



Synergizing With SMEs: Structured Interaction Approach

Purnima Valiathan



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NIIT (USA), Inc.
1050 Crown Pointe Parkway
Floor 9
Atlanta, Georgia 30338
Telephone (770) 551-9494; Fax (770) 551-9229
Web site: <http://www.niitusa.com>

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Synergizing With SMEs: Structured Interaction Approach

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Introduction

Henry David Thoreau had said, *"The man who goes alone can start today; but he who travels with another must wait till the other is ready."*

The effectiveness of Technology-Based Training is dependent on two roles- the Subject Matter Expert (SME) and the Instructional Designer. If you are involved in producing Technology-Based Training, you are probably familiar with these roles. Further, you may have even experienced situations of long wait periods (that consumed your project cycle time) wherein the Instructional Designer had to wait because a SME couldn't be identified on time, or the SME was identified but had only limited time to spare. Has this ever left you wondering whether the situation can be tackled in a way where you neither go alone nor wait for the other person?

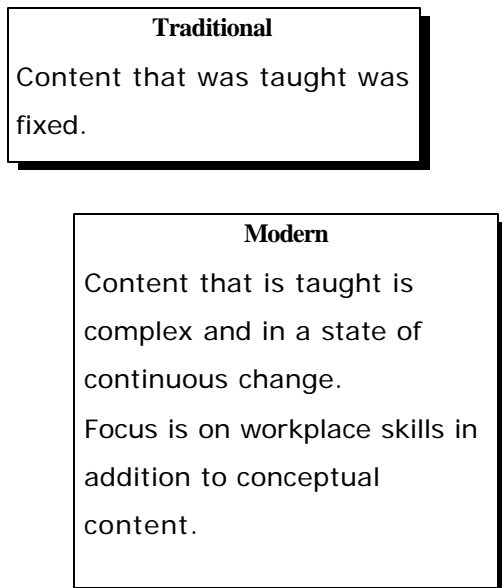
This paper provides an insight into the problems in the SME-Instructional Designer interface, the various causes for these problems and how we eliminated most of the problems by using a job-aid.

Role of the SME and the Instructional Designer in the Technology-Based Training industry

Traditionally, in the Technology-Based Training industry, SMEs would be responsible for providing the content and deciding how much of it should be included in the training. Instructional Designers, on the other hand, were responsible for converting the content provided by the SME into information that could be easily understood and learned. In addition to providing content-related inputs, the SME would explain concepts (they were considered to be semi-trainers too) and validate the technical accuracy and completeness of the subject matter within the training material. The SME was considered an authority on the subject matter - rarely was the SME expected to not understand a particular concept thoroughly.

In the current day scenario, there has been a change in the nature of the training material being created and in the training needs as well (Figure 1). Most of the training material being created today is for some new product or new technology that is still undergoing changes. This change in the nature of training materials has been cited by the authors Diane M. Gayeski, Larry E. Wood and John M. Ford (1992) in their article Getting Inside the Expert's Brain. They state, "The art of specifying content for training courses is becoming more complex. Often the processes and products being taught are in a state of continuous change."

Further, there is a need for creating training material that inculcates workplace skills and prepares the learners to implement their learning in the workplace. To quote from the article Business Experts and College Faculty Collaborate to Design Instruction by Gloria Palumbo Holland (1998), "Corporate America is demanding that education programs 'achieve specific, real-world goals'. A lack of workplace skills 'is fast becoming an economic and competitive issue'."



(Figure 1: Changes in the Training material)

Given these changes in the nature of training material that is being created, the traditional SME role has also undergone changes. Today, a SME may either be a person who is considered an authority in the exact subject area or *in a field related to the subject area*. In addition, a SME is also expected to have a hands on experience of applying concepts related to the subject matter in

the workplace - which means that SMEs are not those who *explain* concepts, but are those who *apply* concepts.

As a result of the change in the SME role, even an Instructional Designer's role needs to undergo a change. Though the Instructional Designer may be a novice in the subject matter while beginning to create the training material, it is imperative that the Instructional Designer evolves as a semi-expert in the subject matter somewhere midway in the process of creating the training material. Further, the nature and the type of queries that an Instructional Designer raises and resolves with SME support must also meet the changed training needs.

Failure of the Instructional Designer to adapt to the changing nature of training materials and the changing role of the SME often lead to inadequate and inappropriate interactions between the two roles, and in the long run affect the quality of the training material and project deadlines.

Problems involved in the SME-Instructional Designer interface

In the LSB unit at NIIT, we are involved in producing Technology-Based Training. The kind of training material that we develop is mostly technical. Therefore, Instructional Designers are highly dependent on SMEs for a lot of content-related inputs. Given the technical nature of the training material that we are producing, and our dependence on SMEs, we had been facing various problems in the SME-Instructional Designer interface. These problems manifested in the form of:

- Content Errors
- Instructional Gaps
- Project Delays

To ascertain the problems in the SME-Instructional Designer interface at NIIT, we asked the Instructional Designers to answer a questionnaire. Two key questions in the questionnaire were:

1) *What support do you expect from the SME and what support does the SME actually provide?*

Responses to this question revealed a gap between the expected SME support and the actual SME support (Table 1). Moreover, it exposed the fact that the Instructional Designers at NIIT were still perceiving the SME’s role in the traditional context and had not adapted to meet the changed SME role and the changed training needs. The Instructional Designers seemed to completely depend on the SME for content inputs when, in reality, there were instances of the SME also needing to research in order to provide these inputs. In addition, the Instructional Designers expected the SME to help them understand concepts related to the subject matter as well as provide examples and analogies in support of the subject matter. This consumed a lot of the available SME time at the expense of missing out on seeking SME inputs on other critical factors, such as how certain concepts were applied by them in the workplace.

2) *What are the problems that you face due to dependence on the SMEs?*

Responses to this question indicated the non availability of the SME at Project start as a major problem. Apparently, a SME is not always available during the initial stages of developing the training material, and if available may have only limited time to spare. In addition, the SME who is identified to provide content expertise may not be an expert in the same subject matter, and may not have adequate experience in applying certain concepts in the workplace. This was a common constraint - a result of the fact that we have moved away from creating training material for content that is fixed.

Expected SME Support	Actual SME Support
Provide all information including the content unavailable in a documented form.	Provide additional information and indicate sources from where unavailable content can be identified.
Explain concepts related to the subject matter.	Ratify the Instructional Designer’s understanding of the subject matter.
Provide examples and analogies in support of the subject matter.	Ratify the examples and analogies identified by the Instructional Designer.
Provide an answer to all content-related queries.	Provide an answer to most content-related queries.

(Table 1: Expected SME Support & Actual SME Support)

However, even though most of our projects seemed to face these problems, there were some that were being developed minus these hiccups. This made us realize that the solution to the problem probably existed with the Instructional Designers themselves. We organized a workshop where we grouped the Instructional Designers into two categories: those who rarely delayed a project due to constraints in interfacing with the SME, and those whose projects were always affected due to constraints in interfacing with the SME. The two groups were asked to answer the following question:

How do you tackle the problems of interfacing with the SME?

This question, elicited different responses from the two groups. The group that always faced content-related problems gave the responses "Wait for SME inputs" and "Locate a different SME", as the solutions to the problems. On the other hand, the group that rarely faced content-related problems responded with a wide range of solutions such as, interviewing and observing people who apply the concepts at work, and interviewing the users of the software, if training material was being created for a particular software. In addition, researching through books, magazines and the Internet, and speaking to Instructional Designers who had developed similar training material in the past were cited as solutions.

The Job-Aid

On the basis of the information that we had gathered through the questionnaire and the workshop, we realized that we needed to develop a strategy that would help the Instructional Designers to elicit the maximum information in the limited SME time. The main idea behind developing a solution was to ensure that the critical aspects of the subject matter were adequately addressed by the Instructional Designers through SME support. We felt that a structured approach towards interacting with the SME would ensure that the Instructional Designers do not forget to query the SME on issues, such as the typical tasks performed by the target learner. Further, given the nature of the training material that needs to be developed these days, it would be ideal if the Instructional Designers gathered content-related inputs from more than a single source.

To meet these requirements, we developed a strategy in the form of a job-aid (see Table 2). This job-aid is based on the twin concepts of *proactivity* and *synergy*. The job-aid aims at empowering Instructional Designers (not wait for the other man) and leveraging the strengths of each role (not traveling alone).

The job-aid has four quadrants. Each quadrant represents an area that must be addressed by the Instructional Designer while creating training material in the current day scenario. The main features of the Job-Aid are:

1) It prepares the Instructional Designer for situations that exist in the SME-Instructional Designer interface and leverages on the expertise that each role has to offer.

The **Q1** quadrant represents the area of expertise of the Instructional Designer, which the SME does not know. The Instructional Designer knows how the content must be structured, organized and explained so that the learner learns quickly and effectively. This is the area of Design.

The **Q2** quadrant represents an area that both the Instructional Designer and the SME do not know. At times, when you are creating training material for a new technology, neither the Instructional Designer nor the SME may have the complete content in hand. This is the area of Information.

The **Q3** quadrant represents the area that both the Instructional Designer and the SME know to an extent. The Instructional Designer would know the audience range. The SME would know which specific role must be targeted in the audience range. In addition, the SME would know what tasks are performed by a person in that role. This is the area of Audience.

The **Q4** quadrant represents the area of SME expertise, and is not known to the Instructional Designer. The SME would know how much of information needs to be covered and in what depth for the specified audience. This is the area of Content Specifics.

2) It takes into account the changes that have taken place in the nature of the training material being developed these days.

The quadrants Q1 and Q4 (the shaded areas in Table 1) are representative of the traditional training material and the tasks that the SME and the Instructional Designer performed in their traditional role and continue to perform even today. The quadrants Q2 and Q3 are representative of the nature of the training material in modern times and reflect the changed role of the SME and the Instructional Designer - Q2 represents the fact that we may often need to create training material for some new technology, while Q3 represents the need to make the training material skill-based.

3) *It structures the process of eliciting inputs by specifying what Instructional Designers need to ask and in what context.*

A list of tasks is specified in each quadrant. The Instructional Designer is supposed to perform all possible tasks at the onset of the project and the rest during the Instructional Designer's first meeting with the SME. This is a sort of check list to ensure that the Instructional Designer does not miss out on seeking inputs related to some critical factor.

Case Study: Before & After

We have successfully applied this tool to four projects and have identified the following benefits:

- It leaves little scope for perceptions and assumptions regarding the SME role, leading to optimum utilization of SME time.
- It promotes ownership among the Instructional Designers with regard to the subject matter, makes the Instructional Designers content savvy, thereby reducing content errors and review rounds.
- It helps the Instructional Designers to take into account diverse views on a subject lending greater credibility and authenticity to the training material.

Before

Too many SME meetings
Little output from the meetings
Many Content Errors
Many Instructional Gaps
Multiple review rounds

After

Few SME meetings
Increased output from the meetings
Few Content Errors
Few Instructional gaps
Single review round

Drawbacks

Like any new strategy that you implement in a project, this too has some amount of drawbacks. In the past few months that we tried implementing this, we found the following drawbacks:

- Instructional Designers did not accept this concept very easily – because they don't feel very confident about the subject matter and hence did not want to take up the ownership for that.
- At times, it lead to diverse views on a concept which seemed to confuse the Instructional Designer.
- At times, the Instructional Designer got too focused on the content and thereby neglected the design.

Conclusion

By implementing the Structured Interaction Approach in the SME-Instructional Designer interface, we are to a large extent optimizing the limited SME time that is earmarked for a project. This technique of synergizing with SMEs through a structured approach takes into account most critical factors that need to be addressed to make any training material effective. However, we are aware that the list of tasks included in the job-aid may not be comprehensive. To take care of this, Instructional Designers who are using the job-aid have been specifically asked to identify those tasks that they perform, which are not listed in the job-aid. We plan to review the feedback that we get from the Instructional Designers as an ongoing process so that we can update the job-aid and make it comprehensive.

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Author Biography

Purnima Valiathan is an Instructional Design Expert at NIIT's LSBU-Projects Group. A post graduate in the field of Education she has over nine years of experience in designing and delivering instruction.

<p>ID knows, but SME doesn't know</p> <p style="text-align: center;">(Q1)</p> <p style="text-align: center;"><i>DESIGN SPECIFICS</i></p> <ol style="list-style-type: none"> 1) Brief the SME on Design Specifics <ul style="list-style-type: none"> · Platform limitations · Course size 2) Create a rough structure of the course with SME inputs. 3) Debate with the SME on very large and very small parts (in terms of modules/sections/topics) in the structure – Try to merge small chunks and break up very large chunks. 4) Identify at least two workplace examples that you plan to use in the training material - ask the SME to ratify whether the examples suit the intended audience. 5) Notify the SME about the information that you do not have and need to collect. 6) Identify all instances of highly technical content from the information that you have - paraphrase these (in terms that a learner will understand – non tech jargon). 7) Get the SME to validate the paraphrased content. 	<p style="text-align: center;">ID doesn't know & SME doesn't know</p> <p style="text-align: center;">(Q2)</p> <p style="text-align: center;"><i>INFORMATION</i></p> <ol style="list-style-type: none"> 1) Try to locate any kind of information related to the unavailable content, from the following sources: <ul style="list-style-type: none"> · Books & magazines · Users of a software · Internet · Chat forums · Newsgroups 2) Identify people who apply these concepts in a real working scenario. 3) Interview the identified people and document the conversations. 4) Identify and list down a few keywords from the conversations. 5) Use the keywords that you get from the interview to search the Internet for the required information. 6) Identify and interview Instructional Designers who have developed similar training material in the past. 7) Discuss all the information that you have collected with the SME.
<p style="text-align: center;">ID knows & SME knows</p> <p style="text-align: center;">(Q3)</p> <p style="text-align: center;"><i>AUDIENCE</i></p> <ol style="list-style-type: none"> 1) Target the appropriate job profile in the audience range; for example, if the audience 	<p style="text-align: center;">ID doesn't know, but SME knows</p> <p style="text-align: center;">(Q4)</p> <p style="text-align: center;">CONTENT SPECIFICS</p> <ol style="list-style-type: none"> 1) Identify the critical matter that must be included in the content for the intended

range is specified as Technical Manager/System Administrator/Help Desk support – identify with SME help which of these roles should be specifically targeted in the training material that you are developing.

- 2) Ask the SME about the typical tasks that are performed as part of the job profile of the audience identified in the audience range.
- 3) Identify how the learner will apply the concepts being explained in their daily tasks.
- 4) Locate a person of each job profile in a real working scenario.
- 5) Interview and observe the person at work.

audience.

- 2) Identify technical terms that must be defined/explained to the intended audience.
- 3) Identify technical terms that need not be defined/explained to the intended audience.

(Table 2: The Four Quadrant Job-Aid for Synergizing With SMEs)



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