

# Subject Specialist Consultation in Instructional Design: Higher Education

**Martin Tessmer**

*Assistant Professor of Instructional  
Design  
College of Education  
University of Colorado at Denver  
Denver, CO 80204*

**Abstract.** Instructional design consultation in higher education has its own unique set of problems and solutions. The needs and characteristics of the subject specialist in higher education differ from those in other work environments. To facilitate subject specialist-instructional designer interactions in higher education, certain tools and strategies can be used. Through a four-stage training process, students in instructional development programs can learn to successfully use these tools and strategies as part of the consultation process.

Subject specialist consultation remains one of the most vital instructional design skills. In two separate surveys of job skills needed for training and media developers, interpersonal skills with subject specialists was ranked as one of the three most important skills for professional competence (American Society for Training and Development, 1979; Deden-Parker, 1981). Another survey of competencies for instructional development professionals has listed interpersonal consulting skills as one of the core competencies for instructional developers (Task Force on ID Certification, 1981). Recently, the University Consortium for Instructional Development and Technology (UCIDT) suggested there be a conference symposium to teach students how to interview subject matter experts (Reiser, 1986), indicating its importance as a design skill.

While the ability to competently interact with subject specialists is a

necessary and critical skill for instructional developers, education and training programs for developers may not teach the skill (Wallington, 1980). For students and practitioners of instructional design, there is a need to know the processes and problems of dealing with subject specialists in instructional development.

Thus, practitioners need to know more about methods for effectively conducting designer-subject specialist interactions. These subject specialists can be in business, higher education, government, the military services, or the health sciences. On the other hand, instructors of future instructional designers need to know what interaction techniques their students should learn and how students can learn them. Part of this student learning process includes learning the characteristics of subject specialists in a given field, and how to resolve problems that arise when working with those specialists.

This paper outlines one practitioner's view of designer-subject specialist interactions in higher education. Four topics will be reviewed:

- subject specialist characteristics that affect the design process
- consultation problems that arise from subject specialist characteristics
  - interaction strategies/tools to alleviate consultation problems
  - methods for teaching consulting strategies to students in instructional development programs.

Just as instructional designers are differentiated by their field of endeavor, subject specialists can be differentiated

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by theirs. Subject specialists in higher education are different from those in business, and these two types are generally different from those in the military services.

The author's comments are based on six years' experience as an instructional designer for the faculty and administration of several institutions of higher education, with the last three spent as the sole designer for a three-college higher education complex that includes a community college, a four-year college, and a graduate institution. During that time, the author has worked with over a hundred subject specialists on projects that involved the design and production of a wide variety of instructional materials.

### **Characteristics of Subject Specialists in Higher Education**

Most subject specialists have little knowledge about the instructional design process. They are often interested in media production and expect media production advice that concerns production costs, program length, and proper media format. This expectation is common to a number of instructional design centers in higher education (Mellon, 1982; Schrock, 1985). The instructional designer is seen as a media specialist or production consultant. However, "instructional" advice about task analysis, objectives, or instructional strategies can be unexpected and unwelcome, because the subject specialist may not perceive these areas as part of the designer's expertise (Schrock, 1985).

### **The SME as Client and User**

The subject specialist in higher education is frequently both the client and the user of the products produced in a media project. Almost all media project subject specialists are faculty who have initiated the project request and intend to use the methods and materials produced in the project. Hence, they have a sincere interest and involvement in the project. However, designers can find it difficult to implement an instructional design procedure that the subject specialist does not accept. The subject specialist can argue against a designer's recommendation on the basis that the specialist is: (1) an initiator and "co-manager" of the project (with the designer), (2) the user who must live with the results of the project, (3) a teacher who has the academic freedom to conduct instruction as he or she sees fit.

The dual role of the subject specialist as the expert and initiator/user/teacher can create personal interaction and

project management problems. Part of the difficulty is that higher education instructional design services may not have a process for appointing someone as a project director that serves as the "last court of appeals" to determine the content, process, and features of the project. In business and the military, project directors are more unequivocally designated.

In higher education, instructional designers may be *appointed* to help the subject specialist produce effective instructional materials, but the subject specialist is responsible to an academic department chair who may have little awareness or involvement in the project. In colleges and universities, subject specialists are accorded independence and authority rarely found in other fields of instructional design practice. They are not hired or appointed to a project, and may see themselves as "hiring" the instructional designer to work on their projects.

### **The Subject Specialist as Instructional Developer**

In higher education, subject specialists are experienced instructors who have their own ideas about instruction and instructional development. Most of them have organized and taught courses for years, and thus have established beliefs about how to plan and deliver instruction. As a result, they may disagree with a designer's recommendations to conduct task analyses or write objectives. However, such objections are not based on the commonly heard reasons that the subject specialist already knows the subject or does not

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understand the design process. Instead, the reason is that these subject specialists are experienced instructors and "designers" in their own right. They may have a type of learned disagreement with the design process, in the form of these objections:

1. Their subject is too complex to be amenable to simplification procedures of instructional design, such as identifying outcomes or conducting task analyses.
2. The project goal is to educate students, not train them. Task analyses, objectives, and instructional strategies are more useful for training development.
3. Instructional design is an effort to compartmentalize and dissect the learning process. The very questions asked by an instructional designer (e.g., "What is your objective?") should not be asked, since they represent the wrong approach to education.
4. Subject specialists have successfully taught their subject a number of times. There is no need to determine outcomes, content, or instructional strategies. One simply converts instruction to a computer lesson or video program.

Here, the problem is not just that the subject specialist has no understanding of the design process or does not have the time to do it (which are other valid problems), but rather that he or she sees the design process as superfluous or wrong. In some cases, these beliefs may be non-negotiable (Locatis, Weisberg & Toothman, 1984). Again, ow-

ing to the status of the subject specialist as client and user, negotiating with a designer over these objections can become sensitive and challenging.

### **Varied Backgrounds and Perspectives of Subject Specialists**

Subject specialists in higher education have widely divergent intellectual backgrounds and approaches. They may be experts in philosophy, business administration, computer science, music, electrical engineering, appliance repair, or nursing. While this variety of subject areas can make a designer's work more interesting and challenging, the designer also has the burden of understanding people with such varied backgrounds. This burden is not simply the designer's lack of subject matter knowledge, but that the subject specialists represent a wide range of cognitive frameworks, values, and psychological styles (Coscarelli & Stonewater, 1979).

As Bratton (1979) and Rosenberg (1978) indicate, a designer has to understand clients' personalities and viewpoints, grasp their explanations, summarize their discourse, and provide feedback. A designer must use active listening skills, which involve probing and reflecting the subject specialist's responses (Coldeway and Rasmussen, 1984). When a designer must work on several projects at once, the problem of mentally "shifting gears" to understand and empathize with each subject specialist can be difficult and tiring.

## **Strategies for Working with the Subject Specialists**

The interaction problems between designers and subject specialists are formidable. Several different strategies can be used to alleviate the problems. Some of these strategies relate to materials which are given to the subject specialist, while others involve ways of working with the subject specialist.

### **Preplanning Surveys and Outlines**

Surveys and outlines can prepare the subject specialist for the initial interview with the designer. These materials help solve two problems: (1) the subject specialist is uninformed or misinformed about the design process, (2) the subject specialist is both the client and the user of the products produced. The designer can give the subject specialist two handouts before they meet to discuss the project, hence the name "preplanning." One handout is a preplanning questionnaire about the proposed project (Appendix A). The other is a production outline of the steps and stages of the design/production process for projects such as telecourses or computer-assisted instruction (Appendix B).

The preplanning questionnaire serves two important purposes. First, subject specialists who complete the questionnaire furnish the designer with information about their conception of the project. Second, as the subject specialists complete questions about outcomes, learner characteristics, and media formats, they become aware of the content and complexity of the design process. The questionnaire serves as an "advance organizer" that informs the subject specialist about elements in the design process. This makes it easier to explain and implement the process in subsequent meetings. As indicated by Bratton (1983), clients must be prepared in advance for the initial instructional design interview. Preplanning surveys accomplish this goal.

In some cases, the subject specialist may not understand some of the questions on the survey, such as a question about learning guidance or formative evaluation. However, the designer can tell the subject specialist to request clarification of questionnaire items dur-

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ing their initial meeting. Explaining aspects of the instructional design process *at the subject specialist's request* keeps the designer from using the initial meeting to give unneeded lectures about instructional design. Instead, the designer gives a quick overview of the design process and responds to the subject specialist's specific inquiries.

Production outlines are used to delineate the design and production steps of expensive, labor intensive projects such as computer-assisted instruction or instructional television. They also describe the duties of the subject specialist, instructional designer, and production staff involved in the project. Subject specialists who read the production outlines for a project will have a better understanding of the stages, roles, and time requirements of the production process. They will understand that determining outcomes and conducting task analyses are part of the regular and expected procedures for designing project materials, and that a successful project may require a substantial investment of their time.

After reading and completing such preparatory handouts, the subject specialist will come into initial planning meetings with a better understanding of the instructional design process. This happens without the designer preaching or teaching about the design process or overwhelming the subject specialist with details and questions (Coldeway & Rasmussen, 1984; Bratton, 1983). A further benefit is that the subject specialist can privately reevaluate any preconceptions about the design process, and can change his or her opinions without losing face.

Preplanning surveys and outlines are forms of handouts, a consultation tool that has been used by other designers to prepare clients and facilitate communications (Spitzer, 1987; Ruggiero, 1985). Handouts function as a consultation job aid for the designer. With handouts, the designer's main duty is to tactfully introduce these forms to the subject specialist as part of the planning process. The designer should explain that the handouts will help the designer understand the subject specialist's perceptions of the project. Part of the initial planning session is then devoted to discussing the subject specialist's responses to the handouts.

### Flexible Interaction Strategies

While preplanning surveys and outlines help clarify the instructional design process, flexible interaction strategies help manage it. In working with subject specialists who are initiators and users of the project results, the designer must be prepared to adjust their level of assertiveness according to the magnitude of their role in the project. Some writers see the designer as an assertive leader in a project (Coldeway & Rasmussen, 1984). Others have indicated that the designer can succeed best as an *advisor* who suggests options to subject specialists (Davies, 1975; Willis, 1983). In cases where the subject specialists are the primary users of a product, they have the right to reject a designer's suggested instructional methods, materials, or planning activities (such as task analysis). In

such cases, an advisor's role may be most appropriate for the designer.

However, contrary to much of the literature about designer consultation roles, there is no one role that a designer should adopt in every situation. Rather, designers must be flexible enough to *adapt* their roles to the nature of each project and each client. The designer may become more assertive and directive with a subject specialist in some projects and more consultative and collaborative in others. What determines the role adopted? The designer's perceptions of the magnitude of the project and its potential users.

For example, as the size of the project increases, or the dissemination of the project extends beyond the subject specialist's use, the designer becomes more responsible for ensuring the instructional quality of the project. A project such as a telecourse requires a considerable expenditure of institutional staff and resources for its production. Furthermore, the students and teachers who will use the project results transcend the individual subject specialist's responsibilities. These teachers and students become part of the "client system" to which the consultant is responsible (Lippitt & Lippitt, 1986; Leitzman, Walter, Earle, & Myers, 1979).

In large-scale projects, the designer must become more of a co-director and less of an advisor, to the point that the designer may insist that certain activities or features be included in the project. The reasons for the designer's more aggressive stance are not only based on design theory and research, but also on the twofold obligation not to waste the resources of the institution and to provide multiple users with quality instructional materials. However, even when a more assertive position is adopted, the designer should seek to maintain a collaborative and empathetic role with the subject specialist.

### Listening and Consultation Heuristics

As stated earlier, the variety of subject specialists in higher education can burden the designer's ability to consult on a number of projects at once. To cope with this demand, there are several heuristics that a designer can use to

better understand the subject specialists and reduce mental fatigue.

First, the designer should try to pace and space planning and production meetings. This can minimize cognitive dissonance or fatigue that can result from scheduling meetings too close together. For example, a designer should be wary of scheduling successive meetings with, say, a statistician and a philosophy instructor. Similarly, an intensive budget or personnel meeting can diminish a designer's ability to fully attend to a crucial client entry consultation that follows.

Second, designers must use the active listening skills of probing and reflecting. Probing is a frequently mentioned consultation activity for all types of consultants (Lippitt & Lippitt, 1986; Gallessich, 1982). It mainly involves questioning clients in order to clarify their remarks and responses. Reflecting involves rephrasing or repeating clients' remarks, to better remember them and to demonstrate attention to their concerns. Probing and reflecting will help a designer understand a subject specialist's cognitive framework. In particular, probing reduces a designer's effort to understand a subject specialist, because it enables the specialist to explain his or her viewpoints instead of the designer having to figure them out.

Third, the designer must remember the power of informal conversation (Locatis, Weisberg, & Toothman, 1984), which is useful in helping the subject specialist and the designer to know one another and in inducing a spirit of col-

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laboration. Icebreaking and tension reduction skills are part of the competent design consultant's repertoire (Bratton, 1979). Informal conversation is an excellent way to break down the walls between designer and subject specialist and create a relaxed mood for interactions.

### Recommendations for ID Training

A four-step training process can be used to train future instructional designers in interactions with subject specialists. This process is currently being used in an instructional design program at the University of Colorado at

Denver. The training process is similar to that outlined by Savage (1975), and involves the following student activities.

*Observing correct and incorrect interaction situations.* Instructional design students should view situations that are examples and nonexamples of how interactions between the subject specialist and designer should be conducted. The situations could be on videotape or videodisc, role-played, or published as case studies. Incorrect characteristics and procedures should be clearly identified. The examples are used to develop concepts of consultation techniques.

*Critiquing interaction situations.* Given a variety of examples and nonexamples of correct interaction behaviors, the student learns to determine the appropriateness of the behaviors for the consultation situation. At this stage, the student should select and justify consultation strategies.

*Role-playing interaction situations.* Students are given the chance to take the part of a designer who must work on a project with a subject specialist. Then, the student assumes the role of a subject specialist and works with a designer. In some situations, the student in the role of subject specialist can be instructed to adopt a particular type of behavior or attitude toward instructional design to see how the designer in the role play reacts. The designer should determine how the subject spe-

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cialist is reacting, and decide whether to change his or her communication style to better conduct the planning process. As a supplement or replacement for live role playing, interactive videodisc can also be used. The computer can play the role of the subject specialist and require responses from the student who is playing the role of designer.

*Conducting client interactions in field situations.* Student designers can acquire interaction skills through the use of instructional design internships. Students who seek higher education employment can be assigned to work on faculty design projects in which they conduct planning meetings or co-conduct with a resident instructional designer. Above all, the student's consultation behaviors must be reviewed during the internship, not after its completion. Conducting reviews during the internship allows students to correct their consultation behaviors and reapply them in other projects.

For updating or retraining practicing designers, national conferences should provide yearly workshops and symposia on interacting with subject specialists. In particular, more training could be given on the preplanning stage of a development project, that is, what should be done before the initial planning meeting.

## Summary

The instructional design process in higher education has its own distinct problems and processes, as characterized by the unique characteristics of subject specialists in higher education. While the perceptions and background of subject specialists may occasionally pose problems to the instructional designer, the use of preplanning handouts and flexible interaction strategies can facilitate the instructional process and help guarantee the success of a project.

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## Appendix A

### Instructional Design Preplanning Outline

#### I. General Information

1. Name \_\_\_\_\_
2. Date \_\_\_\_\_
3. Title/Theme of Project \_\_\_\_\_
4. Content areas covered in program \_\_\_\_\_
5. Estimated Length (Complete both parts)
  - a) \_\_\_\_\_ hour(s) total
  - b) \_\_\_\_\_ individual program(s)
6. Desired Completion Date \_\_\_\_\_

#### II. Instructional Design Information

1. Need for project \_\_\_\_\_
2. Uses for Product (Check all that apply)
  - Prepare students for classroom instruction
  - Supplement classroom instruction
  - Stand-alone instructional modules
  - Promotional
  - Staff development or in-service
  - Continuing education
  - Other: \_\_\_\_\_
3. Target Audience (Complete "a" through "e")
  - a) • Students • Faculty  
• Staff • Public
  - b) TOTAL # \_\_\_\_\_
  - c) Age Range. \_\_\_\_\_ yrs.
  - d) Educational Background \_\_\_\_\_  
(year or level)
  - e) Other relevant characteristics \_\_\_\_\_

#### 4. Major Instructional Objective of Program

- a) What will target audience learn from the program? (check one)
  - *Creative Problem Solving* (how to solve problems, locate things, create original products or methods, etc.)
  - *Application of Principles* (how to apply specific rules to specific problems or situations, solve equations, perform a task, etc.)
  - *Concept Learning* (how to identify examples of some object, idea or activity, to classify parts of something, name things, etc.)
  - *Motor Skills* (how to execute or perform some coordinated body movement such as dancing, swinging a bat, writing, etc.)
  - *Verbal Information* (statements or facts about things, such as dates, weights, measures, rhymes, quotations, rules, etc.)
- b) Describe the major objective checked above (what audience will learn).

#### 5. Other Objectives of Program

- a) What sub-objectives must audience learn from the program in order to learn the major objective above? (check *all* that apply)
  - Creative Problem Solving
  - Application of Principles
  - Concept Learning
  - Motor Skills
  - Verbal Information

(Continued)

**Appendix A Continued**

b) Are there any attitudes or feelings you wish to develop in the audience, such as punctuality, enthusiasm, attention to detail, respect for law, preference for art courses, etc? (please describe below)

c) What prerequisite skills or knowledge must the audience already know in order to learn from the program?

**6. Instructional Techniques and Materials**

a) Check off all of the instructional techniques that you want incorporated into the program itself.

- Statement of objectives (what will be learned from the program)
- Practice exercises or problems
- Learning guidance (models, highlights, blowups, zoom-in shots, graphics, etc.)
- Demonstrations (how to do something, how something works, etc.)
- Feedback on practice exercises
- Summary review(s) of content covered in program
- Review of entry/prerequisite skills

b) Check off any supplementary materials that you may want as part of the overall program package.

- Instructor's guide
- Administrator's guide
- Workbooks
- Test items
- Test item forms

- Support graphics (signs, transparencies)
- Documentation of program effectiveness (reports of evaluation results and/or tryouts of new program on test audience).
- List of program objectives and sub-objectives

**7. Possible Media Choices**

Check off any types of media that you think are instructionally appropriate for presenting the program

- Audiotape
- Slide/audiotape
- Filmstrip/audiotape
- Slides
- Real objects
- Filmstrip
- Print text
- Videotape
- 8mm motion picture

**III. Production Information**

**1. Distribution Environment**

Where will project be used?

(Check all that apply).

*On Campus: Off Campus:*

- |                        |                           |
|------------------------|---------------------------|
| • Classrooms           | • Classrooms              |
| • Office/meeting rooms | • at other campuses       |
| • Closed-circuit TV    | • Cable TV                |
|                        | • Commercial marketing/TV |

• Other:

2. Will people be used as actors or participants in the program?

- Yes • No

3. What is the expected lifespan of the program content?

\_\_\_\_\_ years

4. Will the program need to be revised?

- Yes • No

If yes, how often?

THANK YOU FOR YOUR TIME

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## Appendix B

### Video Production Agreement for Disseminable Video

#### OPTION ONE: ON-CAMPUS AND OFF-CAMPUS USAGE

*Definition:*

Productions in this category may be used in a variety of ways: off campus via cable TV, commercial television, or local playback at individual sites; on campus; or any combination of the above. In some cases, the program may be marketed as a telecourse package. These productions, ranging from a single program to a complete telecourse, are usually produced in the studio.

*Examples:*

- Multi-unit telecourse
- Speech by a visiting notable
- Public service announcement

*Planning Activities:*

Under this option, planning will include:

- Determining the objectives of the program
- Selecting instructional strategies and activities
- Writing a script
- Determining production methods/strategies
- Developing a production calendar/timetable
- Designing evaluation instruments\*
- Recommending related print material\*
- Outlining instructor's guide\*
- Developing a contract, including division of royalties, for programs to be marketed
- Determining marketing and dissemination plan for the program\*
- Obtaining signed model releases

- Optional steps