CHAPTER 29

COMPETENCE AT A
GLANCE: PROFESSIONAL
KNOWLEDGE, SKILLS,
AND ABILITIES IN THE
FIELD OF INSTRUCTIONAL
DESIGN AND TECHNOLOGY

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Editors' Introduction

What skills are necessary to be considered competent in the field of instructional design and technology (IDT)? Over the years, various individuals and groups have tried to answer this question by developing lists of desired competencies for one or more types of positions within the IDT field. In this chapter, Karen Rasmussen reviews some of the early competency lists and presents two competency lists that have recently been developed. On the basis of these lists and the definition of instructional design and technology put forth in this book, she identifies seven competency areas (domains) within the field of instructional design and technology. She also describes why competency lists are valuable to different groups within the profession, and she discusses the issue of whether IDT professionals should be certified.
Knowledge and Comprehension Questions

1. Prepare a table with four columns and eight rows (use the first row for column headings). Fill in the table as follows:
   - In the first column, place the seven types of activities (analysis, design, development, implementation, evaluation, management, and research) mentioned in the definition of the field of instructional design and technology presented in this book.
   - In the second column, list the seven interrelated domains the author refers to near the beginning of this chapter. Place each domain in the same row as the related activity listed in the first column.
   - In the third column, list the four competency areas described by IRSTPI (see Table 29.2). Place each competency area in the same row as the related activity listed in the first column.
   - In the fourth column, list the five competency areas described by NCATE/AECT (see Table 29.2). Place each competency area in the same row as the related activity listed in the first column.

2. Describe some of the ways in which competency lists are valuable to (a) IDT professionals, (b) IDT academicians, and (c) IDT students.

3. Compare the recent competency statements (Table 29.2) with the ones prepared in the 1980s (first three columns of Table 29.1). Identify at least three competencies that appear on the new list that did not appear on the old ones. Identify the factors that are likely to have caused these competencies to be added.

Professions have a common, recognized set of duties, responsibilities, and skills. Professions are distinguished by six elements: a body of theory and research, intellectual techniques, application to practical affairs, training and certification, enforced ethics, and association and communication among members of the profession (Finn, 1953, as cited in Selia & Richey, 1994). The field of instructional design and technology (IDT) fulfills the criteria inherent in these characteristics and can, therefore, be considered a profession. One of the most important components in the development of a profession is a common, standard set of competencies for the profession.

Instructional designers and developers, instructional technologists, media specialists, and other related occupations have created competencies to frame their profession. Acknowledged competencies assist personnel directors, managers, and academicians in determining job tasks and, ultimately, the ways and methods that individuals can be trained to be part of the profession. Common competencies also permit those involved with the field to have a common vocabulary, a set of quality standards, and a way to objectively measure products (Silber, 1992). Although individuals entering the IDT profession possess a varied set of prior experiences, as they embark on a systematic program, common skills are developed. This set of common skills facilitates and ensures that the profession continues to grow and mature. In addition, standards assist in enhancing client satisfaction, improving the product quality, and improving productivity (Silber, 1992).

In this book, IDT has been defined as encompassing "the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace. . . . Research and theory related to each of the aforementioned areas is also an important part of the field." On the basis of this definition and two new competency lists prepared by professional organizations within the field (to be described in more detail later in this chapter), the tasks of IDT professionals can be separated into seven interrelated domains: professional foundations (including research and theory), planning and analysis, design, development, utilization, evaluation, and management.

In this review of the competencies required for IDT professionals, it is important to realize that in the broad field of IDT, a variety of technical skills may be used. Indeed, most professionals do not use all of the skills that academic training prepares them for (Wedmen & Tessmer, 1993); however, general knowledge provides IDT professionals with broad field knowledge and skills that further permit them to meet individual job requirements. The resulting skills or competencies that are required to meet the challenges of the seven domains and the evolution and future of those competencies are discussed in the remainder of this chapter.

IDT Professionals

There are almost as many different positions in the field of instructional design and technology as there are people in the field—an amazing variety of positions. IDT professionals may work in business and industry, the military, PK–12, postsecondary education, vocational education, health-related fields, technology support, consulting, or other education and training initiatives. Tasks include a wide variety of activities in each of the seven domains. These tasks might be as varied as performing a job task analysis for a complicated piece of machinery implementing a new program in a public school.

IDT professionals may work individually, performing all relevant IDT tasks, or in teams in which different specialists work together to solve problems. Regardless of the work environment, the type of task to be completed, or the number of people in a team, the roles that an IDT professional might have include the following:

- A project director who is responsible for managing through leadership and guidance;
- Client representatives who present the client's desires and requirements;
- An instructional designer who performs the analysis and design of the project, then supervises the implementation of the field tests;
- A subject matter expert (SME) who provides content support;
- An instructional developer who is in charge of developing the product;
- A quality control expert who reviews each of the products throughout the project;
- A teacher or trainer who presents the instructional material;
- Support staff who help in each of the areas; and
- An evaluator who evaluates the product.
IDT professionals might fill any of the positions on a team, depending on their training and expertise. Typical IDT professionals have a broad skill base on which to draw that enables them to be, in many cases, a jack of all trades. Representative skills are directly correlated with the general proposed competencies as set forth by national associations and organizations.

The Evolution of the Competencies

Because of the nature of the IDT field, it is continually updated, defined, and redefined as conditions and situations warrant. Since the 1970s, various scholars, researchers, and organizations have put forth various taxonomies for organizing common competencies. Definitions and descriptions of the field were formed, formalized beginning in 1977 by the Association for Educational Communications and Technology (AECT) and National Society for Performance and Instruction (NSPI), later the International Society for Performance Improvement (ISPI), which joined to form a Joint Certification Task Force (IBSTPI, 1999; Seels & Richey, 1994). This task force ultimately formed the International Board of Standards for Training, Performance, and Instruction (IBSTPI), a not-for-profit corporation that focused on improving performance via a variety of means such as research, development, and competency definition (IBSTPI, 1999). These groups and task forces began to examine what kinds of knowledge, skills, and abilities individuals in the IDT field ought to have to further the mission and aims of the profession.

AECT, ISPI, and IBSTPI are made up of a variety of professionals who are interested in different aspects of teaching, learning, and performance. AECT is a professional group composed of IDT professionals who function as instructional designers and developers, media specialists, faculty in instructional design and technology program areas, or graduate students in IDT higher-education programs. Members of the IPSI strive to improve individual and organization performance (ISPI, 1999). Individuals involved in IBSTPI focus on improving performance, both individual and organizational, through the integration of practice with research and development (IBSTPI, 1999). Collectively, these organizations support the practice and development of the profession of instructional design and technology through a variety of functions and activities.

Instructional designers and technologists belong to these organizations for a variety of reasons. National and international groups give individuals a voice about their profession that can be shared with other groups. Organizations also provide professional development opportunities through conferences, journals, workshops, and research opportunities. Professional organizations offer other benefits, such as central job opportunity banks and networking opportunities to assist individuals in enhancing their performance and knowledge.

In the early 1980s, the first sets of competencies for professionals in the field of instructional technologists were presented (Dempsey & Rasmussen, 1995). Other researchers followed suit and proposed their own competencies. These different competency lists embody various frameworks and perspectives. For example, some lists focus on what this book refers to as the field of instructional design and technology (often labeled instruc-
<table>
<thead>
<tr>
<th>Competencies for the Twenty-First Century</th>
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<tr>
<td>Changes in the IDT field, fueled by redefinition and emerging technologies (e.g., multimedia, WWW) have led to newly proposed competencies to herald the twenty-first century. Redefinition of the field has been greatly influenced by the actual practice of instructional design and technology in terms of job tasks and increasingly available technologies (Seeles &amp; Richey, 1994). The changes in the field have brought about a change in how the competencies are viewed and the associated framework that they generate. Today’s competencies are categorized within the broad domains of the field and provide IDT professionals with a conceptual framework from which the field can be defined, tasks can be generated, and a new cadre of professionals can be trained.</td>
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TABLE 29.2 IBSTPI, 1998: Categories and Competencies

Professional Foundations
1. Communicate effectively visually, orally, and in writing
2. Apply research and theory to ID practice
3. Continuously improve personal ID knowledge, skills, and attitudes
4. Develop research skills in ID projects
5. Identify and resolve design ethical and legal implications

Planning and Analysis
6. Conduct needs assessments
7. Design curricula or programs
8. Determine instructional content via a variety of methods
9. Identify and describe learner population characteristics
10. Analyze environmental characteristics
11. Analyze existing and emerging technologies' characteristics and their function in an instructional environment
12. Reflect on situation elements before completing design solutions and strategies

Design and Development
13. Select, modify, or create an ID model that is appropriate for a given situation
14. Define and sequence the instructional content and strategies using a variety of techniques and strategies
15. Select or modify existing materials
16. Develop materials
17. Design instruction using diversity of the learners and groups of learners
18. Evaluate and assess instruction and its impact in the learning environment

Implementation and Management
19. Plan and manage ID projects
20. Promote collaboration, partnerships, and relationships among design teams
21. Use business skills to manage ID
22. Design instructional management systems
23. Provide for effective implementation of products and programs

AECT/NCATE, 2000: Proposed Competency Categories

<table>
<thead>
<tr>
<th>Design</th>
<th>ISD</th>
<th>Message design</th>
<th>Instructional strategies</th>
<th>Learner characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>Print technologies</td>
<td>Audiovisual technologies</td>
<td>Computer-based technologies</td>
<td>Integrated technologies</td>
</tr>
<tr>
<td>Utilization</td>
<td>Media utilization</td>
<td>Diffusion of innovations</td>
<td>Implementation and institutionalization</td>
<td>Policies and regulations</td>
</tr>
<tr>
<td>Management</td>
<td>Project management</td>
<td>Resource management</td>
<td>Delivery system management</td>
<td>Information management</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Problem analysis</td>
<td>Criterion-referenced measurement</td>
<td>Formative and summative evaluation</td>
<td>Long-range planning</td>
</tr>
</tbody>
</table>

TABLE 29.3 AECT/NCATE example performance objectives

<table>
<thead>
<tr>
<th>Competency Category</th>
<th>Initial</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Identify a variety of instructional systems design models and apply at least one model (1.1a)</td>
<td>Identify learning theories from which a variety of ID models are derived and the consequent implications (1.1b)</td>
</tr>
<tr>
<td>Development</td>
<td>Select appropriate media to produce effective learning environments using technology resources (2.0.1)</td>
<td>Collaborate with a development team to apply principles of design specifications to produce technological products (2.0.1)</td>
</tr>
<tr>
<td>Utilization</td>
<td>Identify key factors in selecting and using technologies appropriate for learning situations specified in the instructional design process (3.1.1)</td>
<td>Use research and theory in the selection and use of technologies for learning (3.1.1)</td>
</tr>
<tr>
<td>Management</td>
<td>Develop and apply resource management techniques in various learning and training contexts (4.2.1)</td>
<td>Implement and evaluate resource management techniques using current research (4.2.1)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Develop and apply criterion-referenced measures in a variety of contexts (5.2.1)</td>
<td>Display skill in the conception, design, implementation, and reporting of original research on evaluation in order to evaluate projects and programs (5.0.2)</td>
</tr>
</tbody>
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discuss instructional technology. The frameworks provided by IBSTPI and AECT/NCATE enable IDT professionals and educators of IDT professionals to gather information that they require to make educated decisions. These frameworks permit a definition of the field and a structure by which to view it.

Instructional Design and Technology Professionals
IDT professionals use the competencies in a variety of ways. For example, competencies serve as a framework to create position descriptions, analyze projects, and develop work task assignments. Competencies provide a mechanism by which completed work can be evaluated, consulting contracts can be developed, and performance can be measured. In addition, the competencies provide a road map for professional development for continuous skill improvement.

Instructional Design and Technology Academicians

Either formally or informally, the faculty in many IDT programs use many of the competencies listed here to provide a baseline for the skills that IDT students should have at the completion of their programs.
be a successful professional. The competencies also permit the development of criteria by which to evaluate students. With initial and advanced skills, as proposed by AECT/NCATE, competencies for master's and doctoral students are easily delineated.

**Instructional Design and Technology Students**

Competencies give students the big picture of tasks that they might accomplish as professionals. The competencies provide the structure by which they may interpret the field. In addition, through the alignment of skills to competencies, students, and via a comprehensive program of study, students can expect to develop skills needed for IDT positions.

**The Future**

Competencies for IDT professionals will continue to evolve as the profession matures, reflects, and conducts research examining the kinds of knowledge, skills, and abilities that individuals entering the field must have to be successful. The notion that we, as a field, continuously improve our own field as well as our individual work serves us well in light of an ever-changing world. The existence of competencies, a set of overriding principles that govern our profession, ensures that our field will continue its development well into the twenty-first century. With the competencies forming a foundational base of the profession, attention can be given to related issues in the new century. These issues include continued revision of the competencies, certification, and continuous direction of the field.

**The Future of the Competencies**

Over the past twenty years, competencies have undergone shifts from isolated tasks to the broad categories of today. Tasks have been defined, redefined, and reorganized to reflect realities of today’s IDT profession. Tomorrow’s professional community will no doubt continue to revise the competencies as needed to reflect theoretical advances in instructional design and technology as well as meet challenges of emerging processes and technologies.

**Certification**

Perhaps the next professional hurdle that will be faced by the IDT field concerns the issue of whether or not IDT professionals should be certified. Occupations that certify members of the profession subscribe to a common set of standards that are commonly agreed to by the members of the profession. These common sets of standards certainly vary, but the objective of certification is to formally recognize an individual’s possession of a body of knowledge or ability to perform skills, based on a set of agreed competencies (Bratton, 1995). Professionals may be certified in a variety of ways, including successful completion of an examination related to the is...