Research suggests no single model of skill gap/needs assessment stands out as most effective or more validated than others. Literature on this topic consists of guidelines, principles, and tools that may be used to conduct skill gap assessments as effectively as possible. Of the models/approaches in use, the Discrepancy Model is the most preferred for identifying learning and performance needs in organizations, though a hybrid methodology may be preferred when projects require greater simplicity and flexibility. Regardless of the methodology used, the key to conducting effective skill gap assessment lies in leveraging multiple data collection methods, including surveys, interviews, and performance appraisals.1

Overview of Skill Gap Assessment Methodologies

Skill gap assessments determine what skills and/or competencies are lacking in an organization’s employees and what, if any, training is necessary to fill identified gaps; it is the first step in the instructional system design (ISD)* process. Although there is no universally endorsed ISD skill gap method, the following table presents three over-arching frameworks identified in literature that organizations use to identify employee and organizational skill gaps and training needs.2,3

<table>
<thead>
<tr>
<th>Assessment Methodology</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Felt-Needs” Methodology</td>
<td>Asks employees to list or rank desired training courses; traditionally used to assess skill gaps of large numbers of employees quickly</td>
<td>• Can boost employee morale</td>
<td>• Employees report “wants” rather than needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easy large-scale implementation</td>
<td>• Minimal success in improving performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low resource requirements</td>
<td></td>
</tr>
<tr>
<td>Performance Analysis/Discrepancy Model</td>
<td>Performance evaluations and other data are aggregated and analyzed to identify skill gaps by comparing individual and organization-wide skills to desired skills</td>
<td>• High impact on performance</td>
<td>• Difficult to implement on large-scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Most effective methodology</td>
<td>• Moderate impact on employee morale</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Resource intensive</td>
</tr>
<tr>
<td>Hybrid Methodology</td>
<td>Consists of a strategic needs assessment phase and an employee-perceived performance improvement phase; identifies gaps between what is and what should be in terms of valued organizational goals or results and prioritizes those gaps</td>
<td>• Can be implemented on large-scale with limited resources</td>
<td>• Identifying strategic goals can be difficult</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Uncovers high priority organizational priorities and aligning training needs</td>
<td></td>
</tr>
</tbody>
</table>

The chart below details the advantages and disadvantages of three main skill gap assessment techniques used to gather data within the frameworks above: surveys, observation, and interviews/focus groups. As previously noted, research suggests that multi-source, multi-dimensional assessments are optimal for conducting effective skills gap analysis, and organizations should therefore use a combination of the methods below.4

<table>
<thead>
<tr>
<th>Collection Technique</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>Most common method for conducting skill data collection; asks employees and managers questions regarding specific job requirements</td>
<td>• Can gather a significant amount of information from a high quantity of people</td>
<td>• Results often unclear and subjective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Relatively simple to administer</td>
<td>• Risk of survey-fatigue</td>
</tr>
<tr>
<td>Observation</td>
<td>Observation at work site by subject-matter expert; usually limited to study of specific job classification</td>
<td>• Can generate highly relevant information to the work setting</td>
<td>• Observer must have both content and process knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Requires great time commitment</td>
</tr>
<tr>
<td>Interviews and Focus Groups</td>
<td>May include key consultation with persons who are in a position to understand the skill gaps and needs of a group, individual interviews with those who would participate in training, and group discussion; one of the most widely used techniques for gathering information on organizational and individual skill gaps and training needs</td>
<td>• Provides respondents the opportunity to convey feelings more completely than other methods</td>
<td>• Require great time commitment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Permits immediate synthesis of ideas, build support for specific program under study, and help participants be part of the solution</td>
<td>• Require highly-skilled interviewer or facilitator</td>
</tr>
</tbody>
</table>
Levels of Skill Gap Assessment

Regardless of which of the previously detailed methodologies is used to conduct skill gap assessments, there are three levels at which assessments are conducted: organizational analysis, job/task analysis, and individual analysis. These layers of assessment, developed in 1961 by McGhee and Thayer, are still the dominant framework for conducting skill gap assessment. The figure below offers definitions, goals, and data collection methods at each level of analysis.

**Organizational Analysis**

Organizational analysis considers the appropriateness of the training process based on the context in which training will occur. An important aspect of this level involves strategic planning and the identification of knowledge, skills, and abilities (KSAs) that will be needed in the future as both the organization and the organization evolve. Organizational analysis should identify the following:

- Organizational goals (effectiveness of the organization at meeting its goals) and resources available
- State of the economy and the impact on operating costs
- Changing work force demographics and the need to address cultural or language barriers
- Changing technology and automation
- Increasing global/world market
- Political trends such as sexual harassment and workplace violence
- Environmental impacts (e.g., new laws such as ADA, FMLA, OSHA, competition, customers)
- Climate and support for training (top management support, employee willingness to participate, responsibility for outcomes)

**Organizational Analysis Data May be Obtained via:**

- Organizational goals and objectives—As determined via mission statements, strategic plans, succession planning, long- and short-term staffing needs
- Skills inventory—Determined via surveys, supervisory observation, training records
- Efficiency indices—May be assessed via annual report, customer service records, quality records, process delays
- Engagement indices—As determined via surveys, exit interviews, grievances

**Job/Task Analysis**

Organizations may diagnose skill gaps via a job or task analysis, which compares the requirements of certain jobs with the KSAs needed to achieve optimum performance.

**Job/Task Analysis Data May be Obtained via:**

- Job description—A narrative statement of the major activities involved in performing the job and the conditions under which these activities are performed. If an accurate job description is not available or is out of date, one should be prepared to use job analysis techniques.
- KSA analysis—A more detailed list of specified tasks for each job including knowledge, skills, attitudes, and abilities required of employees.
- Performance standards—Objectives of the tasks of the job and the standards by which they will be judged are needed to identify performance discrepancies.
- Job observation/work sample—Manager observation at work site or analysis of employee products
- Job inventory questionnaire—Evaluation of tasks in terms of importance and time spent performing.
- Review of literature about the job—Research of best practices from other companies, review of professional journals.
- Interviews/Surveys—Questions employees, their supervisors, and upper management about the job requirements.
- Analysis of operating problems—Analyzes down time, waste, repairs, late deliveries, quality control, etc.

**Individual Analysis**

Skill gap assessment may be focused on individual performance. Companies most commonly use employee performance evaluations to evaluate at this level. Based on the employee performance evaluation, a recommendation is made by the employee’s supervisor regarding an area for performance improvement and specific training.

**Individual Analysis Data may be Obtained via:**

- Performance evaluation—Identifies weaknesses and areas of improvement (e.g., 360/180-degree reviews)
- Performance problems—Productivity, absenteeism and tardiness, accidents, grievances, waste, etc.
- Job observation/work samples—See above
- Skills inventories—See above
- Interviews—Talk to manager, supervisor, and employee; ask employee what he/she believes he/she needs to learn
- Questionnaires—Written form of the interview, tests, must measure job-related qualities such as job knowledge and skills
- Attitude surveys—Measures morale, motivation, and satisfaction
Case Example: Company-Wide Hybrid Skill Gap and Needs Assessment

The following hybrid methodology was used by one state government to conduct an organization-wide needs assessment. The model is broken into two phases: a strategic needs assessment and employee-perceptions assessment, as detailed in the figure below.  

Figure 1: Organization-Wide Performance Driven Training Needs Assessment

<table>
<thead>
<tr>
<th>Phase 1: Strategic Needs Assessment</th>
<th>Phase 2: Employee Perceived Performance Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top Leaders:</strong> Key goals for the agency</td>
<td><strong>Employees (selected):</strong> Opportunities for performance improvement through training</td>
</tr>
<tr>
<td><strong>Top Leaders:</strong> Areas with greatest performance improvement potential</td>
<td><strong>Subject Matter Experts:</strong> Prioritize training for performance improvement potential</td>
</tr>
<tr>
<td><strong>Unit Leaders:</strong> Areas with greatest performance improvement potential</td>
<td><strong>Employees:</strong> Training needed survey</td>
</tr>
<tr>
<td><strong>Unit Employees:</strong> Performance improvement training solutions</td>
<td><strong>Training Needed to Improve Performance</strong></td>
</tr>
</tbody>
</table>

The following hybrid methodology was used by one state government to conduct an organization-wide needs assessment. The model is broken into two phases: a strategic needs assessment and employee-perceptions assessment, as detailed in the figure below. 

**Situation:** A state government had little funding available for employee training due to a variety of political and economic factors, but state employees had a high level of unmet training needs. The administration placed a high priority on improving employee training and approached the HRD program at the state university for assistance in assessing and prioritizing training needs. HRD used the following hybrid model to conduct the assessment:

- **Phase 1: Strategic Needs Assessment**
  - Top management in the organization were interviewed to identify a) high priority performance goals, b) performance indicators, and c) perceived barriers to accomplishing them. Sample interview questions included:
    - What is the mission of your unit/agency?
    - What are the key goals/objectives of your unit that support this mission? (Prioritize if possible)
    - What are the key areas within your agency with the greatest performance improvement potential to meet the objectives above?
  - Goals and expected outcomes were summarized in a report for the organization head (each strategic issue received a separate summary).
  - The organization head rated each strategic objective as high, medium, or low priority.
  - Unit management and selected employees were interviewed to gain a better understanding of the high priority goals/issues.
  - Intensive training needs assessment or performance analysis methodologies appropriate for the situation were implemented. These typically involved intensive, multiple-data collection methods including focus groups, customer interviews, work observation, work sampling, and surveys.
  - Training recommendations were made on the basis of the intensive assessments.

- **Phase 2: Employee Perceived Performance Improvement**
  - Employees were divided into job groups with somewhat similar tasks (approximately 20 per department).
  - A sample of 20% from each employee group was randomly drawn and sent a pre-survey form. Sample questions included:
    - Please describe the three to five biggest problems you face in your job that keep you from being as productive as you think you could be. For each problem noted, please identify any possible training and non-training solutions you see.
  - Three to six subject matter experts from that employee group were then chosen to review pre-survey results.
  - A survey was created using the proposed training solutions and distributed to all employees in the group.
  - Responses were tabulated and ranked by perceived performance improvement rating.

**Results:** The process was completed on time and within resource limitations. Phase 1 led to a small set of very high priority organizational goals, as intended, and intensive assessment in these areas led to significant training and non-training initiatives. Employees’ reports of performance problems and training and non-training solutions to these problems indicated that the pre-survey was used appropriately. The procedure led to a more highly targeted list of intervention options judged by employees to have the likelihood of improving performance.