic development issues for the community. (b) A *relevance review* judges whether an organization's activities are relevant to its mission. An example of a relevance review is when an organizational development specialist works with an organization and engages its stakeholders—management, employees, clients, and others—to understand the strategy of the organization and when the specialist offers an assessment on what could be changed, such as what activities the organization should and should not be doing to meet the goals of the strategy. (c) A *benchmarking review* involves judging the relative standing in an international, regional, sector, or other perspective. For instance, benchmarking reviews assess property rights across countries, thus allowing countries to compare their relative performance.

Finding Experts

Following are some considerations that are relevant when bringing experts on board for an expert review:

03--Section 3--81-164.indd 91 12/14/11 9:20 AM

1. Generate a protocol (guide) for identifying appropriate experts to invite for the expert review process.
   - This protocol should be based on your understanding of the goals of your needs assessment, as well as the specific context in which the organization functions.
   - Carefully identify the skills and knowledge that someone should possess to be able to meaningfully function as an expert reviewer for the needs assessment, and include those competencies in the protocol.
   - Apply the protocol as you search for potential experts.
2. Identify potential experts from *outside* the system to participate in the review.
   - Experts can be from within the organization (but outside of the unit or division that is the focus of the needs assessment).
   - Or they can be from outside the organization when they have expertise with the performance system or similar such systems.
3. Determine whether you would like experts to be invited as individuals or as teams.
4. Determine whether you would like local or international experts or a combination of both. Consider carefully the benefits and drawbacks of involving experts from other countries. Example benefits and drawbacks include the following:
   - An advantage of involving international experts may be that they bring dynamic new insights to the situation and that they are able to size up the organization's relative standing from an international perspective.
   - A drawback may be that the international expert's ability to leverage his or her expertise may be limited if that expert has no familiarity with the local country context.
   - In some developing country contexts, there may be relatively modest capacity in certain areas of economic productivity, and it may thus be advisable to invite international experts to participate.
   - In many instances, using both local and international experts may provide a mix of the "best of both worlds."
5. As you begin to invite experts, find out about their availability during the time period for the expert review. Because they *are* experts, it is likely

03--Section 3--81-164.indd 92 12/14/11 9:20 AM

that they are in demand elsewhere too, so you may have to do some creative planning to work around scheduling restrictions while still meeting the goals of an expert review. For instance, if a given expert is not available to come onsite, determine if he or she can review other documentation and reports to give you quality input at a distance (for example, using audio or video conferences).

6. Present the potential experts with unbiased background information on the purpose of their involvement in the needs assessment, and ask each potential expert to evaluate his or her experience and knowledge relative to the specific goals for your needs assessment.

Planning and Conducting the Expert Review

1. Define your objectives for the expert review (or what results you expect to accomplish by the time the review is complete). Be realistic about what objectives can be accomplished. Determine when it is appropriate to use each expert, knowing what they can and cannot do given the constraints of the situation.
2. Generate terms of reference (that is, a scope of work) that can be used by experts prior to arriving on site. Doing so will allow experts to arrive prepared for the task, including giving them time to locate any hard-to-find materials that they may want to consult during the review process.
3. Contact each expert reviewer, and make arrangements for his or her participation. As noted previously, if one or more experts are not available for in-person participation, make arrangements to send relevant documentation that will allow the expert(s) to contribute at a distance.
4. Inform stakeholders and participants of the role of expert reviewer(s).
5. Consider providing metrics or protocols that the experts can use during the expert review. Such metrics or protocols can be valuable in increasing the objectivity and transparency of an expert review process, and they can also increase the chances that the expert review results are aligned with the objectives you defined at the beginning of the process.
6. Collect the necessary background information for each expert reviewer. This information may be valuable later if you have to justify decisions made during the needs assessment.
7. Be sure to include specific deliverables for each reviewer and for each context in which the review is to take place. For instance, do you expect a

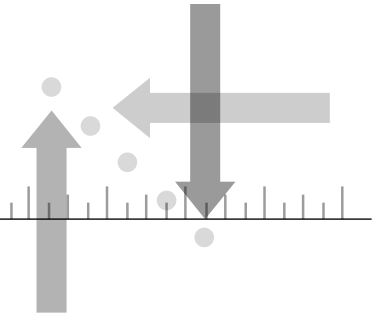
03--Section 3--81-164.indd 93 12/14/11 9:20 AM

written report at the conclusion of each review, or will reviewers be expected to present their findings during a presentation?

Tips for Success

- Develop and maintain a list or inventory of program review experts (especially for larger-scale efforts) to be used for subsequent expert review needs.
- Arrange logistics and provide onsite meeting support. Provide translation and interpretation services, as needed, when engaging international experts.
- Provide experts with specific guidelines or questions that should be used to guide the expert review process.
- Watch out for experts who may have an agenda of their own in completing the review (for example, making recommendations so they can gain future consulting contracts with your organization).
- If you are inviting experts from outside contexts, equip them with some information that will give them insight into the context in which the expert review will take place. This approach is especially important if experts are being invited from foreign countries where cultural and business practices may be significantly different from the context in which your needs assessment is being conducted.
- To the extent possible, schedule the onsite expert's review process during a time when the organization is otherwise functioning in a generally normal way. Scheduling the review process at this time increases the chances that the review will yield relevant results, and it also ensures that others in the organization are not negatively affected by the presence of outside experts.
- Prepare reports on the results of each review. In the reports, identify the relationship of the expert's review to the needs assessment, the goal of the specific expert review, the competencies or expertise of the expert or expert team, the type of expert review conducted, the findings from the expert review, and the potential implications of the findings for the needs assessment.

03--Section 3--81-164.indd 94 12/14/11 9:20 AM



MANAGEMENT OF FOCUS GROUPS

Purpose

The purpose of conducting focus groups is to collect information from a small group (for instance, 5 to 12 participants) in a systematic and structured format (see box 3A.2). An effective focus group is designed around a clear and specific goal. Participants interact with a facilitator who presents the participants with questions designed to yield insight into current or desired results in relation to a specific topic or issue.

Needs Assessment Applications

Attaining the information required to complete a needs assessment will oftentimes require that you interview (or have a focused discussion with) a number of people at the same time. The focus group is an opportunity to gain valuable information related to both current results and desired results at each level of the program or project results chain.

Although focus groups can also be used to identify alternative activities to improve performance, during your needs assessment it is important to

Box 3A.2 Sample Uses of Focus Groups

- Collect information on current performance.
- Validate the results of a survey.
- Define the desired results.
- Identify potential solutions.
- Define strengths and weaknesses of potential solutions.

03--Section 3--81-164.indd 95 12/14/11 9:20 AM

maintain attention (focus) on the collection of information that will help you identify (a) valid needs (or gaps between current and desired results), (b) evidence to support the validation of those needs, and (c) information that will allow you to prioritize needs before selecting a course of action for addressing the high-priority needs.

Advantages and Disadvantages

Advantages

- Through a focus group format, multiple people can be interviewed at one time.
- Focus group discussions allow members of the focus group to build on each other's comments and reactions. This approach can yield a synergy of discussion around topics or themes.
- Focus groups can help people come to consensus and make challenging decisions (such as prioritizing needs).

Disadvantages

- Group members may not contribute equally to the discussion in a focus group format. More reserved members may not feel comfortable inserting their contributions in the discussion. Other participants may try to dominate discussions.
- Gaining information from the group can be challenging. There is a risk of "groupthink" that can emerge through this process, thus diverting the discussion and making it hard to refocus the group on different issues.
- Discussions may take too long to cover all of the relevant topics and to offer everyone a chance to participate.
- Because of the presence of others, participants may not feel comfortable sharing more sensitive information or views.
- Focus groups are often poorly done, particularly if the focus group facilitator is not experienced in managing focus groups. Focus groups can easily get "off task" if the facilitator does not maintain structure and control throughout the process. (For a helpful sample outline and a sample protocol, see pages 101–105.)

03--Section 3--81-164.indd 96 12/14/11 9:20 AM

Process Overview

1. From the list of information required for the needs assessment, identify those elements that may best be attained through focus groups. For instance, identification of needs, validation of needs, root causes of needs, and alternative solutions identification, or a combination of these.

2. Prioritize the information requirements for each focus group, and use this ranking to create a facilitator's guide or protocol for each focus group.

3. Select a decision-making technique for each focus group. Although unstructured focus groups may be useful on limited occasions, more structured techniques are often valuable and can ensure that the focus group provides the information you require for making needs assessment decisions. Here are some sample decision-making techniques that you should consider for small groups:

   a. ***Critical Incident Technique:*** In their responses to focus group questions, participants are asked to provide past events as examples. Each event should include a description of the conditions or context for the event, the people involved in the event, the place of the event, and the associated activities or behaviors of people in the event. The focus of the discussions is then on previous incidents related to the topic rather than on speculations and generalizations.

   b. ***Brainstorming:*** This technique can be used to quickly generate new ideas or to identify and consider alternative solutions to a given problem. To initiate a productive brainstorming session, you should identify the specific topic that you would like group members to concentrate on. Introduce the topic, and encourage group members to brainstorm freely for a given amount of time. Encourage "on-the-spot" thoughts and ideas. Record all contributions from group members (it is helpful to record their thoughts in a format that is visible to all group members, such as a video-projected concept map or a word processing document). Categorize and combine ideas under overarching headings. Analyze and evaluate the ideas with the group, and prioritize the ideas in terms of their usability in the needs assessment.

   c. ***Straw Polls:*** An informal voting method that can be used to quickly probe opinions of participants. Straw polls give all participants the chance to give their opinion through a response such as a "yes" or

03--Section 3--81-164.indd 97 12/14/11 9:20 AM

"no" to a question. It is important to recognize that straw polls are not generally considered to be binding, official votes. Instead, they are used to get a sense of the pulse of a group in relation to a specific issue or theme, and they can orient the subsequent discussion. Straw polls can be used effectively in situations where there is a long list of ideas and where you want the group members to eliminate ideas that have little or no support. The straw poll approach lets each group member choose a given number of items from the list for inclusion or elimination.

d. ***Round Robin Reporting:*** This technique can be implemented in at least two different ways, both of which are based on your having a specific question or suggestion. One approach is to share the question or suggestion with the group members and then to ask all group members to write down their ideas in relation to the question or issue. You next go around the group and have each person take turns to share one idea from his or her list. Continue this process by going around the room until nobody has any ideas left to share. Another approach is to share the question or suggestion with the group and then ask each person to give his or her reactions and ideas in relation to the question or suggestion you presented. In both formats, the round robin approach allows each group member to share equally in the group process, thereby ensuring that no one person dominates the discussion.

4. Create a facilitator's guide or protocol to guide each focus group. Ensure that required information regarding both the current results and the desired results of the needs assessment are represented, along with the required information at each level of the program or project results chain.

5. Locate an experienced facilitator, if possible, as well as a note taker. Using an experienced focus group facilitator will generally lead to better results than if you facilitate the group yourself; however, you may want to be present as a backup note taker during the focus group to capture some of the data firsthand.

6. The facilitator can use the facilitator's guide or protocol to generate a few specific questions that can be used to open the discussion in the focus group (or to come up with the questions, he or she can also consult the information about current and desired results that are based on the needs assessment).

03--Section 3--81-164.indd 98 12/14/11 9:20 AM

7. Schedule a time for the focus group when the highest-priority participants are all available. Verify that you have both a focus group facilitator and a person to take notes during the meeting, that both are available at the scheduled time, and that both understand what is to be accomplished through the focus group. Arrange for an audio recorder so that the facilitator and note taker can verify information from the discussion when later preparing final notes or a report.

8. Implement the focus group session. The facilitator should remind participants to observe confidentiality of information shared. Allow the facilitator to manage the focus group process. If you serve as note taker for the focus group, avoid being tempted to interrupt the group. You are simply there to record data and to observe the focus group.

9. Immediately after the focus group has ended, the facilitator and note taker should verify that all of the essential information from the group has been captured in a written document.

10. If appropriate, run several focus groups. Doing so ensures that you gather enough information for the needs assessment.

Tips for Success

- Have a clear and specific goal for the focus group (in other words, have and maintain a clear focal point rather than an open conversation).
- Engage a facilitator who is experienced in managing focus groups. Focus groups are not as easy to facilitate as you might expect.
- Create a survey to be given out to participants so you can capture information that may not be discussed in the focus group because of time limitations.
- Carefully present each of your questions to the group, and allow the group members a couple of minutes to think about the question and to record their answers.
- Complete a test run of the focus group so you can identify potential problems, changes to questions, or additional materials that should be available to participants.
- After a question has been answered and before moving to the next question, verbally report back a summary of what you heard. This step confirms for the group members that they communicated what they in-

03--Section 3--81-164.indd 99 12/14/11 9:20 AM

tended to, and it allows them to make any suggestions for adjustments in the event that their thoughts were not accurately represented.

- Don't be afraid to ask participants to leave if they are not willing to let others in the focus group participate. After all, the goal of the focus group is to gain multiple perspectives on the issues.
- If you are going to record (by video or audio) the focus group, then be sure to get the consent of all participants. Communicate to the group members what will be done with the video or audio recording of the session (for example, who will listen to it, how it will be stored, how long it will be stored, and so on). Such issues have consequences for how open the group members will feel about sharing their true opinions rather than those that they think you (or the organization) will want to hear.
- Write down any observations that you made during the focus group. For example, note if the audio or video equipment failed, if something unexpected took place, and so on. Such notes may help elucidate comments when you analyze the data that you gathered through the focus group.
- Plan for the focus group to take between 40 minutes and 3 hours.

References and Resources

McClelland, Samuel B. 1994b. "Training Needs Assessment Data-Gathering Methods: Part 3—Focus Groups." *Journal of European Industrial Training* 18(3): 29–32.

Witkin, Belle Ruth, and James W. Altschuld. 1995. *Planning and Conducting Needs Assessments: A Practical Guide*. Thousand Oaks, CA: Sage Publications.

Websites

"Brainstorming Process" is available at http://www.businessballs.com/brainstorming.htm.

"The Focus Group Interview and Other Kinds of Group Activities" is available at http://ppa.aces.uiuc.edu/pdf_files/Focus.pdf.

"Focus Groups—A Needs Assessment Tool" is available at http://www.joe.org/joe/1992spring/tt2.html.

"Small Group Techniques" is available at http://www.fhwa.dot.gov/reports/pittd/smlgroup.htm.

A USAID guide for conducting focus groups is available at http://pdf.usaid.gov/pdf_docs/PNABY233.pdf.

03--Section 3--81-164.indd 100 12/14/11 9:20 AM

Sample: Focus Group Facilitator Outline and Protocol to Identify Factors Leading to Capacity Gaps in Primary Education

This outline will help lead the facilitator through the four key stages of a focus group, as well as serve as a sample protocol for the focus group. The sample protocol has been developed for a series of focus groups with village, provincial, and national administrators involved with the primary education in a developing country that has a mostly rural population. Such focus groups are part of a larger needs assessment study, and they supplement other data collection approaches that have already been completed.

The focus group facilitator should review this facilitator outline with other organizers of the needs assessment. It will be important to determine if all steps and arrangements for running the focus group have been planned and agreed. Modify this outline as necessary.

Sample of Facilitator Outline for Stages of the Focus Group

1. **Opening Remarks**
   - Explain the purpose of the focus group, how it differs from other types of discussions, and how the information will be used.
   - Encourage disagreement and debate over the issues.
   - Clarify that the group does not necessarily need to reach consensus or make decisions.
   - Describe the facilitator's neutral role, discuss issues about confidentiality of information (where appropriate), and solicit participant questions about the process to reduce anxiety.
   - Provide guidance about how the group will operate (for example, having a time frame, talking one at a time, respecting divergent opinions, no one person speaking for the whole group, having cell phones off, not smoking).
2. **Introductions**
   - Invite members to introduce themselves and to describe their role or relationship to the focus group topic.
   - To stimulate group interaction, have each person speak at least once.

03--Section 3--81-164.indd 101 12/14/11 9:20 AM

- Establish the group as a safe, comfortable, nonthreatening context for discussion.
- Stimulate members to begin thinking concretely about the issues at hand.

3. **Leading the Focus Group**
   - Use the focus group protocol, but diverge where there are emergent data or paths to follow.
   - Build on initial questions with follow-up questions. Encourage increasingly deep responses to key questions.
   - Connect emergent data from separate questions into a complex, integrated analysis.
   - Ensure that all participants who want to comment on a question have the opportunity to contribute and to broaden the information collected.
4. **Closing**
   - Signal that the group discussion will end soon.
   - Identify and reiterate key themes that emerged from the discussion. Give participants an opportunity to refine the themes.
   - Summarize and test with the group the relative weight of certain categories of response.
   - Identify differences of perspective, contrasting opinions, and areas of agreement.
   - Allow a round of final comments and insights. Thank participants and describe any next steps.

The focus group facilitator should review this facilitator protocol with other organizers of the needs assessment. It will be important to determine if the protocol questions are appropriate for the potential respondents and if they address the main issues of the needs assessment. Beyond working with the needs assessment organizers and focus group, the facilitator may wish to ask for a review by others who know about the topic of the focus group. Modify this protocol as necessary.

03--Section 3--81-164.indd 102 12/14/11 9:20 AM

Sample of Focus Group Protocol	
Welcome (Where appropriate, modify the script and questions.)	***Script:*** Thank you for agreeing to participate in this focus group today. We have interviewed a number of stakeholders of the education system in our country to identify capacity gaps of the primary education system, and now we want to learn more about the *factors* that are leading to those gaps. We are not here to debate or solve the capacity gaps, though if you have suggestions for how to improve capacity, please note them on a sheet of paper. We will collect those ideas at the end of the session. Here are nine common categories of factors that influence capacity and that we will use to guide our discussion. However, you are welcome to suggest others. • **Performance capability.** Do we have the right people in the right jobs to achieve desired results? • **Knowledge and skills.** Do people know what to do, and are they able to do it? • **Motivation and self-confidence.** Do people have the motivation and confidence to achieve desired results? • **Expectations and feedback.** Do we have formal and informal mechanisms to help people know how they are performing? • **Environment, tools, and processes.** Do we have what is necessary to achieve desired results (for example, policies, guidelines, data systems, computers)? • **Incentives, rewards, and recognition.** Do we encourage good performance and recognize the achievement of desired results? • **Resources.** Do we have the resources to achieve the desired results (for example, budget, time, personnel, buildings, books)? • **Goals, strategy, and organizational culture.** Does everyone know what we are trying to achieve and how we will achieve it? Do we have shared norms, habits, and beliefs? • **Coordination within and among ministries and government agencies.** Are the government agencies coordinating appropriately? • **Other.** Indicate other possible factors.
Do you have any questions regarding our goals of the focus group?	Notes:

03--Section 3--81-164.indd 103 12/14/11 9:20 AM

Questions	
Q1: One of the identified capacity gaps is the high variation in teacher commitment to the jobs (from those highly committed and engaged as teachers, to those frequently absent from work). Of the nine common factors leading to capacity gaps on your handout, which do you find are most responsible for the current gap?	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
Q2: A second of the identified capacity gaps is the uneven and late delivery of textbooks for schools and pupils. Of the nine common factors leading to capacity gaps on your handout, which do find are most responsible for the current gap?	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
	Response:

03--Section 3--81-164.indd 104 12/14/11 9:20 AM

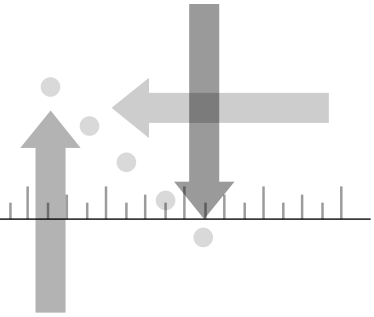
Q3: A third identified capacity gap is the increasing absenteeism among third grade girls in our most rural populations. Of the nine common factors leading to capacity gaps on your handout, which do you find are most responsible for the current gap?	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
Q4: The fourth identified capacity gap is the *[insert gap]*. Of the nine common factors leading to capacity gaps on your handout, which do you find are most responsible for the current gap?	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:
	Response:
	Follow-up question and response:

Note: If you have time remaining, you can cover more remaining capacity gaps. If, however, you are short on time, then start the next focus group with the capacity gaps you were not able to include in this discussion.

Conclusions

Script: Summarize the major factors identified during the conversation, and then ask the focus group members to verify that you accurately interpreted their responses.

03--Section 3--81-164.indd 105 12/14/11 9:20 AM



INTERVIEWS

Purpose

The purpose of conducting interviews is to collect information from a single person through a format that may range from structured, to semistructured, to unstructured.

Needs Assessment Applications

Individual interviews can often provide in-depth context, stories, and discussion related to one or more topics that are pertinent to the needs assessment. Such interviews can be done in an environment where the interviewer can ask for elaboration or explanation with follow-up questions. (For a helpful sample checklist and a sample protocol, see pages 110–115.)

Interviews also offer an opportunity for the interviewee to become familiar with the needs assessment and its objectives. Individuals in positions of influence may also appreciate the additional personal attention that the interview can offer as opposed to a survey or focus group.

Advantages and Disadvantages

Advantages

- Interviews typically allow for more focused discussions and follow-up questions.
- Individuals may offer information in interviews that they wouldn't offer in a group context.
- Interviews can be an excellent source for stories and context.
- The interviewer can observe the nonverbal behavior of an interviewee.

03--Section 3--81-164.indd 106 12/14/11 9:20 AM

Disadvantages

- Time requirements for interviewers and interviewees can be significant.
- Interviews have the potential to reduce the scope and sample for data collection.
- The results of multiple interviews may contradict each other or may be difficult to analyze.
- Interviewees may be biased or may represent only a limited perspective on performance issues and themes.
- Interviews, if not done well, can get off topic and frustrate both interviewer and interviewee (the interviewer can leave without the necessary information to guide his or her assessment; the interviewee can feel that the time was not productive).

Process Overview

1. Create a list of all the information required for completing your needs assessment. Prioritize and align the list of information requirements on the basis of your assessment's objectives and of the participants available for the interviews.
2. Determine what information is required from each interview.
3. Select interviewees who can best provide the information you are looking for in the interviews. Experts are often included as interviewees, but novices should also be considered when questions regarding current (or entry) knowledge and skills are elements in the assessment's considerations.
4. For each interview, create a protocol that will guide the questions that are to be asked.
    a. Determine how structured the protocol should be. A *structured interview protocol* has clearly defined questions and order of questions and can be repeated to elicit the same type of information across different interviewees. A structured interview is preferable when you want to aggregate or generalize information. This approach to interviewing is also preferable when your interviewees are not necessarily experts on a given topic or experienced interviewees (for example, interns seeking to gather information for a needs assessment plan with community

03--Section 3--81-164.indd 107 12/14/11 9:20 AM

leaders). An *unstructured interview* may start with a set of loosely planned questions in the protocol, but the interviewer may alter the questions and the order of questions depending on the information provided by each interviewee. An unstructured interview works best for interviewees who are well-informed about the topic and are able to deviate from a set plan.

b. Determine the types of questions to be included in the protocol. A protocol may include a range of types of questions, including open-ended questions (*What are the possible causes for these identified gaps?*) and closed-ended questions (*Of the six gaps in the handout provided, identify the gap that is most important to address this year*).

c. Leave room in the protocol for the interviewer to take notes during the interview, and include possible follow-up questions to help guide the discussion (see the link in the Websites section of this document for some suggestions on creating an interview protocol).

d. Conduct needs assessment interviews with a formal and systematic process that can be replicated.

e. Ensure that required information regarding both the current results and the desired results of the needs assessment are represented in the protocol, along with the required information at each level of the program or project results chain.

5. Schedule a convenient time and location for the interview. The interview should take place in a friendly location where both the interviewee and interviewer will feel comfortable discussing potentially delicate topics. Describe to the interviewee how the information will be used and the confidentiality of the information provided.

6. Take careful notes during the interview, offering to recap the response of the interviewee whenever there may be confusion. Follow the interview protocol carefully to ensure that you don't have to schedule a second interview to ask questions that may have been skipped. When possible, it is often a good idea to record an interview so you can verify your notes after the interview is complete. Another option is to have a note taker accompany the interviewer.

7. Immediately following the interview review your notes carefully to ensure that you have accurately captured all of the relevant information. If you find any confusion, this is the time to call or e-mail the interviewee to verify information or to ask for clarifications.

03--Section 3--81-164.indd 108 12/14/11 9:20 AM

8. Relate the findings from each interview to other data sources for verification. For instance, if an interviewee quotes a news article or a research report, then it is typically useful to check that resource to ensure that the facts and figures provided by the interviewee were accurate and presented without bias.

Tips for Success

- Create a friendly and open environment by using active listening techniques (such as recapping, paraphrasing, taking notes, and using friendly body language).
- Refrain from asking leading questions (*"I'm sure you agree that . . ."*) or cutting off an interviewee during his or her response. If you are to avoid cutting off interviewees, it is often helpful to include potential follow-up questions as part of the interview protocol.
- Interviewers should not debate or argue with the interviewees. Interviewers are supposed to gather the views of others, not convince the interviewees of the interviewers' views.
- Using the critical incident technique can be a valuable way to differentiate between perceptions and past experiences. Interviewees are asked to provide past events as examples when they respond to specific questions. Each event should include a description of the conditions or context for the event, the people involved in the event, the place of the event, and the associated activities or behaviors of people in the event.
- Take good notes during the interview (or record it, if the participant is agreeable).

References and Resources

Altschuld, James W. 2010. *Needs Assessment Phase III: Collecting Data* (Book 3 of *Needs Assessment Kit*). Thousand Oaks, CA: Sage Publications.

Altschuld, James W., and J. N. Eastmond Jr. 2010. *Needs Assessment Phase II: Getting Started* (Book 2 of *Needs Assessment Kit*). Thousand Oaks, CA: Sage Publications.

McClelland, Samuel B. 1994a. "Training Needs Assessment Data-Gathering Methods: Part 2—Individual Interviews." *Journal of European Industrial Training* 18 (2): 27–31.

Witkin, Belle Ruth, and James W. Altschuld. 1995. *Planning and Conducting Needs Assessments: A Practical Guide*. Thousand Oaks, CA: Sage Publications.

03--Section 3--81-164.indd 109 12/14/11 9:20 AM

Websites

"Getting the Lay of the Land on Health: A Guide for Using Interviews to Gather Information" is available at http://www.accessproject.org/adobe/getting_the_lay_of_the_land_on_health.pdf.

"Information Brief: Developing Interview Protocols" is available at http://www.neirtec.org/evaluation/PDFs/PreparingtoCollect5.pdf.

A sample interview protocol is available at http://www.ceismc.gatech.edu/MM_Tools/NIP.html.

A tip sheet on asking open-ended and probing questions is available at http://ppa.aces.uiuc.edu/pdf_files/Asking1.PDF.

A tip sheet on conducting key informant interviews is available at http://ppa.aces.uiuc.edu/pdf_files/Conducting1.PDF.

Tips for using individual interviews as a surveying technique are available at http://ppa.aces.uiuc.edu/pdf_files/Tips.PDF.

The USAID article on conducting needs assessment interviews is available at http://pdf.usaid.gov/pdf_docs/PNABS541.pdf.

Samples of Interview Preparation Checklist and Interview Release Agreement

Interview Preparation Checklist

- ☐ On what basis was this interviewee selected?
- ☐ Do I have the time and location of the interview?
- ☐ What do I know about the interviewee (title, experiences, background, and so on) ?
- ☐ Has the interviewee been sent information on the topic and focus of the interview?
- ☐ Should the interview questions be sent to the interviewee before the interview?
- ☐ Will the interview use closed-ended questions, open-ended questions, or a combination of both?
- ☐ Do I have some sample follow-up questions identified for each interview question?
- ☐ What information must I get from the interview?
- ☐ What information would it be nice to get, but is not necessary, from the interview?

03--Section 3--81-164.indd 110 12/14/11 9:20 AM

- ☐ Are there documents I should ask for at the end of the interview (reports, files, and so on)?
- ☐ How will I take notes during the interview?
- ☐ Will I record the interview? If so, have I checked the batteries in the recorder? Have I asked the interviewee for permission to record the interview? (See the generic interview release agreement that follows.)
- ☐ How will I transcribe the interview recording (or notes)? Will I have time immediately after the interview to reflect on the answers and to take additional notes?

03--Section 3--81-164.indd 111 12/14/11 9:20 AM

Sample Interview Permission or Release Form

(Organization)
(Address)

_____("Interviewer") has informed me that he or she is gathering research for a needs assessment and related Assessments on the subject of _____ (collectively "the Assessment") and has asked me to grant interviews and to otherwise cooperate with the Interviewer in connection with the Assessment.

To assist the Interviewer in preparing the Assessment, I have agreed to be interviewed and to provide information and other materials to be used in connection with the Assessment, including personal experiences, remarks, and recollections, as well as any other documents that I may choose to give to the Interviewer ("the Interview Materials").

I hereby grant and assign to the Interviewer and his or her licensees, successors, and assigns the following rights in connection with the Interview Materials for use as part of the Assessment in any and all reports, versions, and media in perpetuity throughout the world. Indicate your agreement with any of these statements below by checking the boxes and initialing your name next to each agreed item.

☐ The right to **quote or paraphrase using my name** all or any portion of the Interview Materials and to generally use and publish the Interview Materials, including my experiences, recollections, incidents, remarks, and information, as well as any other documents that I may give to the Interviewer.

-- OR --

☐ The right to **anonymously quote or paraphrase** all or any portion of the Interview Materials and to generally use and publish the Interview Materials, including my experiences, recollections, incidents, remarks, and information, as well as any other documents that I may give to the Interviewer in manner where my identity is protected.

☐ The right to use my name, image, voice, likeness, and biographical data.

☐ The right to develop, produce, and distribute the Assessment in any manner that the Interviewer deems appropriate. I understand and acknowledge that the Interviewer's company (which may be the same as mine) will be the sole owner of all copyright and other rights pertaining to the Assessment.

To enable the Interviewer to develop the Assessment in any manner deemed best, I hereby release and discharge the Interviewer and his or her licensees, successors, and assigns from any and all claims, demands, or causes of action that I may have against them by reason of anything contained in the Assessment, or any of the above uses, including any claims based on the right of privacy, the right of publicity, copyright, libel, slander, or any other right.

I acknowledge and agree that I am not entitled to receive any form of payment from the Interviewer or from his or her licensees, successors, and assigns.

Agreed and confirmed:

_____ _____
Printed Name Date

_____ _____
Signature Date

03--Section 3--81-164.indd 112 12/14/11 9:20 AM

Sample of Interview Protocol

Interview Protocol to Identify Teachers' Capacity Gaps in Classroom Teaching Skills and Behaviors

Instructions: Use this protocol to interview principals from provincial schools. The purpose is to obtain information about capacity gaps that teachers have in the area of classroom teaching skills and behaviors.

Introduction	
Welcome (Where appropriate, modify the script and questions.)	***Script:*** Thank you for agreeing to participate in this interview. You are one principal in our sample of 58 principals who are from across the country and were selected to provide information on the topic discussed today. In this interview, we will focus on identifying the challenges and capacity gaps that exist among your teachers in the area of classroom teaching skills and behaviors. This interview is part of a broader needs assessment sponsored by the national ministry of education. The overall needs assessment is being conducted so people can understand capacity development issues in the education system—not just related to teachers' skills and behaviors—and then can make decisions on how to address the issues. The information that you provide will not be attributed directly to you.
Do you have any questions regarding our goals?	Notes:
Questions	
Q1. How many years have you served as a principal?	
Q2. How many years have you served as a principal in this school?	

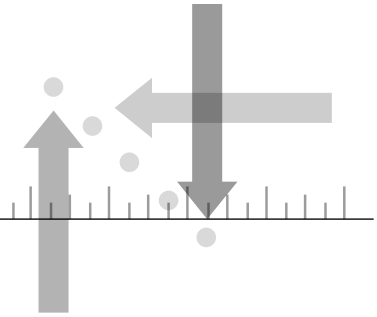
03--Section 3--81-164.indd 113 12/14/11 9:20 AM

Q3. What is your highest level of education?	☐ High school or secondary education or lower ☐ Basic university level (for example, associate's degree, Tecnicatura, and so on) ☐ Intermediate university level (for example, bachelor's degree, Licence, Licenciatura, and so on) ☐ Master's degree level or equivalent (for example, Master of Business Administration, Maîtrise, Maestria, and so on) ☐ Postmaster's level or equivalent (for example, All But Dissertation and so on) ☐ Doctorate level or higher ☐ Other: Please specify and describe it with regard to the earlier list
Q4. As a school principal, describe your work.	
Q5. How many teachers do you supervise?	
Q6. How many students were enrolled in the school at the beginning of the year (indicate start date of school year)?	
Q7. How many students are currently enrolled in the school now (indicate date)?	

03--Section 3--81-164.indd 114 12/14/11 9:20 AM

Q8: Drawing on your experiences, can you describe the two or three major capacity gaps related to your teachers' classroom teaching skills and behaviors that limit your school and your province in achieving their educational goals?	Response:
	Follow-up question and response:
Q9: What do you believe are the causes of each of the capacity gaps that you identified in the previous question?	Response:
	Follow-up question and response:
Q10: Are there other challenges that you believe limit the capacity of your province to achieve its educational goals?	Response:
	Follow-up question and response:
Q11: Can you recommend anyone I should meet with to identify related capacity gaps?	Response:
	Follow-up question and response:
Conclusions	
Review	***Script:*** Summarize the major capacity gaps identified from the conversation, and then ask the interviewee to verify that you accurately interpreted the responses.

03--Section 3--81-164.indd 115 12/14/11 9:20 AM



DUAL-RESPONSE SURVEYS

Purpose

The purpose of conducting dual-response surveys is to collect information from a large number of people—typically located in multiple locations—regarding their perspectives on both current and desired performance.

Needs Assessment Applications

Surveys are commonly used for needs assessments, but many types of surveys are available to you. The dual-response survey might be a new tool for you to consider. Surveys can be useful tools for needs assessments because they are relatively easy to develop, their data usually can be clearly transformed into useful information, and surveys (especially web-based ones) can easily be distributed to both large and small groups. Because surveys can require less time to complete than interviews or focus groups, and because they can be sent to people at other locations, they are often used in needs assessments (as well as in needs analyses).

Whereas the traditional single-response survey is a data collection tool used in a variety of organizational activities—such as opinion polling and evaluation—the dual-response survey format provides significant benefits over traditional single-response tools in completing a needs assessment. The dual-response survey, as presented here, collects information regarding both the *current* and *desired* performance, thereby providing clear data regarding the size, direction, and relative priority of performance gaps (or needs). This type of survey gives you more options for analyzing data than does its single-response counterpart, and it provides valuable information that is essential to the unique goals of a needs assessment.

03--Section 3--81-164.indd 116 12/14/11 9:20 AM

Advantages and Disadvantages

Advantages

- A needs assessment survey allows you to capture the perspectives of multiple groups on a variety of performance-related topics.
- The dual-response format allows the needs assessment survey to simultaneously capture data regarding both the current and the desired levels of performance. Too often needs assessments assume that the desired performance is known and agreed upon by everyone in the organization when in reality this assumption is rarely the case.
- The dual-response format gives you multiple ways to view, analyze, and report on findings, including the size of the needs, the direction of the needs, and the relative priority that participants associate with the needs.
- Surveys offer a variable format where you can ask a few questions or many questions, and likewise you can ask open-ended or closed-ended questions.

Disadvantages

- Survey data are frequently confused with performance data. It is important to remember that survey data rely on the perceptions of those completing the survey. Thus, while a respondent may indicate that his or her perception is that performance is high, the reality may be that performance is low. Nevertheless, knowing the perceptions of those participating in the needs assessment is essential to making informed decisions.
- Many organizations frequently use surveys; as a result, employees can get "burned out" on completing surveys. This reaction can reduce your response rate, increase the number of respondents who complete only part of the survey, or otherwise compromise the integrity of your survey results.
- Surveys do not give you the opportunity to ask follow-up questions to respondents (unlike interviews or focus groups).
- Although surveys may seem easy to prepare, they are often developed poorly. Therefore, it is important to have an experienced survey developer involved in the process of developing a survey, assisting in survey development, determining the survey analysis approach, or reviewing the survey.

03--Section 3--81-164.indd 117 12/14/11 9:20 AM

Process Overview

1. Drawing from the list of information required for the needs assessment, create a list of the information that you expect to gain from the needs assessment survey. The focus of developing an effective needs assessment survey should always be on the information required to make decisions. This focus will prevent you from asking questions that don't get used in subsequent decision making. (For helpful sample templates to serve as job aids, see pages 125–126.)

2. Create your needs assessment survey for a target audience. Also, consider using multiple versions of a survey to target different audiences or stakeholders. Surveys frequently are best used to collect information from a larger number of people than you would potentially invite for an interview or a focus group.

3. Identify questions to include in your needs assessment. Questions should focus on results and performance, rather than on what resources or changes participants may want. In the Tips for Writing Good Survey Questions section of this tool are many ideas on how to write successful survey questions.

4. Create the survey using the dual-response format. Multiple sections within a single survey can also use different response scales—you simply must clearly communicate those differences to the survey respondents. Table 3A.1. provides examples of three types of rating scales: agreement, satisfaction, and frequency. You can change the associated responses with each level of the Likert-type scales to represent appropriate responses for the questions in your assessment (see example in table 3A.1).

5. Pilot test your survey with participants who are representative of your target audience. When participants have completed the draft survey, calculate the results to ensure that you can use the information attained from each question. Typically, responses to some questions do not provide the useful information you were looking for; thus, changes must be made to the survey.

6. Needs assessment surveys can be done in a variety of formats and media depending on the target audience. Web surveys can easily be created, distributed, and analyzed using Internet-based survey systems. Paper-based surveys can also be effective, especially if members of your target audience may not have access to technology or have the computer skills necessary for completing an online survey. Select the format that you believe

03--Section 3--81-164.indd 118 12/14/11 9:20 AM

Table 3A.1 Examples of Different Rating Scales

Agreement: *1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree*

Current performance	Survey question	Desired or optimal performance
① ② ③ ④ ⑤	Does the subway usually get me to where I am going on time?	① ② ③ ④ ⑤

Satisfaction: *1 = Very Dissatisfied; 2 = Dissatisfied; 3 = Neutral; 4 = Satisfied; 5 = Very Satisfied*

Current performance	Survey question	Desired or optimal performance
① ② ③ ④ ⑤	What is my overall satisfaction with the subway service provided by the city?	① ② ③ ④ ⑤

Frequency: *1 = Daily; 2 = Weekly (3–6 times per week); 3 = Occasionally (3–6 times per month); 4 = Sometimes (less than 3 times per month); 5 = Rarely (once a month to never)*

Current performance	Survey question	Desired or optimal performance
① ② ③ ④ ⑤	Does the subway have mechanical failures during my trips?	① ② ③ ④ ⑤

will give you the highest return rate of completed surveys. Ideally, you would want at least 50 percent (often more) of the surveys you send out to be completed. The higher the return rate, the more confidence you can have that your survey results represent the perspectives of the target audience. For national level, highly sensitive, or other important needs assessments, you will want to consult with a statistician about minimum response rates.

7. The data from a dual-response needs assessment can be analyzed using four analysis approaches—discrepancy, direction, position, and demographic differences—to inform decision making. See table 3A.2 for an example of responses from a single survey taker. See table 3A.3 to review how this survey taker's responses would be analyzed using the four analysis approaches.

Analysis 1: Discrepancy

For each question of the needs assessment survey, you should perform a gap analysis by subtracting the value assigned to the *current* column from

03--Section 3--81-164.indd 119 12/14/11 9:20 AM

Table 3A.2 Example of a Completed Survey

Instructions: Indicate your level of agreement with the survey questions below. Note that desired or optimal performance ratings should be taken in consideration of costs (financial, and other costs) associated with achieving optimal performance. Therefore, take care to avoid giving all responses a rating of 5. (Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree)

Current performance	Survey question	Desired or optimal performance
① ❷ ③ ④ ⑤	a. Does the subway usually get me to where I am going on time?	① ② ③ ❹ ⑤
① ② ③ ❹ ⑤	b. Does the subway station have an adequate number of employees at each station to serve my needs?	① ② ❸ ④ ⑤
❶ ② ③ ④ ⑤	c. Can the subway audio system be heard easily in all train cars?	① ② ❸ ④ ⑤
① ❷ ③ ④ ⑤	d. Is the subway system operated safely?	① ② ③ ④ ❺

the value assigned to the *desired* column (see table 3A.2). The results of this analysis will identify discrepancies between the *current* and *desired* performance for each variable associated with the performance system. The size of the gap can provide valuable information in determining the perceived acuteness of the need or the extent to which opportunities can be capitalized upon.

The results of this analysis are, however, necessary rather than sufficient for quality decision making. Alone, these results provide only isolated values (data points) that must be put into context through their relationships with the three other analysis approaches.

Analysis 2: Direction

For each question, the positive or negative value of the gap should be identified to differentiate needs (when desired is greater than current) from opportunities (when *what is* (WI) is greater than *what should be* (WSB).

- Positive discrepancies between *desired* and *current* (for example, desired = 5, current = 3, gap = 2 identifies a **need**.
- Negative discrepancies between *desired* and *current* (for example, *desired* = 3, *current* = 4, gap = –1) identifies an **opportunity** (for instance, to reallocate resources).

03--Section 3--81-164.indd 120 12/14/11 9:20 AM

Table 3A.3 Example of an Analysis of the Completed Survey

Instructions for the survey analyst: For each item, tabulate the gap size by subtracting the current performance from the desired performance. Gap direction will be determined by whether the difference between desired and current performance is positive, negative, or neutral. Once this direction is determined, indicate in the next cells whether the response represents (a) a need, opportunity, or neither and (b) whether the position or priority in addressing the need or opportunity is low, medium, or high. The "analyst comments" column is to be used for summarizing the lengthier comments by the respondent. The example in the table provides analysis for one single respondent, but usually there are many more respondents. Thus, analyzing and aggregating results on a computer spreadsheet is advised.

Survey question	Gap size: ***desired – current performance*** Gap direction: ***positive = need; negative = opportunity***	Need or opportunity	Position or priority	Analyst comments
a. Does the subway usually get me to where I am going on time?	+2	*Need*	Medium	The respondent recommends a reduction in schedule delays. (+2 points: need)
b. Does the subway station have an adequate number of employees at each station to serve my needs?	–1	*Opportunity*	Low	There may be an opportunity to reduce the number of employees at stations during nonpeak hours. (–1 point: opportunity)
c. Can the subway audio system be heard easily in all train cars?	+2	*Need*	Medium	The respondent noted difficulties in hearing the conductor. (+2 points: need).
d. Is the subway system operated safely?	+3	*Need*	High	The respondent indicated a problem with proper door closing during crowded periods. Safety hazard—requires immediate attention. (+3 points: need)

The distinction between needs and opportunities provides a context for discrepancy data, which by itself illustrates only the size of the gap between *current* and *desired* performance. By examining the direction of the discrepancy, decision makers can consider which gaps illustrate needs that have the potential to be addressed through organizational efforts and which gaps

03--Section 3--81-164.indd 121 12/14/11 9:20 AM

identify opportunities that the organization may want to leverage (or maintain) to ensure future success.

Analysis 3: Position (that is, relative priority)

The position analysis illustrates the relative importance or priority of discrepancies from the perspective of the respondents. Although many gaps between *WSB* and *WI* may have equivalent discrepancies and may be in the same direction, the position of the discrepancy on the Likert scale of the instrument can demonstrate the relative priority of the discrepancy in relation to other gaps.

For example, two needs may be identified with a discrepancy of +3, but the first need illustrated a gap between WSB = 5 and WI = 2, whereas the second need illustrated a gap between WSB = 3 and WI = 0. As a result, the interpretation of these discrepancies in relation to each other would indicate a perceived prioritization of the first need over the second. This information can be valuable in selecting which discrepancies are addressed when resources are limited.

Together, three types of analysis (discrepancy, direction, and position) can offer valuable data for identifying and prioritizing needs.

Analysis 4: Demographic Differences (optional)

You may want to view the results of your needs assessment survey on the basis of demographic differences (for example, division, location, position type, or years of experience). Analysis of the results can be reviewed by demographic variables if items related to the desired demographic categories are added to the instrument. If your organization has collected data regarding the demographics of respondents to the survey, then you should complete an analysis for *discrepancy*, *direction*, and *position* for each demographic on a section, subsection, or item basis, depending on the level of information required for decision making.

Tips for Success

- An abundance of literature exists about survey development, implementation, and analysis. Developing surveys is not as easy as it may seem, so consult survey literature and survey developers when preparing your survey.

03--Section 3--81-164.indd 122 12/14/11 9:20 AM

- You should pilot test any survey questions with representatives from the target audience.
- Before releasing your survey, plan ahead on how you will analyze the results.
- If you have diverse audiences, you should not try to write one survey that fits all audiences.
- You must plan to follow up with participants who have not completed the survey after a few days so you can remind them of the importance of their participation.
- If you must have survey results from an important stakeholder group to be able to make informed decisions, you should oversample that group to ensure that you get enough responses. In other words, if you want 50 returned surveys, then you would send out 200 surveys to the group in hopes of getting at least a 25 percent response rate rather than sending out 100 surveys with hopes of getting a 50 percent response rate.

Tips for Writing Good Survey Questions

- Ensure a common understanding.
- Start with the more interesting questions for the audience.
- Don't try to impress participants with big words.
- Don't write leading questions.
- Avoid double negatives or questions with multiple meanings.
- Stay focused: don't ask more questions than you require for making decisions.
- Put your questions in a logical order (for example, use sections or topic area headlines to organize questions).
- Verify that questions make sense for both response columns (current and desired).
- Don't let your survey get too long (for example, it should take participants no more than 15 minutes to complete).

References and Resources

Altschuld, James W. 2010. *Needs Assessment Phase III: Collecting Data* (Book 3 of *Needs Assessment Kit*). Thousand Oaks, CA: Sage Publications.

03--Section 3--81-164.indd 123 12/14/11 9:20 AM

Altschuld, James W., and J. N. Eastmond Jr. 2010. *Needs Assessment Phase I: Getting Started* (Book 2 of *Needs Assessment Kit*). Thousand Oaks, CA: Sage Publications.

Kaufman, Roger, Ingrid Guerra-López, Ryan Watkins, and Doug Leigh. 2008. *The Assessment Book: Applied Strategic Thinking and Performance Improvement Through Self-Assessments*. Amherst, MA: HRD Press.

Websites

An inexpensive and easy-to-use survey development and deployment tool can be found at http://www.surveymonkey.com.

Another site that offers complete online survey services, including the development, deployment, and analysis of dual response and traditional surveys, is at http://www.evaluationsolutions.com.

03--Section 3--81-164.indd 124 12/14/11 9:20 AM

Samples of Job Aids

Survey Template

Satisfaction Scale: *1 = Very Dissatisfied; 2 = Dissatisfied; 3 = Neutral; 4 = Satisfied; 5 = Very Satisfied*

Sample Instructions: Indicate your level of agreement with the survey questions in the table. Note that desired or optimal performance ratings should be taken in consideration of costs (financial and other costs) associated with achieving optimal performance. Therefore, take care to avoid giving all responses a rating of 5. (Scale: *1 = Very Dissatisfied; 2 = Dissatisfied; 3 = Neutral; 4 = Satisfied; 5 = Very Satisfied*)

Current performance	Survey question	Desired or optimal performance
①②③④⑤	a.	①②③④⑤
①②③④⑤	b.	①②③④⑤
①②③④⑤	c.	①②③④⑤

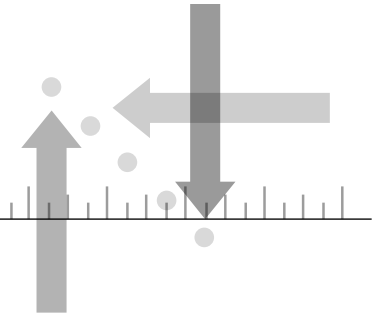
Analysis Template

Instructions for the survey analyst: For each item, tabulate the gap size by subtracting the current performance from the desired performance. Gap direction will be determined by whether the difference between desired and current performance is positive, negative, or neutral. Once this direction is determined, indicate in the next cells whether the response represents (a) a need, opportunity, or neither and (b) whether the position or priority in addressing the need or opportunity is low, medium, or high. The "analyst comments" column is to be used for summarizing the lengthier comments by the respondent. The example in the table provides analysis for one single respondent, but usually there are many more respondents. Thus, analyzing and aggregating results on a computer spreadsheet is advised.

03--Section 3--81-164.indd 125 12/14/11 9:20 AM

Survey question	Gap size: ***desired – current performance*** Gap direction: ***positive = need; negative = opportunity***	Need or opportunity	Position or priority	Analyst comments
a.	0 1 2 3 4 5 Positive or Negative	Need or Opportunity	High Medium Low	
b.	0 1 2 3 4 5 Positive or Negative	Need or Opportunity	High Medium Low	
c.	0 1 2 3 4 5 Positive or Negative	Need or Opportunity	High Medium Low	

03--Section 3--81-164.indd 126 12/14/11 9:20 AM



SWOT+

Purpose

The purpose of conducting a SWOT is to identify, organize, and prioritize the strengths, weaknesses, opportunities, and threats (or SWOTs) that influence the planning, design, development, implementation, and evaluation of almost any program or project.

Needs Assessment Applications

Identifying a list of SWOTs is a common brainstorming technique used in organizational planning. Developing a list alone, however, rarely provides the useful information required to guide a needs assessment. Instead, you should combine the benefits of brainstorming with an approach that defines the relationships among the identified SWOT factors, and then you should use those relationships to guide decisions about what to do next.

The resulting SWOT+ technique asks SWOT informants to assign values to each of the items on the SWOT list. Thus, in certain cases, the items on the list that are of highest value may be acted on first, and the items with lesser importance might need to be recognized but never acted on.

Advantages and Disadvantages

Advantages

- A SWOT builds on the value of a process that is already familiar in most organizations.

03--Section 3--81-164.indd 127 12/14/11 9:20 AM

- SWOT factors are prioritized in relation to other SWOT factors, rather than simply listed and given equal value.
- A SWOT engages a group in defining the relationship among SWOT factors.

Disadvantages

- Assigning of values to each SWOT factor can be challenging for group members.
- Additional time is required to move from the SWOT factors to their relationships to the recommendations about what should be done next.

Process Overview

1. Decide on a focus for your SWOT+ analysis. For instance, are you looking for SWOT factors that influence just your project or unit, or SWOT factors that affect the entire organization? This context will provide boundaries for the discussion and will help you identify SWOT factors that will best guide your needs assessment.
2. Identify internal and external stakeholders for the SWOT analysis. These partners should represent an array of perspectives around the performance issue at the center of your needs assessment.
3. In a meeting (or by e-mail), have group members identify SWOT factors from their perspectives. In most situations, begin your SWOT analysis by asking participants to simply brainstorm ideas to fit into the following four categories:

   Strength: An internal competence, valuable resource, or attribute that an organization can use to exploit opportunities in the external environment

   Weakness: An internal lack of a competence, resource, or attribute that an organization requires to perform in the external environment

   Opportunity: An external possibility that an organization can pursue or exploit to gain benefit

   Threat: An external factor that has the potential to reduce an organization's performance

03--Section 3--81-164.indd 128 12/14/11 9:20 AM

4. When you have identified an adequate number of SWOT factors (6 to 10 per category is typically enough), sort them into a SWOT matrix (see table 3A.4).
5. To enhance the SWOT factors, ask the group members to define their relative value or importance within the context. Do this by using a continuum along each of the X and Y axes of your SWOT matrix (see figure 3A.1). Use the continuum of internal-to-external control for the X axis and the asset-to-liability continuum for the Y axis. Individual factors can then be plotted within the matrix according to their relationships to other factors.
6. Place a mark (for example, S1, S2, and so on) for each SWOT factor where it intersects along the two continuums, thus defining its relationship to other SWOT factors. Figure 3A.1 shows how value assignments were given to each item on the SWOT list (from table 3A.4) and were plotted on the matrix.
7. Use the plotted SWOT factors to determine which factors should be fixed immediately, which should be improved on over time, which should be sustained, and which should be monitored (see figure 3A.1).

Table 3A.4 Traditional SWOT Matrix

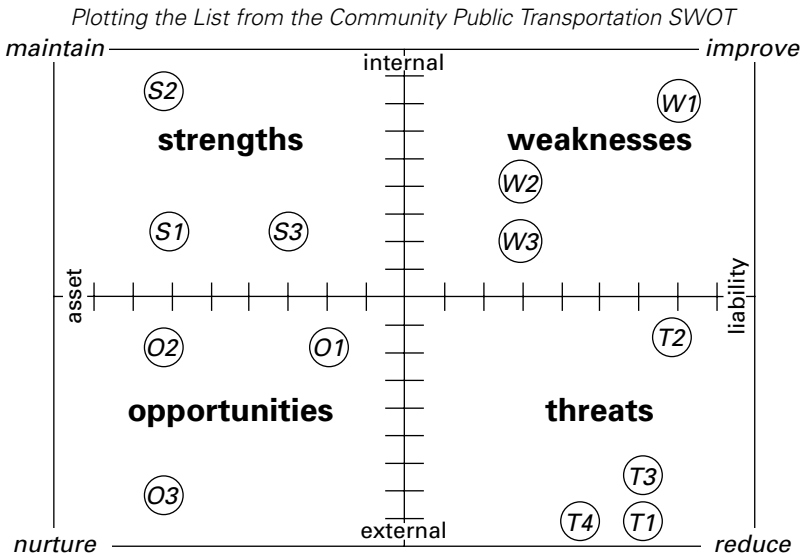
SWOT Analysis

Community Public Transportation SWOT

Strengths	***Weaknesses***
S1 = Four new subway stations have been completed in the past year; three more are expected in the next two years.	W1 = Approximately 18% of subway and bus mechanics are expected to retire in the next five years.
S2 = There is a growing demand—a 15% increase in subway riders in the past year.	W2 = Development of new bike lanes in the city center has been delayed.
S3 = The past year saw a 3% increase in "overall satisfaction" among subway riders.	W3 = Increased subway and bus fees have reduced the ability of poorer citizens to afford public transportation.
Opportunities	***Threats***
O1 = Increasing fuel costs may push more people to public transportation.	T1 = Increasing fuel costs increase bus costs.
O2 = Biking and walking to work are becoming more popular.	T2 = The roads in the city center are clogged during rush hours, increasing commuting times and delaying bus schedules.
O3 = National subsidy is possible to help finance reduced fee transit cards for elderly and disabled populations.	T3 = Labor costs are increasing.
	T4 = Delays in delivery of new buses and subway cars from manufacturers are averaging 4–6 months behind schedule.

03--Section 3--81-164.indd 129 12/14/11 9:20 AM

Figure 3A.1 Expanded Versions of the SWOT Matrix (SWOT+)



Note: The letters and numbers within the quadrants correspond to information provided in table 3A.4.

8. With each SWOT factor plotted into the matrix from table 3A.4 , prioritize the factors in order of importance for achieving desired performance objectives.
9. Use the prioritized list of SWOT factors to guide your decisions. You can see that with this information visually plotted, the participants can go a step further and can discuss the relationship among the items plotted; (a) which items to act on and in what order and (b) which items can possibly be monitored for now, but perhaps never acted on.

Tips for Success

- When identifying SWOT factors, use an open brainstorming process that allows all participants to share their ideas.
- Avoid ambiguous SWOT factors; link each factor to a specific and measurable indicator to ensure that everyone is using the same operational definition of the factor.

03--Section 3--81-164.indd 130 12/14/11 9:20 AM

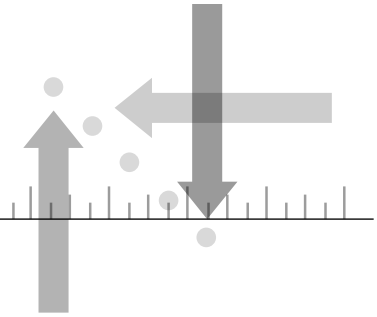
- Work to build consensus around the placement of SWOT factors within the matrix; keep in mind that often there are many opinions about where individual factors should go on the continuums of internal–external and asset–liability.

References and Resources

Leigh, Doug. 2006. "SWOT Analysis." In *The Handbook of Human Performance Technology*, edited by J. Pershing, 1089–1108. San Francisco, CA: Jossey-Bass/Pfeiffer.

Watkins, Ryan. 2007. *Performance by Design: The Systematic Selection, Design, and Development of Performance Technologies That Produce Useful Results.* Amherst, MA: HRD Press, and Silver Spring, MD: International Society for Performance Improvement.

03--Section 3--81-164.indd 131 12/14/11 9:20 AM



WORLD CAFÉ™ (WITH "SPEED DATING" VARIATION)

Purpose

The World Café is a format for collaborative conversations designed to yield deeper insights into pressing collective issues. The collaborative conversations bring together stakeholders in group settings to formulate directions (or ideas, opinions, and so on) concerning needs, next steps, and solutions.

Needs Assessment Applications

The World Café format has gained in popularity over recent years because it is an easy approach to gathering information through collaboration; also it is a generally quick and usually fun process. (See http://www.theworldcafe.com for more information on the approach.) The following discussion draws on the trademarked World Café approach, but it has been adapted for needs assessment purposes.

When used in a needs assessment context, the World Café approach offers a useful, fluid framework for structuring a productive, problem-solving discussion among a group of participants who typically would have diverse perspectives (but, in many cases, they could have shared or common perspectives). Because of the way in which the conversations are structured, participants circulate about the room, cross-pollinating ideas and building upon one another's suggestions. This approach lends itself well to needs assessment because it can provide unique opportunities for gathering information when other techniques would not be appropriate, viable, affordable, or useful.

03--Section 3--81-164.indd 132 12/14/11 9:20 AM

Advantages and Disadvantages

Advantages

- This approach can be used with a large and diverse group of participants and stakeholders.
- A collaborative setting allows for transparent decision making.
- The approach can yield more nuanced data and findings than can structured interviews or focus groups.
- The flexible technique can be applied in many settings and for different objectives.

Disadvantages

- The "results" of World Café sessions are subject to interpretation.
- The findings of this approach will depend largely on which stakeholders participate.
- The approach requires substantial advance planning for determining key discussion questions.

Process Overview[1]

1. Have organizers determine in advance the targeted questions that will address the key objectives for holding the World Café.
2. Seat groups of four or five people at small tables or in clusters. Each table is led by a host who has been given some guidance about duties of facilitating the table work.
3. Set up progressive (usually three) rounds of conversation of approximately 20–30 minutes each.
4. Encourage both table hosts and members to write or draw key ideas using the markers and paper provided.
5. When groups have completed the initial round of conversation, ask one person to remain at the table as the host while the other group members become ambassadors. Ambassadors carry key ideas, themes, and questions from their first group into their new conversations.

03--Section 3--81-164.indd 133 12/14/11 9:20 AM

6. Ask the table host to welcome the new guests and to briefly share the main ideas, themes, and questions of the initial conversation. Encourage the ambassadors to link and connect ideas coming from their previous table conversations as they listen carefully and build on each other's contributions.
7. In the third round of conversation, either have people return to their first table or have them continue traveling to new tables. Sometimes facilitators will add a new question in the third round of discussion to help deepen the exploration.
8. After several rounds of conversation, initiate a period of whole-group discussion.

Tips for Success

- Clarify your purpose, and keep in mind the reason for gathering your group. Design the session with targeted questions and issues in mind.
- As an important component of the World Café approach, create a welcoming environment so participants can share their ideas. Consider how your invitation and the meeting's location will contribute to a hospitable atmosphere.
- Have your World Café explore only one question or a set of related questions. Remember that choosing questions that are of central importance to your meeting objectives and, for that matter, to your participants can produce powerful results.
- Importantly, encourage participants to be active contributors of their ideas and perspectives while allowing those who wish to participate by simply observing to do so.
- Remember that in the World Café design, participants circulate about the large group and take ideas from each small group's discussion to the next table as they become ambassadors. Typically, one participant stays behind as a host, sharing the previous group's ideas with the new arrivals. By using the center of the small-group tables as spaces for drawing with markers, your facilitators and hosts can draw attention to the illustrations and diagrams created as an example of a shared, collaborative vision.
- Encourage participants to sharpen their listening skills as they go into the World Café. Encourage participants (a) to listen rather than plan

03--Section 3--81-164.indd 134 12/14/11 9:20 AM

their response to the current speaker, (b) to be open to being influenced by another's ideas, (c) to listen for deeper questions and insights that may emerge in the group discussion, and (d) to listen for what questions are not being asked or for what is not being spoken.

- To tie in the whole group's progress, first ask each table to spend a few minutes brainstorming about what has emerged in their World Café rounds that has been most meaningful. Depending on the range of ideas that have emerged, the ambassadors and table participants might want to prepare a summary list of the ideas. The list could include those items that were suggested frequently, but it could also include ideas that were suggested less often but that could represent an important and perhaps underrepresented view. Because the World Café is meant to collect expansive ideas around an issue, under many circumstances it will be useful to think beyond the "top five" type of items and to dig deeper about items that were not suggested as frequently. After this period, begin a whole-group discussion. Perhaps tailor this exercise into thematic clusters by asking people from each table to share one thing that they found new or surprising, and then asking others to share ideas and observations that build on that one thing. Ask the whole group the following questions:
  - If there were a single voice in the room, what would the group say are the key takeaways?
  - What deeper questions are emerging as a result of these conversations?
  - Do we notice any patterns emerging? If so, what do these patterns point to?
  - What do we now see and know as a result of these conversations?

"Speed Dating" Variation

As with speed dating events—where single adults meet to have timed interactions with other singles so they can determine if there is a match—adding a similar set of timed and focused conversations among pairs of participants can be a useful variation of World Café. The same general World Café setup would occur, but instead of starting with small groups for 20 minutes, you would start with paired participants talking and brainstorming together for about 5 to 8 minutes.

03--Section 3--81-164.indd 135 12/14/11 9:20 AM

Following two or three rounds of the paired conversations, you would then begin the process of sharing ideas on white boards or through index cards handed to a facilitator. This information would then be collapsed into the whole-group session of the World Café. This variation on the format allows for more sharing by each participant and potentially for an even deeper conversation on issues (with a reduced threat that a single person would dominate a group conversation).

Notes

1. Based in part on "Café to Go" in World Café (2008) at http://www.theworldcafe.com/pdfs/cafetogo.pdf.

References and Resources

Brown, Juanita, and David Isaacs. 2005. *The World Café: Shaping Our Futures through Conversations That Matter*. San Francisco, CA: Berrett-Koehler Publishers.

Brown, Juanita, David Isaacs, Eric Vogt, and Nancy Margulies. 2002. "Strategic Questioning: Engaging People's Best Thinking." *The Systems Thinker* 13 (9).

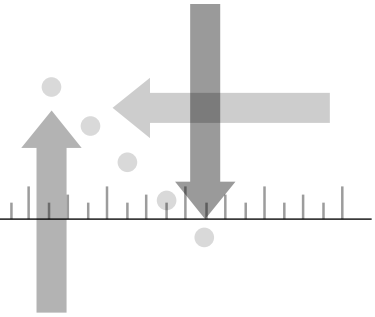
Brown, Juanita, David Isaacs, Nancy Margulies, and Gary Warhaftig. 1999. "The World Café: Catalyzing Large-Scale Collective Learning." *Leverage Magazine* (33): 1–2.

Websites

"Café to Go: A Quick Reference Guide for Putting Conversations to Work" is available at http://www.theworldcafe.com/pdfs/cafetogo.pdf.

Additional World Café information is available at http://www.theworldcafe.com/.

03--Section 3--81-164.indd 136 12/14/11 9:20 AM



DELPHI TECHNIQUE

Purpose

The Delphi technique is a powerful approach that can be used (a) to gather data and opinions from experts (such as identifying primary performance constraints) or (b) to lead to a group decision (such as making recommendations about what to do). The Delphi technique is also referred to as the Delphi method, Delphi approach, Delphi activity, or Delphi study. It was developed by RAND during the 1950s for warfare forecasting, and it relied on panels of experts to provide information in a systematic and iterative manner.

Needs Assessment Applications

The Delphi technique is a data collection tool that you can use to solicit insight from a group of experts in a structured way. In a needs assessment, the Delphi technique is typically used to gain expert input for defining needs, to identify desired results, to prioritize causes, or to recommend solutions. The intention with the Delphi technique is for the iterative process not only to solicit insight from experts, but also to ultimately reveal the areas where experts have consensus in their views. This consensus expert insight can be an invaluable source of information to support decision making about things such as needs, goals, and anticipated outcomes.

The Delphi technique uses a "layered," or iterative, strategy to gather information and arrive at consensus about a specific subject, situation, need, or goal. The technique is similar to the nominal group technique (see page 166 in part 3B) in terms of its structure. One of the unique features of

03--Section 3--81-164.indd 137 12/14/11 9:20 AM

the Delphi technique, however, is that the information solicitation and consensus-building processes can be done through either postal or electronic mail. The Delphi technique can be used for planning, problem solving, decision making, or data collection. The information that is generated through this technique typically (a) provides insight about a variety of different alternatives, (b) seeks to correlate expert insight on a specific subject, (c) provides the background information necessary for decision making, or (d) reveals consensus in expert opinions about a particular subject or theme.

Advantages and Disadvantages

Advantages

- The Delphi technique is versatile in terms of its potential application and can, therefore, be used to tackle a very wide variety of issues, subjects, and situations.
- Through this technique, you have the option of setting up a broad and dynamic panel of experts from a variety of disciplines and professional sectors (for example, donors, community organizations, government officials, and academia).
- Location is not a constraint in terms of access to expert insight. This technique accommodates data collection through either postal or electronic mail, making it possible to involve experts from almost any part of the world.
- The iterative process of the Delphi technique promotes reflective and evaluative contributions from experts.
- The technique enables the natural group process of sharing and evaluating ideas and expert insight without the need for an in-person meeting format. Because the objective of the Delphi technique is to achieve convergence, as opposed to divergence, in expert perspectives, it promotes a nonconfrontational format for communication and exchange. Expert contributions also remain anonymous to other participants in the expert panel, which may help participants to feel more at ease with fully and honestly providing their insights and opinions.
- The structured and step-by-step nature of the technique makes it very democratic in nature, giving each invited participant an equal opportunity for contribution.

03--Section 3--81-164.indd 138 12/14/11 9:20 AM

- Quantitative analysis of the data from a Delphi study is relatively simple and can be done using spreadsheet software (such as Microsoft Excel).

Disadvantages

- If the coordinator of a Delphi activity fails to (a) select a representative expert panel, (b) select a good initial question, or (c) follow the recommended implementation steps for the technique, the outcomes of the activity may be compromised.
- If the Delphi technique is conducted through postal mail, the time required for the process can be lengthy, particularly if the panel of expert participants is located in a variety of different countries. If you decide to use the Delphi approach with postal mail, you should expect to allocate between one and three months for data collection.
- The technique requires sustained involvement from the participants. Participant dropout is, therefore, a risk.
- The viewpoints and judgments that are collected through the Delphi technique are subjective in nature. Thus, the extent of accuracy and comprehensiveness of the data may, in some instances, be uncertain.
- The Delphi technique, although generating valuable information, should not be used as the sole source of information for making definitive decisions about needs or future strategies.

Process Overview

The procedure for the Delphi technique essentially consists of four steps: (a) planning, (b) setting up the expert panel, (c) administering questionnaires, and (d) interpreting final data for decision making.

Planning

1. Form a small group of colleagues to work with you on implementing and monitoring the Delphi study. The Delphi depends on the group's ability to identify and engage a number of experts on the topic, which is often challenging for one individual to manage.
2. Use the list of information required for the needs assessment to determine the specific issue, purpose, scope, and focus of the Delphi study.
3. Develop a time line for the Delphi activity. This time line should include intended deadlines for (a) setting up the expert panel, (b) sending out each

03--Section 3--81-164.indd 139 12/14/11 9:20 AM

of the questionnaires, (c) receiving responses to each of the questionnaires, and (d) analyzing and interpreting the final results from the Delphi.

4. Determine how you will define *consensus* from the responses you receive. For example, does a simple majority (51 percent) represent consensus, or is greater agreement required?
5. Create the first questionnaire for the Delphi study. Ensure that the questionnaire clearly aligns with the scope and purpose of the Delphi.
   a. The questionnaire can consist of one single question that targets the specific focus area of the Delphi. If a single question is used, make sure that it is an open-response question (that is, a question that allows the respondent to submit his or her own answer rather than being forced to choose an answer). An example might be a question asking experts to identify all possible causes of a specific performance gap.
   b. Plan on testing the questionnaire before you distribute it so you can make sure that it is worded correctly to elicit the types of information that you are looking for.

Setting Up the Expert Panel

1. Select a panel of experts to match the scope and purpose of the Delphi study. The initial panel should typically consist of between 30 and 50 participants, though more may be warranted in some cases. The specifics of the kind of panel that you create may differ depending on the specific goals of the assessment. Here are some tips:
   a. Although a larger panel will generate more information on the focus of the activity, it will also increase the data to be analyzed in each phase of the Delphi.
   b. The panel should include individuals who are experts in the focus area of the study.
   c. It is advisable that you select participants who have both conceptual and applied (practical) understanding of the focus areas of your Delphi activity.
   d. If the focus area of your Delphi endeavor extends over several sectors, you may want to invite experts representing each of those sectors.
   e. You should try to screen the panel to make sure that you have selected a group of participants who represent diverse perspectives about your focus area.

03--Section 3--81-164.indd 140 12/14/11 9:20 AM

2. Prepare and distribute a letter to invite the experts you want to participate on the expert panel. The letter should include the following:

   a. The specific scope and purpose of the Delphi

   b. The general process that will be used in the activity

   c. The anticipated time commitment the expert will be asked to make (This commitment should include the amount of time that you expect the expert will require to complete each questionnaire, as well as the span of time over which the Delphi activity will take place.)

3. Remember that sustained participation of the expert panelists is essential to the success of the Delphi activity. Consider following up the invitation letters with a telephone call to each invitee.

Administering Questionnaires

1. Send out the questionnaire that you prepared during the planning phase. Make sure that you include directions on when and how responses should be returned (for example, "Please submit your responses to this questionnaire by replying to this e-mail. The deadline for submitting responses is April 2.").

2. Code the responses by identifying all the elements or factors that are referred to in the responses you receive. For example, if you asked experts to identify all "possible factors contributing to a performance problem," then your task is to identify each statement referring to a "possible factor" in the responses. Next, you compile all those statements of possible factors into one single list. Make sure that the duplicate references are removed and that each factor represents only one idea or construct.

3. Create a second questionnaire using the list of elements that you compiled in step 2, directly above. In your instructions to this questionnaire, ask the respondents to rate each element on the list in terms of importance or relevance to the focus of the Delphi. For example, provide a scale as follows: "*Low Importance = 1 2 3 4 5 = High Importance.*" Ask respondents to rank each element in the list while using that scale. Make sure that you include directions on when and how responses should be returned.

4. Tabulate the results from the second questionnaire by calculating the mean (average), median (middle), and mode (most) scores, as well as standard deviation (dispersion of scores around the average) and inter-

03--Section 3--81-164.indd 141 12/14/11 9:20 AM

quartile range (percentage of similar responses). Each can be calculated in spreadsheet programs such as Microsoft Excel.

5. Using your analysis, determine where there is consensus among the experts. Typically median (middle) scores, along with interquartile ranges, are of the most value in determining consensus although how you define consensus can vary from project to project. In their article, Hsin-Ling Hung and his colleagues (2008) identify a number of important considerations in defining and calculating consensus.
6. Drawing from the results of the second questionnaire, develop a third questionnaire with the items from the second questionnaire that had the greatest consensus among the experts. Depending on the context, you will want to determine an appropriate "cut score" for consensus to be able to reduce the list.
7. Conduct a third and fourth round of questionnaires, calculating consensus among experts using the results of each.
8. Remember that research indicates most Delphi applications reach stable consensus among experts (in other words, few changes from one round to the next) after four rounds. If you do not see this consensus, then you can use additional rounds of data collection (five or six in total) or can consider including both median scores and interquartile ranges for each element in the fifth round to help the experts move toward consensus. When you find stability in responses from one round to the next, you can then use those findings in your needs assessment.

Interpreting Final Data for Decision Making

1. Report the final results to the panel of experts; they will be interested.
2. Use the results to focus in on the specific issue, purpose, and scope of the Delphi study, and use the insight from the expert panel as guidance in your needs assessment decisions.

Tips for Success

- Consider seeking endorsement from an influential person for the Delphi activity. This endorsement may help you to solicit and sustain involvement from the experts you wish to involve in the activity.

03--Section 3--81-164.indd 142 12/14/11 9:20 AM

- Remain in contact with participants throughout the Delphi activity. For example, consider calling each of the experts after you have sent them the invitation to participate. In addition, follow up personally with participants who do not respond to the subsequent questionnaires.
- If possible, plan to provide incentives to participants at each round in the Delphi activity. Incentives can be of either a material or a nonmaterial nature. Following up with thank-you cards or other personalized communication may play an important role in keeping participants involved.

References and Resources

Hung, Hsin-Ling, James W. Altschuld, and Y-F. Lee. 2008. "Methodological and Conceptual Issues Confronting a Cross-Country Delphi Study of Educational Program Evaluation." *Evaluation and Program Planning* 31 (2): 191–98.

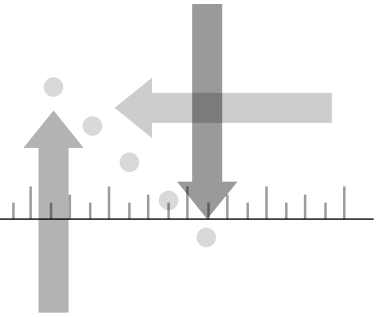
Websites

One of the earliest reports on the development of the Delphi technique is "The Use of the Delphi Technique in Problems of Educational Innovations" by Olaf Helmer-Hirschberg, which is available at http://www.rand.org/pubs/papers/2006/P3499.pdf.

An article on the art of the Delphi technique is available at http://findarticles.com/p/articles/mi_6820/is_4_12/ai_n28482367/?tag=content;col1.

A descriptive definition, including a history of the technique and valuable resources, is available at http://en.wikipedia.org/wiki/Delphi_method.

03--Section 3--81-164.indd 143 12/14/11 9:20 AM



PERFORMANCE OBSERVATIONS

Purpose

The goal of a performance observation is to accurately document the steps, procedures, tools, and decisions used to accomplish current performance (see box 3A.3).

Needs Assessment Applications

To fully understand what is involved in accomplishing current results, you should use performance observations to document the current individual or team processes. Performance observations can, thereby, provide essential information in the analysis of current performance (or information that is helpful in determining what is working and what is not working in the current process).

Information from the performance observation can then be compared and contrasted with information from other sources (such as interviews with expert performers, statistical performance measures, task protocols and procedures, best practices for the task, and performance standards for desired performance).

Box 3A.3 Sample Uses of Performance Observations

- Identify procedural breakdowns in current delivery of HIV/AIDS medications.
- Modify procurement process to reduce redundancies.
- Reduce the time required to conduct inspections to identify potholes in roads.
- Improve team member collaboration.

03--Section 3--81-164.indd 144 12/14/11 9:20 AM

Advantages and Disadvantages

Advantages

- By observing without interfering, you can create a performance observation that accurately documents the steps, procedures, tools, and decisions made in completing a task.
- Performance observations don't rely on the perspectives or memories of performers to define how tasks are currently completed.
- Performance observations can be done by multiple members of the needs assessment team to validate the findings.

Disadvantages

- Performance observations require the time and related expenses of having an observer to document the current performance.
- Observations alone may miss some of the decisions and other nonvisible aspects that go into performing a task (especially with regard to complex cognitive tasks).
- Observers may introduce biases into the needs assessment. Therefore, it is important that observers are trained in the observation process and are sensitized about biases and the need for objectivity. Having multiple observers can also be a way to address issues of observer bias. Observers should also be aware that those being observed might change their behavior, change what they say or do, or say or do things they think the observer would want to hear. The observer should consider options on how to conduct the observation to avoid influencing the person(s) being observed.

Process Overview

1. After needs (or gaps between current and desired performance) have been identified, use performance observations to document the current processes, procedures, tools, and decisions that helped achieve current results. To begin, identify essential tasks involved in the achievement of current performance (for example, develop a concept note, monitor procurement transactions, or review project reports).

03--Section 3--81-164.indd 145 12/14/11 9:20 AM

2. For each essential task involved in the achievement of current performance, determine which tasks can be observed during the needs assessment. For instance, if a task will not be completed again for another 12–18 months, then it is unlikely that you can include a performance observation of that task in your needs assessment.

3. Remember that performance observations are rarely done as an exclusive information-collection process because observations should involve minimal interactions with the performers (which could be distracting and could compromise the validity of the observation). Plan to integrate your performance observations with other processes such as post-performance interviews, document reviews, or performer focus groups.

4. Before observing the completion of a task associated with the performance, review any documentation on the processes, procedures, tools, or decisions that may be used in completing the task. Having an idea of what steps are coming next can help you to focus your observations.

5. Create a performance observation protocol or checklist to ensure that you systematically assess the current performance. This step will also be valuable if multiple reviewers will be observing the performance or if multiple tasks are to be observed.

6. Select the performers to be observed. It is frequently helpful, when possible, to observe the performance of both an expert and a novice so you can isolate potential differences. For most needs assessments, as compared with performance evaluations, it is useful to inform the performer that he or she will be observed and to schedule time to debrief him or her after the observation.

7. Observe the performer while he or she completes the task. During the observation, the observer should not interfere with the performance. For example, do not stop the performer to ask questions or make suggestions; hold questions and comments until the post-observation debrief. Use the observation protocol to track activities and to make observations about how the task is completed.

8. After the task is completed, meet with the performer to debrief him or her on the observation. During the debrief, ask questions to (a) identify any unique characteristics of the observed performance that may not be relevant to your assessment (for instance, unrelated activities or interruptions that took place during the observation), (b) determine if the observation is representative of task performance by others, or (c) find out

03--Section 3--81-164.indd 146 12/14/11 9:20 AM

what recommendations the performer would offer for completing the task more efficiently or effectively.

9. Write a summary report of the findings from each performance observation. Include these in the report: background information on the task, performer, and performance environment; notes from each performance observation; notes from each observation debrief; and your comments or recommendations that are based on observations.

Tips for Success

- Observe the complete performance of the task being reviewed; you don't want to leave early and potentially miss critical steps, tools, or decisions. However, for tasks that are completed over several days or weeks (such as developing a project plan), it can be useful to conduct performance observations that focus on select subtasks.
- Make arrangements early in the needs assessment process if you want to observe performance, especially for tasks that are not completed on a routine basis within the organization.

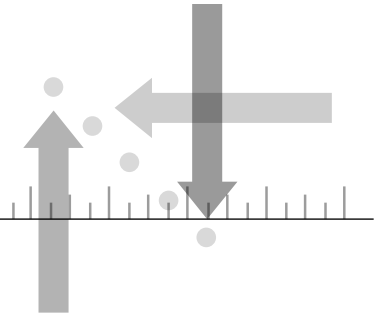
References and Resources

McClelland, Samuel B. 1994c. "Training Needs Assessment Data-Gathering Methods: Part 4—Onsite Observations." *Journal of European Industrial Training* 18 (5): 4–7.

Website

A how-to description on Find, Use, Manage, and Share Information (FUMSI) is available at http://web.fumsi.com/go/article/use/2491.

03--Section 3--81-164.indd 147 12/14/11 9:20 AM



TASK ANALYSIS (HIERARCHICAL OR SEQUENTIAL, IF-THEN, AND MODEL-BASED)

Purpose

The purpose of a task analysis is to systematically describe, document, and analyze the activities, procedures, processes, and resources that are used by individuals or groups to accomplish current results.

Needs Assessment Applications

A task analysis explains the processes and inputs that are being used at this time to accomplish results. Consequently, a task analysis defines what individuals and teams both are doing and should be doing to contribute to current results. As part of a needs assessment, this vital tool can inform both the diagnosis of needs and the detection of potential remedies for improving performance.

In many ways, a task analysis process parallels the performance analysis process although the former begins with the results currently being achieved, whereas the latter begins with the desired results that should be accomplished in the future. Sometimes these starting places are one and the same. Yet, from their unique vantage points, the two processes parallel each other as they identify the tasks, processes, procedures, tools, and resources that are used to achieve results.

Your focus during a task analysis is on systematically documenting what individuals or groups are doing (or should be doing). From observable processes and behaviors to scripted procedures and organic creativity, it is important to detail current events so that they may be compared with desired events when identifying future actions.

03--Section 3--81-164.indd 148 12/14/11 9:20 AM

Advantages and Disadvantages

Advantages

- A task analysis can attain a clear definition of what resources, processes, and results are related to current tasks that are (or will be) related to your program or project.
- By using a task analysis to systematically review the completion of current tasks and their results, you will ensure that your needs assessment will be better prepared to make recommendations regarding changes to current procedures and new tasks.
- A task analysis will help you to identify both what is working well and what is not working as well within the current organization.

Disadvantages

- Effective task analyses require time and resources that may not have been included in your initial planning.
- Completing a task analysis is usually more complex than completing the task itself. For complex tasks, you will likely want to use a task analysis expert.
- It can be challenging to determine (a) if and how the completion of tasks would change because of needs assessment recommendations and (b) how those changes would influence other parts of the system.

Process Overview[1]

1. Identify key positions and tasks related to the completion of results within your results framework. For example, if your results framework identifies food safety inspections conducted by the state health and agriculture agencies as an essential result for improving performance in the overall food safety system, then you would want to identify which positions and tasks within the agencies are (or would be) responsible for the successful completion of food safety inspections.
2. Select a task analysis method. Several systematic task analysis methods can be applied, each with advantages and disadvantages depending on the context. As a result, use a mix of task analysis methods during any needs assessment. Three possible methods are (a) hierarchical (sequential), (b) if–then, and (c) model-based.

03--Section 3--81-164.indd 149 12/14/11 9:20 AM

a. ***Hierarchical (Sequential) Task Analysis***

(1) This kind of analysis identifies both the component steps in completing the given task and their hierarchical (or sequential) relationship to one another. When desired results are not being accomplished, use the hierarchical analysis to provide insights into the obstacles preventing success. Equally, when desired results are being accomplished, use the analysis to detail the constructive processes that lead to accomplishment of objectives.

(2) To begin, you should review, observe, and document each step taken by the performer in completing the task. Verify the appropriate sequence of steps for accomplishing results, and identify the resources (for example, supplies, computers, or other employees) used to complete the task. Routinely, processes will involve steps that cannot be observed. Talk with the individuals or teams that perform selected tasks to identify both internal and external behaviors. Most often, a hierarchical task analysis requires a combination of observation and interviews with expert performers.

(3) For example, a task analysis may identify that receptionists complete the following steps in accomplishing a performance objective for the pension office:

- Check voice mail messages.
- Take detailed and accurate notes on each voice mail message.
- Send e-mail to district pension officers along with voice mail messages.
- Copy managers on e-mail messages sent to their respective pension officers.
- Clear phone messages after e-mail messages have been sent.

(4) Depending on the level of detail required for making useful decisions, additional analysis may be done on any single step within the process to determine more detailed actions taken by the expert performer (for example, what steps are required to check voice mail messages). The level of detail required for a task analysis varies greatly from initiative to initiative. Balance (a) the desired level of detail for making improvement decisions with (b) the available time and resources.

03--Section 3--81-164.indd 150 12/14/11 9:20 AM

(5) Create a graphic depicting the tasks and their relationships (see figure 3A.2).

b. ***If-Then Task Analysis***

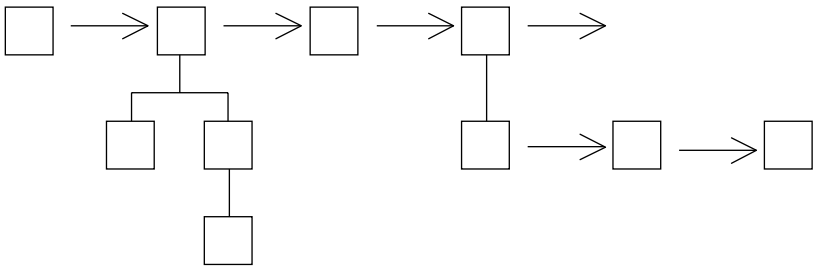
(1) If–then analysis applies process logic to the determination of the important decision steps for completing a task. This analysis technique can be useful when you have multiple decision steps. For example, for the task of using a word processing software application, you might include "*If* a word in the text is underlined in red, *then* right-click on the word to identify options for revising the spelling of the word." As tasks gain in complexity, multiple decisions must typically be made by the performer. The if–then analysis becomes an effective technique for identifying and documenting decisions and behaviors that cannot be observed.

(2) In a manner similar to the hierarchical analysis technique, you can use both observations and interviews with expert performers to complete an if–then analysis. In addition, combinations of methods are commonly used to identify the constituent steps in completing many complex tasks.

(3) Continuing the example, receptionists in another pension office might identify the following steps for achieving the same performance objective:

- Step 1: Check voice mail messages when you arrive at work. If there are messages, then take detailed notes on each voice mail message.

Figure 3A.2 Example of a Hierarchical Task Analysis Graphic



03--Section 3--81-164.indd 151 12/14/11 9:20 AM

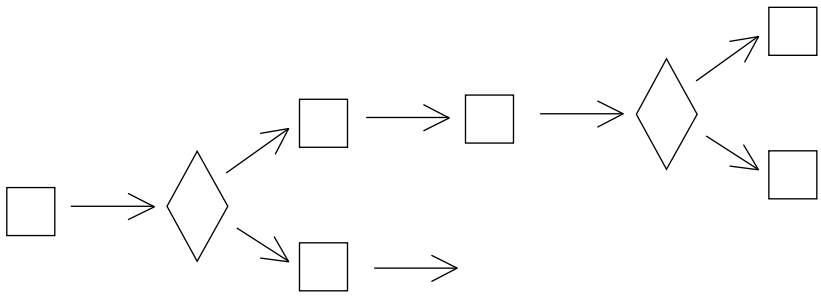
- Step 2: If the voice mail was for a pension officer, then e-mail the pension officer the contact information and message from the voice mail (and proceed to step 4).
- Step 3: If the voice mail message was for a manager, then forward the voice mail to the manager using the *8 feature of the phone.
- Step 4: Copy (or inform) the managers about e-mails going to their respective pension officers.
- Step 5: If you have completed steps 2, 3, and 4 for all voice mail messages, then delete phone messages.

(4) Create a graphic depicting the tasks and their relationships (see figure 3A.3).

c. ***Model-Based Task Analysis***

(1) Use a model-based analysis when the task being reviewed is vague or difficult to define. Because many "soft skills" or professional tasks (for example, demonstrating leadership, group problem solving) are characterized by their elusive definitions and reliance on situational context, model-based analysis can provide you with essential information for describing how performance objectives get accomplished in these situations. In completing a model-based analysis, you work closely with performers to develop a model or framework for completing the task. Performance is then the result of applying the model even when there are ambiguous guidelines for performing the task.

Figure 3A.3 Example of an If-Then Task Analysis Graphic



03--Section 3--81-164.indd 152 12/14/11 9:20 AM

(2) For example, for the soft skills task of mentoring pension office employees, the analysis may identify the following performance model:

> Describe for the employee the optional techniques that may be used to complete his or her work. In mentoring the employee, use one or more of the following techniques: (a) use examples of other current and previous employees, (b) have the employee form a mental picture of performing the work at his or her desk, (c) demonstrate successful performance of the work-related tasks, (d) have the employee practice the work steps and then provide immediate feedback to the employee, and (e) suggest additional training opportunities offered within the organization.

(3) Use interviews (or focus groups) with expert performers to define a model for a task. After a model is developed, expert performers should again review the procedures and options to ensure that the model adequately represents a framework for accomplishing desired results. The ability of a model to represent the successful completion of a task depends on the flexibility of the model. If your model-based analysis does not result in a flexible framework that can be applied in a variety of contexts, then review the task using another task analysis technique.

(4) When possible, create a graphic depicting the tasks and their relationships (see figure 3A.4).

3. To collect information in a task analysis, use a combination of interviews, observations, intensive observations, focus groups, surveys, document reviews, data reviews, and other techniques.

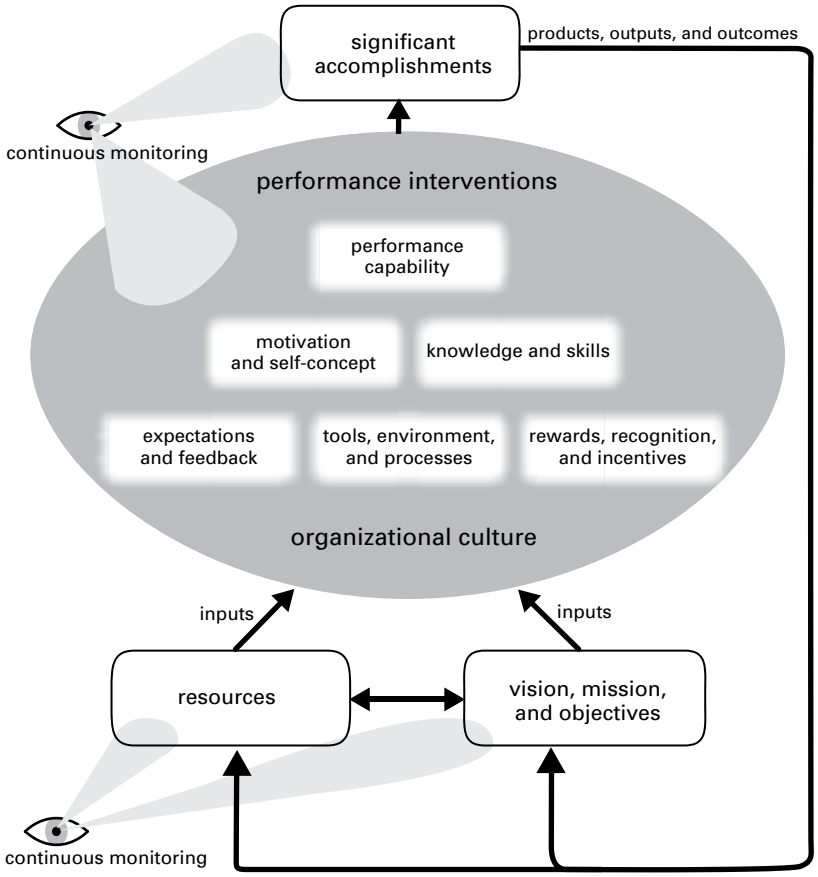
4. After the initial task analysis is completed and as a useful step, have the participants in the analysis review your findings to provide clarifications and corrections when appropriate. Depending on the complexity of your tasks, several rounds of revisions may be required.

5. Write a summary report of the findings from the task analysis.

6. Remember that the task analysis is an essential ingredient to a needs assessment and should be used as a point of comparison with other assessment data (for example, surveys, interviews, focus groups) to inform your decisions.

03--Section 3--81-164.indd 153 12/14/11 9:20 AM

Figure 3A.4 Example of a Model-Based Task Analysis Graphic



Source: The example is the performance pyramid model found in Wedman (2010). Reused with permission. Also available at http://needsassessment.missouri.edu.

Tips for Success

- Strive to be very systematic in your analysis.
- Communicate openly with those participating in your analysis to assure them that the results of the analysis will be used only for improving results and not for placing blame.
- Remember that actions speak louder than words; it is better to observe individuals performing a task than to simply ask them what they do.

03--Section 3--81-164.indd 154 12/14/11 9:20 AM

Note

1. Based in part on http://www.nwlink.com/~donclark/hrd/tasks.html and Watkins (2007).

References and Resources

Jonassen, David H., Wallace H. Hannum, and Martin Tessmer. 1989. *Handbook of Task Analysis Procedures*. Westport, CT: Praeger Publishers.

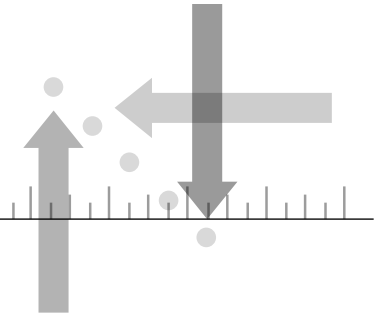
Watkins, Ryan. 2007. *Performance by Design: The Systematic Selection, Design, and Development of Performance Technologies That Produce Useful Results*. Amherst, MA: HRD Press, and Silver Spring, MD: International Society for Performance Improvement.

Wedman, John F. 2010. "Performance Pyramid Model." In *Handbook of Improving Performance in the Workplace*. Vol. 2: *Selecting and Implementing Performance Interventions*, edited by Ryan Watkins and Doug Leigh. San Francisco: Wiley/Pfeiffer, and Silver Spring, MD: International Society for Performance Improvement, 51–80.

Website

Tasks and Task Analysis is available at http://www.nwlink.com/~donclark/hrd/tasks.html.

03--Section 3--81-164.indd 155 12/14/11 9:20 AM



COGNITIVE TASK ANALYSIS

Purpose

The purpose of a cognitive task analysis (CTA) is to systematically define the decision requirements and psychological processes used by expert individuals (or performers) in accomplishing results.

Needs Assessment Applications

A standard task analysis explains the processes and inputs that are being used at this time to accomplish results. As a consequence, a task analysis defines what individuals and teams either are doing or should be doing to contribute to current results. In the completion of a needs assessment, the task analysis is a vital tool for informing both the diagnosis of needs and the detection of potential remedies for improving performance.

In a CTA, however, cognitive analysis methods focus on the psychological processes underlying the completion of a task. For example, CTA may be used when one is trying to understand how master teachers are able to manage student behaviors in classrooms. CTA should be used whenever complex decisions are required (such as when multiple contributing variables and options must be weighed by the performer) and when few observable behaviors can be identified. Subtle cues from the performance context and the experience of expert performers are often discovered through the CTA technique. Of the many tools and techniques offered in this book, CTA is one of the more difficult approaches to undertake.

03--Section 3--81-164.indd 156 12/14/11 9:20 AM

Advantages and Disadvantages

Advantages

- A CTA generates detailed, precise information on the nature of expert performance in a specific task of interest.
- When implemented correctly, CTA techniques provide highly valid sources of information on expert cognitive processes.
- A CTA provides systematic procedures (rather than hit-or-miss steps) for ascertaining expert cognitive processes.

Disadvantages

- Analysis of the data gathered during a CTA can be time-intensive.
- CTA does not always capture other noncognitive attributes necessary for accomplishing results (such as physical capabilities, access to resources, and interpersonal relationships).
- The results of a CTA can be misleading when expert performers have performance capacities beyond that of others (for example, a CTA can be done with high-performing professional athletes, but implementation of cognitive processes alone will not duplicate performance).
- Completing a task analysis, especially a CTA, is usually more complex than completing the task itself. For complex tasks, you will likely want to use a task analysis expert to get useful results.

Process Overview[1]

Collect Preliminary Knowledge

To kick off the CTA process, identify some key cognitive tasks to study (for example, how master teachers manage classroom behavior) that are important elements in the achievement of particular results (for example, improvements in student performance on tests). In particular, identify those cognitive tasks that merit *detailed* study through CTA. As you proceed through the following steps, pay special attention to (a) tasks that are important, fre-

03--Section 3--81-164.indd 157 12/14/11 9:20 AM

quent, and highly critical cognitive tasks within the job performance that you are studying and (b) tasks or problems that are within the job performance and that allow for discrimination between expert and novice performance (such tasks are referred to as *representative tasks*).

1. Develop some general understanding of the domain area (for example, training of teachers) in which the CTA will be conducted and of the common terminology used in that domain area. This understanding will make it a lot easier to conduct an effective CTA.

2. Identify experts who are good candidates (for example, master teachers) for serving as subjects of the CTA (ideally two or more experts should be identified for participation). Experts with recent experience in both performing and teaching the cognitive skill are generally considered to be good candidates for participation.

3. Identify the knowledge structures associated with the task area through one or more of the following substeps:

   a. ***Document review and analysis:*** Review any written materials that you can locate and that provide relevant information on the tasks you have identified as being of interest. Documents could include job descriptions, reports, training materials, and so on. By reviewing available documents and research, you are better prepared to conduct interviews with experts, and you are able to (later on) identify discrepancies between extant training (performance support materials) and expert performance.

   b. ***Observation:*** Observe an expert conducting the tasks and procedures of interest to the CTA (for example, teaching a classroom subject to high school students). Record the actions and conditions that are naturally a part of the process of executing the tasks that are of interest. Make special notes of points in the task-completion process where it seems that the expert is engaged in decision making, analysis, or other critical cognitive tasks.

   c. ***Unstructured interviews:*** When you are conducting an unstructured interview, it generally is helpful if you have been able to do a document analysis or observation beforehand. For the interview, your goal is to ask the expert direct questions that will give you more information about the tasks and to sort through preliminary questions that may help you in preparing for structured interviews that you complete later in the process. Because the interview is unstructured, you may opt to

03--Section 3--81-164.indd 158 12/14/11 9:20 AM

take a "go with the flow" approach for the interview, or you may ask the expert to focus on a specific aspect or task related to the domain area.

Identify Knowledge Representations

Using the results from the preliminary knowledge data collection, identify the subtasks and knowledge that are associated with each of the primary tasks that you are interested in studying further. Generally, an effective approach for visually organizing this information is by creating a visual representation of the relationship between the tasks, subtasks, and knowledge associated with the domain of interest. Concept maps can be an effective approach to visually representing the knowledge and task structures.

Use Focused Methods to Gather Information

1. If the CTA will be conducted by someone other than you, identify someone to serve as the cognitive task analyst. Note that it is highly desirable to choose this individual carefully. Ideally, it is someone who can interact comfortably with the subject matter expert and who can learn domain- and task-specific terminology efficiently.
2. Choose one or more of the following methods to work with the expert(s) to identify, cluster, link, and prioritize the critical cognitive decisions that are routine in expert performance. All of these knowledge-gathering methods can be used with expert performers. If you intend to also gather information from novices, however, it is recommended that you select either *structured and unstructured interviews* or *concurrent verbal protocol analysis* as knowledge-gathering methods, because the other techniques assume a high level of domain knowledge.
   - ***Structured and unstructured interviews:*** One approach is to ask the expert (for example, a master teacher) to list (a) all of the steps involved in completing the subtasks (for example, how to call on students, how to deal with misbehaviors, and so on) that are part of the larger task (for example, classroom management) that you are studying; (b) key decision points, and when those decision points appear; (c) procedures that can be used to make decisions between alternate options; (d) conceptual knowledge required to tackle the subtasks; and (e) ways that the expert determines when the conditions call for beginning the process for completing the subtask(s).

03--Section 3--81-164.indd 159 12/14/11 9:20 AM

- ***Concurrent verbal protocol analysis:*** To begin a protocol analysis, you should work with experts to identify a good "representative task" in the task area. An example could be how a master teacher would deal with a disruptive student. Develop a problem or scenario around that representative task, and ask several experts (such as master teachers) to review and modify the problem or scenario before using it for knowledge gathering.

  To begin understanding the task (for example, the process of dealing with disruptive students), you should schedule time with the expert in a quiet location where you have audio or video recording capabilities. Prepare and train the expert for solving problems aloud by giving him or her instructions on how to think aloud, as well as by giving the expert the chance to think aloud while solving at least two or three sample problems so that he or she can get comfortable with the verbalization process. Next, present the main problem or challenge to the expert. Record all of the verbal utterances of the expert as he or she solves the problem. It is very important that you avoid interrupting the expert at any time during the problem-solving process. If possible, gather verbal protocols from several experts for the same problem, and pay special attention to problem-solving steps and strategies used by all or most of the experts.

- ***Applied cognitive tasks analysis:*** In this approach, you conduct three structured interviews. Each interview generates a separate product. Through the first interview, you develop a *task diagram* that gives a broad representation of the task and specifically allows you to hone in on complex cognitive processes that merit further consideration. The second interview yields a *knowledge audit*, which probes the expert on the skills and knowledge applied to tackle specific component tasks or decision points in the overarching task process. The third and final interview involves presenting the expert with a specific and relevant scenario designed to elicit insight into the cognitive processes used by the expert in the scenario context. The compiled and analyzed results from the applied cognitive tasks analysis are represented in a *cognitive demands table*.

- ***Critical incident (or decision) method:*** This procedure begins with the expert identifying a situation in which he or she had to apply expertise to a critical and uncommon situation relating to the task area of interest (for example, a classroom where students were starting physical fights). The expert describes the incident, and the analyst works with the expert to create a time line for the incident. The ana-

03--Section 3--81-164.indd 160 12/14/11 9:20 AM

lyst then works with the expert to try to identify key points on the incident time line when decisions had to be made (for example, when to intervene to prevent fights in classrooms). From there, the analyst closely questions the expert to identify perceptual cues and prior knowledge that were used in the decision making, as well as alternative decisions that could have been made. An understanding of those key decision points, as well as of the representative tasks that experts can perform and that novices have difficulty performing, is an important result of using the critical incident method.

3. Develop a protocol for each of the knowledge-gathering methods selected. Next are recommendations for the design of the protocols for each of the knowledge-gathering techniques:

   - ***Protocol for structured and unstructured interviews:*** Develop instructions and questions for interviews, focusing on key decision points, procedures for choosing between different options at decision points, and domain knowledge.

   - ***Protocol for concurrent verbal protocol analysis:*** Develop a protocol that provides participants with information on procedures for verbalizing thought sequences, as well as a few simple problem-solving tasks that can be used to practice the verbalization process. The protocol should conclude with the presentation of the main problem (based on the representative task).

   - ***Protocol for applied cognitive task analysis:*** Develop instructions and questions for each of the three interviews. For the task diagram, come prepared with paper, sticky notes, markers, or a computer to diagram the tasks. For the knowledge audit, come prepared with some idea of what the possible knowledge and skills would be so you are able to probe for more information. For the third interview, prepare scenarios for the expert to discuss.

   - ***Protocol for critical decision method:*** Develop instructions and questions, focusing on key decision points, procedures for choosing between different options at decision points, and domain knowledge in use in the critical incident identified by the expert.

4. Apply the knowledge-gathering technique. It is highly advisable that you record the knowledge-gathering session in either audio or video format (video format is justified in cases where the task includes psychomotor actions). Make sure that you have the expert's permission in

03--Section 3--81-164.indd 161 12/14/11 9:20 AM

advance to record the session. Because people generally do not feel immediately at ease with being recorded, and because the knowledge-gathering exercise may be unfamiliar to the expert, it is highly recommended that you run through with the expert an example session of the exercise before conducting the actual knowledge-gathering session. This suggestion is particularly relevant if you choose to implement a concurrent verbal protocol analysis, an applied CTA, or the critical decision method.

Analyze and Verify Data Required

1. If you have recorded the knowledge-gathering session(s), transcribe the recorded information into a text-based format.
2. Prepare the transcripts for further categorization and synthesis by coding them. Pay special attention to diagnosing and characterizing key decision points on the basis of the techniques used, the cues signaling the decision points, and the inferences made.
3. After coding has been completed, organize the data from the transcripts into a format that summarizes and categorizes the data.
4. Provide a copy of the formatted results from the knowledge-gathering session to each of the experts from whom you gathered data. Allow the experts to make any suggestions for changes or clarifications.
5. Integrate edits and adjustments recommended by the experts.
6. Compare the formatted results for each of the expert knowledge-gathering sessions, and verify that the formatted results reflect the knowledge representation for the task area.

Format Results for Intended Application

1. Using the formatted results from the expert knowledge-gathering sessions, create a single model task analysis, representing all the skills, knowledge, and strategies used by the experts when functioning in the task area.
2. Write a summary report of the findings from the CTA.
3. The task analysis is an essential ingredient of a needs assessment and should be used as a point of comparison with other assessment data (for example, surveys, interviews, focus groups) to inform your decisions.

03--Section 3--81-164.indd 162 12/14/11 9:20 AM

Tips for Success

- Strive to be very systematic in your analysis.
- Remember that actions speak louder than words; it is better to observe individuals performing the task than to simply ask them what they do.
- Also remember that expert performers have often internalized or made habitual many of the key decisions that go into performing the related steps within the task. This internalization makes completing a cognitive analysis challenging. Aid expert performers in communicating their cognitive processes by using techniques such as card sorting, process tracing, or concept mapping.

Note

1. Based in part on Clark et al. (2008). Also available at http://www.cogtech.usc.edu/publications/clark_etal_cognitive_task_analysis_chapter.pdf.

References and Resources

Clark, R. E., D. Feldon, J. J. G. van Merriënboer, K. Yates, and S. Early. 2008. "Cognitive Task Analysis." In *Handbook of Research on Educational Communications and Technology*, 3rd ed., edited by J. M. Spector, M. D. Merrill, J. J. G. van Merriënboer, and M. P. Driscoll, 577–94. Mahwah, NJ: Lawrence Erlbaum Associates.

Watkins, Ryan. 2007. *Performance by Design: The Systematic Selection, Design, and Development of Performance Technologies That Produce Useful Results*. Amherst, MA: HRD Press, and Silver Spring, MD: International Society for Performance Improvement.

Witkin, Belle Ruth, and James W. Altschuld. 1995. *Planning and Conducting Needs Assessments: A Practical Guide*. Thousand Oaks, CA: Sage Publications.

Websites

"Applied Cognitive Task Analysis (ACTA)" (by Militello and Hutton) is available at http://www.class.uidaho.edu/psy562/Readings/Militello&Hutton(1998).pdf.

"Cognitive Task Analysis" (by Clark, Feldon, van Merriënboer, Yates, and Early) is available at http://www.cogtech.usc.edu/publications/clark_etal_cognitive_task_analysis_chapter.pdf.

03--Section 3--81-164.indd 163 12/14/11 9:20 AM

"Cognitive Task Analysis" (from NATO) is available at http://ftp.rta.nato.int/public//PubFulltext/RTO/TR/RTO-TR-024/TR-024-$$ALL.pdf.

"Cognitive Task Analysis for HPTers" (presentation slides generated by Stone and Villachica) is available at http://www.dls.com/1090_CTA_Panel.pdf.

"Protocols for Cognitive Task Analysis" (from the Institute for Human and Machine Cognition) is available at http://www.ihmc.us/research/projects/CTAProtocols/ProtocolsForCognitiveTaskAnalysis.pdf.

03--Section 3--81-164.indd 164 12/14/11 9:20 AM