ALIGNING BUSINESS NEEDS AND INSTRUCTIONAL ASSETS (RECYCLING INSTRUCTIONAL ASSETS)

Joel Gendelman

High-performing organizations and performance improvement professionals frequently speak about the alignment of their instructional curricula with the needs of the business. However, they often lack a systematic methodology for performing that alignment. This article presents such a method. The process provides the ability to better support current business initiatives, increase organizational responsiveness, and reduce curriculum acquisition and development costs.

HIGH-PERFORMING ORGANIZATIONS and performance improvement professionals frequently speak about the alignment of their instructional curricula with the needs of the business. However, they often lack a systematic methodology for performing that alignment. This article presents a method that provides organizations and performance improvement professionals these abilities:

- Enhance business alignments in processes and programs.
- Increase departmental budgets by documenting business alignment to department heads and executives.
- Decrease development, acquisition, and licensing costs by efficiently reusing instructional assets.

This alignment can be created for a specific course, curriculum, business unit, or multinational organization. To meet more pragmatic needs, such as to quickly recycle existing instructional assets to meet a current business need, I recommend substantially limiting the scope of an investigation and eliminating unnecessary steps. Exhibit 1 summarizes this process, and the following sections demonstrate it and provide relevant examples.

STEP 1: DOCUMENT YOUR BUSINESS NEEDS

1.1 Define Your Audiences

The size of your organization will determine the complexity of this task. If you support a large multinational corporation, you may first need to identify business units and geographies. In any case, you need to specify the prerequisites and motivational factors of the audiences you support. Prerequisites should include both basic educational prerequisites such as reading level, as well as more specific prerequisites such as sales skills and previous experience with the product or technology. For the most part, these prerequisites should be identified in existing instructional materials. Be sure to include motivational factors that identify if members of the audience have been rewarded, punished, or ignored for performing the behaviors included in each curriculum since those factors may be assisting or hampering performance on the job (examples are the performance of their manager or the presence or absence of a necessary tool or piece of machinery). This type of information is

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Step 1: Document Your Business Needs.
1. Define your audiences.
2. Create a position road map for each audience.
3. Develop task listings to support the road maps.
4. Create performance objectives.
5. Determine constraints.
6. Document Step 1 information using the audience and job analysis chart.

Step 2: Analyze Curricula.
1. Gather instructional materials and information.
2. Identify additional information needs.
3. Analyze and document the curricula.
   • Generate instructional and enabling objectives.
   • Validate and enhance objectives.
   • Convert assessment items into objectives.
   • Convert course outlines and activities into objectives.
   • Group objectives under corresponding performance objectives.
4. Document Step 2 information using the curriculum documentation chart.

Step 3: Align Business Needs With Curriculum Assets.
1. Align instructional objectives with performance objectives.
2. Link objectives to instructional assets (courses, modules, sections).
3. Document the Step 3 information using the curriculum alignment chart.
4. Note discrepancies.

Step 4: Make Recommendations.

Step 5: Implement Recommendations.
1. Retire courses and materials.
2. Obtain additional third-party materials.
3. Develop materials (course road maps, activity sheets, resource maps, job aids, assessments).

Step 6: Assess and Revise.

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sometimes difficult to gather, and, in most cases, you will have to gather it in collaboration with the business unit or line organization.

As performance improvement professionals, we recognize that training is not the solution to every performance problem. For example, it is not the best solution if participants are not performing because of lack of motivation and incentive, or an environmental deficiency. If a performance problem is due to a lack of motivation or incentives or a poor attitude, consider establishing a feedback system, or institute positive incentives for members of the audience. If there is an environmental deficiency, it is best to remove or remedy the portion of the environment (for example, management or the organizational structure) that is deficient.

This treatment of motivation, incentive, or attitude problems is just the tip of the iceberg. (See Harless, 1970, for a more comprehensive coverage of this subject.)

1.2 Create a Position Road Map for Each Audience

Now that you have identified each audience, you will need descriptions of their positions, which include the major task groups of the tasks they perform on the job. Since these task groups may change as employees increase their tenure in a position, you may wish to document this as well.

1.3 Develop Task Listings to Support the Road Maps

Identify the specific tasks included in each major task group.

1.4 Create Performance Objectives

Identify the performance objectives that support each task. Since a house is only as good as its foundation, make sure that you are working with clear performance objectives that identify desired behaviors. To ensure that you are working with specific, clear objectives, decode the objectives against these elements:

1. Be sure that the "who" is as specific as you can make it. It should identify participants' education and reading levels, as well as their skills and knowledge related to the objective.

2. Determine if the behavior is the main intent or an indicator. If it is the main intent, be sure that it is observable. If the behavior is an indicator, identify the main intent. If the behavior is an indicator and you cannot identify the main intent, request help from the person who wrote the objective. Also be sure that the indicator is simple and direct and does not require prerequisites that participants may not have.

3. Be sure that result is observable.

4. Ensure that the conditions specify the range of situations in which participants are expected to perform.

Since a house is only as good as its foundation, make sure that you are working with clear performance objectives that identify desired behaviors.

5. Be sure that the standards are reasonable, taking the consequences of making a mistake and time in a time-critical environment into consideration.

For a more detailed presentation of what makes an objective effective, see Mager (1984).

1.5 Determine Constraints

Before going any further, be sure to review descriptions of the audiences and tasks to determine the following types of constraints:

Time: When does the task need to get done?

Resources: Who is available to help?

Budget: How much time and outside dollars can the organization spend in performing the task?

Equipment: What equipment, tools, and supporting documentation are available in the job environment?

1.6 Document Step 1 Information Using the Audience and Job Analysis Chart

Document the results of this step in the process in Exhibit 2.

STEP 2: ANALYZE THE CURRICULA

2.1 Gather Instructional Materials and Information

Determine the information that you have for your instructional assets. Then identify the additional information you need to align these assets with your performance objectives.

2.2 Identify Additional Information Needs

In the best of all possible worlds, you will have nicely grouped instructional objectives, as well as detailed information on the target audience. In fact, you will rarely have all the information you need. So take a moment to determine the additional information that you need to gather related to the audience, tasks, and objectives. We have summarized this in Figure 1.

2.3 Analyze and Document the Curricula

In this step, you go beyond the information that the instructional assets provide and determine what your courses and curricula are really made of by gathering the information identified in Figure 1. You will not need to perform all of these activities, only the ones that resulted from the analysis of your performance objectives in identifying additional information needs. In addition, you may need to perform some additional activities; for example, task analyses if they have never been done before.

EXHIBIT 2	AUDIENCE AND JOB ANALYSIS CHART					
AUDIENCE	CHARACTERISTICS	POSITION	JOB TASK GROUPS	TASKS	PERFORMANCE OBJECTIVES	CONSTRAINTS

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Business Side of the House

Audience and position
descriptions
Job task groups
Job tasks
Performance objectives
Constraints

Curriculum Side of the House

Curriculum materials
Instructional objectives
Enabling objectives
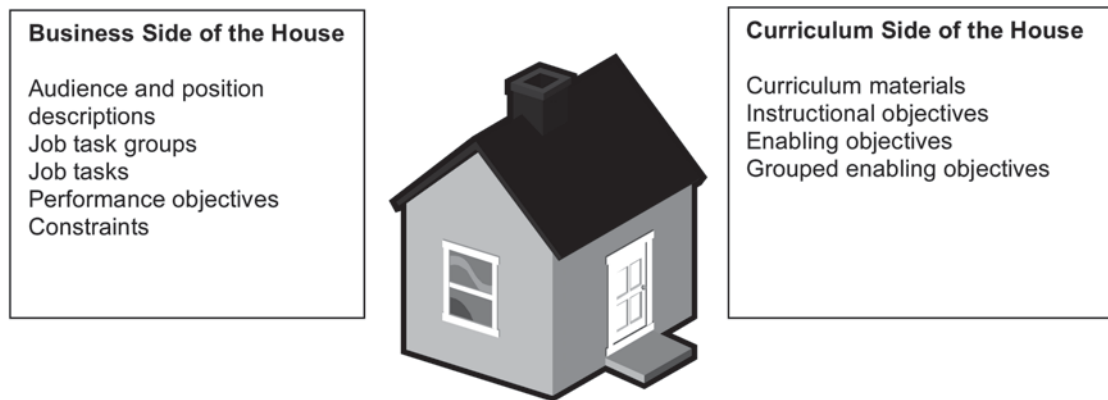Grouped enabling objectives

FIGURE 1.   ADDITIONAL INFORMATION TO GATHER

Generate Instructional and Enabling Objectives. Figure 1 includes three types of objectives: performance objectives, instructional objectives, and enabling objectives.

The difference between performance objectives and instructional objectives is that performance objectives specify the behaviors that you want participants to perform back on the job. Since the instructional environment does not have the resources of the real world (e.g., people and machinery), instructional objectives are simulated counterparts of those real-world objectives that are possible in an instructional environment. Here are examples of each type of objective:

Performance objective: Participants will be able to diffuse customers' anger in 9 out of 10 instances within the first 10 minutes of the call.

Instructional objectives: (1) Given two scenarios, participants will be able to check the statements that would diffuse the customer's anger from a list provided. (2) Given two scenarios, participants will be able to write a response that would help diffuse the customer's anger.

An enabling objective is a subset of an instructional objective. Mastery of several enabling objectives enables participants to perform an instructional objective. You can generate enabling objectives by converting assessment items or the course outline and associated activities into objectives. I believe that it is easier to infer the real-world performance desired from an assessment item than from a title in a content outline. In either case, attempt to follow the guidelines in Section 1.4.

Validate and Enhance Objectives. Do not believe everything that you read. Just because the authors of the internal or third-party courses that compose curricula say that the

materials accomplish a performance objectives does not make it so. You need to make that judgment for yourself.

Check the course descriptions of the performance objectives against the activities, exercises, and assessment items in the course. In this way, you can ensure that participants will be exhibiting the performances specified in the objectives during the instruction. Also, be sure to check that the published performance objectives match the task listing identified in Step 1 and enhance them to ensure that they include the elements identified in Step 1.4.

Convert Assessment Items Into Objectives. If your assessments are representative and valid, converting assessment items into objectives is straightforward. Build the objective by identifying the five elements of an effective objective:

Who: Participants will be able to . . .

Behavior or result: Type the letter corresponding to the most appropriate choice of opening statement for a call from a customer.

Result: Letter corresponding to the correct choice.

Conditions: Given a description of a support situation.

Standards: This is not identified in the assessment item.

Then write a sentence or two that covers the components.

More often than not, you will need to use your judgment to create the standard—for example: "Given descriptions of support situations, participants will be able to choose the number corresponding to the most appropriate opening statement within three minutes in at least 9 out of 10 cases."

Convert Course Outlines and Activities Into Objectives. This method typically requires more effort. You need to follow the same steps as converting from an assessment item to an objective, but this time using the content outline and associated activities as a reference:

- Develop the objective by identifying each of the five elements of a good objective (who, behavior, result, conditions, standards).

- Write a sentence or two that covers all of these elements.

Here is an example:

Course Outline

IV.2: Report information back to the customer.

IV.2.A: The two steps in reporting.

IV2.B: Give appropriate information.

IV.2.C: Check for understanding.

IV.2.D: Apply your understanding.

Activity Description

Participants are provided written descriptions of support situations and a list of field technicians' responses. They are then asked to choose from a series of statements, the statement that best illustrates reporting back to the customer.

Components of the Objective

Who: Participants will be able to . . .

Behavior: Choose a statement from a list.

Result: A chosen statement that best illustrates reporting back to the customer.

Conditions: Given written descriptions of support situations.

Standards: Includes the two steps of giving appropriate information and checking for understanding.

Completed Objective

Given written descriptions of support situations, participants will be able to apply their knowledge by selecting the letter corresponding to the statement that best illustrates reporting back to the customer within three minutes in at least 9 out of 10 cases.

Group Objectives Under Corresponding Performance Objectives. You will usually group instructional objectives using the same method as when grouping performance objectives. You can group objectives in several ways—for example:

By Product or Product Class

- From simple products to more complex ones.

- From new products to old ones.

- According to the sequence a task is performed.

- Forward chaining in which you teach the first action performed first and cover the last action last.

- Backward chaining in which you teach the last action performed first and the first action last.

By Logical Order of the Subject Matter

- From the most basic and subordinate cognitive elements to more complex ones.

- From facts to concepts, rules, and finally to principles.

Whatever the case, it is easiest to compare objectives if you group them the same way.

2.4 Document Step 2 Information Using the Curriculum Documentation Chart

Use the curriculum documentation chart in Exhibit 3 to document the results of this stage of the process. Exhibit 4 shows a sample of a curriculum documentation chart for a specific course. Notice that the locations of several columns have changed to facilitate interpreting the information for this exercise. I recommend doing the same when you perform you own analyses.

STEP 3: ALIGN BUSINESS NEEDS WITH CURRICULUM ASSETS

In performing this step, you will do these actions:

- Align instructional objectives with performance objectives.

- Link both to instructional assets (courses, modules, sections).

- Document the curriculum using the curriculum alignment chart.

- Note any discrepancies.

3.1 Align Instructional Objectives With Performance Objectives

Perform this activity using portions of the curriculum alignment chart form in Exhibit 5. If you have not already realized it, having an Excel Power User, or being one yourself, will help you transform one chart into the other.

EXHIBIT 3	CURRICULUM DOCUMENTATION CHART			
COURSE	MODULE	SECTION	INSTRUCTIONAL OBJECTIVE	ENABLING OBJECTIVES

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3.2 Link Objectives to Instructional Assets (Courses, Modules, Sections)

This should be fairly self-explanatory. Do this step using the curriculum alignment chart in Exhibit 5.

3.3 Document Step 3 Information Using the Curriculum Alignment Chart

Complete the curriculum alignment chart.

3.4 Note Discrepancies

Nothing is perfect. You will no doubt find a lack of alignment between the performance objectives, instructional objectives, and instructional assets. Great! This is why you are doing this exercise. Do not worry; you will soon do something about these differences.

Discrepancies typically fall into three categories:

- Performance objectives not covered by the instructional objectives

- Instructional objectives not relevant to performance objectives

- Instructional assets that are not aligned with the performance objectives or the instructional objectives

STEP 4: MAKE RECOMMENDATIONS

For the most part, your recommendations will provide you and your management with the following choices:

- Obtain or create additional instructional materials to cover the performance objectives not covered by your current instructional assets.

- Retire instructional assets.

- Reuse instructional assets that are now identified and well documented.

Following is an outline for a report that consolidates these recommendations:

1. Introduction

2. Purpose of the report

3. Description of the effort and process used

EXHIBIT 4	SAMPLE CURRICULUM DOCUMENTATION CHART			
INSTRUCTIONAL OBJECTIVE	**ENABLING OBJECTIVE**	**TAXONOMY LEVEL**	**MODULE**	**SECTION**
Accept that every organization can be strengthened by a high-performance board.	Explain that boards are their most important resource.	Comprehension	2	3
	Determine if they feel that their board is their most important resource.	Synthesis	2	3
	Identify typical board issues.	Knowledge	2	3
	Explain why having a high-performance board and utilizing it to its potential can greatly benefit the organization and all of its stakeholders.	Comprehension	4	1
Gain enough information on the value of a high-performance board that the participant chooses to take the next steps.	Define, identify, and explain the characteristics and drawbacks of different types of boards (NOFO, NIFI, and NIFO).	Comprehension	2	2
	Given a case study, identify those characteristics and drawbacks.	Application	2	2
	List examples of each type of board of directors.	Synthesis	2	2
	Identify the type of board, its characteristics, and the effects they have experienced.	Synthesis	2	2
	Explain why a NIFO board is the baseline for a high-performance board.	Comprehension	2	2
	Define and explain XXX's strategy (reality, focus, and organizational competency).	Comprehension	2	3
	Explain each and apply to examples.	Application	2	3
	Explain and generate examples of each element of an organization's theory of business • Reality • Focus • Organizational competency.	Application	2	4
	Identify the importance of each element.	Knowledge	2	4
	Given a case study, determine each element of the organization's theory of business.	Application	2	4

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EXHIBIT 4	SAMPLE CURRICULUM DOCUMENTATION CHART (continued)			
INSTRUCTIONAL OBJECTIVE	ENABLING OBJECTIVE	TAXONOMY LEVEL	MODULE	SECTION
	Explain the importance of reviewing their theory of business.	Comprehension	2	4
	Explain an organization's reality.	Comprehension	2	5
	Apply to case study.	Application	2	5
	Explain how high-performance boards set the direction of an organization.	Comprehension	3	2
	Identify how a focus and direction ensures that a high-performance board will be successful.	Comprehension	3	2
	Define a high-performance board in terms of direction, operation, and control.	Knowledge	3	2
	Define the roles and responsibilities of a high-performance board.	Knowledge	3	3
	Describe the roles and responsibilities of the board, board members, and executive director or CEO and recognize how that compares with the participant's current board.	Application	3	3
	Identify and explain that the mission of a board is to create the future versus focus on the past or present.	Comprehension	3	3
	Given a case study, identify the role of the board in creating the future versus focusing on the past.	Application	3	3
	Explain the role of strategic planning in creating the future of an organization.	Comprehension	3	4
	Define organization governance.	Knowledge	3	4
	Given a case study, identify the board's role in organizational governance.	Application	3	4
	Apply the board's role of organizational governance.	Application	3	4
	Explain the board's role in setting policy.	Comprehension	3	4
	List the roles, responsibilities, and boundaries of boards.	Knowledge	3	4
	Apply to a real-world example.	Application	3	4

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EXHIBIT 4	SAMPLE CURRICULUM DOCUMENTATION CHART (continued)			
INSTRUCTIONAL OBJECTIVE	ENABLING OBJECTIVE	TAXONOMY LEVEL	MODULE	SECTION
	Describe how high-performance boards instill accountability into the board.	Comprehension	3	4 and 5
	List tips for boards to better focus their efforts.	Knowledge	3	4
	Given a case study, apply the general process of gathering performance feedback.	Application	3	4
	Explain that the board monitors and measures key strategic performance indicators and holds leadership and organization accountable for achieving those targets, as well as monitoring and evaluating the board's effectiveness.	Knowledge	3	5
	Identify and explain the role of the board in monitoring and controlling performance.	Comprehension	3	5
	Given a case study, apply the above to identify the specific monitoring and controlling responsibilities of the board.	Application	3	5
	List and explain the elements of performance measurement.	Comprehension	3	5
	List and explain the elements of performance monitoring.	Comprehension	3	5
	Explain and apply to examples of board self-governance.	Application	3	5
	List and explain the elements of developing and maintaining the board and leadership.	Comprehension	3	5
	Identify and explain the process of performance evaluation, board development, and board improvement.	Comprehension	3	5
	List and explain the elements of board performance improvement.	Comprehension	3	5
	Read and interpret pre-meeting board documents.	Comprehension	3	5
	Identify and explain the benefits of community involvement.	Comprehension	4	1
	Given a case study, apply the above.	Application	4	1
	Identify the personal satisfaction of serving on a board.	Comprehension	4	1
	List and explain methods for relieving personal and board stress.	Comprehension	4	1
	List benefits of achieving the desired outcome.	Knowledge	4	1

EXHIBIT 4 SAMPLE CURRICULUM DOCUMENTATION CHART (continued)

| INSTRUCTIONAL OBJECTIVE	ENABLING OBJECTIVE	TAXONOMY LEVEL	MODULE	SECTION
Identify why XXX is a trusted source and is here to provide support throughout the entire process.	Identify and explain XXX's beliefs regarding high-performance boards.	Comprehension	2	1
Recognize and accept that they are not alone and the resources they can turn to.			2	1
Assess where they are today and where they currently fall short of excellent performance.	See enabling objectives for "Gain Enough Information."			
Begin to formulate an action plan to address any gaps. List the biggest issues, challenges, and weaknesses their board faces, develop a general plan for moving forward, and begin prioritizing the issues, challenges, and weaknesses of creating a board of directors.	Apply defining reality to their own business.	Synthesis	2	3
	Generate a listing of issues that they would like their board to address.	Synthesis	2	3
	Explain how organizations develop high-performance boards.	Comprehension	4	2
	Indicate that the initial one-on-one meeting is the first step to moving toward a high-performing board.	Knowledge	4	2
	Explain why using XXX's systematic management model can help them assess the gaps, develop the plan, and help you create a high-performance board.	Comprehension	4	2
	State that the first and most important decision is, "Are you and your board ready?"	Knowledge	4	2
	Indicate that this is a process that takes time, and dramatic changes will not happen overnight.	Knowledge	4	2
	Describe the importance to committing to this long term.	Comprehension	4	2
	State that there are many paths to pursue and no one right answer for all organizations.	Knowledge	4	2
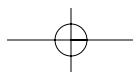
EXHIBIT 5	CURRICULUM ALIGNMENT CHART					
PERFORMANCE OBJECTIVES	CURRICULUM OBJECTIVE	TAXONOMY LEVEL	COURSE	MODULE	SECTION

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4. Task listings
5. Audience and job analysis chart
6. Curriculum documentation chart
7. Curriculum alignment chart
8. Recommendations
   • Curriculum reorganization
   • Retirement of instructional assets
   • Curriculum development
9. Action plan and schedule
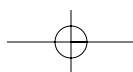
STEP 5: IMPLEMENT RECOMMENDATIONS

Most of your recommendations will probably surround the following choices.

5.1 Retire Courses and Materials

This is self-explanatory. While you may wish to do this immediately, it would probably be best to consider your organization's process for retiring these assets.

5.2 Obtain Additional Third-Party Materials

Obtaining third-party materials may be your most cost-effective choice for filling the holes left by your existing curricula. This calls for an additional analysis in which you analyze the third-party course and compare its objectives to the performance objectives that are not met by your current instructional assets. See Step 3.1.

5.3 Develop Materials

Many times, you will find that the objectives not covered by the third-party course are specific to your organization and can be met only by materials that you create internally. Developing the following types of instructional tools can greatly streamline your efforts.

Course Road Maps. Course road maps direct participants to the instructional assets that they need to complete. They can even route participants based on their prerequisites or performance on a mastery test.

Activity Sheets. Sometimes it is difficult for participants to put together the big picture of what they are supposed to do and when they are supposed to do it. Activity sheets are one way of providing them with this information.

Resource Maps. Sometimes the hardest part of performing an activity is finding out where to look for guidance. Internal documents, corporate intranets, and the Internet itself contain a wealth of information if you know where to look. Often this is not as intuitive as it may seem, especially for someone who does not know what he or she is looking for. Resource maps are similar to curriculum road maps, except that they route participants to resources other than courseware.

Job Aids. Road maps, activity sheets, and resource maps are only a few examples of job aids. Use your creativity to develop new ones. Be sure to consider procedure sheets, flowcharts, worksheets, samples, and cheat sheets.

Assessments. A major part of most quality initiatives is assessment and evaluation. For every course or curriculum that you have analyzed, you should develop a prerequisite and mastery test. Below are some hints for developing good mastery items:

Match the Result

Step 1: Locate the result identified in both the objective and the assessment item.

Step 2: Determine if the result identified in the assessment items is the same as the one in the objective.

Match the Conditions

Step 1: Locate the conditions in the objective and the assessment item.

Step 2: Determine if they are identical.

Step 3: If not, identify the conditions that the assessment items approximates.

Step 4: Determine if the degree of approximation is acceptable and does not require additional prerequisite skills (e.g., presentation, verbal, writing, or social).

Use a Variety of Assessment Item Types

Use a wide variety of assessment items that include short answer, multiple choice, matching, true/false, hot spot, critique and repair, simulation, and label items.

Include Choices That Help More Than They Hurt

Rule 1: Ensure that choices are well written. Keep the material short and simple, use the active voice, and write in the second person.

Rule 2: Ensure that choices help more than they hurt. Isolate the critical elements of the objective, determine where learners can go wrong, and construct choices that reflect these wrong turns.

STEP 6: ASSESS AND REVISE

A curriculum architect's work is never done. Implement your newly aligned curricula, begin reusing learning objects, continue to assess their effectiveness, and make refinements.

CONCLUSION

The process described in this article represents years of refinement of the reverse instructional design model initially derived from work on front-end analysis, performance problem-solving analysis, task analysis, and instructional design. (For a preliminary version of this model, see Gendelman, 1990, and Blair and Gendelman, 1990.) This is an organic process that merits ongoing refinements by human performance technology practitioners. Temper it with your own intelligence, and enhance it with your own expertise to make it work for your performance needs.

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