Needs analysis is the process of identifying problems and their causes, then matching solutions to the problems. Therefore, the formal needs analysis process is useful only when problems are not clearly identified or analyzed. Attention to the simple decision process illustrated in Figure 2 may save time and embarrassment by avoiding the effort of a formal needs assessment and needs analysis when they are not necessary.

**Figure 2: What to Use Instead:**

<table>
<thead>
<tr>
<th>If</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training goal is clear or required as in mandatory training</td>
<td>Start with task analysis</td>
</tr>
<tr>
<td>You are training new hires to do a specific job</td>
<td>Start with job analysis then task analysis</td>
</tr>
<tr>
<td>New technologies, processes, or programs are being introduced</td>
<td>Use subject matter expert analysis</td>
</tr>
</tbody>
</table>

**But**

| If there seems to be performance issues, something other than not knowing how to do the job may be involved | Use needs assessment/needs analysis studies |

So, it is important to recommend needs assessment and needs analysis when problems have not been clearly identified, and it is also important to intentionally avert this work when it is not necessary.

If there are performance issues and a needs analysis is in order, how can it be done faster, better and easier? Here is an example of one approach when conducting interviews is the chosen data gathering technique.

**Needs Assessment/Analysis Interviews - Faster/Better/Easier**

One data gathering technique used often in needs assessment/analysis is the interview. Here is how interviews can be done faster/better/easier.

- Develop a list of standard questions and supplemental questions. The questions can be used repeatedly, if modified to address each particular situation.
- Use the standard and supplemental questions to identify gaps in the knowledge, performance, or attitude.
- Ask which gaps are most important to resolve.
- Ask questions about the root cause(s) of the interviewee’s identified high priority gaps (needs).
- Ask how the gaps can be closed (possible solutions to the problems identified).

By asking questions about the gaps, their root cause, and solutions, information for both the needs assessment and needs analysis is collected in the same interview.

To be more efficient and effective in collecting and handling the interview data, record the interviews and have them transcribed. A court reporting company or the services of a conference call center (if telephone interviews are used) will take the burden of transcription off the consultant and speed the process. The court reporters or the conference call centers will provide an electronic copy of the interview, as well as a hard copy, usually within 48 hours. Using this process, electronic copies of all interviews can be available within 2 days of the last interview.

Once the electronic copies are received, the comments can be sorted into problem categories. Comments are then summarized within each category. Recommendations are built from the summary information. This process makes the report more accurate (better) because what people actually said has been captured, rather than relying upon notes. The process moves more quickly using transcription services (faster), and it is certainly less time consuming and laborious (easier), compared to having instructional designers undertake all the work. The time and effort of instructional design professionals are saved for analysis, summarization and recommendations.

What is the relationship between the needs analysis process and ISD? The needs analysis process is a preliminary step taken when it is not certain whether training is needed or exactly what
training is needed. If one of the outcomes of the needs analysis process is the identification of knowledge, skills, and attitudes that can be treated best as a training intervention, then it serves as input to the rest of the ISD process. If other interventions are selected, it serves for input to those non-training interventions.

Following are three more examples of how other parts of ISD can be done faster/better/easier. These three examples suffice to show how today’s practitioner is able to effectively and efficiently apply ISD to accommodate increasing needs for speed, continuous content changes, and cost savings. The three areas of ISD discussed are content analysis, instructional design strategies, and developmental testing. These three are common in one form or another in all ISD models.

Content Analysis – Faster, Better, Easier

Content analysis involves the use of various techniques to determine the knowledge, skills, and attitudes people need to meet a business need (problem or opportunity) or to do a specific job. For most practitioners, it is both the most difficult and the most important part of the ISD process. No other area of analysis in ISD involves as many different techniques as content analysis.

An excellent book on content analysis is Task Analysis Methods for Instructional Design. The book describes and illustrates 26 methods for task and job analysis. Three primary techniques widely used are hierarchical task analysis, procedural task analysis (covert and overt), and concept analysis.

- Hierarchical task analysis is used primarily for cognitive learning.
- Procedural task analysis (both overt and covert) is used for linear tasks. Overt procedural task analysis usually involves psychomotor behaviors, even when some cognitive processing may also be occurring. Covert procedural task analysis involves analyzing those procedures that are not directly observable, but are part of how people think through decisions.
- Concept analysis is used to identify the critical attributes of ideas and to identify examples and non-examples of the ideas for training purposes.

Here are some ideas for making this important and sometimes taxing process better, faster, and easier.

1. Content analysis should start with determining which kind of analysis is appropriate for a given training situation. If teaching topics have dependencies involving prerequisite learning, hierarchical analysis should be used. When teaching how to use a software program or how to operate something where people push buttons and recognize cues, procedural task analysis is a better choice than hierarchical analysis. When teaching people to comprehend and use an idea (rather than a task), concept analysis should be used. There are many techniques for breaking content into usable chunks for teaching and learning. Using an appropriate technique based on the kind of learning undertaken will both speed the process and make it better in terms of identifying all the right content to be taught and learned.

2. Key to any content analysis is identifying all the necessary and sufficient knowledge, skills, and attitudes needed by a trainee to perform on the job. One of the most common learning reasons for non-performance is the lack of a prerequisite concept or skill. It is therefore important to ask content experts probing questions to be sure all the necessary and sufficient content has been identified.

3. When conducting a concept analysis, divergent examples must be collected so training can demonstrate the range of possibilities. Concept analysis should also identify non-examples that closely resemble the concept, but are not the concept. These close-in non-examples can be used in the training to help trainees avoid misunderstanding the concept.

4. To aid in the transfer of training and generalization of content to many situations, content experts should be asked for a wide range of examples when the learning task is hierarchical in nature or is a concept.

5. One technique for aiding content analysis is to use Post-It® Notes for displaying and sorting content. A separate task/topic is written on each note. The notes can then be arranged and rearranged in different combinations to discover how the topics and tasks are interrelated. Additions and deletions can be quickly and easily made. It is also a fast and fun way to do a task analysis with content experts.

6. Content analysis is best performed by seeking the input of more than one content expert. This provides for multiple perspectives. This
is particularly important with overt procedural tasks since many high performers develop idiosyncratic behaviors over time that do not necessarily contribute to good performance.

These suggestions for making content analysis faster/better/easier can all help. However, it should be noted that content analysis is very important to most master developers. They devote considerable time and effort to ensure all the necessary and sufficient content needed for acceptable learner performance on the job has been identified.

Design Strategies – Faster, Better, Easier
The design phase of ISD, like content analysis, involves the use of many different techniques. Most master instructional designers are familiar with a wide variety of design strategies. To design quickly and effectively, they select macro level designs based on the type of content, the target audience, and the context for the training. As they begin to work on the actual training modules, they think in terms of existing structures and formats (frames and SuperFrames™) that may be modified for reuse, then move on to the details. Below are some examples of macro level design thinking and the use of frames and SuperFrames™.

Software Training Development
An example of thinking at a macro level when designing instruction can be illustrated in what is a common scenario today – introduction of new software. Software is often developed for a specialized area. In one recent instructional design project, enterprise-wide software was created for managing a large company’s real estate holdings. No user guide had been developed for the software, and performance based training was needed to realize the anticipated value of the software as rapidly as possible. How was this done faster/better/easier?
• The user guide was created with the basic procedures for completing program functions at the same time training development was undertaken (faster).
• Separate from the user guide, performance-based exercises, demonstrations, and visual presentations were developed for the training. Keeping the exercises separate from the user guide allowed the user to have a streamlined user guide after the training, whether on-line or hard copy (better). By having performance-based exercises, the training simulated the job tasks users face in the real work world.
• To complete this macro level design, a module at the beginning of the training was added that discussed how to maneuver though the software.

In this example the client received two for one: the user guide and the training program (easier and better).

Cognitive Processes and Approaches
In many training situations, there are cognitive processes and approaches to learn, usually related to problem solving. A fast macro approach to instructional design for such learning situations is to think in terms of the phases or steps required in the process/approach/methodology to be taught.

Some familiar examples of content that lends itself to this approach include training on ISD itself or developing a course on change management, leadership, or teamwork. When faced with such topics, ask is there a process, a cycle things go through, or a methodology people will follow. If so, the phases required by the process, cycle, or methodology may be the general framework for a more detailed and complete hierarchical analysis. This is typically a faster way to get started designing for topics that are hierarchical in nature. Each part of the process, cycle, or methodology can then be formed into a training module. Each module can start with a definition of the phase or step in the process, followed by examples, case studies, and worksheets.

SuperFrames™
SuperFrames™ are an expansion of the concept of game or activity frames. SuperFrames™ provide fast and proven structures for learning. They consist of both a game/activity frame and imbedded job aids that are used during the activity and later on the job to promote training transfer. SuperFrames™ make the design/development process faster and promote performance based learning and transfer of training (faster and better). Because SuperFrames™ are based on existing activity structures, they are also easier to design and develop.

Most master developers carry several SuperFrames™ in their heads; they also refer to activity frame resources as needed. Here is an example of SuperFrames™ that is helpful for teaching people to quickly and accurately use procedures online or in manuals.
The frame is similar to a scavenger hunt. The first step is presentation of job aids and brief explanations to show how the manuals or on-line reference systems work. If there are several manuals or systems, a job aid may even be developed to help the learner identify the right reference quickly. Other job aids are developed to illustrate the structure of the references.

Once the structure is apparent to the learner, an activity is used for practice and reinforcement. In this case, a scavenger hunt. Real scenarios are provided to the learner, which make the training performance-based. The learner uses the job aids previously presented to find the right procedures or policies quickly. The learner then answers two or three questions related to interpreting the procedure or policy. To conclude, the activity is debriefed. Such SuperFrames™ are fun, interesting, quick to develop, and performance-based, making them a faster, easier, and better way to design training in many situations.

The design phase of ISD can be accomplished faster, better, and easier by macro level design and the use of frames and SuperFrames™. Detailed techniques for teaching specific kinds of content (i.e., facts, procedures, processes, principles, and concepts) are helpful too, but most master instructional developers think at a more macro design level to jump-start the overall development process.

**Developmental Testing - Faster/Better/Easier**

One of the keys to the systematic development of a training intervention (and non-training interventions as well) is to test the intervention prior to implementation. While few would disagree that testing training materials and programs before releasing the programs is important, this step in the ISD process—developmental testing—is nevertheless often diminished or skipped altogether.

Those with experience know that developmental testing is an essential step in terms of learning outcomes, as well as in program acceptance. Master developers know that just “going with it” is a formula for disaster. Consider the consequences of putting on a play without a dress rehearsal. A poor “opening night” can result in lowered attendance and possible cancellation. Training programs aren’t much different, especially if learners have a choice in attending the training or not. So how can materials be tested faster/better/easier?

Fortunately, much practical research exists in this area. Studies show that small group trials are as productive as large group trials in terms of collecting data for the purpose of improving an instructional program. Further, there appears to be no significant difference in the quality of information collected for the purpose of revision when testing a program on a very small number of people (or even just one person), and testing the same version of the training material with larger groups of 15-20 people. This is a great finding for practitioners! Of note is the fact that the number of try-out and revision cycles to which the training programs are subjected is more important for improvement purposes than the number of people in a single trial run. Therefore, using very small group trials as a strategy for developmental testing may not only be faster and easier, but it may be better as well because more test and revision cycles are likely to be completed. It is also better because the risk of exposing the training program to many people before getting the bugs out of it is minimized. Remember, once the first class of fifteen to twenty students has been run, there are fifteen to twenty people who can function as either advocates for your program or adversaries.

Thus far this article has made suggestions about how the practice of ISD in the practical world is being conducted to make the process faster, better and easier. In the next section, ISD’s robust nature will be demonstrated by showing how it is used in the exciting new world of e-learning and web-based training.

**Applying ISD To Web-Based Training**

In the past thirty years training delivery systems have come and gone, but none with the apparent impact of the web. Each time a major new delivery system appears, similar things occur. Among them are feelings of euphoria that the new system will solve all training problems. This jubilation is usually accompanied by a total disregard for what we have learned in the past regarding learning and instructional design. After some time, people begin to realize that program substance and instructional design are what really matters when it comes to learning; they also realize that the delivery system itself does not inherently possess the capability to help people learn in any organized manner. Fortunately, more and more people are recognizing the need for the application of instructional design principles to this relatively new, dynamic delivery system—the web.

Because this delivery system has such an impact on organizations from government to business and industry, instructional designers have been trying to learn how best to apply ISD practices to it. How does ISD fit in? Here are some illustrations of how ISD is needed and what we know can be integrated into web-based training.
**Visual Design and Instructional Design**

Web-based training requires good visual design as well as good instructional design. Good instructional design alone will not suffice in this delivery system. It’s necessary but not sufficient. Visual design is critical in terms of user comfort and attention. So, what is known about visual design from the field of instructional design?

Malcolm Fleming and W. Howard Levie’s classic book *Instructional Message Design* is an appropriate and useful reference. The reason is simple: the principles presented in this book are based on perception research. Learner perception doesn’t change when instructional messages are delivered over a new and different delivery system. The application of the principles of perception to instructional design were probably never more important in designing good, complete training programs than in web-based training. The same is true for instructional design. We need both.

**ISD - Just One Part of Web-Based Training**

While good instructional design and good visual design are vital for good web-based training, it is also important to know how ISD fits into the total process of web-based training development. Web-based training development involves software development with its own process. It also requires modifications in project management and a greater emphasis on the implementation and maintenance phases of ISD.

Figure 3 (right) is a representation of how ISD fits into the software development process and project management when developing web-based training.

Please note in the same figure that web-based training is not a foregone conclusion. This part of the new model is not new at all; rather it is part of any good front-end analysis to performance issues.

Another characteristic of e-learning solutions is that they require increased emphasis on the implementation phase. This is primarily due to two influencing factors. First, the learner is often engaged in learning in an individual, unsupervised environment. Second, there is less of a tolerance on the part of the learner for obsolete information. Learners expect information to be current. This individualized instructional environment also increases emphasis on such ISD components as testing the learner’s knowledge and skills. Without testing, it is very difficult to tell if learners took the training at all and if they did, if they learned what they were supposed to learn.

**Project Management for ISD**

As can be seen in the model in figure 3, project management takes on a special significance in more complicated projects such as web-based training. In this section, suggestions for managing the ISD process faster/better/easier are provided.

Instructional developers always face constraints that require them to develop training programs in an expedient manner. These constraints may vary, but they are always present to some extent. Some of the constraints besides time are money, location, access to people, and access to equipment. How can the systematic instructional development process be maintained under these circumstances? What can be done to organize ISD work and manage projects in today’s fast-paced, cost conscious environment, yet still get the outcomes and results desired?
Here are ten ways to organize and manage ISD projects faster, better and easier.

1. Team selection and formation for any given project may be the most critical factor in project success. Team selection should be based primarily on capability and reliability. Too often, the primary selection criterion is availability.

2. Large projects should be jump-started with an extensive kick-off meeting (virtual or live) where project goals, the business need driving the project, the deliverables, milestones, means of communication, and methods for tracking progress throughout the project are clearly communicated.

3. To make “shorter time to completion” a way of thinking and acting, limit the number of projects to which developers are assigned, but hold developers accountable for project deliverables and completion times.

4. Provide an environment that supports uninterrupted time every day for instructional developers to work on their projects. Mornings should be quiet time in an instructional development work environment; staff meetings and other routine interruptions and activities should be scheduled for late afternoon.

5. To avoid setting unnecessary controls and procedures that may distract from the primary effort of developing the instructional program, determine the fewest number of milestones that require approval.

6. Organize projects for speed and customer results (instead of organizing for process and control). Do not over-proceduralize the ISD process; doing so makes it longer and less effective.

7. Use technology to increase effectiveness and efficiency in communications and productivity: email, transcription services, and online file sharing are all examples of technologies that can help.

8. Ask all personnel to keep track of time on projects. Use experience/statistics from completed projects to do a better job estimating resources for future projects.

9. Consider using a lead developer with experience as the project manager to help anticipate bottlenecks and determine how to keep them from slowing the development process.

10. Provide production assistance and coordination to instructional developers towards the end of the project. Consider using production services that can provide a fast turn-around time allowing more time for the instructional developers to create the final product.

General Comments and Conclusion

In this last section, general comments are provided for improved ISD use. As mentioned in the introduction to this article, training departments too often have the wrong idea about why they exist. They exist primarily to help people do a better job at getting the results an organization needs (not to provide training and training processes per se). Focusing on results, rather than focusing on providing training, causes decisions to be made in very different ways. The ISD process and training are means, not ends.

So what can be done to keep focused on this primary goal of customer outcomes and results? Here are some recommendations:

- As a training organization, focus on helping customers get the results they want. This requires the training development organization to be project-driven vs. being process- and control-driven. The training organization should let customers know they have a process for helping them with their issues, and then move on to focusing on the customer’s issues and needed results. The ISD process should be secondary to a focus that is results-driven.

- When the training organization is process- and control-driven, it often makes a big deal out of something that can be easily and quickly resolved. One way to help make sure this does not happen is to take a minimalist approach with customers. Give a simple solution when something doesn’t really require a full ISD approach. For example, instead of developing a formal training program, it may be sufficient to produce a simple job aid, provide some structured on-the-job training, provide a briefing on a new tool (if the audience already possesses the necessary prerequisites to use the tool), design a well articulated communication (when trying to implement a change), or produce better user documentation when existing directions aren’t clear. While some of these
examples may be considered non-training solutions, the training organization can often provide these services because the skills necessary for providing these solutions are within the ISD skill set.

In this article, ISD is shown to be a robust and lasting process that has evolved to meet today’s increasing needs for speed, continuous content changes, worldwide distribution, and cost savings. No, ISD is not dead. It has not lost its value. We should not over-generalize the criticisms of ISD, but rather take them at face value and continue to improve the practice of ISD within our organizations by focusing on the outcomes and results needed. This article has been a positive appeal to avoid throwing the baby out with the bath water. After all, would we have people believe we need an un-systematic way of designing and developing training solutions?

References


