

Using Needs Assessment Data to Design a Graduate Instructional Development Program

David H. Jonassen
Instructional Technology Program
School of Education
University of Colorado at Denver
1200 Larimer Street, Box 106
Denver, CO 80204

Abstract. The role and function of corporate education and training is substantively different than that of public education. Therefore, the roles of corporate educators and trainers are different from the roles of public school educators. These differences have created a demand for preparation programs that are designed specifically to meet the needs of corporate trainers and designers. Preparation programs in instructional design and technology have attempted to meet that demand. In order to design such a program, the needs (or competencies) of corporate trainers and designers must be clarified. The needs assessment and curriculum design processes used to design a graduate instructional technology program to educate trainers and instructional developers for work in the corporate environment are described.

The purpose of this article is to describe a process for designing professional preparation requirements for corporate trainers and developers. First, a brief history of the growth of education and training in industry is presented and compared with the role

and mission of public education. A review of the training and development skills sought by industrial training organizations is then presented. These skills have been researched and specified by professional associations concerned with the possible certification of corporate trainers. Next, a local needs assessment designed to confirm and explicate the competencies needed by corporate trainers is described. The competencies are combined into a comprehensive competency list which comprises the needs assessment for designing a graduate program to prepare trainers and developers for industry.

The Growth of Industrial Training

Significant growth of corporate training and instruction has occurred in the past two decades. Alongside colleges and the public schools, a new type of educational institution has evolved in the corporations of America. Training departments and even corporate colleges are supplementing and in some situations supplanting the professional preparation formerly available only at public and private universities.

The commitment of business to education and training has a variety of causes. Two prominent causes are the perceived decline in the efficacy of public schools and the increased specialization in job roles. Public school graduates often are not able to fulfill the increasingly demanding roles in our

post-industrial society. The shift from an industrial to an information society has left many workers ill-prepared to assume new, information-dependent roles (Toffler, 1979).

Corporations have had to supplement the educational preparation that their employees received in public schools and universities. This has resulted in the institutionalization of training departments and corporate colleges, which in turn has created the demand for corporate educators and trainers and precipitated the need for professional preparation programs. Educational technology and instructional design programs have increasingly attempted to fill that need.

Skills Needed by Corporate Trainers/Developers

In order to design an educational preparation program for corporate trainers and developers, the skills required of them need to be clarified. Other individuals have conducted needs assessments which have identified some general competencies. Deden-Parker (1981) queried the directors of industrial training organizations in the San Francisco area about the skills needed by corporate trainers. She identified 26 skills as being critical to the corporate trainer. Instructional design and production skills were found to be less important than interpersonal communication and management skills. Deden-Parker concluded from her study that corporate trainers had

significantly different educational needs than instructional technologists in public education. She recommended that corporate trainer/developer preparation programs require the use of corporate examples in their training as well as practical experience (internship) in corporate training environments.

Sullivan (1984) corroborated these results in a survey of 750 professionals from higher education and business. A total of 26 skills were identified from six prominent models of instructional design and development. The results showed that business trainers believed that most of the skills should be practiced more frequently than their counterparts in higher education, especially those skills related to assessing constraints, dealing with clients, differentiating needs, testing learners, and using performance-oriented evaluation.

Stolovitch (1981) summarized some of the differences between instructional development in education and in corporate training. Corporate training often must produce tangible cost benefits, whereas instructional development efforts in education are not as accountable. Time constraints are more important in industry than they are in education. Education is more concerned with the process, while industry is more concerned with the product. In industry, the instructional development model is more clearly defined and adhered to, whereas in education the process is often compromised. Education tends to focus on more general content, whereas industrial training is more specific and vocational.

The two most comprehensive needs assessments were undertaken by two important professional associations. The Association for Educational Communications and Technology (AECT) appointed a task force to develop a set of core competencies for instructional development professionals which could be used as standards for certification. The task force spent three years revising and perfecting the list (AECT Task Force, 1981). The competencies identified by the task force represent what they believe are the core competencies which should be possessed by instructional developers (not specifically trainers) in both business and education. This list has been updated and slightly expanded by the Interna-

tional Board of Standards for Training, Performance, and Instruction (1986), which hopes to become an independent certifying agency. The list represents perhaps the most definitive statement about instructional design and development competencies, but it does not adequately address many competencies that are needed by corporate trainers/developers.

Deden-Parker (1981) and Sullivan (1984) both concluded that training programs for corporate trainers/developers should differ from those for instructional developers in educational institutions. In order to show the differences between competencies needed by educators and those needed by corporate trainers, the competency statements generated by the AECT task force were compared with the competency study conducted by the American Society for Training and Development, entitled *Models for Excellence* (ASTD, 1983). The ASTD membership and mission represent corporate training and development professionals more than do the AECT membership and mission. ASTD focuses more on human resources development, which includes many personnel and consultation functions not represented in the conceptualization of an instructional developer produced by the AECT task force, which has a narrower focus, specifically instructional design and development. Instructional developers and trainers in industry are expected to have a broader set of skills, which include many of the human resource development and organizational skills.

In *Models for Excellence*, 31 training and development competencies are

identified. These competencies include many which are specific to the corporate training environment, such as adult learning, cost-benefit analysis, organization behavior, and personnel functions. However, the ASTD competency list does not include some instructional design skills, such as sequencing and evaluating instruction or determining instructional strategies. Some of these skills are implied by ASTD's more general competency statements, but they are not stated explicitly.

Because few individuals could possess all of the skills identified in *Models for Excellence*, the ASTD study identified 15 key training and development roles, such as instructor, manager, marketer, task analyst, theoretician, and transfer agent. Critical competencies were identified for each role, as were the outputs or products that represent competence. The human resources development orientation of ASTD members is reflected in most of those roles.

A comparison of the competency lists produced by AECT and ASTD reveals that the ASTD list has more "soft skills" (feedback skill, futuring skill, intellectual versatility), more generic information skills (library skills, research skills, writing skills), and consultation skills (questioning skills, human relations skills) than the AECT study includes. The orientation of the ASTD skills list differs from the AECT list, which focuses more on the instructional development job functions. The results of both surveys provide statements of important training and development competencies which can

Corporations have had to supplement the educational preparation that their employees received in public schools and universities.

. . . it was important to identify the competencies which were most relevant to the local training community.

function as competency statements for designing a graduate curriculum.

Local Needs Assessment

In order to assess the competencies that were important to the local training community served by a graduate educational technology program, a local needs assessment was conducted. Since the AECT and ASTD surveys presented different models of corporate trainers and developers, it was important to identify the competencies which were most relevant to the local training community. The local needs assessment consisted of two parts: a critical incident analysis to generate important training and development skills, and a criticality rating of those skills that were identified by the analysis. The highly rated skills would confirm the competencies identified by the AECT and ASTD surveys and fill in any gaps in the combined list of competencies from those surveys.

Critical Incident Technique

The method selected for assessing needs was the critical incident technique. With this technique, reports or descriptions of behaviors that are normally exhibited by the target population are collected. The critical incident technique was developed by John Flannigan (1954, 1962) during the second world war as a means for discovering why some pilots were not learning

to fly and what dimensions of combat leadership were necessary in the Army Air Corps.

Critical incidents are reports of observed behavior which are recorded and then analyzed to determine various performance dimensions of a task. The reports are observations, statements, or anecdotes by members of the population being analyzed (e.g., a police officer, salesman, or instructional developer), the individual's supervisor, or the client or user of the individual's services. Anyone qualified to objectively observe and record the incidents that comprise an individual's job may collect the critical incidents.

The critical incident technique has been used to analyze numerous types of jobs, including Navy recruiters (Borman, Dunnette, & Hough, 1976), police officers (Ronan, Talbert, & Mullet, 1977), and salesmen (Kirchner & Dunnette, 1957). The method has also been used to develop general definitions or theories of professionalism in education (Leles, 1968) and leadership (Van Fleet, 1974). Its usefulness is general, and its effectiveness is well established. The reliability and content validity of the technique have been found to be good (Anderson & Nilsson, 1964; Ronan & Latham, 1974).

If the sample is representative, the observers sufficiently qualified, the types of observations appropriate, and the procedures capable of producing accurate reports, then the definition of a job using the critical incident technique is valid and comprehensive. After incidents are collected from qualified observers, including those who

perform the job or task, the incidents must be analyzed.

Method

Needs Assessment Instruments

Data were collected through a critical incident survey, consisting of one page of directions that described the survey and the procedures for completing it, and a page for recording effective or ineffective incidents. The response page was used to describe a separate training or development incident observed by a respondent, the circumstances leading up to it, why the incident was detrimental or helpful, and the job title and experience level of the performer. This instrument was accompanied by a cover letter that described the background and purpose for the study.

A criticality survey was derived from the reported incidents. Each of the incidents was converted into a competency statement. The criticality survey asked the participants to rate the level of effectiveness and the level of importance of each competency statement to corporate trainers/developers on a 9-point Likert scale (very ineffective to very effective, very unimportant to very important).

Participants

The survey was mailed to a random sampling (100 members) of the local chapters of the National Society for Performance and Instruction and the American Society for Training and Development. All participants were either trainers or training supervisors.

Procedure

The critical incident survey was mailed to each participant. Two weeks after the initial mailing, 43 responses had been received. No follow-up mailing was undertaken because of time constraints. (The second part of the analysis had been scheduled, so the first part had to be completed.) The incident statements were condensed into competency statements which could be evaluated more effectively for their effectiveness and importance by the trainers.

During a scheduled meeting of the local chapter of the National Society for Performance and Instruction, 21 members other than the original respondents completed the criticality survey. This was followed by a discussion of the general competencies needed by trainers/developers in industry.

Results

Each of the 43 critical incident surveys was rewritten into a skill statement. Nonessential and contextual information was removed, leaving only a description of the skill. The skill statements are listed in Table 1. Since the critical incident technique asks for both effective and ineffective incidents, some of the skill statements do not represent effective training behavior. Each statement was evaluated for its effectiveness or ineffectiveness on the criticality survey.

The criticality survey ratings of the perceived effectiveness and importance of each of the skill statements derived from the critical incident survey are listed in Table 2. The mean levels of effectiveness and importance for each statement are presented. Those skills with mean effectiveness and importance ratings greater than 5 (on a 9-point scale) were identified and compared with the competencies in the AECT and ASTD surveys. Where competencies did not exist on the AECT and ASTD surveys to describe those activities, the incident statements were added to the final list of training competencies.

The skill statements from the local needs assessment were combined with the competencies listed in the ASTD and AECT studies. This final list of competencies (see Table 3) was the basis for designing the curriculum for a graduate program. The final list was assembled by starting with the AECT competency list and general headings, then eliminating competencies that were not mentioned on either the ASTD or local lists. Next, those competencies that were identified by ASTD and confirmed by the local study were added to the final list, along with additional general headings (e.g., "Provide Human Resource Development in an Organization"). Finally, additional skills that were identified by the local needs assessment and rated as important were added to the list.

TABLE 1

Statements of Critical Incidents

1. Given a request for a workshop in a short time, developer performed a needs analysis and interviewed the client for examples and case studies.
2. Developer suggested several ways to design the training (e.g., instructor led, simulation, etc.)
3. Developed training which incorporated step-by-step job aids and steps to follow in lieu of training.
4. In a trial run of recently revised course (by third party), developer made recommendations contrary to client's operational dictates.
5. Before a group of retirement-age employees, developer did not analyze audience, so rambled and put audience to sleep.
6. Developer did not fulfill customer's request by the negotiated commitment date.
7. Training was developed even though course developer cited and documented environmental problems that caused performance problems.
8. Developed training for a client even though it was not required to satisfy the client.
9. Developer did front-end analysis, determining the tasks to be trained.
10. Developer met with the client to determine exactly what the problem was.
11. Developer prepared a clear cost analysis and reviewed it with the client.
12. Developer negotiated a very clear contract of who would do what for whom.
13. Trainer presented a concept training program without performance-based objectives.
14. Trainer presented a program without analyzing audience.
15. Teaching adults who are eager to learn because of immediate applications and very critical because of experience.
16. Presented material in nontraditional ways, providing a good jolt to adults' conventional ideas about learning.
17. Presented class activities that were appropriate, participative, skill-based.
18. Prepared himself/herself in course content.
19. Redesigned a concept program as a result of pilot program.
20. Designed a workshop based upon instructional design modules that included performance-based objectives.
21. While conducting an exercise, noticed that one student was having problems, so reassigned partners to place student with more understanding person, and increased contact with them.
22. During the development of a new package, developer discovered several errors in the training materials provided by equipment producer.
23. Presented information in a practical, jargon-free manner.
24. Trainer brought own life experiences, to the classroom, especially those that were humorous, in order to make a point or illustrate a concept.
25. Made a presentation that contained flash and excitement at expense of thorough, solid, helpful information.
26. Purchased a program from a vendor without a good trial using a target population.
27. Didn't prepare well for an upcoming class that had been taught before.
28. Read verbatim from an Instructor's Guide during class.

(Continued)

Table 1 Continued

29. Based upon error frequency on job, analyzed critical codes (job study) and developed a job aid to address problem.
30. Developer depended solely upon SME input for information in developing the course.
31. Developer did not do an adequate data collection or task analysis to determine the specifics of what should really be in the course.
32. Consultants reviewed evaluations and created a program to meet needs.
33. During a period of accelerated training, instructor refused to answer several questions from students.
34. Developer neglected to properly analyze a specific task in order to develop a training program.
35. Distinguished in terms of adult learners how cognitive/conceptual learning is different from process learning.
36. Designed specific, skill-related exercises to illustrate teaching concepts.
37. Selected appropriate off-the-shelf training material and adapted these materials to their particular environments.
38. Provided effective training given the internal politics and culture of the organization.
39. Assisted departments in developing their own training materials and presentations.
40. Found out as much as possible about the organization in which he or she works.
41. Developed a program based upon his/her perceived need without assessing the needs of the user.
42. In a class, encouraged participants to share experiences and problems, allowing the group to get involved in problem solving.
43. In a time management class, lectured constantly about too much information without permitting practice or sharing of ideas.

Training Programs for Corporate Trainers/Developers

Many educational media and instructional technology programs have developed corporate training tracks or degree programs over the past decade that are designed to prepare corporate trainers/developers. The conceptual bases for these programs vary, as do their curricula. A number of programs are providing corporate training seminars and/or internship experiences in industry, such as those described by Deden-Parker (1981). What graduates often lack are the conceptual bases necessary to function in the corporate environment, both during their internship and their employment. Even though there is no educational substitute for experience related to many of the competencies listed in Table 3, we should attempt to prepare the students

as much as possible prior to internship or job experience. This is particularly prevalent among the project management and monitoring competencies and the interpersonal and consulting behaviors.

If the competencies listed in Table 3 are used as the basis for developing training programs for corporate trainers, the individuals completing such a program should be better prepared to assume the role of corporate trainer and developer. Ideally, a set of clinical experiences, beginning with observations and leading up through assistantships and then to full-time training employment would prepare students best, particularly those with no prior business experience. However, these sorts of structured apprenticeships are not cost-effective, neither to the corporation nor to the student. Instructional programs must be redesigned to make the limited internship experiences as meaningful as possible. A good deal of the corporate perspective can be gained by the students if they are encouraged to join and actively participate in professional associations such as ASTD and NSPI.

A curriculum was designed for a corporate training and development master's program to address the competencies stated in Table 3. The process of developing the curriculum consisted of three stages: (1) determining program requirements, (2) identifying existing courses in the university in which any of the competencies were taught, and (3) designing courses to teach competencies. Table 4 lists in the left column the courses in each curricular area of the program.

The human resource development competencies were grouped together to comprise a professional orientation core. Courses offered by the College of Business and Economics as part of their Master of Business Education (MBA) program were selected to fulfill the pro-

What graduates often lack are the conceptual bases necessary to function in the corporate environment.

TABLE 2

Mean Effectiveness/Importance Ratings and Correlations

	Mean Effectiveness	Mean Importance
1.	6.58	7.28
2.	5.63	6.94
3.	6.90	7.37
4.	4.05	6.61
5.	1.50	7.20
6.	3.05	6.20
7.	3.26	5.95
8.	3.63	4.56
9.	8.25	8.35
10.	8.05	8.45
11.	6.84	7.15
12.	7.65	7.55
13.	2.37	6.21
14.	1.45	6.85
15.	5.69	6.63
16.	6.50	6.65
17.	8.21	8.32
18.	7.75	7.85
19.	7.89	7.89
20.	8.21	8.11
21.	7.45	7.50
22.	6.76	7.35
23.	7.63	7.84
24.	7.32	6.79
25.	2.83	3.67
26.	2.17	3.50
27.	2.83	3.31
28.	1.25	2.85
29.	7.62	2.62
30.	3.27	3.77
31.	1.77	2.77
32.	7.75	3.25
33.	2.17	3.42
34.	2.25	2.67
35.	6.91	3.55
36.	8.09	3.36
37.	6.93	4.44
38.	7.60	5.01
39.	6.93	5.06
40.	7.40	4.88
41.	1.73	3.69
42.	7.33	4.56
43.	1.53	3.13

TABLE 3

Amended List of Training/Instructional Development Competencies

1. Identify Projects for Instruction or Training

- 1.1 Analyze information about projects and decide if instructional development is appropriate; conduct performance analysis.
- 1.2 Determine the cause of performance problems (personal, motivational, or environmental) and determine appropriate solutions.
- 1.3 Judge the appropriateness of projects selected and provide a rationale for the judgment.
- 1.4 Forecast trends and visualize possible futures in your organization and their implications for the operation of your organization.

2. Conduct Needs Assessments

- 2.1 Develop and conduct a needs assessment plan, including selecting appropriate techniques, instruments, question forms and question types.
- 2.2 Select tasks appropriate for analysis and instructional development.
- 2.3 Develop a range of information-gathering techniques (questionnaires, interviews, tests, observations) that captures needed information from people.

3. Assess Learner/Trainee Characteristics

- 3.1 Distinguish among entry skills assessment, prerequisite assessment and aptitude assessment.
- 3.2 Identify relevant learner/trainee characteristics and determine methods for assessing them.
- 3.3 Develop and implement a plan for assessing learner/trainee characteristics and the effects of those characteristics on learning performance.

4. Analyze the Job Task or Content

- 4.1 Identify knowledge and skill requirements of various tasks or roles and the components and sequence of the operations (mental or physical) needed to accomplish them.
- 4.2 Sequence learner outcomes and state a rationale for the sequence selected based upon task analysis criteria.
- 4.3 Classify task and content level of tasks and task components.

5. Write Performance Objectives

- 5.1 Distinguish objectives stated in performance terms from instructional goals, organizational goals, learner activities, teacher activities, and other statements.
- 5.2 Write complete and properly stated performance objectives.
- 5.3 Judge the accuracy, comprehensiveness and appropriateness of statements of learner outcomes in terms of the job, task, or content analysis or in terms of the opinions of the client or a subject matter expert.

6. Analyze the Learning Environment

- 6.1 Analyze characteristics of the instructional setting (environmental analysis) and determine instructional resources (media) that are appropriate to that setting.
- 6.2 Judge the accuracy, comprehensiveness, and appropriateness of an environmental analysis performed by someone else.

(Continued)

Table 3 Continued

7. Select Instructional Strategies

- 7.1 Select instructional strategies and tactics (activities) that are appropriate for use with the types of learners, learner outcomes, and other criteria in your setting.

8. Sequence Instruction

- 8.1 Specify a sequence of learner activities which is appropriate to the achievement of specified learner outcomes, which is participative, and which actively engages the learner.
- 8.2 Judge the appropriateness and completeness of a given sequence of learner activities designed by another instructor.

9. Select Instructional Delivery System

- 9.1 Describe the instructional resources that are required to carry out instructional strategies and facilitate learner outcomes.
- 9.2 Evaluate existing instructional resources to determine their usefulness for supporting instructional strategies and learned outcomes.
- 9.3 Adapt and use existing instructional resources to fulfill instructional needs.
- 9.4 Plan for the production of materials by writing storyboards, lesson plans, script outlines, etc.

10. Evaluate Instructional Outcomes

- 10.1 Plan and conduct a formative evaluation (e.g., trials with subjects, expert review, analysis of implementation consideration, etc.)
- 10.2 Write criterion and norm referenced test items to evaluate learning outcomes and general abilities and prerequisite skills.
- 10.3 Revise materials based on evaluation feedback.
- 10.4 Evaluate formative evaluation plans, information-gathering techniques and revision specifications.
- 10.5 Conduct a cost-benefit analysis of training or instruction.

11. Manage Instruction/Training Efforts

- 11.1 Plan the components of a system for managing a course, training package, or workshop.
- 11.2 Manage an instructional organization, including defining jobs, hiring, organizing, and evaluating personnel.
- 11.3 Evaluate the operations of a given management system.
- 11.4 Build a team of personnel to cooperate and participate in the solution of instructional problems.
- 11.5 Develop a system for storing, managing, and accessing records of people, equipment, or other instructional resources.
- 11.6 Use appropriate computer tools to accomplish management tasks.

12. Monitor Instruction/Training Projects

- 12.1 Identify the sequence of tasks required by a project and prepare a timeline for accomplishing them.
- 12.2 Evaluate a given instructional development project plan and timeline.
- 12.3 Plan and coordinate logistical support (scheduling, budgeting, meeting space, and other support systems).

13. Design and Deliver Instructional Messages

- 13.1 Write or edit instructional or informational materials that clearly communicate the instructional intent, using accepted rules of style and form.
- 13.2 Develop training job aids in lieu of traditional instruction when appropriate.
- 13.3 Make verbal presentations that are clear, relevant, interesting, and easily understood by the audience.

fessional orientation competencies. These courses include organizational behavior, organizational development, and human resources development. Using MBA courses is necessary and desirable for political, programmatic, and instructional reasons. In addition to avoiding program duplication, business concepts are best conveyed by business educators. Additionally, because corporate training/development students will be competing with other business students in their careers, that competitive orientation ought to begin in their preparation program.

Competencies were grouped into a foundations core which consists of learning theory applied to instructional practice, adult learning and adult education principles, and evaluation and test development skills needed to support the instructional design and development competencies. A tests and measurement course already existed, so it was added to the curriculum. The adult learning perspective is especially important, because the age of learners represents one of the major differences between instructional development in education and business. The educational, motivational, and instructional needs of adult learners are substantively different than those of K-12 or college-level learners. The success of most programs depends upon accommodating the needs of an adult audience. An adult education course and a cognition and instruction course had to be written. The cognition and instruction course is a theory-into-practice application of cognitive principles of learning.

The instructional design/development core of competencies is the key to the program. These competencies include not only commonly used instructional development skills, but also the management, monitoring, and consultation skills identified by the ASTD and local needs assessments. Original course materials were written to address these competencies. The instructional development core includes courses in front-end analysis and instructional strategies. The project management and consultation competencies are addressed in two courses on instructional development project management and instructional development consultation. This core also includes coursework in formative evaluation and learner characteristics that impact on learning. Formative evalua-

(Continued)

Table 3 Continued

- 13.4 Develop various conceptual models for describing complex ideas in ways that will help learners understand the ideas.
- 13.5 Design and develop effective visual communications such as diagrams, tables, overheads, and charts.
- 13.6 Write effective documentation, training manuals, and other forms of training texts.
- 14. Demonstrate Interpersonal, Group, and Consulting Behaviors.**
 - 14.1 Assess the needs and goals of a group and influence the group to work toward and complete the task assigned.
 - 14.2 Demonstrate interpersonal behaviors with individuals and groups that are sensitive to their needs.
 - 14.3 Consult effectively with clients and contract for services to the satisfaction of both parties.
 - 14.4 Adapt behavior to different people in order to build a stronger and more effective relationship with them.
 - 14.5 Help individuals recognize and understand personal needs, values, problems, and goals, and the alternatives for achieving them.
 - 14.6 Interview or question people, listening actively or design a questionnaire that captures needed information from people.
- 15. Promote Instructional Development and Systems Strategies**
 - 15.1 Promote diffusion and adoption of the instructional development process.
 - 15.2 Select, develop, and use appropriate research methods and skills, such as statistical analysis and tests and measurements, in the conduct of research.
 - 15.3 Scan, synthesize, and draw conclusions from research data found in research reports or program evaluations.
 - 15.4 Write effective project reports, progress updates, memos, and executive summaries.
 - 15.5 Use a variety of computer-based tools to identify and locate appropriate information sources and instructional tools.
- 16. Provide Human Resources Development in an Organization**
 - 16.1 Define the organizational structure (chain of command) and the political power structure in an organization.
 - 16.2 Determine a course of action which accounts for and reconciles many, often inconsistent, goals.
 - 16.3 Identify decision makers, set an agenda, negotiate with them, and influence their decisions in ways that will accomplish organizational goals and support your services.
 - 16.4 Identify institutional constraints that may affect a program or service and take action to mitigate the effects of those constraints.
 - 16.5 Assess instructional alternatives in terms of their financial, psychological, and strategic advantages and costs.
- 17. Maintain a Professional Orientation**
 - 17.1 Maintain professional standards by fulfilling your contractual obligations by the contracted date.
 - 17.2 Be willing to explore and use a broad range of ideas and to change perspectives and approaches when necessary. Think logically and creatively and remain open-minded.

tion technologies are practiced more rigorously in corporate training situations, particularly the follow-up evaluation of instructional systems. Since corporate trainees vary so widely, analyzing those characteristics is very important.

The production core of courses includes a selection from basic skills in text design (important because so much instruction is text-based), video production, media production, and to a greater extent, computer-based instruction. The courses which existed were not current, so new, contemporary courses were written. Master's-level preparation does not permit extensive training in production skills, but graduates need to be able to work effectively with production specialists. Interviews with local corporate trainers confirmed other studies (Deden-Parker, 1981) which indicated that production skills were less important in the corporate environment. If production is needed, trainers usually contract for those services.

Table 4 identifies in matrix form the competencies from Table 3 that are taught in each of the courses. The matrix ensures that each competency identified by the needs assessment is taught in the instructional program.

Finally, the program contains a required internship experience in which the student is required to conduct performance analysis and needs assessment and to design, produce, implement, and formatively evaluate an instructional system for addressing some performance problem in an agency, business, or similar organization. The business community offers a wealth of internship possibilities in any type of business, public agency, or military installation. The internship is required in lieu of a more traditional comprehensive exam or thesis. The internship requires an extensive written report to be delivered both to the agency or business and to the program faculty.

In addition to standard academic predictors, admission to the program requires evidence of oral and written communications skills. The needs assessment indicated a clear need for writing ability. However, graduate programs are not in an academic position to offer remedial writing instruction. Hence, rather than including all competencies in the instructional program, the competencies related to writ-

TABLE 4

Course × Competency Matrix Corporate Training Program

		1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1
Professional Orientation Core																						
Human Behavior in Organizations	3	X										X						X				
Organizational Development	3	X	X	X	X	X	X	X										X				
Human Resource Development	3	X	X																			
Learning Foundations Core																						
Cognition and Instruction	3																					
Adult Learning and Education	3																					
Introduction to Tests Measurement	3																					
Instructional Development Core																						
Instructional Design: Front End Analysis	3	X	X	X		X	X	X				X	X	X	X	X	X	X				X
Instructional Design: Strategies and Development	3																	X	X	X	X	X
Managing the Instructional Development Process	2		X																			
Instructional Development Consulting Skills	2																					
Analyzing Learner Characteristics	2								X	X	X											
Formative Evaluation	2																					
Production Core (8 or more)																						
Developing Instructional Text Material	3																					X
Developing Interactive Computer-Based Instruction	3																					X
Producing Instructional Media Materials	3																					X
Portable Video Production	2																					X

ing are prerequisite to the program and therefore used as admission criteria.

Summary

In this article, the growth of corporate training from historical and conceptual perspectives was described. The process of instructional development in the corporate environment was compared to the educational environment, and, based upon several needs assessments, it was concluded that the needs of educators and trainers are different. Two major needs assessments conducted by professional associations were reviewed and then a locally conducted critical incident needs assessment was completed. The competencies deriving from all of these studies were combined into a list of competencies for corporate trainers. Finally, an outline for an educational program to prepare corporate trainers was described in terms of the competencies previously identified. The increasing number of positions in corporate train-

ing, coupled with an increased willingness to "practice what we preach" (needs assessment, etc.), will strengthen educational programs in universities and gain the respect of the corporate training community, making our programs and graduates more appealing.

References

- AECT Task Force on ID Certification (1981). Competencies for the instructional/training development professional. *Journal of Instructional Development*, 5(1), 14-15.
- American Society for Training and Development. (1983). *Models for excellence*. Washington, DC: ASTD.
- Anderson, B. E., & Nilsson, S. G. (1964). Studies in the reliability and validity of the critical incident technique. *Journal of Applied Psychology*, 48, 398-403.
- Borman, W. C., Dunnette, M. D., & Hough, L. M. (1976). *Development of behaviorally based rating scales for evaluating the performance of US Navy recruiters*. Minneapolis, MN: Personnel Decisions, Inc.
- Deden-Parker, A. (1981). Instructional technology skills sought by industry. *NSPI Journal*, 20(1), 24-25, 30.
- Flannigan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327-358.
- Flannigan, J. C. (1962). *Measuring human performance*. Pittsburgh, PA: American Institute for Research.
- International Board of Standards for Training, Performance, and Instruction. (1986). *Instructional design competencies: The standards*. Iowa City, IA: Author.
- Kirchner, W. K., & Dunnette, M. D. (1957). Identifying the critical factors in successful salesmanship. *Personnel*, 34, 54-57.
- Leles, S. (1968). Using the critical incident technique to develop a theory of educational professionalism: An exploratory study. *Journal of Teacher Education*, 19(1), 59-69.
- Ronan, W. W., & Latham, G. P. (1974). The reliability and validity of the critical incident technique: A closer look. *Studies in Personnel Psychology*, 6, 53-64.
- Ronan, W. W., Talbert, T. L., & Mullett, G. M. (1977). Prediction of job performance dimensions: Police officers. *Public Personnel Management*, 6, 173-180.
- Stolovitch, H. D. (1981). Preparing the industrial and educational instructional developer: Is there a difference? *NSPI Journal*, 20, 29-30.
- Sullivan, R. F. (1984). A profile of the instructional developer in higher education and business. *Journal of Instructional Development*, 7(2), 14-19.
- Toffler, A. (1979). *The third wave*. New York: Bantam Books.
- Van Fleet, D. D. (1974). Toward identifying critical elements in a behavior description of leadership. *Public Personnel Management*, 3(1), 70-82.

