This study explores the gap between the educational preparation of instructional design students and the competency demands of the contemporary business and industry sector workplace. The overarching purpose of this study was to provide instructional design faculty with an inventory of contextually detailed ID competencies from experienced instructional designers to use in ensuring a greater alignment between the learning objectives targeted within the curriculum of instructional design programs and the knowledge, skills, attitudes, and intentions that are expected to be practiced in the workplace.

Ten instructional designers, with an average of 11 years working in the business and industry sector, were invited to participate in this study to: (1) identify what knowledge, skills, and attitudes are critical for success as an instructional designer in the contemporary business workplace, and (2) what strategies instructional design practitioners would use to prepare students for the realities of the ID workplace. A qualitative research interview method called the Critical Incident Technique was utilized to enable instructional designers to provide rich descriptions of the critical instructional design competencies they feel contributes to their success and/or failures as an instructional designer. However, the Critical Incident Technique
was not successfully used in this study, and therefore it was abandoned in favor of a more general qualitative interview approach. Asking participants to take the perspective of an Instructional Design instructor proved to be particularly useful in obtaining participant ideas about how to better prepare instructional designers for the realities of the business and industry workplace.

In respect to the competencies identified as most critical for success as a business and industry instructional designer, participants discussed in greatest frequency and detail the need for instructional designers to adroitly navigate the tricky terrain of SME Relations and Client Relations. These interrelated competencies were also the areas where participants were most emphatic about the gap between the realities of their practice and the academic environment. In response to this gap, participants talked about the importance of involving alumni and other graduates in co-teaching classes, serving as mentors, and supervising internship programs. Participants also recommended using a variety of simulations and role-playing in the educational preparation of instructional designers to prepare them for the sometimes unpredictable realities of the job.

INDEX WORDS: Instructional designer, Instructional design preparation, Competencies, Critical Incident Technique, Knowledge, Skills, and Attitudes
PREPARING INSTRUCTIONAL DESIGNERS FOR THE REALITIES OF THE BUSINESS
AND INDUSTRY WORKPLACE

by

THOMAS REED LECHNER

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MS, Boise State University, 2005

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by

THOMAS REED LECHNER

Major Professor: Ikseon Choi
Committee: Thomas C. Reeves
Michael Orey
Wanda Stitt-Gohdes

Electronic Version Approved:
Maureen Grasso
Dean of the Graduate School
The University of Georgia
December 2010
DEDICATION

I would like to dedicate this dissertation to my parents, Jim and Maxine Lechner.
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CHAPTER 1

STATEMENT OF THE PROBLEM

Higher education graduates are entering the workforce without sufficient skills needed for career success (Atkins, 1999; Peddle, 2000; Wendlandt & Rochlen, 2008). Work supervisors often claim there is a disparity between the types of skills taught at university and those that are demanded by industry (Andrews & Wooten, 2005; Askov & Gordon, 1999; Atkins, 1999; Evers, Rush, & Berdrow, 1998; Morley, 2001; Robinson, 2000; Shivpuri & Kim, 2004). Carnevale, Gainer, and Villet (1990) assert that “employers depend on educators to provide job-ready and training-ready entry-level employees” (p. 236). Atkins (1999) acknowledges that “there is currently a skills gap between what employers need and what universities are producing” (p. 271). Evers et al., (1998) echo this sentiment, “the skills most in demand are least in supply” (p. 16). These skills, generally referred to as generic employability skills, include the ability to “solve complex problems, work successfully in teams, exhibit oral and written communication skills, and practice good interpersonal skills” (Schmidt, 1999, p. 31).

Gaps in the Educational Preparation of Instructional Designers

The field of instructional design (ID) is certainly no exception to this issue of a gap existing between educational preparation and the competency demands of the workplace. Venables and Tan (2009) assert that ID programs do not adequately prepare students for proficiency in a workforce where they are required to possess strong communication skills and business aptitude. Larson (2005) and Larson and Lockee (2009) conducted studies to survey the alignment of instructional design preparation and practice and found that ID education programs
that contextualize or tailor the preparation of their students for career tracks are perceived to be more successful than those programs that do not. In another study of the relationship between the academic preparation and the professional practice of instructional designers, Julian (2001) states that “because the field of ID has become so rich and varied in terms of settings in which it is practiced, we can no longer discuss the profession without consideration of the environment of practice” (p. 16). In other words, there is a need for greater alignment between the learning objectives targeted within the curriculum of instructional design programs and the knowledge, skills, attitudes, and intentions that are expected to be practiced in the workplace.

Fang, Lee, and Huang (2004) are of the opinion that the benefit of work-integrated learning is more valuable to new ID graduates, given the job market, since fresh graduates from internship programs generally receive higher entry-level compensation and encounter a shorter period in obtaining their first position, as compared with those without internship experience. The addition of a specific work placement component in any type of information technology program benefits students through exposure to technical and business mentoring, and to current industry standards, as well as giving them an opportunity to clarify career goals (Calway, 2006; Trigwell & Reid, 1998). Tozman (2007) offers valuable advice for instructional design educators and practitioners alike “…our work environment, our education, our tools, and our learners have all changed. Yet we instructional designers still try to operate, and to do our jobs, in the same way that we did them ten years ago” (p. 1). Instructional design educators and practitioners should work together closely to ensure that the preparation of future instructional designers is consistent with the realities of current practices in the field.
Bridging the Gap

The recognition of a gap, as well as recommended solutions to bridging the gap between higher education preparation and workplace needs, is certainly not new. In the 1980s, researchers such as Fuhrmann and Grasha (1983) concluded that colleges could better meet the needs of their graduates by adjusting how and what they teach in order to help students succeed in their jobs. Shivpuri and Kim (2004) suggest that higher education should listen to the needs of its stakeholders in industry:

Although employment of graduates is not the only goal of colleges, it is still important for college administrators and employers to strive for open channels of communication and continuous dialogue in order to recognize, discuss, and resolve these outstanding discrepancies and more effectively serve their common link: the students (p. 44).

Hopefully, the notion that higher education curricula should become more responsive to the needs of employers will gain wider acceptance and lead to more measures aimed at improving the transition from school to work. Tynjala, Valimaa, and Sarja (2003) call for a new pragmatic university, based on an innovative perspective that “is not rooted in Humboldtian ideals of an autonomous university, but in the relationship between society, business enterprises, and the academic world” (p. 148). Increasingly, there is a recognition that higher education programs need to prepare their graduates for the practical challenges they can expect to face upon entering the workforce (Venables & Tan, 2009).

According to Hofstrand (1996), one reason that higher education institutions do an inadequate job of addressing the employability skills of their students is due to the fact that they do not understand what skills are lacking and have not placed a high priority on trying to understand what they are. However, if higher education institutions do not fully understand the
employability skills needed by their students, I, like Taylor (1998), believe that those in the workplace do. Thus, I am confident that greater efforts to align the needs of employers with the offerings of higher education are both important and feasible.

In Australia, higher education is responding to the needs of the workplace by making the workplace an integral part of the university curricula, as evidenced through the Learning in the Workplace and Community (LiWC) Policy at Victoria University. This policy mandates a minimum of 25% content and assessment of all academic programs to be related to work-integrated learning (Venables & Tan, 2009). Graduates’ rankings of program relevance to employability outcomes are one of the key indicators for deciding Australian government funding to universities (Venables & Tan, 2009). Under such a system, it is in the interest of universities to actively promote the development of generic and work-related skills in their graduates, and to document and measure their outcomes (Oliver, Jones, Ferns, & Tucker, 2007).

Teichler (1999) concluded that higher education institutions should serve three functions when preparing students: the educational function, based on cognitive and intellectual capabilities needed related to broad knowledge as well as higher order problem-solving processes; the training function, based on the competencies needed to assist students in specific, specialized work; and the socialization function, based on the “values, attitudes, social behavior and the communication skills relevant for action in socio-communicative contexts” (p. 183). The famous Dearing Report (1997) noted that most teaching practices in Britain were of the transmission variety and there was little space for conversation between students and staff in order that they might understand and use new concepts and develop the skills demanded by employers. Dearing suggested that higher education should aim for a less pronounced distinction between academic and vocational subjects and “… provide real benefits for employers and
students and those students should plan and map their way through courses in which key skills of employment are embedded” (p. 38).

Approaches to Embedding Work into the Curricula

In preparing students for the realities of employment, I will focus on two approaches to incorporating work into the higher education curricula. The first, Work-Based Learning, or what I like to call the “Take Mohammed to the Mountain” approach, includes a number of variations of placing students in a work environment to supplement their higher education coursework. The second, Work-Informed Learning, or what I call the “Take the Mountain to Mohammed” approach, is the process of integrating the authentic conditions of the workplace into the higher education curriculum.

Work-Based Learning – Taking Mohammed to the Mountain

It has become widely acknowledged that learning is a phenomenon that should be situated in its cultural context to be effective (Brown et al., 1989; Darrah, 1995; Resnick, 1987) and thus a strong case can be made for higher education students to do some of their learning in the cultural context of the workplace. Venables and Tan (2009) assert that students can be better prepared for the realities of work upon graduation if their academic learning is reinforced through authentic workplace experience, where the link between theory and professional practice can be realized.

Work-Based Learning programs (WBL) are designed to capitalize upon the inherent link between theory and its place in professional practice. According to Keating (2006), the workplace provides opportunities for students to learn in and through work rather than learning about and for work. Although this has been recognized for years in professions such as engineering, nursing, and teaching, it is not the normal mode of delivery for most university
programs. The underlying principle of such programs is that “working knowledge is rarely codified in text books, formal training programs, competency standards or procedures manuals and is more likely to be developed within the context and environment of the immediate workplace” (Keating, 2006, p. 3). Symes and McIntyre (2000) assert that knowledge that can be applied is far more valuable to students than explicit academic knowledge in that the former is contextual, social, and situation specific.

The term work-based learning refers both to employees learning at work (Keeling et al., 1998, Marsick & Watkins, 1990) and student learning that takes place through internships, work-based excursions, service learning, and other forms of work-related experiential connections (Boud & Solomon, 2001; Clark & Whitelegg, 1998; Kivinen et al., 1999; Trigwell & Reid, 1998). Common to all of these variations of WBL is the idea of learning-by-doing (Dewey, 1964) with an emphasis on active, experiential, and collaborative learning that will help expose students to the realities of work life. The relationship of the curricula to these various WBL experiences can vary a great deal, from curricula that are geared closely to work preparation with deliberate connections between work and school to educational approaches that do not emphasize the connection (Tynjälä, Välimaa, & Sarja, 2003). Disciplines with a long track record of internships and student teaching experiences can serve as useful models in looking at the relationship between curricula and the WBL experience, and the extent to which the work experience is used in the overall learning experience.

In traditional forms of WBL, control remains essentially with higher education faculty and staff rather than with the employers who host the students. This center of power issue can be a real challenge, as many students are simply dumped into a WBL experience and largely left to fend for themselves in negotiating their own day-to-day learning opportunities/responsibilities.
with the host organization. Keating (2006) argues that often times the difference between a really good and really bad WBL experience is the role the higher education representative (faculty member and/or some form of work-experience coordinator) plays in assisting students negotiate their work experience. The roles of coordinators and academic staff involved in internship programs are quite different from the traditional classroom teaching model (Venables & Tan, 2009). The coordinator in particular plays a delicate role in dealing with students who may come to believe that the workplace represents what Tynjälä, Välimaa, and Sarja (2003) call the “true competency” (p. 155), and that classroom learning is somehow perceived as out of touch with reality. The students themselves can unwittingly become players in the sometimes tense relationship between the world of work and the world of higher education and further exacerbate these cultural tensions.

Another key issue is how to guide students in harmonizing the learning they are doing on the job and their academic learning. Again, faculty members and/or coordinators are significant players in this process and this can make the difference between a meaningful experience and a lost opportunity. Considering appropriate ways to assess the WBL experience is also important. As the faculty member who is ultimately responsible for assigning a grade is largely absent from observing the student at work, a great deal of thought needs to be put into the best way to make informed assessment decisions.

The appeal of WBL programs is the promise of seamless ebb and flow of learning opportunities between the classroom and workplace, enabling students to live and breathe theory and construct their own perspective for its place in professional practice. I have had the opportunity to personally witness, both as a student and as a supervisor, how WBL programs can breathe life into higher education. As a student, I participated in three WBL experiences in my
undergraduate career: first, as a legislative intern in 1986 for U.S. Senator Max Baucus in Washington, DC, followed by a second internship with Senator Baucus as his eastern Montana re-election coordinator in 1990, and finally as a student-teacher in 1995. I also supervised five Business Management and Marketing interns in a business I operated in Bozeman, Montana, between 1987 and 1989. My two stints with Senator Baucus gave me an up close and very personal understanding of the competencies needed to excel in politics – and I learned that I did not possess these competencies! My student teaching experience, however, provided an opportunity, under a very supportive host teacher, to practice the concepts I had learned in my education courses. I was fortunate to have meaningful internship experiences that supplemented my formal learning. As a supervisor of five interns from the Business Department at Montana State, I heard them marvel nearly everyday at the huge gap they perceived between the neat and tidy case studies in their textbooks and what they witnessed in the real world of business.

I wish that all higher education students could have the opportunity to supplement their formal learning in WBL programs like I did. Unfortunately, as the number of students accessing higher education continues to grow (particularly through distance learning), it is not feasible that all students will have the opportunity to participate in a WBL program. However, even if all students could avail themselves of a WBL program during their higher education experience, I do not believe this would go far enough to bridge the gap between education and the demands of work. WBL programs are often quite short in length and only provide students with a teasing taste that cannot be depended on to provide all of the knowledge, skills, and attitudes students will need to be successful in the workplace.
Work-Informed Learning – Taking the Mountain to Mohammed

If it is impractical to rely on WBL programs to infuse the realities of the workplace into the higher education experience, a feasible alternative is bringing the workplace to the classroom. There is a long tradition of involving industry stakeholders in technical and vocational colleges, in an effort to align curricula with workplace needs. Wenger (1998) describes three ways in which educators and industry may interact for the purposes of closing the gap between their two worlds. First, there may be immersion of one in the other, such as, when academics return to the workplace or those from work teach in higher education. This method obviously suffers from a whole host of logistical limitations that make it somewhat difficult to establish and maintain a program, rather than a reliable and scalable solution.

Wenger’s (1998) second approach, of industry advisory committees, is commonly used in vocational colleges where an assortment of industrialists and academic staff meet once or twice a year to discuss curriculum and instruction issues. The role of the committee is to decide upon curriculum issues so that academic courses are more closely aligned to what industry wants, and to the changes that are occurring in industry. For industry delegates, being on the advisory committee is a form of simultaneous membership in both the workplace and the academic community. Simultaneous membership is a term derived from Callon’s (1998) idea of potential overflow of information via individuals who simultaneously occupy different frames of practice. As the committee potentially enables the negotiation and flow of knowledge between the two communities, it constitutes what Wenger (1998) calls a boundary practice. The academics respond by saying that it is hard to keep up with changes in industry and that issues such as confidence and teamwork are difficult to teach (Gallaway, 2006).
The third of Wenger’s (1998) approaches is the one-on-one meeting between industry and higher education representatives. When representatives from the workplace meet those from higher education in order to discuss issues of teaching and learning, there are interactions which can often lead to misunderstandings that may cause both to become even more convinced that they belong to completely different worlds with different motivations, interests, and outputs. Whereas, the point of these meetings is to attempt to cross the boundaries which separate them, some participants are unable to negotiate the tricky boundary crossing.

The boundaries between higher education and the world of work are real and can, in part, explain the difficulty representatives face when working together under the laudable objective of closing the gap between these two worlds. In economic terms, the traditional way that college and university programs and employers have interacted can be viewed through the lens of the relationship of supply and demand, with higher education providing the supply and employers having a demand. It is my intention to invert this equation by capturing detailed descriptions of demand from the ID workplace to inform the educational supply of instructional designers.

Research Purpose

The purpose of my research is to provide instructional design faculty contextually-detailed descriptions of critical ID skills and competencies from expert practitioners to be used in informing and shaping instruction and assessment practices to better prepare ID students for the realities of the workplace. While this is hardly a new or revolutionary idea, I have found a common weakness of so-called competency-based curricula development is that the competencies used as a base of development are described in a bullet-point level of detail that is insufficient to guide curriculum design.
In the instructional design world, the International Board of Standards for Training, Performance and Instruction (IBSTPI) has developed a set of competency standards that are widely used throughout the industry. IBSTPI has produced a total of 23 instructional design competencies, all of which are described in short sentences. Here are some examples of the description level of these competencies: Under the professional foundations category, the ubiquitous “communicate effectively in visual, oral, and written form” (IBSTPI, 2001). “Conduct a needs analysis” (IBSTPI, 2001) is found in the planning and analysis category, and finally, under the implementation and management category is listed the overly broad “apply business skills to managing instructional design” (IBSTPI, 2001).

It seems unlikely that faculty members can use this very general level of description to shape sufficiently detailed instructional design curricula. Faculty members know very well that their students will need to “conduct a needs analysis” when they enter the ID workforce. What faculty members need to know is what the needs analysis process “looks like” in the work setting. This picture of what a needs analysis looks like includes things like specific examples, time and budget parameters, details on collaborations, and the criteria used to judge success and failure. My purpose is to capture descriptions of successful instructional design practice in a level of detail that faculty members can actually convert into usable instruction and assessment practices.

Research Questions

1. What knowledge, skills, and attitudes are critical for success as an instructional designer in the contemporary business and industry workplace according to the research participants?
2. What strategies and approaches would the research participants use to prepare instructional design students for the realities of the business and industry workplace?

Research Approach

I like to compare my research approach to the work that archeologists conduct in the field. As an archeologist goes into the field, I go into the ID workplace, to *excavate* experts’ descriptions of successful work skills and competencies. Great care has been given to ensure that the *artifacts* unearthed in the ID workplace have been extracted with all of the contextual components intact for ID faculty to use in shaping instruction and assessment practices.

In creating the tools I have used in my research, I have conducted a thorough investigation of the wide variety of job analysis, needs assessment, and competency analysis methodologies that are typically used in describing and analyzing workplace competencies. (A discussion of potential research techniques can be found in Literature Review chapter.) I have ultimately decided to use a qualitative research approach called the Critical Incident Technique (Flanagan, 1954). In the simplest of terms, CIT research participants are asked to recall either very positive or negative (i.e. critical) episodes or incidents. Having participants tap into incidents to which they attach strong feelings can provide rich descriptions which spell out a wide variety of the unique characteristics of workplace practices rather than just a list of discrete tasks.

One of the more unrealistic aspects of the higher education curricula has been the practice of separating content into its component skills, rather than taking an approach that emphasizes teaching skills holistically, within a meaningful problem-solving context, and with their links and interactions intact. This notion of keeping links intact with the world of work is a key component of my model of capturing workplace competencies for use in shaping instructional and
assessment practices in the higher education setting. This approach is based partially on the apprenticeship learning mode (Brown, Collins, & Duguid, 1989), in which students actually learn by doing because they work on realistic tasks. This approach goes a long way toward satisfying students’ question of “Why do we need to learn this stuff?” and allaying negative comments such as “I’m never going to use this in the real world.” When instruction and assessment are anchored in meaningful and realistic content, the answers to student questions about the relevance of what they are learning are addressed in a positive manner.

Research Scope

It is important at this juncture to be clear that it is beyond the scope of my dissertation research to focus on how the data I collect from the ID workplace will be used to inform ID curricula development efforts. I am very mindful of the challenges faced when bridging the academic and corporate worlds to discuss curricula decisions. Understandably, faculty members are protective of the curricula they are responsible for teaching, and can be skeptical of the robustness of the corporate world’s approach to education. Although I am confident that higher educational faculty members and administrators will be receptive to reliably and validly collected information concerning the needs of employers, whether they will have the capacity and the resources to make any recommended changes in how and what they teach remains to be seen.

So, with these caveats in place, I am deliberately framing my research to promote an open attitude between both stakeholder groups, the expert ID practitioners from whom I have captured descriptions of the work competencies in demand, and from academics, who can choose to use these descriptions to shape supply. To this end, I did not put my ID practitioner participants in the position of evaluating their higher education experience in terms of how well
it prepared them for the realities of the workplace. I believe that taking a laundry list of “ways
my education didn’t prepare me for work” from corporate instructional designers to faculty
members would not help facilitate a constructive attitude toward using the data to inform
curricula decisions. I think it is crucial to present the input from corporate ID practitioners in a
positive, non-threatening way to faculty members. This approach is far more likely to promote
their cooperation.

I discovered, while conducting interviews with instructional designers under a pilot
project in 2009, that the designers were quite protective of their master’s program and I sensed
that they didn’t want to be put in the position of rating their professors and their courses.
Therefore, to keep my interview participants comfortable, and to make their input palatable to
faculty members, I focused on obtaining descriptions of the competencies needed for success in
the ID workplace without descriptions of the gap between school and work. In any case,
instructional design is a dynamic field that does evolve in practice as well as in theory, and
periodic feedback loops of the kind I propose to formalize are inherent in the very fundamental
processes of the field.

Nature of Research Goals

I came to work on my doctoral studies after 15 years experience as a teacher with the
burning intention of saving the world, or at least the world of education. I now realize that
informing the world about some important matters is much more viable than “saving it.” Among
the many new things I have learned, the notion of socially responsible research is especially
appealing. As Reeves et. al (2005) point out, although all instructional technology research may
appear to lay claim to “social responsibility” by its very nature, a great deal of the studies in our
field do not appear to live up to this claim. Reeves (1995) offers one explanation for the IT
field’s failure to produce socially responsible research: “Are we asking the wrong questions? For the most part, yes” (p. 10). I believe that my research questions, and the approach used to answer them, have produced research findings that are socially responsible and contribute to the field of instructional design education, specifically, and the alignment of higher education preparation and work demands, generally.

Critics of my research might claim that I am, in fact, not engaging in research at all, but simply performing a glorified needs assessment exercise. To these critics, I can only reply that I am driven by a desire to truly make an impact on educational practice, rather than just theorize about it among a handful of like-minded individuals. My “action goals” are focused on capturing descriptions of workplace competencies in demand in the workplace for the purpose of informing the educational preparation of students.
CHAPTER 2
REVIEW OF THE LITERATURE

There is a very compelling body of literature to support the existence of a gap between what employers demand from their employees and the competencies higher education graduates possess upon entering the job market (Atkins, 1999; Andrews & Wooten, 2005; Askov & Gordon, 1999; Evers, Rush, & Berdrow, 1998; Morley, 2001; Peddle, 2000; Robinson, 2000; Shivpuri & Kim, 2004). It would be very natural to focus this study on this gap, and in the process, add to the literature by conducting yet another study which verifies that higher education graduates are not prepared for the demands of work. However, I am avoiding this temptation and focusing the purpose of my dissertation on creating a body of information that can be used by instructional design faculty to narrow the gap. As identified in the Statement of Purpose chapter, I posit that Work-Informed Learning offers great potential for preparing students for the realities of workplace competency demands. In order to construct work-informed curricula it is necessary to capture and analyze the knowledge, competencies, and attitudes required for success in the workplace. As such, the purpose of this literature review is to analyze three broad approaches commonly used in capturing workplace competencies and attitudes. These three approaches are: job analysis, needs assessment, and competency analysis. I framed the following questions to guide my review of the literature:

1. analysis, needs assessment, and competency analysis methods are commonly used in capturing workplace competencies?
2. What are the strengths and weaknesses of each of these methods in capturing contextually-detailed descriptions of workplace competencies?

3. What method offers the most holistic approach to capturing contextually-detailed descriptions of instructional design workplace competencies?

Job Analysis

According to Stitt-Gohdes et al. (2000), workplaces are becoming increasingly complex places that require a multitude of research methodologies and data collection techniques to properly capture the types of information needed to understand their nature. For years, a variety of job analysis methods have been used to gather, document, and analyze “information about three basic aspects of a job: job content, job requirements, and the context in which the job is performed” (Bemis, Belenky, & Soder, 1983, p. 1). Job content refers to a description of the activities involved in the job. These descriptions may range in specificity from general statements of job activities to very detailed descriptions of duties or tasks. Job requirements include factors such as number of years of education and experience, degrees, licenses and various forms of credentials. According to Bemis et al. (1983), the nature of job requirements is changing to include the identification of skills, abilities, areas of knowledge, and other characteristics that speak to an employee’s ability to perform the content of a job. The context of a job refers to factors such as the purpose, the degree of accountability of the employee, the extent and nature of supervision and training, and the physical and social conditions of the job location. One of the major challenges of my research agenda is finding a job competency analysis method that can help create a detailed and contextual profile of instructional design competencies.
A Survey of Job Analysis Methods

There are many job analysis methods and numerous variations of the major methods. Some of these main methods include: the Department of Labor method, Functional Job Analysis, Develop a Curriculum (DACUM), and the Critical Incident Technique (Bemis et al., 1983).

The Department of Labor (DOL) method was originally designed for the purpose of documenting titles and descriptions of jobs throughout the United States for publication in the third edition of the Dictionary of Occupational Titles (DOT), which was first published in 1965. The fourth, and latest, edition was published in 1991 by the Employment and Training Administration (O*NET). In this method, jobs are described in terms of work performed (job-content data such as worker functions, work fields, machines, materials, and specific tasks) and “worker traits” (job-requirement data with some contextual information, such as, aptitudes, temperaments, interests, and environmental conditions). All data are collected and analyzed by trained analysts and are based on a review of written materials, observations, and interviews with both workers and supervisors. Under this method, all procedures and techniques are specifically spelled out and followed in the name of uniformity. As the title of the Dictionary of Occupational Titles indicates, jobs are described in terms of their title, which does not provide a means of really understanding their complexity in a social context.

In this section of the literature review I have focused on three job analysis techniques which hold promise for my proposed research approach. These three techniques are: (1) Functional Job Analysis; (2) DACUM (Develop A Curriculum), and (3) the Critical Incident Technique. I have chosen these three analysis methods for investigation because they all contain elements that appear to possess potential for helping to capture not only the task analysis aspects of instructional design work, but also the important contextual/situational aspects of work. These
three methods are presented in order of priority from perceived lowest to highest degree of appropriateness and usability for my doctoral research. The last method reviewed, the Critical Incident Technique, appears to have the most potential for providing a holistic description of desirable workplace competencies. The overall aim of this section is to determine the most useful aspects of each job analysis method for the purpose of creating the research methodology for my dissertation research.

**Functional Job Analysis**

The Department of Labor (DOL) created the Functional Job Analysis (FJA) method with the major objective of matching the right people with the most appropriate job. To this end, the DOL realized two types of information would be required to fulfill this objective of matching people and jobs: (1) a description of the work, and (2) a description of the worker qualifications, so that applicants could prepare and apply for the most appropriate job (Brannick & Levine, 2002). FJA is based on the idea that the work people do is related to one of three aspects: data, people, or things.

The use of a trained analyst to gather data and complete the analysis process is both a strength and weakness of the FJA method. While a professional job analyst can provide a sense of objectivity from the outside, the analyst may also know nothing of the job or work culture and must spend a good amount of time grounding him or herself in the fundamentals of the job and its culture. As such, the analyst initiates the process by looking at information about the job under analysis in books, periodicals, or other technical publications. The analyst also studies flowcharts and organizational charts; job descriptions and other technical documents prepared by trade associations, trade unions, and professional associations, and pamphlets, books, or other information prepared by the government (Brannick & Levine, 2002). These documents provide
analysts with background information about the general nature of the job and are useful when interacting with people in the workplace.

The preferred method of collecting data in the FJA method is the observation/interview. In this method, the analyst either watches the worker as they work and then interviews the worker afterward or simultaneously interviews the worker as he or she works. The obvious benefit of this method is that the analyst can observe work being performed and ask workers about it. When the work is deemed to be dangerous, secret, or consists of mental tasks that are difficult to observe, analysts must rely on interviews as their sole source of information. A more current version of the FJA method uses a panel of incumbent workers who report how they complete their work (Fine & Crenshaw, 1999). The assumption of this new version of FJA is that experienced workers know their job better than supervisors, engineers, or other technical experts (Fine & Crenshaw, 1999). As the experienced workers are prone to describe their work in jargon and job-specific detail, another key role of the analyst is to translate the data gathered from these experts into a common language used among all FJA job descriptions. Describing the work tasks is prescribed in detail and even employs a specific grammar and sentence structure. This special grammar and sentence structure is very useful for standardizing job descriptions but can also strip away the important characteristics of the job and work culture being described.

Although the primary aim of the FJA method is to describe tasks, it also provides a substantial amount of information about working conditions and worker characteristics. This methodology uses a broad scale to describe how workers relate and function in their work in seven categories: (1) Data functions – complexities in the use of information; (2) People functions – level of interpersonal skills; (3) Functions that involve using objects – physical
requirements, typically with machines; (4) Worker instructions – level of responsibility; (5) Reasoning development – from common sense to abstract undertakings; (6) Mathematical development – math skills; and (7) Writing functions (Capelli, 1992). Although these additions to the original FJA job analysis tool may add more breadth to job descriptions, there is still a heavy reliance on the importance of describing specific job tasks. Important characterizations of the work environment and culture are still lacking in the FJA approach and would not help me capture the level of description that I am striving for in my doctoral research.

DACUM

DACUM is an acronym for Develop A CurriculUM, a job analysis process that was originally developed in Canada. According to Bailey and Merritt (1995), DACUM has been widely used throughout Canada and the U.S. and in its refined form is a primary method for developing the applied curricula for programs in technical and community colleges in at least 38 U.S. states. The DACUM process is facilitated by educators and is used as a way to bring business and industry into the curriculum and instruction development of education programs. Robert Norton (1993), who developed the technique, states that DACUM is a “significant technique for initiating needed cooperation between business and education in tech prep…” (p. 1).

In the first phase of DACUM, expert workers and their supervisors are brought together for a series of two-day focus group sessions dedicated to interacting and brainstorming about their jobs, with the ultimate objective of rating job activities based on frequency and importance (Bailey & Merritt, 1995). These brainstorming sessions are very open in nature and “not hampered or constrained by a literature base or any instructor-created document” (Norton, 1993, p.1). From these two-day open focus group sessions a chart is created to display the duties, tasks,
and competencies involved in a particular job. This chart is then shown to a larger group of workers and supervisors for their further input and verification.

Supporters of the DACUM job analysis method argue that the process requires less time, expense, and staff training than other methods. Another strong point is that the language used in the DACUM process is simple and straightforward and avoids excessively academic sounding language. This is particularly useful as DACUM can be developed and implemented by employers, employees, and educators, without the need of a specialist. DACUM is also very customizable with many users wishing to start the process with industry-created competencies or job descriptions rather than a blank slate, thus preventing the prospect of reinventing the wheel and allowing participants to really focus on detailed descriptions of job tasks and competencies. This ability to customize the DACUM process helps in gaining participant buy-in and allows organizations to span the continuum from starting from scratch to really refining the focus on a single job, by starting with pre-existing job descriptions. According to Merritt (1995), DACUM has proven to be a job analysis process that is easily understood by both educational and industry participants and has generated an overall sense of comfort and accuracy.

There are, however, disadvantages in the DACUM process. Wills (1993) contends that it tends to produce too narrow a conceptualization of workers’ roles within an organization. Hanser (1995) states that “one breakdown in the school-to-work transition process stems from the inability of traditional job and task analysis methods to help us identify, understand, and communicate the skills needed for success in the high-performance workplace” (p. x). This can indeed be a criticism of most job analysis methods as the focus on tasks becomes so narrow that descriptions fail to capture the nuances of context and the interplay between discrete job tasks. Wills (1993) characterizes this narrow conceptualization of jobs as “Tayloristic” in nature.
Despite attempts to include input from a variety of stakeholders and provide them with a blank canvas from which to create descriptions of jobs, the DACUM process often still results in narrowly-defined classifications which ultimately do not reflect an industry or job as a whole (Ganzglass & Simon, 1993).

A task-oriented approach such as DACUM, by its very nature, forces participants to focus on details of jobs without dealing with the broader contextual, cultural, or specific nature of the industry. An example of the weakness of this approach is reflected in this statement: “One project director referred to this as a ‘whiskey bottle’ methodology in which every minute aspect of the job is passed around the table for discussion, often in a haphazard manner, in hope that the most important responsibilities and duties will eventually emerge” (Bailey & Merritt, 1995). The use of DACUM, or any job analysis method, for the purpose of validating existing industry or internal job descriptions, runs the real risk of embedding the job analysis system even further into the traditional conceptualizations of the job(s) being investigated. The tendency to use past and present descriptions of a job can too easily come to serve a benchmark function rather than the intended purpose of describing what the job could or should look like.

Hanser (1995) discusses the notion of ‘emergent’ skills and the need to consider the dynamic nature of jobs in conducting job analysis. He expresses concerns that traditional job analysis techniques are static and result in “more of a snapshot of a job than an organic image of a job” (p. 10). While it is easy to understand the tendency to use existing information about jobs and essentially perform an edit and reconfirm process, a good amount of pertinent detail may be lost in this technique. Although starting from scratch can be more time consuming, there is a real possibility that this procedure will not produce the kind of competency and skill profiles that accurately reflect the true nature of the job.
Another reported weakness of the DACUM process is the reliance on the focus group format (both of the ‘free wheeling’ and more structured type) because groups require much more organization and direction than interviewing individuals to be optimally efficient and productive (Bailey & Merritt, 1995). The expression “herding cats” comes to mind and can explain the tendency to either reduce group size or interview participants individually. Another problem reported in the literature is the lack of the group facilitator’s (most often an educator) technical expertise and the need to rely too extensively on internal experts to help navigate their way through the technical aspects of the job descriptions. Yet another logistical problem is releasing employees from work for two or more days, not to mention the issue of the criteria by which employees are selected for participation. Indeed, two sets of researchers (Rayner & Hermann, 1988, and Willet & Hermann, 1989) cite the inability to recruit a representative sample of participants as a shortcoming of the DACUM process.

In the end, DACUM appears to be a job analysis technique that is more effective for specific task-oriented jobs and less effective in capturing the complexities of professional work. While it is true that even professionals must master particular tasks, the challenge of better understanding and describing professional jobs needs to employ methods that do more than take simple snapshots of a job frozen in time and lacking a holistic view of the job task, context, and culture.

Critical Incident Technique

The Critical Incident Technique (CIT) is a qualitative research approach that provides a very holistic way to analyze the nature of workplace requirements. The technique is effective because it can capture workers’ impressions of not only the tasks they perform but also their interpretations of their workplaces. The CIT is “an epistemological process in which qualitative,
descriptive data are provided about real-life accounts” (Di Salvo, Nikkel, & Monroe, 1989, pp. 554-555). It is the richness of the data provided by experienced workers that makes the technique attractive in spelling out a variety of characteristics of work, rather than just discrete tasks. This technique consists of a set of procedures for capturing specific incidents or events in such a way as to utilize them in solving practical problems.

The CIT was developed by John Flanagan in the early 1950s; and, according to the American Institutes for Research (1998), it is one of the most frequently cited methods in the field of industrial/organizational psychology. Flanagan developed CIT as a result of a study he did with the United States Air Force during World War II where he was put in charge of improving flight training and the efficiency of bombing missions. To this end, he started asking trainees as well as veterans to describe exactly what they had done in successful and unsuccessful flight missions. In one of his studies, he asked pilots to describe what they saw, heard or felt that brought on the experience of disorientation while flying. The results of his study led to a number of changes in the cockpit and instrument panel design (Symon & Cassell, 1998). In a larger scale study, Flanagan asked combat veterans to describe specific incidents of effective and ineffective behavior when accomplishing a combat mission. The outcome of this research was an extensive set of descriptions, or ‘critical requirements,’ of effective combat leadership (Symon & Cassell, 1998). As Flanagan became more experienced at this line of inquiry, he formalized the process and it has become widely used today in a variety of qualitative data collection applications. Flanagan (1954) defined the critical incident technique as

…a set of procedures for collecting direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles… By an incident is meant any specifiable human activity
that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act. To be critical the incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects (p. 327).

The studies reviewed by Flanagan were described as having a ‘concreteness’ of reality in which the criteria of what constitutes effective or ineffective job performance could be identified, and observers could be provided with explicit criteria for judging performances as either successful or unsuccessful (Symon & Cassell, 1998).

The shortcoming of any research methodology, even qualitative methods, is the extent to which it can provide rich and descriptive detail. This challenge was not lost on Flanagan (1952), “The problem of the critical incident technique is how to assist teachers and others to get good, specific, descriptive information regarding the individuals they observe” (p. 64). There are two key dimensions of this problem to consider: First, is the problem of having a clear-cut definition of the specific aspects of the individual’s activity to be observed – that is to say – what are we looking for? The other important aspect is the manner in which the observations are to be made and reported.

In trying to determine the strengths and successes of CIT, Landau and Rohmert (1989) put it quite well, “Using CIT, the data reflects actual events… this technique is powerful in analyzing jobs and separating facts from opinions” (p. 51). CIT has a wide range of applications; and because it relies on actual incidents, it has a clear advantage over questionnaires and surveys. CIT facilitates the revelation of issues which are of critical importance to the interviewee. While other methods such as interviews may provide a fine-grained detail of events, CIT provides an almost automatic linkage between context, strategy and outcomes because the technique is
focused on an event which is explained in relation to what happened, why it happened, how it was handled and what the consequences were. An unstructured interview does not allow participants to think in this way. Although one weakness of CIT is that the participant’s account is always retrospective, however, because the incidents are ‘critical,’ the participant tells his or her story with a great deal of detail due to the clarity of their recall (Symon & Cassell, 1998). Another advantage of the CIT method is the focus which enables the researcher to probe aptly and which the interviewee can concentrate on – a hook upon which they can hang their accounts (Symon & Cassell, 1998). A further advantage of CIT is that the analysis enables the researcher to relate context, strategy and outcomes, to look for repetition of patterns of ways of doing, and in the process, build a picture of desirable or undesirable work practices.

Although CIT provides context-rich data, the context is completely developed by the participant. It is then not unusual to use document sources or interviews with other players in the incident to corroborate the participant’s critical incident(s). One definite disadvantage of using the CIT is the considerable time and expense associated with this in-depth method of inquiry. There also can be serious confidentially issues, particularly if participants’ incidents characterize others in their organization (particularly superiors) in a poor light. Also, there is always the school of thought that says that if research is not based on large quantifiable sources of data that it is insufficiently generalizable to be of value. And lastly, the CIT interview is not easy to conduct effectively and requires a skilled researcher who understands the challenges of getting people (most often complete strangers) to tell their stories.

One of the most well-known applications of CIT in understanding jobs came as a result of research conducted in the 1950s which produced the Motivation-Hygiene Theory (Herzberg, Snydermann, & Mausner, 1959). In this research, a modified version of CIT was used with a
sample of 200 engineers and accountants and disclosed two distinct sets of critical factors. One set, called hygienes, was found to be primarily responsible for job dissatisfaction, while the other set, called motivators, was responsible for job satisfaction. The Hygiene-Motivation Theory suggests that people have two parallel needs that require a certain degree of satisfaction. In the context of job analysis this translates into two ways of looking at work: “What makes workers tick?” and “What makes them sick?”

Job analysis tools can offer instructional design educators the ability to capture important information about the knowledge, skills, and attitudes their graduates should possess as well as about the culture of the workplace where their graduates will be expected to perform upon graduation. As evidenced in this review, the approaches to job analysis are varied, as are the applications of information gleaned from the process. Some jobs by their very nature are best described in the discrete tasks that constitute the job. Other jobs, like instructional design, are far more complex and, as such, require a more holistic approach to capturing and documenting the full “story” about the job.

Three job analysis methods were examined in this review: Functional Job Analysis, DACUM, and the Critical Incident Technique. The Functional Job Analysis (FJA) method relies on a trained job analyst to gather data and complete the job analysis process. Although the analyst utilizes a variety of data sources for his or her analysis, he or she may know nothing of the job or work culture, and must spend a great deal of effort grounding themselves in the fundamentals of the job and culture. Ultimately, the FJA’s heavy reliance on the importance of describing specific job tasks results in a characterization of the work environment and culture which I feel will not help me capture the complexity of the instructional design workplace.
DACUM is a job analysis method which brings together expert workers and their supervisors for a series of two-day focus group sessions dedicated to interacting and brainstorming about their jobs, with the ultimate objective of rating job activities based on frequency and importance (Bailey & Merritt, 1995). The DACUM process appears to be simple and straightforward, customizable, and can be developed and implemented by employers, employees, and educators, without the need of a specialist. However, Wills (1995) points out that it tends to produce too narrow a conceptualization of workers’ role in an organization. I believe that the group interview format used in DACUM will not enable an individual to produce the kind of rich narrative about his or her job that I am aiming for in my dissertation research.

Of the three job analysis methods explored, I find that the Critical Incident Technique offers the best approach to job analysis for professional jobs like instructional design, because the information gathering is based on asking experts to describe significant or critical incidents that embody a situation in which they performed their job particularly well. Encouraging experts to tell a “story” of these incidents helps them unpack their expertise through their narrative. The rich description of culture and context that naturally accompany these narratives can ultimately lead to very specific situations that can be replicated in the classroom in the form of simulations and other instructional methods. This richness of description offered through the Critical Incident Technique is fundamentally important to shaping my research approach.

The use of job analysis is not the only way to approach the task of studying a given job for the purpose of understanding the skills, competencies, and attitudes required for success. To further inform my approach to analyzing the job of instructional designer, I will review the literature on two other approaches, needs assessment and competency analysis. It is my purpose
to look at as many methods as possible in the construction of the research methodology and approach used in this study.

Needs Assessment

An important foundational aspect of the instructional design process is needs assessment. As such, I feel it is important to look at the instructional design needs assessment process to inform my approach to conducting a needs assessment of desirable instructional design competencies. Since the original version was published in 1978, Dick and Carey’s *The Systematic Design of Instruction* has served as one of the top guiding forces in the field of instructional design education and practice. It was selected as one of the two most appropriate textbooks for instructional design in the 2000 ITFORUM poll (Bond-Hu & Spector, 2002), along with *Designing Effective Instruction* (Morrison, Ross, & Kemp, 2001). Now in its 7th edition, Dick and Carey (2007) are still influencing a new generation of instructional designers with their fundamentals of design, using concepts and procedures for analyzing, designing, developing, and evaluating instruction.

Of particular interest to my research agenda is Dick and Carey’s approach to needs analysis. Dick and Carey (1990) put it quite simply in their statement “It is generally accepted that the instructional design process begins with the identification of a need – a gap between what is and what should be” (p. 15). This simply stated idea perfectly frames the premise of my research objective: To determine what gaps exist between the knowledge, skills, and attitudes (KSAs) needed for success in the instructional design workplace and the educational preparation of designers.
Needs Assessment Models

One of the first considerations in the needs assessment process, according to Dick and Carey, is the question of who should be involved in determining the needs of the learner. One obvious central character is the learner him or herself. Researchers like Rossett (1987) are clear in stressing the importance of collecting needs assessment data directly from the learners. However, Kaufman and English (1979) indicate that a full host of stakeholders, including educators, parents, and community members should join with the learners in voicing their opinions about the needs of the instruction being designed. Whereas both Rossett and Kaufman/English possess interesting perspectives, I don’t believe that instructional design students (the learner in the Dick and Carey/Rossett needs assessment model) possess the vantage point or sophistication to articulate a vision of what their curricula should look like. Likewise, instructional design faculty, parents, and community members probably don’t possess a current understanding of the demands of the ID workplace. For a real-world perspective on the practice of instructional design, ID programs can likely learn the most from practitioners.

As far as needs assessment in their overall design paradigm is concerned, Dick and Carey are clear that they are not in the business of reinventing the wheel, and in their later editions rely heavily on Rossett’s (1987) five areas of questioning in conducting needs assessment: actual performance, optimal performance, feelings, causes, and solutions. The actual performance describes what is actually happening in the current situation. Optimal performance describes the ideal situation. Feelings focus on the learners’ descriptions and opinions of the current, and ideal, situations. Causes describe the ‘why’ part of the situation, (i.e. Why is this happening? What is the cause?). Solutions are the answers to a need (Dick & Carey, 1996).
The first type of question used by Rossett (1987) is very broad in nature and is used in order to identify problems that learners may be experiencing. These questions are open-ended and allow respondents a great deal of latitude in constructing their response. An example of this type of question is offered by Dick and Carey (1990): “What problems have you recently had on the job” (p. 15)? This question would be a standard type of question used in the Critical Incident Technique, an approach that has heavily influenced my dissertation data collection methodology. This type of question enables respondents to tell contextually rich stories of problems or successes they have experienced on the job – those experiences on the extreme ends of the spectrum. As Dick and Carey recognize, asking this type of question will result in a wide range of answers, with some of the responses offering little or no utility. However, this type of broad question does offer a good entrée, which can then be followed up with questions about the successes or problems the respondents are experiencing in their work.

The second type of question asks learners to prioritize among possible topics or competencies like “rate each of the following skills in terms of your need for them to improve your effectiveness in the office” (Dick & Carey, 1990, pp. 15-16). This approach, of asking employees to rate competencies needed in performing their work successfully, is the most common technique used in competency modeling, a method which is discussed later in this literature review. Frequently, a great deal of time, expense, and effort is put into a study of workplace competencies that concludes, for example, that the top three competencies for the position of public relations executive are “marketing,” “organizational skills,” and “creativity” (Gayeski et al., 2007, p. 10). I feel this information offers very limited utility; and I have not used this type of competency rating approach in my dissertation research.
Rossett’s (1987) third approach to needs assessment is asking learners to demonstrate particular skills, often in the form of a pretest, to determine the skills learners possess. While this method offered some interesting possibilities for my dissertation research, it seemed impractical to ask my busy participants to demonstrate their instructional design skills. However, this method would certainly provide an effective way of capturing contextually specific data on how expert instructional designers perform their craft.

Rossett’s (1987) fourth type of questioning tries to “uncover the feelings that learners have about a particular course or skill. For example, learners might be asked, ‘How interested would you be in a workshop on telephone etiquette?’” (Dick & Carey, 1990, p. 16). Some variation of this “uncovering feelings” approach was used in my dissertation research, as a way of encouraging participants to unpack the significance of the critical incidents they described when explaining the successes and challenges they find in their work.

The last of Rossett’s (1987) five types of questions asks learners to articulate what they think the best solutions are to a given problem. Here is an example of this questioning approach offered by Dick and Carey (1990): “It has been found that many people are not receiving their office messages or understanding the ones they do receive. Which of the following would improve our communication?” (p. 16). As the question suggests, participants are provided a list of alternative solutions to the problem to use in constructing their response. This technique could have been a useful method of providing participants situations (and optional choices) rather than putting all the pressure on them to recall and describe situations from their work experiences. I discovered that providing participants with a base from which to construct their responses helps expedite interviews, by reducing anxiety caused by asking them to produce problem situations and solutions, during the course of a short interview.
Overall, Dick and Carey (1990) report that needs assessment is coming to play a more important role in the total design process, and that creating instruction for no need or a mismatched need can be avoided through effective front-end analysis. They also report a trend of less dependence on survey instruments as the predominate method of conducting needs analysis. According to Dick and Carey (1990), “…surveys are being supplemented or supplanted with more insightful interviews and direct observations of performers” (p. 16). It is just this “insightfulness” quality that I aimed for in my interviews with instructional designers, enabling them to tell a contextually rich story of what they do really well or poorly in their work. Surveys certainly have a role in the research of workplace competencies needs assessment but surveys are too limited in the scope of the details they can capture.

Another model worth consideration is Borich’s (1980) needs assessment model, which is widely used as an approach to conducting educational needs in teacher training. Borich’s needs assessment model is based on the discrepancy model in which survey methodology is used to cause respondents to provide data that can be weighted and ranked in order of priority. Borich (1980) stated that “… the needs assessment model is essentially a self-evaluative procedure which relies on teachers’ judgments about their own performances. The assumption underlying the needs model is that the performer (teacher) can best judge his or her own performance and, when explicitly asked to do so, can make an objective judgment” (p. 42). The unit of analysis in the Borich method, the practitioner, is more akin to the participant population of instructional design practitioners that I have interviewed for my dissertation. However, as stated previously, I believe that survey data is of limited utility in capturing workplace competencies in a level of contextual description detailed enough to inform instructional and assessment practices. An important take-away from the Borich model is the notion that the performer is the best judge of
his or her performance. While this might not always be the case, at a minimum, I am of the opinion that the most reliable way to find out about a job is to ask those who actually perform the job.

The Dick and Carey/Rossett needs assessment model certainly offered some insights worth considering, as I continued to develop my own approach to capturing the needs in closing the gap between the educational preparation of instructional designers and the competency demands of the workplace. An open-ended question like, “What problems have you recently had on the job?” (Dick & Carey, 1990, p. 15) was an important type of question used in my interview protocol. I am also very intrigued by Rossett’s practice of asking participants to demonstrate particular skills, however, I am doubtful of the practicality of using this approach. Lastly, I find the practice of asking participants to provide solutions to problems is another useful take-away of the Dick and Carey/Rossett needs assessment model. This approach may be a particularly good follow-up interview activity after synthesizing some common problems identified during the first round of interviews.

The Competency Movement

Another approach to assessing the needs of learners or job performers is the wide variety of techniques that come under the umbrella term competencies. The competencies movement has been the rage since the mid-1990s and McLagan (1997) captures the headlong rush towards anything competencies related: “All of a sudden, it seems, there is a surge in interest in competencies – a global surge. In the United States, the emphasis is on leadership competencies – driven, perhaps, by concerns about losing world-class status” (p. 40). Although McLagan wrote this over a decade ago, organizations of all sizes and stripe are still clamoring to jump on the competencies bandwagon in hopes of maximizing the efficiency of their human capital.
As a concept, competencies have been around for centuries and can be traced back to medieval guilds in which apprentices learned skills by working with a master (McLagan, 1997). Indeed, throughout the ages, people have been building various forms of taxonomies of objectives for the cognitive, behavioral, and affective domain – which are now commonly known as knowledge, skills, and attitudes (KSAs). The International Board of Standards for Training and Performance Instruction (2001) defines a competency as “a knowledge, skill, or attitude that enables one to effectively perform the activities of a given occupation or function to the standards expected in employment.” The National Center for Education Statistics (NCES) of the U.S. Department of Education (2002) defines a competency as “the combination of skills, abilities, and knowledge needed to perform a specific task” (p. 7). As defined by both IBSTPI and NCES, a competency includes both a “means” and an “end.” The “means” are knowledge, skill, or abilities and the “end” is to perform the activities of a given job (Gillies & Howard, 2003; Gordon & Issenberg, 2003). The essence of the true meaning of competency is lost if the end is ignored.

The birth of the competency movement is frequently associated with the work of David McClelland (1973) in his attempts to provide an alternative to the trait and intelligence approaches for measuring and predicting human performance. McClelland’s competency approach was at first applied to the field of educational achievement testing and then was adopted for other educational and business applications (Athey & Orth, 1999). The widespread adoption of his work can be summarized as follows (McClelland, 1973): (1) The best way to understand performance is to observe what people actually do to be successful (i.e., competencies), rather than rely on assumptions about underlying traits or attributes such as intelligence; (2) The best way to measure and predict performance is to have people perform key
aspects of the competency you want to measure, rather than administering a test to assess underlying traits or attributes; (3) Competencies can be *learned and developed* over time, in contrast to traits and attributes that are viewed as inherent and largely immutable; (4) Competencies should be made *visible and accessible* to people so they can understand and develop the required level of performance, rather than be cloaked in the veil of mystery associated with traits and intelligence factors, and (5) Competencies should be linked to meaningful life outcomes that describe the way people must perform in the real world, rather than esoteric mental traits or constructs that only psychologists can understand.

Over the past 30 years, a variety of competency analysis approaches have evolved from McClelland’s original work (Marrelli, 1998). The conceptual framework, terminology, and methodologies used by modern practitioners are often very heavily shaped by the discipline of the practitioner. Three disciplines have been particularly prominent in the competencies movement over the past three decades: differential psychology, educational and behavioral psychology, and management science/industrial engineering (McLagan, 1997). Differential psychology focuses on the differences between superior and other performers (Marrelli, 1998). The emphases of analysis under this model are on cognitive and physical abilities, values, interests, motives and personality traits rather than knowledge and skills that can be developed. Competencies in differential psychology are seen as innate and almost impossible to teach in an educational setting. This approach is quite different from that of the educational and behavioral psychology, which focuses on all the competencies needed for successful work performance. Under this framework, knowledge and skills that can be developed are seen as important as cognitive and physical abilities, values, interests, motives and personality traits. Practitioners in the approach see the performance environment as an important determinant of workers’ behavior.
on the job (Marrelli, 1998). The third discipline, management science/industrial engineering, focuses on job duty and task analysis.

The focus on task analysis plays an important role in the competencies movement, just as it does in job analysis and shares the same objective of breaking work into manageable procedures, which can be captured and used for a variety of purposes. A results competency is somewhat rarer than a task competency and can be detected by the use of the words “ability to…” (e.g., ability to produce profits). An output competency is the ability of an individual or group to produce some output or deliverable. This varies a great deal based on the particular job (Marrelli, 1998).

According to Mirabile (1997), “knowledge is awareness, information, or understanding about facts, rules, principles, guidelines, concepts, or processes needed to successfully perform a task” (p. 4). The knowledge may be concrete, specific, and easily measurable, or it may be more complex, abstract, and quite difficult to assess (Lucia & Lepsinger, 1999).

A skill represents a capacity to perform physical or mental tasks with a specific outcome (Marrelli, 1998). The skill of alphabetizing lists of names is an example of a skill that is concrete and quite easy to assess. Conducting a needs analysis process for an instructional design project represents a much more complex skill, or set of skills, that is both difficult to describe in detail and to assess. In the modern workplace, professional jobs in particular are largely made up of these complex skills that are difficult to capture in words for the purposes of education and training.

The third leg, abilities or attitudes toward work, becomes even more complex than the notions of knowledge and skills. Marrelli (1998), refers to ability as a “constellation of several underlying capacities that enable us to learn and perform” (p. 10). Ability or attitude
competencies are tricky, as they can be seen as innate in nature and very difficult to educate or train people to perform. They include critical thinking and motivation to work hard.

In professional jobs such as instructional design, much of the work actually takes the form of a hybrid of these models and is called an “attribute bundle” by McLagan (1997). Examples of an attribute bundle are problem solving, decision making, and working in groups. For example, problem solving is made up of some knowledge (such as technical know-how and problem solving techniques); some skills (such as, analysis skills and lateral thinking); and some attitudes, values, orientations, and commitments (such as achievement and integrity) (McLagan, 1997).

Competency Modeling

McLagan’s “attribute bundles” reminds us of the complexity of a “job” and that simply looking at a discrete task does not tell the entire story. To get a fuller and more realistic understanding of work competencies it is necessary to have an organizing framework in which to position the constituent parts of knowledge, skills, and abilities or attitudes. This organizational framework is called competency modeling and lists the competencies required for effective job performance in a specific job, or family of similar jobs (based on organization, function, or process). Marrelli (1998) sums it up well in: “A competency model is the organization of identified competencies into a conceptual framework that enables the people in an organization to understand, talk about, and apply the competencies” (p. 10). The model becomes an organizing scheme and is often expressed in a chart, diagram, or other visual image.

To be successful, competency modeling should be viewed as a continuous process with the list of competency needs revised as conditions change. According to Marrelli (1998), competency modeling is most successful when applied to each component of the management
systems including: strategic workforce planning, selection, succession planning, employee development, career development, compensation, and performance management. In this way, competencies become a central agent in guiding how employees are selected, trained on the job, and, ultimately, how they are compensated and evaluated in their work.

While there is an incredible push to conduct competency analyses in the twenty-first century knowledge economy, the modern workplace environment presents many challenges to the traditional approaches. Typically, job competencies have been identified by interviewing or observing expert workers. However, many job requirements now change so quickly due primarily to technology advancements, that using data from expert workers may not yield competencies that will be necessary for success in the same job in the future (Gayeski et al., 2007). The nature of the change in the modern workplace must be considered when developing any competency analysis enterprise and should be built on a forward-looking perspective.

Conclusion

I began this chapter with an indication that I would review the literature to analyze three broad approaches commonly used in capturing workplace competencies, and in the process, respond to these questions:

1. analysis, needs assessment, and competency analysis methods are commonly used in capturing workplace competencies?
2. What are the strengths and weaknesses of each of these methods in capturing contextually-detailed descriptions of workplace competencies?
3. What method offers the most holistic approach to capturing contextually-detailed descriptions of instructional design workplace competencies?
I have previously likened my role as job analyst with that of an archeologist. Early on in this process I sensed the need for an approach that allows me to delicately brush away the layers to expose *artifacts*, which I have attempted to remove intact and take to instructional design faculty to use in shaping curricula. In my case, the *artifacts* are detailed descriptions of stories of doing a particularly good job of communicating with a client about a design job or conducting a learner needs analysis. Instructional design faculty can then use these intact artifacts to shape ID instructional and assessment practices. The artifacts can be used to develop case-studies, authentic projects, and a variety of other applications.

As I prepared for my own “archeological digs” in the ID workplace, I looked to job analysis, needs assessment, and competency analysis approaches in order to select the best features from each method in shaping my research methodology and approach. Despite the promising title *competency modeling*, I found there was little from the actual practice of competency modeling that I can use in my dissertation research. The competency modeling approach grew out of the scientific control group method in which the behavior of a select group of high performers is compared to a group of average performers (Athey & Orth, 1999). This type of methodology focuses on comparing the statistical significance of the frequency of competencies which are characterized in a *bullet-point* level of description. A study (Gayeski et al., 2007) conducted at Johnson & Wales University in which it was concluded that the key competencies for high performers in the position *public relations account executive* are “marketing,” “organizational skills,” and “creativity” (p. 10). This kind of study won’t be of much use to ID faculty members and I won’t waste my time or anyone else’s with this type of study. There was a good deal to learn from the Dick and Carey/Rossett needs assessment model though. The open-ended question technique plays right into the Critical Incident Technique,
which is an interview method that asks participants to *tell a story* of important or critical incidents from work that encapsulate work they perform that is either really good or really bad. Recalling events from strongly associated good or bad memories is a way of enabling participants to tell the story with a great deal of granular detail and context. I believed the Critical Incident Technique offered the most promise in helping me create a flexible interview protocol that would result in participants describing a holistic picture of the competencies and attitudes required for success in the instructional design workplace. The CIT calls upon participants to not only describe the task-specific aspects of their work but also the cultural and situational contexts that make the modern workplace so complex. As such, I relied heavily on the Critical Incident Technique in crafting my research methodology, as described in detail in the following chapter.
CHAPTER 3
RESEARCH METHODOLOGY

The overarching purpose of this study is to provide instructional design (ID) faculty with an inventory of contextually detailed ID competencies from expert practitioners to be used in shaping ID curricula. An assumption of this study is that a detailed understanding of the competencies considered critical for success in the instructional design workplace should be the foundation for an ID curriculum. To this end, a qualitative research approach has been used to capture a holistic picture (Creswell & Brown, 1992) of instructional design workplace competencies. Specifically, an interpretive research approach has been employed, with the aim of gaining an understanding of the social context of the phenomenon being studied (Walsham, 1995). The research questions guiding this study are:

1. What knowledge, skills, and attitudes are critical for success as an instructional designer in the contemporary business and industry workplace according to the research participants?

2. What strategies and approaches would the research participants use to prepare instructional design students for the realities of the business and industry workplace?

Research Methods

A wide variety of research methods could have been employed in this quest to capture contextually rich descriptions of competencies required for success in the instructional design workplace. Some of the specific data collection methods commonly used in analyzing workplace
competencies are background research, observations, individual interviews, group meetings, worker logs, and questionnaires, just to name a few.

Trauth (2001) posits that the nature of the research question(s) should be the most significant influence on the choice of a research methodology. "That is, what one wants to learn determines how one should go about learning it" (p. 4). As I was seeking to capture “thick” descriptions of instructional design competencies, using a qualitative research approach was deemed to be the most appropriate method for understanding the complex workplace setting (Stitt-Gohdes et al., 2000). Ultimately, three qualitative research methods were considered for this line of inquiry: observation, the Delphi technique, and interviews. After careful consideration of these methods, I chose interviews as the most appropriate method to answer the research questions that guided this study.

Interview Method

Interview is a method that allows job analysts to ask workers about their motivations and the social context in which they work in a direct manner. Another advantage of interviews is that they can be accomplished in a relatively short amount of time, especially compared to observations and the Delphi technique which typically take much more time. Ghorpade (1988) defines interviews as “a conversation with a purpose” (p. 61). In the simplest of terms, the purpose of interviews, as a job analysis method, is to gather specific information about how jobs are accomplished, with special focus on the knowledge, skills, and attitudes needed to be effective “on the job.” A wide variety of interview formats can be used in job analysis. Several factors influence the way interviews are structured such as the participants in the interview, role of the interviewer, and amount of structure. Most typically, job analysis interviews are conducted between one analyst and one worker. However, any number of different configurations can be
used – groups of workers being interviewed by one or more interviewers, interviews with managers, customers, and so on. A positive result of the interview method recognized by Ghorpade (1988) is that interviewing enables the exploration of a wide range of issues, e.g., characteristics of jobs as perceived by the worker; the worker’s attitudes, values, beliefs, and opinions; and their mastery of the language and technical matters. The interviewer can also help participants clarify the meaning of questions in ways that are not possible using questionnaires. Interviews enable conversations about work with the purpose of understanding what workers actually do, and they provide the opportunity to use probing techniques that allow analysts to dig deep into the workers’ thinking about the work they perform.

In this study, I chose to use a specific interview method called the Critical Incident Technique (described in detail in the Review of the Literature chapter), as I believed it would enable instructional designers to provide rich descriptions of the critical instructional design competencies they feel contribute to their success and/or failures as an instructional designer. The CIT asks research participants to recall and describe positive or negative incidents that embody the performance of their work, either particularly well, or poorly. Tapping into strongly associated memories enables participants to give particularly detailed descriptions of not only specific work tasks but also the context of the work.

Research Design

I used Symon and Cassell’s (1998) eight steps for implementing the CIT interview method as a structure for my dissertation research design. Within the descriptions of the eight steps, I will discuss participant selection, data collection techniques, logistics, and data analysis strategies used in conducting this study.
These eight steps are:

(1) preliminary design work and determination of the sample, (2) gaining access, (3) introducing the CIT method and getting the interview under way, (4) focusing on the theme and giving an account of oneself as researcher to the respondent, (5) controlling the interview, by probing at incidents and clarifying one’s understanding, (6) concluding the interview, (7) taking care of ethical issues, (8) analyzing the data. (p. 56)

Sample Population

Step 1: Preliminary design work and determination of the sample. The most important aspect of this stage was creating criteria for participant selection. The first consideration was defining which career environment from which to choose instructional design participants. The Association for Educational Communications and Technology (AECT) (2000) lists six distinct instructional designer career environments: business and industry; K-12 education; higher education; government and military; non-profit organizations, and the health professions. For this study, I have focused on individuals who possess a minimum of five years of experience working as instructional designers in the business and industry career environment. My rationale for this choice is primarily driven by the fact that for the past twenty years, a large portion of “instructional design practice has occurred within the private sector, primarily in business and industrial settings” (Richey & Morrison, 2002, p. 198). Although data varies about the actual percentage of ID professionals working in business and industry, Florida State University estimates that 80 to 90% of their masters graduates go on to work in business and industry (Larson & Lockee, 2004). Although I hope my study results will be useful for all involved in the education of instructional designers, I specifically would like to provide information to the Instructional Design and Development (IDD) faculty at The University of Georgia to inform the
development of the supply of instructional designers in response to the demands of business and industry in the state of Georgia.

The second criterion used in selecting participants was the issue of job expertise. After a considerable search of the literature, it was difficult to identify specific criterion used in selecting participants for Critical Incident Technique studies. I therefore broadened my search to include participant selection criteria used in other job analysis methodologies. The selection criteria used in DACUM studies appear to be a good fit for this study, particularly the overall philosophical position that posits “skilled workers themselves are best able to describe the competencies needed to perform their work” (Norton, 1993, p. 2). This philosophical footing is consistent with my own, and in large part explains why I have chosen to interview skilled instructional designers, rather than their managers.

In DACUM studies, the following two characteristics are used in selecting “skilled” or expert workers: (1) A high level of technical competence, and (2) extremely good communication skills (Norton, 1993). Finding reliable methods of determining “technical competence” is a challenge, particularly considering the scope and complexity of the position of instructional designer. One could certainly make an argument of it taking x-number of years of work experience to become competent or skilled. It could be counter argued that some people work their entire career and do not obtain the status of competent or skilled! I have, however, chosen to focus on instructional designers who have worked in the business and industry setting for a minimum of five years. Levitin (2007) argues in his book, This Is Your Brain on Music - The Science of a Human Obsession, that people can become an expert in anything if they devote a minimum of 10,000 hours, or five work years, to it. At a minimum, instructional designers who have spent five years in the industry workplace have had the opportunity to not only learn the
technical aspects of their work but also the social context as well. The ability for participants to put the job into social perspective was an important characteristic I was seeking.

This whole issue of expertise has been of interest to cognitive psychologists since the 1960’s (LeMaistre, 1998) and has produced a wide range of interesting studies over the years. Initially, this work examined analytic skills in a variety of specific skill areas. For example, some of the most well-known studies in this area of expertise were conducted with chess experts (i.e., deGroot, 1965; Chase & Simon, 1971). Some of the more influential research in the area of expertise has come from Chi and Glaser (1988). Highlights from their research which has guided my formulation of participant selection criteria include: superior content knowledge, sense of relevance of information, ability to adapt to changing task conditions, and perhaps most important, the ability to communicate. It is this last characteristic that I feel is most critical to the success of the CIT interviews – the participant’s ability to communicate the story of his/her expertise. After all, if they can’t communicate what makes a successful instructional designer, it doesn’t serve the purpose of providing IDD faculty members with information to use in shaping curricula.

Step 2: Gaining access. One characteristic of qualitative research that is particularly attractive to me is purposeful sample selection (McMillan, 1996). As referenced in Step 1, I intended to be very purposeful about identifying participants who have not only worked a minimum of five years, but are also perceived to be talented instructional designers with good communication skills. I am fortunate that our IDD faculty members have knowledge of many graduates and current students who have been working in the business and industry sector for five or more years. Richardson et al. (1965) would consider faculty members to be informal gatekeepers in this recruitment practice. The IDD faculty members indeed turned out to be
invaluable gatekeepers, and I am appreciative of their efforts in helping me identify study participants.

I initiated the participant recruitment process by asking UGA’s Learning, Design, and Technology faculty members for the names and contact information (if available) for IDD graduates or masters students who met the following criteria: (1) have been working as instructional designers in the business and industry career track for five or more years; (2) are perceived to be talented instructional designers; (3) are perceived to have good communication skills, and (4) live within a three-hour drive of Athens.

In response to this request, faculty members provided me with the names of six recommended potential participants, along with the suggestion to contact these individuals, and look for other participants, using the professional social networking website LinkedIn. After joining the Learning, Design, and Technology (formerly Instructional Technology) at the University of Georgia LinkedIn group, I conducted a search of the LDT membership to identify potential participants to add to the six individuals recommended by faculty members. Through this process, 12 more individuals were identified. Armed with a list of 18 potential participants, I sent a message through LinkedIn to all 18 people inviting them to participate in my study, fully describing the objectives, procedures, and expectations/time commitments (see the Invitation Email in Appendix A).

From the 18 email invitations sent out, four people immediately responded, indicating their interest in participating in the study. After one week, I sent a follow-up message to the 14 people who did not respond to the first invitation message. From this follow-up, I received messages from three more people agreeing to participate in the study. As participants began indicating their willingness to participate, I sent them a second email describing the interview
protocol in more detail, particularly the use of the Critical Incident Technique. Included in the follow-up email was an instrument I created, the Pre-Interview Critical Incident Recollection Form (Appendix B), which was designed to help participants recall incidents in which they performed their work particularly well or poorly. Based on the experiences from my pilot project, I believed giving participants sufficient time to recall critical incidents prior to the interview would yield better results than springing the request on them during the interview.

In email communications setting up meeting logistics, I also asked participants if they could recommend instructional designers meeting my selection criteria who might consider participating in my study. This referral method is commonly called snowball sampling (Goodman, 1961) and serves as an excellent way to identify interview participants. Although this method is often used to identify hidden populations (Salganik & Heckathorn, 2004), it proved to be a very effective gateway to high quality participants in this study. Through this snowball sampling method, two individuals were recommended and both readily agreed to participate after sending them an email invitation. Despite making participants aware of my selection criteria, one of the referred individuals had only four years of work experience as an instructional designer, but seemed very keen to participate in the study. Given the reality of the limited time to locate additional participants, I elected to make an exception to my selection criteria and included the participant with four years of work experience. This particular participant provided great insight into instructional design competencies and instructional strategies for preparing students for the demands of the business and industry workplace.

Through faculty recommendations and contacting members of the Learning, Design, and Technology LinkedIn group, I had lined up nine people who were willing to participate in my study. Of course, finding an ideal number of participants is a perennial question for qualitative
researchers. It is quite common in qualitative research studies to use the law of diminishing returns notion from economics, or what is called data saturation (Flick, 1998; Morse, 1995) in determining the number of participants to include in a qualitative study. However, due to a very limited window of time to conduct interviews, I chose to use ten participants in my study. To add one more participant to reach a total of ten participants, I asked an acquaintance, who more than met the selection criteria, to participate in the study.

Table 1

*Summary of Participant Demographic and Interview Information*

<table>
<thead>
<tr>
<th>P#</th>
<th>Gender</th>
<th>Status</th>
<th>Experience</th>
<th>Interview Time</th>
<th>Identification Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>male</td>
<td>graduate</td>
<td>18 years</td>
<td>55 minutes</td>
<td>faculty recommendation</td>
</tr>
<tr>
<td>2</td>
<td>female</td>
<td>student</td>
<td>4 years</td>
<td>52 minutes</td>
<td>LinkedIn search</td>
</tr>
<tr>
<td>3</td>
<td>male</td>
<td>student</td>
<td>7 years</td>
<td>47 minutes</td>
<td>faculty recommendation</td>
</tr>
<tr>
<td>4</td>
<td>male</td>
<td>student</td>
<td>6 years</td>
<td>54 minutes</td>
<td>LinkedIn search</td>
</tr>
<tr>
<td>5</td>
<td>female</td>
<td>graduate</td>
<td>14 years</td>
<td>50 minutes</td>
<td>LinkedIn search</td>
</tr>
<tr>
<td>6</td>
<td>female</td>
<td>graduate</td>
<td>14 years</td>
<td>39 minutes</td>
<td>referred by other participant</td>
</tr>
<tr>
<td>7</td>
<td>female</td>
<td>graduate</td>
<td>12 years</td>
<td>53 minutes</td>
<td>referred by other participant</td>
</tr>
<tr>
<td>8</td>
<td>female</td>
<td>graduate</td>
<td>5 years</td>
<td>48 minutes</td>
<td>LinkedIn search</td>
</tr>
<tr>
<td>9</td>
<td>male</td>
<td>graduate</td>
<td>16 years</td>
<td>49 minutes</td>
<td>faculty recommendation</td>
</tr>
<tr>
<td>10</td>
<td>male</td>
<td>graduate</td>
<td>16 years</td>
<td>67 minutes</td>
<td>Acquaintance</td>
</tr>
</tbody>
</table>

Data Collection and Instrumentation

Step 3: Introducing the CIT method and getting the interview underway. In this study, I asked participants to be prepared for a one-hour long interview. The actual average interview time was 51 minutes, with the longest being 67 minutes, and the shortest being 39 minutes. I did not exercise the option to conduct follow up interviews, as I was satisfied with the first round of
interviews and lacked time to organize subsequent interviews. Although I had hoped to conduct all interviews at the participant’s place of work, the majority of the participants in this study requested that the interview be held in a location outside of their workplace and only two participants were interviewed at work. While it is certainly tempting to conjecture that the quality of the interviews suffered as a result of interviewing participants away from their workplace, I did not find any compelling evidence to suggest that the two interviews conducted at the participant’s workplace differed from the interviews done off site.

At the beginning of each interview, I again explained the nature of the CIT interview and outlined the purposes of the research and any possible benefits to the participant and/or a larger audience. After this explanation, I asked participants to sign the appropriate human subjects research forms prior to starting the formal interview. Just as I found in my pilot project interviews, the participants indicated that they were happy that the substance of their interview might be used in some way to inform the IDD program they seemed to hold in high regard. I believe that the participants in this study were more responsive because they perceived that the substance of their interview or survey would be used for something constructive.

I am a strong believer in the interview method and took strength as I approached each interview from Seidman’s (1991) statement, “At the heart of interviewing research is an interest in other individuals’ stories because they are of worth” (p. 3). I particularly like the use of the term “stories” throughout Seidman’s seminal work, *Interviewing as Qualitative Research*. The interview protocol used in the semi-structured interviews (Interview Protocol can be found as Appendix D), was created to allow maximum flexibility to respond to each participant’s unique view of their job and the types of questions they seem to feel most comfortable answering.
Table 2  
*Summary of Interview Steps*

<table>
<thead>
<tr>
<th>Interview Step</th>
<th>Goals of Step</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explanation of research objectives, interview protocol, and possible benefits to participants or larger audience.</td>
<td>Promote participant’s understanding of the research project, the procedures of the interview and potential of their input shaping IDD curriculum.</td>
<td>Participants expressed their satisfaction with the idea that their input might be used to shape the IDD curriculum and help prepare ID students.</td>
</tr>
<tr>
<td>2. Explanation of human subjects form and procedures for ensuring confidentiality.</td>
<td>To follow university’s human subjects procedures and put participants at ease about sharing confidential information.</td>
<td>Participants expressed their understanding and relief that all references to specific people, places, or companies would remain confidential.</td>
</tr>
<tr>
<td>3. Open-ended questions about the knowledge, skills, and attitudes critical for success as a business and industry instructional designer.</td>
<td>To encourage participants to reflect on their experiences as an instructional designer to articulate contextually detailed descriptions of critical ID competencies.</td>
<td>Participants were very earnest in their desire to provide the names for as many ID competencies as possible. Was difficult to solicit detailed descriptions of competencies.</td>
</tr>
<tr>
<td>4. Open-ended Critical Incident questions to identify moments of epiphany that might tell a story about critical ID competencies.</td>
<td>To enable participants to recall critical incidents in which they performed their work particularly well or poorly to provide rich descriptions.</td>
<td>Participants struggled to identify critical incidents from their years of ID experience. The technique produced some tension in interviews.</td>
</tr>
<tr>
<td>5. Open-ended questions about the instructional approach participants would use to prepare instructional designers for realities of workplace.</td>
<td>To provide participants an alternative perspective to describe how they would approach the preparation of ID students as an IDD instructor.</td>
<td>Participants used the IDD instructor perspective to provide contextually rich descriptions of instructional and assessment approaches.</td>
</tr>
<tr>
<td>6. Question asking for remarks that could be made in an ID program commencement address to students.</td>
<td>To provide participants an opportunity to summarize their advice for ID students and faculty.</td>
<td>Participants were effective in using this imaginary situation to summarize their advice for graduating ID students.</td>
</tr>
<tr>
<td>7. Closing interview and reiterating promise of confidentiality.</td>
<td>To thank participants for their contributions and to ensure them that all remarks made in interview are confidential.</td>
<td>Participants again expressed their satisfaction with the idea that their input might be used to shape IDD program.</td>
</tr>
</tbody>
</table>
Seidman (1991) talks about the importance of listening on three levels: to the substance of what the interviewee is saying; to the “inner voice” (p. 56) which can reveal the true inner feelings of the participant, and listening while keeping track of the process and managing various aspects of the interview. In approaching each interview, I reminded myself of Seidman’s advice and really tried to listen to everything participants said, and didn’t say, during the course of the interview.

Step 4: Focusing on the theme and giving an account of oneself as researcher to the respondent. Symon and Cassell (1998) warn that some participants will deny that they have any critical incidents to report and make this recommendation to help participants frame a response:

One ploy is to get the respondents to think graphically about the events which have transpired over the past five years by offering them a sheet of paper containing a double arrow-headed line centrally along its length. The respondent is then encouraged to mark the position ‘here and now’ and then work backwards year by year, marking critical events along its length. This visual aid serves several purposes: it focuses attention, enables the interviewee to relax, jogs the memory and enables the researcher to get a sense of the nature of critical events (p. 58).

It was absolutely my intention to avoid coming into an interview with a participant who claimed that he or she didn’t have any critical incident to report. Through pre-interview email communications and providing them with the Pre-Interview Critical Incident Recollection Form, I had hoped that I had sufficiently prepared participants for the interview. However, despite this preparation, participants seemed to struggle to identify and communicate critical incidents from their instructional design practice. A few participants actually appeared to become nervous during the interview due to their inability to describe a critical incident from their years of work experiences. I sensed they felt they had somehow failed by not be able to describe an epiphany
moment. As a result, I modified the interview protocol by first deemphasizing the “critical” or “epiphany” nature of incidents and used less loaded language like “important” or “memorable.” However, despite my attempts to ratchet down the expectations of providing critical incidents, I found it increasingly necessary to swing away from the critical incident line of questioning in order to avoid participants feeling disappointed in their inability to describe critical moments of practice. After several interviews, I found that participants seemed to respond well to answering questions about how they would prepare instructional design students. As a result, I increased the emphasis on participants putting on the IDD faculty “hat” as a way of looking at their practice and how they would leverage their years of experience to most effectively prepare ID students.

Step 5: Controlling the interview by probing at incidents and clarifying one’s understanding. This is a fundamental principle of effective interviewing and probing questions such as: ‘What happened next? Why did it happen? With whom did it happen? How did it happen?’ are very effective in teasing out more details of the incidents being related. An additional benefit pointed out by Symon and Cassell (1998) is “Such interjections help control the flow of the interview and keep the interviewer alert. They also give breathing space to the respondent to gather her/his thoughts” (p. 59).

The probing approach that worked best in teasing out more details was asking participants to switch perspectives from instructional design practitioner to IDD faculty member or program head. Participants seemed to be better equipped to articulate ideas for what strategies and approaches they would use to prepare instructional design students for the realities of the business and industry workplace when they answered the question from the perspective of IDD faculty member. I found this changing perspective technique to work particularly well when participants became stuck in their responses. In these situations, I used transitions like, “OK,
thank you for describing your experiences of working with SMEs, now let’s change your hat to IDD instructor, what cases or situations from your practice would you use as an instructor to improve student’s skills at engaging a subject matter expert? How would you know that your students had acquired the skills to effectively engage a SME?”

Step 6: Concluding the interview. At the conclusion of each interview, I expressed my sincere appreciation to each research participant, not only for the time spent in the interview, but also for the contributions they were making to inform the IDD curricula. Participants showed obvious signs of pride in their IDD program and seemed to be thrilled by the idea of contributing something back to the program. Nearly all participants expressed interest in reading my completed dissertation and offered any assistance they could provide to the IDD program at UGA.

Step 7: Taking care of ethical issues. At the conclusion of the interview, participants were reminded that all possible steps would be taken to protect the identity of them as individuals, as well as the identity of their firm and any clients mentioned in the course of the interview. Participants were also reminded of the specific policies regarding the storage and destruction of audio files and transcriptions (all of which can be found in the Informed Consent form found in Appendix C).

Data Analysis

Step 8: Analyzing the data. In using the Critical Incident Technique, it was my intention to gather a collection of narrative descriptions of critical events in the participants’ practice of instructional design. Creswell (2007) does a wonderful job of capturing the essence of analyzing participants’ critical incidents: “The data collected in a narrative study need to be analyzed for
the story they have to tell, a chronology of unfolding events, and turning points or epiphanies” (p. 155).

The data generated in this study was analyzed in the following steps outlined by Creswell (2009): (1) Organize and prepare the data for analysis; (2) Get a general sense of the data through an initial reading; (3) Begin detailed analysis with a coding process; (4) Use the coding process to generate a description of the setting or people as well as categories or themes for analysis; (5) Advance how the description and themes will be represented in the qualitative narrative, and (6) Make an interpretation or meaning of the data.

Immediately after finishing the ten interviews, the data analysis process was initiated by transcribing the interviews verbatim and typing up field notes taken during the course of the interviews. Despite my original intention to transcribe all the interviews myself, life got in the way, and as a result, I hired someone to transcribe nine of the ten interviews. I had hoped to transcribe more than one interview, but time constraints led me to hire out all but one of the interviews to be transcribed. In compensation, I spent a great deal of time and effort becoming intimate with the transcriptions and to ensure the transcriptionist did an accurate job.

After receiving the transcriptions from the transcriptionist, a preliminary reading of each transcription was done to get a feel for each interview and a correction of the obvious errors was done (e.g., Addy to ADDIE, Smee to SME). After this first reading of the transcriptions, a second reading was done, while simultaneously listening to the respective audio recording, and appropriate corrections were made to the electronic document. Upon completing this step, I tidied up each transcription, added line numbers, and printed out the transcriptions again. With this fresh copy of each transcription, I did another reading, writing comments of my impressions
in the margins. The purpose of this reading was not to assign codes, but simply to become more familiar with the interviews and make notes of interesting statements made by participants.

It is noteworthy to add at this juncture that the steps just described were done in a two-month period after the conclusion of the interviews. For nearly ten months following this initial stage of data analysis, no further analysis of the data was conducted due to a very demanding new job. As so much time had expired since commencing the initial stages of data analysis, it was necessary to take some time and effort to become reacquainted with the interviews once I was in a position to restart the analysis process. This was accomplished by reading each transcription while listening to the respective audio recording of the interview. Comments, written in the margins, were added to existing comments made some ten months prior. Upon completion of this process, I felt reacquainted with the interviews and was prepared to start the subsequent stages of data analysis.

For the scope of this study, learning to use qualitative data analysis software packages like Nudist or Atlas/ti didn’t seem to be practical. Instead, I elected to use Microsoft Office Word 2003, as described by Ruona (2005), in analyzing the qualitative data in this study. Using this common word processing program provided a powerful, yet easy to use, tool to assist in coding, recoding, and sorting of data into analytic categories.

Seidel (1998) posits that the data analysis process in a qualitative research study is analogous to working on a jigsaw puzzle. This analogy felt particularly fitting in the beginning stage, as the sensation of staring at all the pieces of raw data resembled the feeling I have when dumping out all the pieces of a jigsaw puzzle on the table - an expanse of different colored and shaped pieces that appears to make up nothing. Of course, one big difference between a jigsaw puzzle and qualitative research is the fact that the researcher is not provided with a nice picture
of what the final product should look like. Although I had conducted a pilot study, and read many similar studies, I was determined to enter the initial coding phase of the study without a preconceived idea of what the final picture might look like. With my eyes wide open, I commenced coding the data, applying inductive analysis to discover themes in the data (Merriam, 1998). In this initial coding stage, 45 codes were applied to the data (these codes can be found in Table 3 in Chapter 4). After completing the coding of all ten interview transcripts, I went through each again to ensure a consistent application of codes.

With the transcriptions thoroughly dissected and labeled, a first round of organization was performed to make some sense of the wide variety of codes applied to the data. Going back to the jigsaw puzzle analogy, let’s say for the sake of example that the jigsaw puzzle being solved is a picture of a house, a tree, and a cloud filled sky. A common strategy for solving the puzzle is to identify and sort puzzle pieces into groups (e.g., frame pieces, tree pieces, house pieces, blue sky pieces, and cloud pieces). Using this strategy, some of the puzzle pieces will easily fit into these groups and a first round of organization can be made. Although I did not have the luxury of a completed picture to use in creating grouping categories, I used the foundations of the two research questions as the basis for organizing the first round of coding. Corresponding to Research Question #1, I organized codes under the following themes: (1) Knowledge, (2) Skills, and (3) Attitude. Corresponding to Research Question #2, I organized codes under the following themes: (1) Design Reality, (2) Instructional Approach, and (3) Design Specialty.

With the six “piles” of puzzle pieces from the first round of coding, a cross-theme analysis was performed, and at that time I realized the themes used to correspond to Research Question #1 did not seem to be the best way to organize the data, as the three themes were
disproportionately represented. The majority of the codes (14 of 24) fell under the Skills category, with five each under the Knowledge and Attitudes themes. In response to this realization of the poor fit of the themes used to organize data answering Research Question #1, I asked myself a simple question: what competencies did participants discuss most frequently and in greatest detail? To answer this question, I grouped the exemplars from each code and determined with the naked eye those competencies discussed most frequently and in greatest detail in the interviews. From this process, I created a new set of super themes or categories that I felt best responded to the two research questions. After a deep analysis of the exemplars under these new categories, another merging of codes was done to create a new set of sub-categories (these categories and sub-categories can be found in Table 4 in Chapter 4).

In response to Research Question #1, the following categories were created and ordered based on the frequency and level of descriptive detail: (1) Subject Matter Experts Relations; (2) Client Relations; (3) Project Management, and (4) Needs Analysis. In response to Research Question #2, the following categories were created and ordered based on how to best logically present the story of how to prepare instructional designers for the realities of the workplace: (1) Design Reality, (2) Design Specialty, and (3) Instructional Approach.

Limitations

It was the usual suspects that topped the list of limitations of this study – money and time. I would have very much liked to have conducted a large-scale study and dispatched an army of researchers out into the field to observe and interview instructional designers across the globe. Although the hallmark of a high-quality qualitative study is not a large number of participants, I do wish I could have had more time and resources available to me to at least do a more thorough screening process among a larger pool of potential participants.
One major limitation of this study is the difficulty interview participants seemed to face in effectively communicating their expertise as instructional designers. Being good at a job and being able to communicate what makes someone good at a job are two distinctly different skills. Indeed, experts in some fields such as surgery have so much tacit knowledge inherent in their expertise that they are unable to articulate exactly what and why they do certain things in practice. Symon and Cassell (1998) point out that employees being interviewed are immersed in their work situations and are trying to make sense of their reality. Their accounts at best are partial; but partial or not, biased or not, such accounts constitute their reality. All I can do in this study is report the participants’ accounts as accurately as possible.

Qualitative researchers have fought for years to establish the credibility of their methods. One reason this has proven difficult is due to the fact that they are expected to use the same yardstick that quantitative researchers use to judge the robustness of their research through the constructs of reliability, validity, and generalizability. As qualitative research has become more accepted, steady voices like those of Merriam (1998) ask the research community to broaden their understanding of these conventional constructs. Lincoln and Guba (1985) also suggested using a different yardstick by which qualitative research could be judged by replacing the notion of “rigor” with “trustworthiness.”

Lincoln and Guba (1985) posit that a study merits trust if it meets the following criteria: (1) fairness, which is a balanced reporting of multiple realities in a study; (2) ontological authenticity, which is a deeper, fresher understanding of something; (3) educative authenticity, which is a new appreciation of this understanding; (4) catalytic authenticity, which are the courses of action supported by the inquiry; and (5) tactical authenticity, which describes the potential benefit of inquiry to all concerned. According to LeCompte and Preissle (1993), these
five criteria have parallels sought in conventional research: objectivity, novelty, meaningfulness, applicability, and availability to the public.

Qualitative researchers need to concern themselves with two types of validity: internal and external. Internal validity focuses on the congruence of a study’s findings with reality (Merriam & Simpson, 2000). However, it is hard to get beyond the idea that reality is subjective and means different things to different people. This makes assessing internal validity a very challenging business and ultimately up to those whose realities were (re)created (Merriam, 1990). External validity, on the other hand, concerns itself with the ability to generalize the findings of the study to other situations (Merriam, 1990). Lincoln and Guba (1985) assert that external validity rests with the rich, thick description of the findings that creates a base on which others can use their own judgment of transferability. The purpose of my research is to do precisely that, develop a base of understanding through the use of rich, thick description that others can use to exercise judgment and determine validity for themselves within a specific context.

As far as reliability is concerned, Yin (2003) defines reliability as the ability to replicate the findings of another researcher investigating the same case. Merriam (1998) contends that in qualitative research, reliability should focus on results that are consistent with the data. In other words, would other researchers reach the same conclusions if they had access to the same data? In this respect, it is my objective to make the procedures I use in this study as clear as possible.

In qualitative research, the notion of generalizability takes on a profoundly different meaning than it does in the quantitative research tradition. Instead of concerning themselves with the question of whether the findings are universally generalizable, qualitative researchers are interested in which other settings and subjects the findings can be replicated (Bogdan & Biklen,
1992). Whereas some may argue that the findings of my study cannot be generalized in any way, I believe that the lessons learned from my participants will be helpful to anyone interested in aligning educational preparation and ID workplace reality.

Subjectivity Statement

This study straddles a fine line between two different worlds – the business world where instructional design is practiced for a profit and the university where instructional designers receive their formal training. Both worlds have their own strengths and weaknesses and represent different realities. Interestingly, it has occurred to me recently that I am actually awkwardly caught between these two worlds. Although I have completed a master’s degree in Instructional Technology, I do not feel I possess the skills necessary to work as an instructional designer in the types of firms where I conducted my interviews for this study. Likewise, I do not feel I would be qualified to be an instructor in an Instructional Design program upon completion of my doctoral degree. So, now in a rare moment of humility, I wonder how I am so sure about the gaps that exist between education and real-world practice.

Fortunately, through the review of the literature, and now through the voices of the instructional designers I interviewed in this study, I can feel more confident in my claim that there is a meaningful gap between what instructional designers learn in their formal education and the real-world demands of the workplace. Before I started this study, I thought that going into an interview setting in the corporate world pitting the “real-world” against education might serve as some sort of leverage position. However, after further contemplation, I find this idea pretty weak for a whole host of reasons. First off, this really isn’t a matter of the real world versus education; and I am sure that many instructional designers hold their higher education experience in high regard and would be turned off by dismissive views of their experience.
Although gaps may exist in the demands of instructional design as practiced on the job and the educational training they received in higher education – this is not the frame that my participants needed to concern themselves with, as I was only interested in what is required of them now on the job.

So, having thought through all of this, I was determined to be very careful about the way in which I characterized their higher education experience generally, and their instructional design program specifically. Simply said, it was not within the scope of this study for participants to evaluate the effectiveness of their IDD program or any courses under the program they completed.

In terms of research methodology, I certainly went into this study with some distinct feelings about what makes certain job analysis techniques more effective than others. Although there may be a need for me in the future to do some large-scale quantitative approach to cataloging and ranking instructional design competencies, the quantitative method holds no great promise for me in the near future. I am dismissive of these techniques primarily because I feel we don’t need any more bulleted lists of competencies that usually result from large scale surveys.

I am similarly critical of the so-called qualitative research methods that fail to capture the culture of work perspective because I believe that understanding competencies in context is so important. These studies often produce little more contextual and detailed understanding than their quantitative cousins. I am attracted to qualitative research due to its promise of thick, rich, and descriptive detail. This is exactly what I was looking for in talking with instructional designers about their work. Even using qualitative research methods, I was concerned with my ability to get people to speak in depth about what they do at work. In my limited experience with
interviews, I feel I can get people close to an important area where there is real potential for richness and depth and then the moment is lost due to a distraction of some kind. So, I guess my ultimate concern for this research project is my skill at getting people to provide thick and rich descriptions and to do something positive with my angst that my participants are not providing me with what I am looking for – this was a huge challenge!

Conclusion

Gaining an in-depth understanding of the competencies required for success as an instructional designer is a daunting task. Where I have found scores of studies and various resources reporting ID competencies in bullet-point level of description, I have aimed to capture very contextually rich descriptions from which a variety of assessment and instructional practices can be shaped. Identifying the best research methodology to use in capturing this information has also been a difficult task, with each methodology possessing strengths and weaknesses.

Although I would have very much liked to observe and interview instructional designers at work for hours on end, it was not a practical method for this particular study. For the scope of my dissertation research, the Critical Incident Technique offered a way to obtain rich descriptions by asking participants to describe incidents that represents something critical to them. My role as researcher is to help participants unlock these critical incidents and tell me their stories with as much detail as possible. I took on this role with a seriousness of purpose and I genuinely hope that the results of this study can be used by faculty members to bridge the gap between higher education and the ID workplace.
CHAPTER 4
RESULTS AND INTERPRETATION

The focus of this research was twofold: (1) to identify what knowledge, skills, and attitudes are critical for success as an instructional designer in the contemporary business workplace, and (2) what strategies instructional design practitioners would use to prepare students for the realities of the ID workplace. This dual focus, derived from the research questions, served as an excellent frame for organizing the first round of analysis, in which 45 codes were initially applied to the data. These codes were clustered under themes corresponding to the two research questions as found in Table 3.

Table 3
Initial Coding and Themes Applied to Data

<table>
<thead>
<tr>
<th>Theme</th>
<th>First Round of Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Learning Theory, ADDIE Model, Model of Instruction, Technology Knowledge, Curriculum Development</td>
</tr>
<tr>
<td>Skills</td>
<td>Project Management, Client Relations, Subject Matter Expert Relations, Task Management, Interpersonal Skills, Communication Skills, Technical Skills, Problem Solving, Interview Competency, Learner Analysis, Knowledge Transfer, Competency Modeling, Writing Skills, Graphical Skills</td>
</tr>
<tr>
<td>Attitude</td>
<td>Technology Disposition, Self-Learner, Flexibility, Personality Type, Accept Compromise</td>
</tr>
<tr>
<td>Design Reality</td>
<td>Client Changes, Virtual Team, Scope Creep, Well Received</td>
</tr>
<tr>
<td>Instructional Approach</td>
<td>Alumni Relations, Advisory Board, Mentorship Program, Internship Program, Simulation Learning, Check Points, Final Assessment, Authentic Task, Reality Show, Role Play, Project Client, Project Work, Survey Depth, Deep Dive</td>
</tr>
<tr>
<td>Design Specialty</td>
<td>Generalist Designer, Specialist Designer, Design Field</td>
</tr>
</tbody>
</table>
Although the theme clusters listed in Table 3 served as a useful tool in the first round of organization, the imbalance across the three themes used to capture responses to Research Question #1 seemed to create an artificial, and inaccurate, representation of participant’s interviews. Upon further analysis of the clusters of exemplars under the Knowledge, Skills, and Attitudes themes, I felt important contextual information seemed to get stripped away and the exemplars did not work well together in telling a coherent story. Conversely, the three themes used to cluster exemplars in response to Research Question #2 did appear to still work well as an organizing framework for using participant’s voices to tell their story about how they would go about preparing instructional designers for the realities of the workplace.

In response to this concern over the organizational structure used to cluster participant’s thoughts corresponding to Research Question #1, I decided to rethink my approach. In doing so, I found myself asking the same question over and over again: what did participants talk about most frequently, and in greatest detail, when asked to describe what Knowledge, Skills, and Attitudes are critical for instructional designer’s success? This basic question afforded me the opportunity to look at the data with fresh eyes, and after analyzing clusters of exemplars sorted by code, I realized what I knew instinctively, there was a better way of organizing responses to Research Question #1. As a result of this analysis process, I created the following four themes, which were renamed as “categories,” to correspond to Research Question #1: Subject Matter Expert Relations; (2) Client Relations; (3) Project Management, and (4) Needs Analysis.

With this new set of categories in place, the exemplars that had previously appeared to be stripped of context and color seemed to come alive before my eyes. The original coding used, while useful for the first round of organization, suddenly felt inadequate to capture the nuances of these newly minted categories. These categories and sub-categories are represented in Table 4.
Table 4  
*Final Categories and Sub-categories Applied to Data*

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME Relations</td>
<td>Flexible &amp; Empathetic Engagement, Translation of Expertise, Supplemental Learning, Avoiding Disconnects, Ensuring Accuracy, Dangers of SME’s Expertise, Dangers of ID Becoming de facto SME, Limiting Scope of Responsibility, SME’s Learning Styles, Avoiding SME Defensiveness</td>
</tr>
<tr>
<td>Client Relations</td>
<td>Client is King, Early Involvement in Process, Communicating Stakeholder Responsibilities, Client’s Needs vs. Wants, Avoiding Bulldozing Clients, Managing Expectations</td>
</tr>
<tr>
<td>Project Management</td>
<td>PM is Key, Complexity of PM, Resource Management, PM Course Needs, Analyze Audience, PM &amp; ID Communication</td>
</tr>
<tr>
<td>Needs Analysis</td>
<td>Analysis Reality Check, Needs vs. Wants, Walk a Mile in My Shoes, Analysis First – Tools Later, Confidence from Analysis, Avoiding Big Mistakes</td>
</tr>
<tr>
<td>Design Reality</td>
<td>Accepting Compromise, Resource Limitations, Bottom Line Dictates, Changing World, Are Learners Learning?, Cookie Cutter Approaches</td>
</tr>
<tr>
<td>Design Specialty</td>
<td>Generalist vs. Specialist, Recognizing Strengths, Trying on Different Roles, Deep Skill Development, B&amp;I vs. K-12 Fields, Check in Points</td>
</tr>
<tr>
<td>Instructional Approach</td>
<td>Alumni Involvement, Reality Show Lessons, Role-Play Communications, Group Work Practices, Demonstrate ADDIE, Deliver a Curriculum</td>
</tr>
</tbody>
</table>

It is hard to escape the conclusion that there is little comparison between the original coding and the new sub-categories. This is largely a result of the fresh perspective afforded a new set of categories that allowed participant’s voices to be heard clearly. Although it is somewhat cliché to say, the exemplars really fell into place quite naturally after finding an appropriate organizational frame. Using the SME Relations category as an example, it seemed natural to pickup on the consistently urgent message from participants about the importance of
the human relations aspects of working with SMEs, specifically exercising flexibility and empathy in understanding SME’s role in the design process. After human relations, participants discussed a matter of areas dealing with how to most effectively engage SMEs in utilizing their expertise. With these new sets of clusters came a more prescriptive set of sub-categories that more fully and accurately characterized the nuances of the skill sets being described.

One category that is conspicuously absent from this list is the ubiquitous “Communication Skills.” Although it was certainly tempting to create a category solely dedicated to this hugely important skill, I thought better of it due to a fear of losing the importance of the context of the instructional designers’ communication with different stakeholders in various situations. Whereas there can be many similarities between how an instructional designer communicates with a client and a SME, there are also some significant differences that can be better highlighted by focusing on context first and then relevant communication skills required for success. So, despite not being a category on its own, communication skills, in one shape or form, is present in nearly every aspect of the categories reported in this study.

In this chapter, the categories and sub-categories outlined in Table 4 are represented by sample exemplars from participants, along with interpretive comments. Like a choir conductor, I have attempted to select and arrange exemplars that allow the participant’s voices to be heard loud and clear on their perceptions of what knowledge, skills, and attitudes are critical for success as an instructional designer; and what strategies they would use to prepare students for the realities of the ID workplace.
Instructional Design KSAs

The purpose of Research Question #1 was to provide participants an opportunity to reflect on their years of ID experience and share what Knowledge, Skills, and Attitudes they feel are necessary for success as a business and industry sector instructional designer. In response to this question, four categories emerged from the data analysis process: SME Relations, Client Relations, Project Management, and Needs Analysis. These categories are presented in an order based on the frequency and level of detail described by participants. No sophisticated quantitative measures were used in making this process, and determinations of frequency and level of detailed were made by observations of the physical data.

Subject Matter Expert Relations

All ten participants were eager to share their experiences and insights into working with subject matter experts. The key issue that participants wanted to emphasize to inexperienced instructional designers was the importance of understanding the SME’s role in the design process and to exercise flexibility and empathy when engaging SME’s. Participant #7 provides a nice umbrella statement that captures the common message from participants about the attitude and skills required for successful engagement with subject matter experts.

Yeah, that’s something that happens day one. I mean that’s something I think everybody needs to be prepared for, is to work with subject matter experts. Because you’re not the expert, but your job is to translate what the experts say, into something that can be beneficial for the broad audience. I think the biggest thing for me with working with subject matter experts is first to create a rapport with them, to understand what their schedules are, and be flexible with them. (232-237)
A reoccurring message among participants was the need for instructional designers to create a good working relationship with SMEs in order to efficiently and effectively take advantage of the knowledge and expertise they have to offer. This process starts by understanding the realities of the SME’s role in the design process. As reported by Participant #8, instructional designers need to understand that the SME’s participation in the design process is often an additional responsibility piled on top their work duties.

Nine times out of ten, you know this is a side thing for them. Meaning, yeah, they’re working, but they have a whole other set of responsibilities that have nothing to do with this training you are trying to put together. So you have to be very flexible with them. (107-109)

Once instructional designers understand the need to be flexible and understanding with SMEs, there is the matter of how to best engage subject matter experts to best utilize their knowledge and expertise. The most frequently discussed SME engagement skill was balancing the content and expertise provided by the SME through the instructional designer’s independent supplemental learning. While a few participants indicated an overall confidence in relying almost entirely on SMEs for content and expertise, the majority of participants described the importance of doing a lot of supplemental learning to balance the SME’s contributions. Participant #9 captures the importance of the ID being active in understanding the content of the material they are designing with the assistance of a SME.

The competence, or at least capability, to understand the material of which you are designing, especially if you yourself are not the subject matter expert, is extremely important. In general, it’s helpful when creating curriculum not to be a subject matter
expert. To at least have the ability to learn and process it yourself, as if you were a student, so that you can properly craft and create the material. (94-98)

In a similar vein, Participant #5 reported “the ability to go and find information on my own has been very significant, very important” (60-61) because:

Our SMEs never give us enough, or good enough information anyway, so I always need to research outside of the box. They will give me tons and of documentation but it won’t tell the whole story, so I need to go Google it and see what I can learn. (P5, 53-55)

Participants also warn of problems that can result from instructional designers relying too heavily on taking content directly from SMEs, without themselves possessing a fundamental understanding of the material.

I see other people, some people go out and just get to say provide me with this content and they drop it kind of into their material. And it becomes very obvious when you are going through the course that there is a disconnect. So using them to teach you and then rebuilding all that material based on what you’ve learned. (P9, 240-244)

Another motivation for engaging in supplemental research, according to Participant #3, is to ensure the accuracy of the information they receive from SMEs.

Some people take what they get, and I think sometimes that is what I should do as it would be much easier. I can't, it’s just not in me, but some people just take what they get and say this is what I received... I have looked at stuff like that and found that this date, or this bit of information was no longer true... I researched it and find out that the information is different, so I can't live like that. (P3, 272-277)
Another issue that participants warned of is the common phenomenon of SMEs being too close to their subject and not having the ability to predict what students need to successfully learn about the intended subject. Participant # 9 had this to say on the subject:

One big problem while working with subject matter experts is that these people already know the subject too well and so they have a stigma of what’s important and what’s not. And the thing is that what’s confusing to a new person to the subject is entirely different to the things that are difficult to understand when you fully grasp the basics. And so, you know, having the ability to look at things from the ground up and understand sort of where students are going to stumble. Just is saying things like terminology. What terms are actually important? A lot of times subject matter experts will take those terms for granted. (104-111)

For the most part, participants were consistent in their message that effective instructional designers should play an active role in researching content and becoming something of a de facto subject matter expert themselves. However, Participant #10 warned that there are some potential downsides to the ID becoming a de facto SME.

What happens a lot of times is that the instructional designers become the de facto SME and they go in and they try to learn the information themselves and kind of look to a subject matter expert to either validate or invalidate assumptions they made about their work. This is OK to a point, but can result in some serious disconnects in the content. (48-52)

Participants were also eager to share methods they have discovered through trial and error, which makes it easier for SMEs to contribute their knowledge and expertise. One such
method is limiting the scope of issues SMEs need to concern him or herself with in making their contributions.

…they know nothing about online learning. So when we were doing storyboards and scripts and all this stuff, I was like, “Don’t worry about any graphics. Don’t worry about any of that. Just give me the text. Make it as simple as possible. Don’t worry about fancying up anything, just put it down on a paper and we’ll go from there.” And that worked so well with them in the beginning and then they saw the result of what we did after they gave it to us. (T7, 254-259)

Participant #8 made the point that SMEs, just like learners, have a variety of learning and communication styles, and successful instructional designers need to learn what method of engagement works best for different SMEs.

We have several extreme visual people we work with. So, it’s important to understand the SMEs that you are dealing with, some you’ll constantly need to draw diagrams, or whatever, in order to get your point across. I have them draw that to get it to you, and others it’s more verbal. Like storytelling, so you have to be very versatile to get the points to them and from them. (132-137)

Another very important sub-skill identified by participants was the ability to make subject matter experts feel comfortable in their role in the knowledge transfer process. It seems many SMEs can feel threatened and defensive in providing instructional designers their knowledge and expertise.

One of the big problems we have when we start pulling information out of people’s heads is they are naturally going to get defensive because they believe they offer to a company
is what’s in their head. So you really have to make them understand, look we are all here for the company. (P3, 183-186)

Client Relations

It probably isn’t all that surprising that a competency area discussed frequently by the participants in this study, who possess an average of 11 years of ID work experience in the business and industry sector, was client relations. No other competency area induced participants to speak in such vivid terms about the differences between instructional design as a profession, and the brand of ID they practiced as students. The claim of the existence of a gap between the educational preparation and the real-world realities of the workplace was confirmed by the participants in this study, and came out most clearly when discussing working with clients. Participant #1 captures this sentiment well in this statement:

You know talking to clients is huge and it means a difference between you knowing how to be an ID in an academic sense, and you know, really knowing what you are doing in the job. It’s one thing knowing the theory etc., but it is quite another thing being able to work in a social setting to do the job. (94-97)

It is important to note at this juncture that for every client communication rule or guiding principle participants described, they cautioned inexperienced designers to understand where the buck stops, and that managing a client often doesn’t work as well in practice as it does in theory. Here is what Participant #2 had to say on the subject of managing a client: “When you’re working with a client, you operate on their timetable, you operate when they can get things done, and when you get money… and how much you can get” (64-65).

With this client relations reality check disclaimer in mind, the following cluster of exemplars provide some important insights into how experienced instructional designers
communicate with their clients. They advise to involve clients early on to help them understand the ID process, to determine what the client *really* needs as opposed to wants, and to communicate the responsibilities of the various stakeholders. The delicate arts of timing, a balance of power/responsibility, and quietly listening to clients, were the messages participants wanted to stress to inexperienced instructional designers.

I think it is crucial to get clients involved early in the process. As a professional, I have managed this by using a work structure approach what we call work packages that sets up front a line of communication. You know who all the stakeholders are and you know what they’re concerned about. I then do this little exercise called the Tombstone exercise; where I get the client in there and say, OK, what would the tombstone on this project say if it was successful? (P10, 271-276)

Participants talked about the importance of managing the client relationship as much as practical and possible, specifically educating clients on the instructional design process and the responsibilities of the different stakeholders, in attempts to avoid costly misunderstandings that can kill relationships and deals in the future.

I think the biggest thing for me is making my clients fully aware of what they are going to be responsible for and what I’m going to be responsible for. And having some sort of structure where we are held accountable to that because the thing is if there’s not full participation on both parts then we run into trouble. It’s like a well-oiled machine, and every part has to work and be responsible to the other part, or else the whole product doesn’t happen. So, I think setting that up front is really important. (P2, 279-284)

Participants identified one of the most important aspects of educating clients is helping them find the learning solutions they really *need*, as opposed to the solutions they think they
want. For a whole host of reasons, clients are often not in the position to possess a sufficient understanding of the learning process, and the wide variety of learning solutions that can be employed. Effective instructional designers can assist their clients in better understanding their own needs and most appropriate approaches to use in fulfilling those needs.

The other thing that is good is being able to listen and ask questions. Just because somebody will come to you and they will say, “I want you to do… I want training on XYZ” when in fact what they really need training in is ABC, they just didn’t know that. (P6, 74-77)

It is important to add, that while participants identified the importance of educating their clients, they also discussed the necessity of exercising caution in how instructional designers go about exerting their expertise in this education process.

A lot of times people will put themselves in the position as the expert. And you know, we say to our client, “Well, I know what’s best for you,” and that’s not always the case. You may know what’s best for them, but it has to be an agreement. That client has to be very comfortable with you. And if you just go in with your bulldozer telling them, “Ok, this is what you are going to do, and this is how I think you should do it” without getting their input, that totally turns them off. (P7, 110-119)

Another common message from participants was the importance of managing the client’s expectations of the kind of quality and use of the latest technologies they would like to employ versus what they can afford. A client who possesses an understanding of, and hunger to use, the latest technologies, can be a real challenge for instructional designers, and care and diligence need to be exercised in working them.
It is important to know when a customer is really just trying to you know… get fifty dollars out of a ten dollar job. And that is a client you need to be careful with and handle on almost a daily basis and you have to keep your resources away from them. (P1, 284-287)

Related to this previous example of client’ expectations, is the ability to help clients envision a final product in the early stages of development. Several participants recommended exercising caution when showing examples of final products that requires clients to use a lot of imagination to see what it would look like.

Clients don’t always have a big imagination and they work 50-60 hours a week doing other stuff. They are not sitting around thinking about this and dreaming of what it’s going to be like. So, when you communicate you need to hit all of the right notes. Clients always care what things look like. So, it is important to have things look good and not require the client to try to imagine what the product will look like. If I told you I was building you a hot-rod and I pull outside and it looks like an 84 Chevette, you’re going to be scratching your head even though I’m telling you how awesome the engine is going to be and this and that. (P10, 238-244)

Project Management

Although nearly all participants, in some shape or form, discussed the broad competency area “Project Management,” the topic didn’t dominate interviews as much as I thought it might, particularly considering that most participants spend a great deal of their time serving as project managers. In some respects, it was one of the most disappointing competency areas discussed as well, as participants were eager to claim that instructional designers need to do this thing called project management, yet they didn’t offer a great deal of insight into what it looks like, or how to
do it. Nevertheless, the insights offered do deserve their own category. Participant #7 provides an interesting statement describing the relationship between instructional designer and project management and the ultimate need to manage projects.

Project management is so key. Oh my goodness. I mean because that’s what I am. I’m project manager. But I’m an instructional designer. But they recognize that I am a project manager. But my skill is instructional design. So you have to be able to project manage. (182-185)

Despite not providing the contextualized descriptions of successful project management skills from the workplace that I was hoping for in this study, participants were clear in emphasizing that project management requires a wide variety of people and technical skills, and that project management is increasingly important for designers at all levels in the contemporary practice of instructional design.

The thing that I see every day in my job, that also is a component of instructional design, these days it’s more about project management. And the reason why I bring that up is because it involves so many people: clients, SMEs, and internal people. We are also talking about needs assessments, different requirements, many layers, resources, and everyone needs to have some level of project management skills. (P4, 9-13)

The most frequently discussed project management sub-skill was the budgeting and management of resources, with time management at the top of this list. Participants described a variety of challenges in budgeting time and emphasized the need to find a time management system and tools that works well for each individual.
One of the toughest problems I struggle with under project management is the correct estimation of time. It is so important for designers to understand the cues to estimate it correctly. I mean there are enough resources out there to help too, so it’s very important to find a system that works well for you. Some people do it on the screen, and some do it on paper… whatever works for you. (P8, 70-74)

A frequent suggestion from participants was the need for an increased emphasis on project management in the academic preparation of instructional designers. Although all attempts were made to avoid the evaluation of IDD courses, participants occasionally identified course shortcomings and made suggestions for improvements. Participant #2, who was enrolled in an IDD program at the time of the interview, expressed the need to go into the budgeting and management of resources in more depth, based on a knowledge of the importance of these skills in the real-world practice of instructional design.

I know that we have a project management course now but instead of just glossing over those areas about the selection of media and tools and budgeting, things like that, those are really critical elements.

And you won’t be able to manage your project if you, you know if you’re a great instructional designer but you don’t know how to use your resources and be somebody that the client trusts about what’s on the horizon, what you need from an instructional project. (49-54)

As project management encompasses such a wide variety of skills, participants often described several sub-skill sets simultaneously that cross over all or most of the categories identified in this study. Participants talked about the importance of conducting analysis in order to manage clients, SMEs, and various resources over the course of a project. These cross over
skill descriptions provide a useful window in understanding the complexity and interconnected relationships of discrete skill sets.

When you’re in a management position you have to analyze your audience too, just like in instructional design when you analyze your audience. You don’t want to go to clients with a pie in the sky idea and sell them on that idea and then in the end they can’t afford it. So you’re sort of giving them your second choice. Wouldn’t that be great? Oh, but you can’t afford that. So we’ll do this instead.” (P2, 70-75)

A critical line of communication that often breaks down is between the project manager and instructional design team. By virtue of the fact that project managers jump in and out of projects at different points, they can often lack information about the progress of projects and the needs of the instructional designers working in the trenches.

You know sometimes your project manager doesn’t know enough about how the instructional designer’s needs to execute this to be able to pull it together on their own.

So, it is also critical that the PM really understand the information or communication rather, between the instructional design team and project manager. (P10, 450-454)

Needs Analysis

The instructional design skill discussed most frequently by participants was needs analysis. In fact, of the five phases of the ADDIE model, participants spoke almost exclusively about the need for initiating projects with a thorough needs analysis, however, they also admitted that there was often no time or resources to conduct this step adequately, if at all. This was yet another area in which there appears to be a gap between real-world practice and the theory of instructional design. Participant #5 provides a nice statement about the reality of conducting the analysis step.
OK, well, you know it is all good and well to talk about the ideal way to create the nine steps of Gagne or follow ADDIE, and it always says that we should talk to the end-user and interview them, but that never happens in real-life, we never have the time or money to do it. The customer never wants to do it; at most we get to talk to the managers. So, we never really know what the customer, the end-user needs to know. So, that is just a frustration that maybe people should be aware of. (10-15)

Whereas participants recognized the challenges of conducting needs analysis in real-world design projects, they nonetheless stressed the importance of the analysis phase to inexperienced instructional designers. According to some participants, the analysis phase presents designers a good opportunity to demonstrate to clients what they really need, versus what they think they want. Participant #10 discusses this important reality check aspect of conducting a needs analysis.

Another critical competency for instructional designers is being able to do upfront analysis and then having a cadre of approaches in ways of looking at it to determine if it really is an instructional issue or not. Now, I can tell you, having done this for twenty years, probably 75% of the time that we get called in they don’t need instruction. It’s a permission issue. It’s an access issue and they are really wanting to train people on things they don’t perform frequently, and it can often be done with job aids or better support or better cognitive engineering of how the tools are presented to employees to perform the task. Instructional designers need to make the upfront analysis and help the client and their stakeholders understand the best means to attack the problem. (69-76)

Some participants recognized that doing a thorough and meaningful analysis of learner’s needs is difficult. While it is easy to get a cursory understanding of student’s needs, Participant
#6 indicated a struggle with the realities of the time and resources available to gain a meaningful understanding of their learners.

I think the biggest thing is knowing the audience, and probably the best way to do that, in the ideal world, would be to do the whole ‘walk a mile in my shoes - live that job’ approach to analysis. (33-35)

Participants warned inexperienced instructional designers not to get too distracted with the bells and whistles of tools and to focus their attention on analysis to understand the educational needs of the learner.

People become so enamored with the tools, they are missing this first part of process - analysis. So I think starting as early in the communication process, much before a focus on tools, is taking a serious look at analysis, looking at that and trying to ask the right questions to understand where that gap is coming from is critical. (P10, 145-149)

Although the Critical Incident Technique was not as effective as I had hoped in enabling participants to describe incidents in which they performed their job particularly well or poorly, the issue of needs analysis was a topic that participants used to describe their best and worst moments as designers. Participant #2 describes how conducting a thorough needs analysis gave them the confidence to convincingly rationalize the instructional design process to a client.

We had gone through the first six months of our project, had done our analysis phase and had done these critical interviews and gotten peoples learning styles and everything pinned down, and our client came to us one day and said, “We don’t really understand why we are doing all of this.” Because we had conducted such a thorough needs analysis, I felt really confident in what we were doing. Like my mom always used to tell me, that you don’t really know something until you can teach it… to have the ability to go in and
talk to my client knowledgably and get then to understand the importance of what we were doing. I thought that that was a brilliant moment. (337-346)

On the other end of the continuum, Participant #3 recounts that their biggest failure as a designer came as a result of his team failing to do even the most basic needs analysis in a project described as a “colossal waste of time and resources” (245).

You ask about when I did my job poorly… probably the biggest failure I have had during my seven years as an instructional designer happened because we had one program that a very important question wasn’t asked… How many - what was the size of the audience going to be? We found out that we spent about a month producing that there was only 10 people who showed up for it after we spent tons of time and resources on it. So yeah, that would have been something that never would have gotten off the ground, if the person would have asked the right questions. (239-244)

Preparing Instructional Designers

Three categories emerged from the data analysis process corresponding to Research Question #2. In this section, the categories Design Reality, Design Specialty, and Instructional Approach are presented in a different order than in the previous section responding to Research Question #1. Rather than organizing these categories based on the frequency and level of description, the categories have been arranged to tell a story in this order: (1) the realities of the instructional design workplace students should be aware of before entering; (2) what kind of designer students want to become, and (3) specific instructional approaches participants would use to prepare instructional designers.
Design Reality

The category “design reality,” unlike previous categories, is much more of an artificial construct, created to help capture insights into the realities of working as an instructional designer in the business and industry sector. Other categories, like SME relations or Project management, were essentially named as such by participants when asked to discuss the knowledge, skills, and attitudes required for success as an instructional designer. The exemplars used in this category did not emerge as a result of participants being directly asked about the realities their work life, but rather, were described as participants mused about their own practice of instructional design.

One reality that participants particularly wanted to stress on inexperienced designers is understanding and practicing the art of compromise, specifically, learning to live with what designers can actually create, versus what they would like to create for clients. Two participants provide their insights through the exemplars below on the importance of understanding and accepting compromises in what they can offer their clients.

I don’t really think I do the training I would like to do, because I just don’t have the time or the resources to do that. So I have huge compromises in that area. I don’t like these compromises, but really, literally I just have to accept them. (P8, 400-402)

A lot times you’re trying to develop a course and you have to develop it within the confines of what your company does. Or what they sell. So I mean if you don’t have live virtual as an option, chances are you are not selling live virtual, even if that might be the best thing. (P1, 50-53)

It was this issue of not being able to offer clients the “best thing” or best approach that participants indicated they struggle with, and they recommended that inexperienced designers
prepare for this reality as they leave the safe and open environment of school projects. Participant #5 provides a succinct reminder for students to remember as they enter the business and industry sector. “Business dictates everything. The bottom line dictates everything. So, it’s just about turn-around and how well you can create something based on budget and resources available” (17-19).

Participant #10 talked about the importance of academic programs helping their students understand trends in the world of learning, and to have the ability to take a more macro level view of what they are doing and intelligently guide their learning process as professionals. While it easy to argue that all have a capacity to learn, it is a matter of the individual’s learning organization (Senge, 1990) providing the structure for its people to flourish through creation.

Now when we’re looking at engagement we tend to look more at curriculum, certificate programs, you know, even degree programs in the world that’s happening in developing countries, and developed countries, and it’s a different approach. It’s kind of a more macro level view of what you are doing. And it’s a broader system. So I don’t think that we’ve accommodated for those changes in the market place or in our graduate programs. (100-105)

Beyond understanding basic business realities and learning industry trends, participants also talked about the importance of instructional designers not losing sight of the most important question they should ask about the learning events they create: are their learners actually learning? Participants warned inexperienced instructional designers to really focus on the learner, and knowing whether or not they learned, and avoid getting caught up in other distractions.

Because at the end of the day it’s not necessarily how the curriculum builder did, but how much the students learned. If you don’t do that, then you end up with cop-outs. Look I
wrote this very eloquent material and it was very complete and technically accurate and I used lots of big words because I wanted to prove that I went to Harvard, and what not. But nobody learned anything. So it doesn’t matter, a lot of those other issues are secondary, all that matters is did students learn. (P9, 374-379)

Some participants were critical of the realities of the instructional design field for the homogenous brand of learning solutions they crank out. The term “cookie cutter approach” was used to describe dissatisfaction with the kinds of learning solutions participants see being mass-produced by the instructional design field.

Unfortunately, what I tend to see are a lot of the same things over and over and over again. And it’s hard to believe that this kind of cookie cutter approach can be this broadly applicable when you look at the diversity of knowledge that we are trying to convey.

(P10, 20-23)

Design Specialty

An interesting issue that emerged in discussions of the academic preparation of instructional designers was the importance of students, and IDD programs, coming to terms with design specialty. Some participants felt strongly that academic program should prepare generalist designers that can perform a wide variety of design tasks. Other participants felt that academic programs should accept the reality that there is no such thing as a good generalist designer and students should be encouraged early on to focus on a design specialty. The following exemplars highlight this difference of opinion on design specialty and its role in academic programs.

The best ID is going to be a generalist. Your best ID is going to have all of this stuff but to varying degrees. Because you don’t want the ID to actually be making the graphics and
spending all day on the phone with the client, but they have to be able to do those things. (P1, 229-232)

I think it’s better to produce somebody who is really great at one thing. And the reason I feel like that is because I don’t really feel like there is such a thing as a great generalist. (P2, 140-142)

I think you have be a full instructional designer because things are constantly changing. You cannot pigeonhole yourself. I think you have to be aware of, you know, all the specialty areas. But I think a good instructional designer needs to be fluent across the board. (P7, 133-136)

Although there was a variety of opinions on this issue of design specialty, participants were in agreement that the issue should be addressed in the academic preparation of ID students. Although it probably happens somewhat naturally during academic preparation, participants expressed the importance of purposeful reflection on student’s strengths and weaknesses as a part of helping them visualize their career trajectory.

I think it is really important for students to identify what they are good at as a designer. I’m not saying that everybody spends a seminar weekend finding out if you’re good at this that or the other thing, but at least if they can recognize what your strengths and weaknesses are and then understand what the job categories are and then understand what the, what’s going to come at you. (P1, 191-195)

Some participants described the academic preparation period as a great opportunity for students to experiment trying on as many roles as possible and not retreating into their comfort zone. Participants warned students not to continue taking on the same design roles during group projects and to take every opportunity to improve their weaker skills in these situations.
It is my personal philosophy that students in the program should try as many different roles as they can. You know, what better place to try if you’ve never been a project manager, what better place to try it except in some of these courses as opposed to out there in the real world. (P4, 414-416)

Others thought that students should recognize their skill sets early on and take every opportunity they can to develop these skills during project work, and this deep development of a few skills would give inexperienced instructional designers a leg up on those with just a cursory level of skills.

You gotta recognize what people’s strengths are early on and then have them work on those specific parts of the projects that their strength will support. It makes for better projects and it makes for better skills for individuals. (P5, 112-114)

Another aspect of this design specialty issue is how academic programs can best deal with students intending to enter different ID sectors upon graduation. While it can certainly be argued that instructional design can be practiced largely the same across industry sectors, participants were also quick to point out that some of the fundamental realities of these sectors do play an important role in how the job is performed. Participant # 2, enrolled in an IDD program at the time, discussed some of the tensions that exist between business and industry students and K-12 students.

We have this sort of Jets and Sharks thing going on, and not that we have bad feelings for each other, but there are definitely the K-12 educators and the B&I folks, and we have really different needs. Like I said earlier, the environment you operate in has a huge effect on limitations and things that you are going to need to know and ways that you are
going to need to be creative. The bureaucracy I face isn’t the same as somebody who is teaching in the school system. Also, our authentic tasks are totally different. (161-167)

In response to this issue of students coming to terms with design specialty and design field while enrolled in an academic program, Participant #2 recommends the idea of check in points during the program to allow students to be reflective about the career trajectory they would like to make.

I think it would be a great idea to have sort of these check in points. Where in the beginning of the program you think about where you want to be at the end. You know, why did you come in to the program? What do you want to do? What is your focus? (176-179)

### Instructional Approaches

As described in Chapter 3, a very useful questioning approach was asking participants to describe how they would go about preparing instructional designers for the realities of the workplace as an instructor, or program head, in an IDD program. This perspective seemed to offer participants a nice vehicle for reflecting on their practice as instructional designers and to consider how they might go about unpacking their wisdom to share with students. However, this area of questioning, more than any other, highlighted the difference between the three participants that were currently enrolled in an IDD program, versus the seven participants who had already graduated. Current students seemed to be more tethered down to the existing structure of courses to float freely and imagine how they might go about preparing students. In response to this problem of familiarity, I asked these participants to imagine another program or a dream program they could be a part of creating in order to allow them to think more freely about how to prepare instructional design students for the workplace.
A very common ingredient participants identified in their recipe to prepare instructional design students is an active alumni program that would play a role in teaching courses, mentoring students, and generally ensuring that students be exposed as much as possible to the real world of instructional design. Participants expressed that there was too little alumni presence during their academic preparation (current students and graduates alike) and that they felt an alumni presence would have enriched their learning. Without exception, participants indicated enthusiastically that they would love to give back to the program and participate in anyway they can in the future. Here is what a few participants had to say on the topic of the alumni’s potential role in an IDD program.

I think it’s important to leverage the alumni or the working community. Whatever it is, whatever you want to call it… I think alumni is probably the best way to do it. But get them in the classroom. You know, it’s one thing to give a talk about project management, or even a course on project management, but when you can get people in there that really know what project management is and it’s isn’t then you know, I don’t know. I think that that’s really valuable stuff. (P1, 9-14)

I think it would be a great idea to have an alumni mentorship program for students. It’s one thing to have a mentor that’s a full-blown professor, but I think it’s also a good thing to have a mentor that’s a working ID. (P2, 364-365)

I think that every program should have a rolling advisory board and I think that the alumni have to be proactive in making it happen. So I think it’s too much to expect the faculty to just go in and make that happen by themselves. I think that you have to start engraining that as part of the culture of what you do when you go through the program. (P10, 466-469)
While participants spoke highly of the project work they did during their academic preparation, they also identified gaps in reality between coursework projects and the real world practice of instructional design. An interesting idea that developed out of these discussions was approaching project work in school like a reality show, where instructors would interject real world changes like shortened deadlines, changed content, or any manner of change that typically happens during design projects.

Yes, so this nice little square box is all well and good. But you know if it ever happened like that you know, whatever. So if you were going to do that I would give somebody an amount of change in the course. It’s almost like a reality show. When you see how they get you half way to the point and then they tell you guess what, everything’s changed here. The customer has taken away twenty percent of the budget and they need it next week. (P1, 107-112)

I think what always makes a reality show really great is the drama is when they come in on Project Runway and say, oh you were going to have two looks, but now you’re going to have three. And everybody runs around and scrambles, it’s those moments that make the cream rise to the top. You, it’s like anything in life. The point where to get to where you feel like you can’t go any further, it’s that extra 15% that’s like the best work that you’ve ever done. (P2, 102-107)

In an extension of the reality show concept, participants frequently described the use of simulations and role-play activities they would use as tools in preparing students for the realities of real world design challenges. Primarily, participants described role-play situations aimed at improving students’ interpersonal communication skills in interacting with clients, SMEs, and teamwork situations.
You know everything’s great and fine in school, but you know, what if there was a problem? What if you did introduce an issue? Just giving an example, in one of the computer training classes they purposely put in problems. You know, they don’t tell you. You’re supposed to find it. And you can be sitting there waddling for hours, scratching your head. So, what about this, in this role playing where you introduce it where the instructor has incorporated whatever kind of issue you want to cover. Whether it be the person who, you know is not cooperative, or a client who appears once and you never see them again. You know, those sort of things. I would imagine you can create a long laundry list of problems you can put in and to see how the groups reacts and handles those things. (P4, 316-325)

I would have them do a role play where one person being the SME and one person being the client, the third person being the instructional designer who has to take the requirements and communicate to the SME what is needed. (P6, 146-148)

So you have different problems that you present. And then ok, so how are we going to solve this problem? And it can be anything form a technology issue, and instructional design issue, it can also be a team; you know a team issue, where we may have conflict or a communication breakdown. (P7, 57-60)

The important skill of working on teams was a common theme discussed and participants recommended that more attention be dedicated to preparing students to work in teams.

I think it all comes down to group dynamics and that’s something that I would love to have seen more of in my study sessions so far, you know. How do you work within a group?” We briefly touched on it in the project management class, but I think that’s a really important topic to get out there and be successful. (P3, 32-35)
I would say nowadays, projects have a lot of people, and working collaboratively is a newer problem. Learning how to deal with other people who may be uncooperative, or maybe who like to work alone… or may put some of their work on you… or come up with a reason for not doing their work. Before you even get to classes with projects, maybe we ought to talk about how to deal with different attitudes or work styles or whatever. We didn’t go over that sort of thing. (P4, 259-264)

As an educator who has longed believe that assessment is the engine that drives instruction, I found that another useful questioning approach was asking participants to envision the type of final assessment they would use to determine if students were prepared to go into the workplace to practice instructional design. Again, it took some finesse to jiggle some participants loose from the constraints of what they knew as current practice and use their imagination to consider ways of enabling students to demonstrate their abilities to perform discrete aspects of the instructional design job. I believe that with more time to think through the exit assessment question, participants would have been better able to meld their work experiences with their imaginary role as an IDD instructor. However, several participants were able to think on their feet to describe the kinds of skills they would like students to demonstrate at the conclusion of the program.

You might give multiple pieces of materials to students and say to them that you want a 30-minute module or something and they have to make a presentation of how they would deliver it. Have them do some kind of design document or storyboard, something that would show how they would approach it as a designer. (P5, 377-380)

So, I think the key areas from an exit perspective is demonstrating the ADDIE pieces… show me how you’ve mastered those areas, show me that you can at least do the basics

If I were building an ID program, the final exam would have to be to actually build a curriculum and actually deliver it to people who don’t have the slightest idea of what they are talking about. And to judge the performance of the curriculum builder based on the knowledge level of the graduates. (P9, 367-370)

Summary

Through multiple stages of the data analysis process, four categories were created to correspond to Research Question #1 and three categories corresponding to Research Question #2. Based on the frequency and level of description in the interviews, the following categories were used to represent participants’ perception of the knowledge, skills and attitudes required for success for business & industry sector instructional designers: (1) Subject Matter Expert Relations; (2) Client Relations; (3) Project Management, and (4) Needs Analysis.

Participants emphasized the importance of instructional designers developing a rapport with SMEs and exercising understanding and empathy, as SMEs engagement in the process is often an added responsibility on top of their regular work duties. Instructional designers need to be proactive in learning as much they can on the instructional topic to both supplement and balance the content and expertise provided by SMEs. IDs can ensure the validity and accuracy of content through supplemental learning, as well as predict problems that learners may face when exposed to the topic of learning solution. SMEs are often too close to their subject and take for granted vocabulary and other knowledge required to successfully approach a new subject. While participants were generally supportive of the idea of the instructional designer becoming the de
facto SME, some warned of disconnects that could result from an ID not fully understanding the content they were attempting to become instant experts in. Participants also urged instructional designers to understand that SMEs, like learners, have a variety of learning styles and it’s important to determine the best ways of engaging SMEs. Lastly, participants warned that SMEs can become defensive, as they perceive that their value is what they know, and that IDs are trying to take away their knowledge, and in the process, make the SME less valuable to their organization.

The category Client Relations, probably more than any other category, highlighted the reality that instructional design is a business and that the client ultimately sets the terms of projects. Participants recommend that IDs involve clients in the instructional design process early and that stakeholder’s responsibilities be established and managed as much as possible throughout the engagement. In the client communication process, effective designers can help clients come to realize what they really need, versus what they think they want. Participants shared that it is quite common for clients to think they want XYZ, when what they really need is ABC. Key to this communication process is listening careful to clients and gently nudging them toward a solution that more appropriately fits their needs. Instructional designers also need to be thoughtful about how they manage client’s expectations of quality and how the final product is going to look upon completion. Clients care about what things look like and often make quick decisions based on appearance and cannot be counted on to imagine what the final product will look like.

Although project management was a prominent theme in interviews, participants seemed to struggle in describing project management in deep detail. One possible explanation for this is that project management is a complex set of skills that overlap to such an extent that it is difficult
to isolate and describe what it looks like. However, despite their inability to describe it in detail, participants were clear about the increasing importance of project management for instructional designers at all points in their career. Some specific aspects of project management discussed by participants was the budgeting and management of human and physical resources and the importance of good communication between the PM and instructional design team.

Of the five instructional design phases of ADDIE, participants talked almost exclusively about the importance of conducting a needs analysis, but they were also quick to point out that the analysis phase is often skipped due to a lack of time or resources. However, despite this reality, a thorough analysis can be critical in helping instructional designers identify what learning solution is really needed vs. wanted, as well as help eliminate costly mistakes. Inexperienced instructional designers were warned not to become too enamored with tools and pay attention to the critical analysis step, and as much as possible, to “walk in the shoes” of their learners to really understand their needs.

In response to Research Question #2, the following three categories was used to represent how participants would prepare students for the realities for work as business & industry sector instructional designers: (1) Design Reality; (2) Design Specialty, and (3) Instructional Approaches.

The category Design Reality is something of an artificial construct created to capture participants’ experiences and advice about the real-world practice of instructional design in the business and industry sector. Top among the realities participants discussed was the need for instructional designers to accept compromise in the types of work they can actually produce for clients, given the resources and time allocated to projects. Students, emerging from an academic environment, might be accustomed to having ample time to use a wide variety of tools and
approaches in their design work. In the real world, however, the bottom line dictates the kinds of resources that can be allocated to a project. Above all though, participants reminded inexperienced IDs to keep a simple criterion in mind when considering the success of their work: are their learners actually learning? Successful learning solutions are those that engage learners and can demonstrate/measure the growth of their learning.

In discussions of how participants would approach preparing instructional designers in an academic setting, an interesting focus on design specialty emerged. Some participants argued that effective instructional designers are generalists and academic programs should endeavor to create generalist designers, while others argued for the need for specialization. Both camps on this issue did advocate the importance of students reflecting on their strengths and weaknesses throughout their time in an academic program. To assist students in their career trajectory, it was recommended that programs institute check in points for them to think through which design field and specialty would be the best fit.

The participants in this study seemed to respond well to thinking through how they would prepare instructional design students from the perspective of being an IDD instructor or program head. A common approach that many participants recommended was involving alumni to play a role in teaching courses, serving as mentors, and supervising interns. Participants provided an interesting solution to the gap in reality between school projects and real-world design, by throwing changes into student’s project work, much like is done on reality TV programs. Simulations and role-plays of client and SME communication situations were also advocated to give students a feel for the realities of the job. Participants also suggested that students in a performance assessment situation build a learning module based on provided information, demonstrate their ability to follow ADDIE, and to actually deliver curriculum that they design.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Ten instructional designers, with an average of 11 years working in the business and industry sector, were interviewed to capture detailed descriptions of the competencies they felt are critical for success and what strategies and approaches they would use to prepare ID students for the workplace. In approaching this line of interviewing, I have likened my role of researcher with that of an archeologist, both requiring skilled and delicate methods of extracting fragile artifacts from the field to use for further study into the practices of cultures. Using this analogy as a yardstick of success, I would suggest that I have been somewhat successful at chipping off pieces of artifacts that help tell a story of the competencies critical for business and industry instructional designers. I would also suggest that the archeologist analogy is quite fitting, as unearthing detailed descriptions of a job as complex as instructional designer requires a huge amount of patience and skill.

Conclusions and Implications

Participants in this study were quite clear that while they feel there is a gap between the educational preparation of instructional designers and the realities of the contemporary business and industry sector workplace, they did not go as far as suggesting that ID graduates are entering the workforce without sufficient skills needed for career success (Atkins, 1999; Peddle, 2000; Wendlandt & Rochlen, 2008). I would characterize participant’s view on this issue of a gap as: “Sure, there are some things that should be taught and practiced more in IDD programs, but in
reality, some things are difficult to teach in an academic environment and have to be learned on the job.”

Critical ID Competencies

In respect to the KSAs identified as most critical for success as an instructional designer working in business and industry, participants discussed in greatest frequency and detail the need for instructional designers to adroitly navigate the tricky terrain of SME Relations and Client Relations. These interrelated competencies were also the areas where participants were most emphatic about the gap between the realities of their practice and the academic environment. In response to this gap, participants talked about the importance of using a variety of simulations and role-playing in the educational preparation of instructional designers to prepare them for the realities of the job.

The results of a study of 22 instructional designers by Schwier and Wilson (2010) found substantially the same thing as “participants communicated clearly that professional relationships were at the heart of their work, yet they felt that they were not sufficiently prepared for the interpersonal aspects of the work in their graduate training” (p. 137). The participants in Schwier and Wilson’s (2010) study also had quite similar things to say about the “importance of understanding SME’s professional demands outside of the project and to be intuitive about the needs of the SME and build a relationship that is supportive and productive” (p 137). In a similar vein as my study, the participants in Schwier and Wilson’s (2010) study also talked about the importance of diplomacy as a vital skill for instructional designers when dealing with clients. Another similarity between our studies was the emphasis participants placed on the importance of instructional designers learning about a new topic or area of study to supplement the content and expertise provided by the SME. Like in this study, participants in Schwier and Wilson’s
A 2010 study indicated that they are insatiable learners, and they enjoy the opportunity to infiltrate other professions and get an intimate glimpse of unfamiliar content. This de facto SME opportunity also challenges instructional designers to reflect on their own philosophies of teaching and learning, to situate their own professional identities in an array of contexts.

Project management also figured prominently in Schwier and Wilson’s (2010) study and the fact that their participants were “surprised at how important project management skills were, and they reported that they received little in the way of formal training in project management in their programs of study” (140). The participants in their study had very similar things to say about how project management is an important component of completing a project on time and on budget and that these business realities are the heartbeat of a project. However, much like my study, I found a disparity between the sweeping statements made by participants about the necessity for project management and actually describing what it looks like. I can only speculate that instructional designers find it difficult to unpack their expertise on the extremely complex and interrelated skills that fall under the big umbrella category Project Management.

In a 2002 study of 11 practicing instructional designers in the business and industry sector, Liu, Gibby, Quiros, and Demps listed the following as the top four competencies identified by their participants:

1. Working with a client to understand what the client is trying to accomplish; 2. Working with a subject matter expert (SME) to delineate the instructional content; 3. Working on the design, i.e., to translate the client’s needs into a plan that will be used to produce a product that meets the client’s needs, and 4. Working with other members in a team, i.e., designer must be a team player and a true collaborator. (p. 197)
The participants in their study identified similar challenges of working effectively with clients: guiding them through the design process, describing the problem to be solved, and helping them to identify the real needs of projects. They also described the importance of the personal relationship aspect of working with SMEs and understanding that the design project does not have the same priority for the SME as it does for the instructional designer. The participants in Liu, Gibby, Quiros, and Demps’ (2002) study also warned that new instructional designers often do not anticipate the importance of professional relationships and that more attention should be paid to developing interpersonal communication skills in the educational training of instructional designers.

The most important competency identified in a study conducted by Wedman and Tessmer (1993) of the design practices of 73 instructional designers developing training for business and industry was the need to conduct a needs analysis. Although often a casualty of a lack of time and resources, participants in Wedman and Tessmer’s (1993) study also discussed the importance of not skipping the important step of analysis. In addition to the obvious benefits of guiding the instructional project being produced, a needs analysis is an important tool in establishing the needs of a project with clients.

Educational Preparation of Instructional Designers

In respect to the question of the educational preparation of instructional designers, participants had conflicting opinions on the issue of the UGA IDD program producing generalist or specialist designers. While some felt that it was unrealistic for the program to prepare students for the wide variety of skills falling under the umbrella of “instructional design,” others felt strongly that while it is natural for students to have ID strengths, they should at least be exposed to the full gamut of skills expected of the instructional designer in a business and industry
context. Although it wasn’t discussed as frequently as design specialty, participants were more unified in their thoughts on the role of design field. The participants in this study seemed to validate the conclusion of Larson (2005) and Larson and Lockee (2009) studies that ID education programs should contextualize or tailor the preparation of their students for different career tracks. Participants recognized the unique needs of instructional designers from different career tracks and one went as far as suggesting the creation of formal tracks in the IDD program.

Participants in this study also supported Julian’s (2001) contention that “because the field of ID has become so rich and varied in terms of settings in which it is practiced, we can no longer discuss the profession without consideration of the environment of practice” (p. 16).

Participants seemed to respond very well to be asked to look at the educational preparation of instructional designers from the perspective of the IDD instructors. One of the most frequently discussed strategies participants would use in the IDD program is involving alumni in helping teach classes, serve as mentors, and supervise internship programs. One of the more interesting strategies that emerged from these discussions was approaching project work in the graduate program like a reality show, where instructors would interject real world changes like shortened deadlines, changed content, or any manner of change that typically happens during design projects. It was the artificial atmosphere of project work that participants seemed to want to address by throwing in these reality checks.

Limitations of the Study

Perhaps the greatest disappointment of this study was my inability as an interviewer to enable participates to recount critical incidents from their extensive experiences as instructional designers. Despite my attempts to prepare participants in advance to recall critical incidents, it was clear that all ten participants struggled using the CIT lens in reflecting on their ID practice.
Participant #2 sums up the feelings of the participants on the Critical Incident Technique: “This is the most difficult question. The incident question you sent me” (238). Some participants looked visibly uncomfortable with this line of questioning, and in response, I elected to alter my interview protocol to deemphasize the role of CIT in the latter interviews.

One criticism of the CIT method is that researchers specifically instruct participants to think of situations that are in some fashion “critical” (Stauss and Weinlich 1997), and as a result, only the most critical, most memorable events are sought when using the CIT method. Incidents that might be considered “usual” or “ordinary” are generally not reported (Stauss 1993), and researchers typically use the CIT method to study only the “extremes” (Johnston 1995). Indeed, Flanagan’s (1954) original discussion of the CIT method called for investigation of extreme (i.e., “critical”) events. According to Flanagan “an incident is critical if it makes a ‘significant’ contribution, either positively or negatively to the general aim of the activity, and it should be capable of being critiqued or analyzed” (p. 338).

I still believe that the extreme nature of incidents is what makes the Critical Incident Technique a powerful qualitative research tool. However, I don’t believe, nor do I believe the participants in this study believed that their occupation presents situations that are really critical. I posit that the CIT is an excellent tool to use with participants who face really critical incidents that mean the difference between life and death. Flanagan’s original study of World War II pilots seems an ideal environment for using this technique, as it allowed his participants to tell their stories of the life and death situations they encountered in the cockpits of their planes. Sometimes I felt my participants could hardly believe it themselves that they were telling me such limp stories to represent their critical incidents from a decade or more of time on the job.
Almost without exception, the participant’s posture and tone in telling their critical incidents was apologetic in nature.

An unfortunate by-product of nearly a year passing between conducting interviews and data analysis was the inability to do meaningful member checking with participants. Ultimately, I determined that too much time had passed for participants to accurately recall the substance of their responses to interview questions. Providing participants with an opportunity to clarify, refine, and verify their responses would have most certainly enhanced the robustness of this study.

Lessons Learned

In retrospect, I believe my study would have been more successful had I not elected to take the wide open inquiry approach of asking participants to name the Knowledge, Skills, and Attitudes critical for success for business and industry sector instructional designers. During the interviews, I felt participants spent a lot of time and energy trying to simply name well-documented ID competencies. I sensed that even when they were attempting to discuss one competency in some detail, their brain was still in scanning mode in a desire to add to their list of competency names. I believe this intense scanning can be explained by the participant’s earnestness in their desire to provide input into the IDD program they hold in such high regard. Unfortunately, I never felt that participants dug into one competency area and exhausted their thinking of what that competency looks like in real world practice, and how they would prepare instructional design students to become proficient in this competency area. Despite my clumsy attempts to focus participants’ attention on one competency area at a time and squeeze every drop out before going on to another area, I felt a constant nudging to continue on in order to add to their list of competencies. If I had it all to do over again, I would have oriented my study to
focus on a concentrated set of competencies like Communication Skills and gone into interviews with the first step of competency naming already completed for participants. Using this approach would have perhaps allowed participants to settle down and construct deeper responses on one competency area.

In respect to research method, I would not have focused so heavily on the Critical Incident Technique, if at all, as it did not enable participants to tell their stories of critical experiences as I had hoped. I have largely concluded that the nature of the instructional design job is not an ideal for the use of CIT, and that using this perspective in some cases hindered participants, as they felt disappointed in their lack of moments of epiphany. In fact, I genuinely believe that my participants were actually encumbered by being asked to use their own experiences to capture what a given competency looks like. Although it seems somewhat counterintuitive, I felt my participants were not that comfortable or effective in using themselves as the central character in their story. I sensed a lot of doubting and self-editing going on as participants tried to recall experiences from their own practice.

Conversely, I found that a successful technique in this study was shifting the perspective from the participant to the imaginary perspective of an IDD faculty member. I sensed that participants felt some relief in trying on a different “hat,” particularly the hat of an IDD instructor. I believe there is great potential in asking experienced instructional designers to concentrate on the issue of preparing ID students for the realities of their work world using the perspective of being an IDD instructor. Using this perspective removes the pressure of providing evidence of the participant’s success or failures and allows them a relatively clear focus on what they would hope an ID graduate looks like upon completion of their academic program. I use the characterization relatively clear to recognize the mental tethers participants seemed to have to
the specific courses in their IDD program. It is natural for people to use what they know as a point of reference, however, it is easy for people to get snagged on the specifics of their reality and lose the ability to see other ways of doing things. I certainly found this phenomenon as I asked participants to think through how they would prepare ID students, given what they know about the practice of instructional design in the real world. A common response was for participants to name a certain course, make some sort of evaluative remarks, and then recommend some incremental changes to the existing course. While natural, I felt that participants were unable to really tap into their experiences with such a tight tie to the realities of the existing courses in their IDD program.

In response to this natural tendency to attach such a tight purchase on an existing framework, I recommend using the perspective of creating a new ID program from the ground up to offer participants an opportunity to cut their mental tethers and float free to imagine an ideal way of preparing instructional design students. Even using a “nuke it and start over” scenario, it would be important to guide participants away from starting the process by naming courses and falling back into familiar patterns of existing course structures. To counter this temptation, I would ask participants to start by describing their vision for the ultimate exit performance assessment exhibition for students to demonstrate their skills as instructional designer. As a teacher supervisor and trainer, I have had considerable success in leading teachers in a process of planning their courses and program in reverse by articulating what they would like their students to demonstrate at the end of a course or program. Once I have been able to cut teachers free from the realities of their existing course or program, they can often develop a much clearer vision of what they would like their student to look like when they exit. Although it is extremely difficult for some people to do, I ask them to imagine having access to unlimited time and resources to
construct an assessment environment to see to what extent students can perform the designated competencies. In the context of this study, an experienced ID practitioner may designate that they want students to be able to conduct a need analysis in order to provide evidence to a client that they really need to do ABC as opposed to XYZ. In this idealized world, they could set up an assessment environment with someone playing the client, the client’s XYZ contention, and a learner population to study. The biggest challenge I have found is convincing people to hold back reality long enough to really think through in detail what they want their students to look like without giving up saying something like, “Ah, we could never get someone to play the client or gain access to a learner population. We just don’t have the time…” Some amazing things happen for those willing to suspend reality long enough to construct visions for the ideal way to allow students to exhibit their learning, e.g., if they carefully examine their performance objectives, they may find that learning assessments can be done in a more authentic form.

Recommendations

Based on the results of this study, I provide the following list of recommendations to the IDD faculty, fully aware that these will need to be filtered through the realities of the program resources and location at this time:

- Cultivate a culture of active alumni participation in planning instructional and assessment approaches, playing a role in teaching courses, mentoring students, and supervising internship programs.
- Use participant’s idea of interjecting reality show like changes in project work to better simulate the unpredictable nature of real world instructional design practice.
- Provide regular reflection opportunities for students to use in contemplating the role of design field and specialty in their career trajectory.
Other Issues

My research has highlighted several other important issues that must be faced by all departments offering graduate programs related to instructional design and development. First and foremost among these is the recent bifurcation of the field known as Instructional or Educational Technology into those who continue to emphasize the importance of instructional systems design (ISD) as the fundamental foundation of the field and those who view the emerging “learning sciences” as the new foundation of the field. The unique characteristics of these closely related fields can be difficult to identify clearly, and the boundaries can become fuzzy and create a great deal of tension and debate. In an attempt to simplify the debate, I would characterize ISD as primarily concerned with the design of materials for learning and as Hoadley (2004) has stated, "with the best ways to create systems that yield learning" (p. 8). The learning sciences are more akin to the cognitive sciences and concerned with the scientific understanding of learning as seen through the lens of technology (Kirby, Hoadley, & Carr-Chellman, 2005). IDD faculty should try to come to terms with how they situate their programs in the tense area between ISD and learning sciences and be careful to protect students from getting awkwardly stuck between conflicting ideologies. Continuing debate about these perspectives is inevitable and even desirable. Faculty members should help students understand the issues that are raised in this debate, but they should not force students to take a position one way or the other.

Another issue is the continuing debate between those who advocate direct instruction guided by cognitive learning theory and those who promote alternative learning models such as inquiry-based learning, discovery learning, problem-based learning and so forth guided by constructivist learning theory. This debate was highlighted in a recent book titled Constructivist Instruction: Success or Failure edited by Tobias and Duffy (2009). Instructional designers are
often prepared for their careers in courses that emphasize constructivist approaches such as the Studio Model used at The University of Georgia (Clinton & Rieber, 2010), but those going to work in business and industry may find that direct instruction is the preferred method for training. Participants in this study were united in reporting that due to the nature of the content and resources available for their instructional products, online tutorials are the norm in presenting content to busy professionals who are required to “complete” training modules to comply with some form of company policy mandate. One participant described her job as converting poorly constructed PowerPoint presentations from SMEs to online tutorial modules and recommended that students have ample practice completing this task in their educational preparation. Although this is sound practical advice, it is also important for students to practice ways of introducing alternative instructional designs that may ultimately lead to better outcomes.

Finally, there is the issue of delivery modes for programs preparing students for careers in instructional design. More and more programs are being offered totally online today and most of the others appear to use a hybrid model with some courses still provided in a face-to-face mode, but other courses are delivered through online or blended courses. Faculty must decide what the optimal modes are for student learning as well as for program viability. As a key feature of many instructional design courses is working in groups on design projects, students should be provided instruction on strategies for effectively working in groups at a distance. Faculty members need to take extra care to avoid simply “migrating” courses online without giving serious thought about what support and scaffolding students might require in a virtual class environment. Many alumni have experience in working in virtual teams and could be particularly helpful in working with IDD instructors to think through how to offer courses online and providing support for students working in virtual teams.
Summary

The purpose of this study was to provide instructional design educators with contextualized descriptions of competencies that could be used in shaping an ID curriculum. In this pursuit, I feel I have been somewhat successful in capturing descriptions from participants that could be used in informing ID instructional and assessment planning. Although the Critical Incident Technique did not prove to be as useful as I had hoped in enabling participants to tap into incidents which they attached a strong association, their strong desire to contribute something back to their IDD program seemed to provide a strong impetus to share their perspectives on what they think an instructional designer needs to be successful and how they would go about preparing students. Indeed, participants seemed to respond best from the imaginary perspective of IDD instructor considering how to prepare ID students.

I am left with the conclusion that the kind of thick and rich contextualized descriptions of competencies I was hoping to unearth in this study requires an incredibly talented researcher who possesses a rare blend of deep insights into the human psyche, a palette of interview techniques to draw upon, and that indefinable *x*-factor with people. The few glimpses I had of participants striking a rich vein of experience in their mind provides me with the motivation to continue pushing myself to sharpen my skills as an interviewer so I can provide participants with the triggers to enable them to unpack their expertise. The experiences and insights I learned throughout this entire dissertation process will serve me well in my career.
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Reeves, T. C. (1995). Questioning the questions of instructional technology research. In M. R. Simonson & M. Anderson (Eds.), *Proceedings of the Annual Conference of the Association for Educational Communications and Technology, Research and Theory Division* (pp. 459-470), Anaheim, CA.


APPENDIX A

EMAIL INVITATION TO PROSPECTIVE INTERVIEW PARTICIPANTS

Dear ():

I am a doctoral student in the Learning, Design, and Technology (formerly Instructional Technology) program at the University of Georgia. I am preparing to collect data for my dissertation and would like to invite you to participate in my study. The purpose of my study is to identify skills and competencies required for success in the instructional design workplace. The results of my study will be shared with UGA’s Instructional Design and Development faculty members to inform curriculum and instruction practices, with the goal of better preparing students for the realities of the ID workplace. You have been identified by an IDD faculty member as a person who could contribute to our understanding of the skills and competencies required for success as an instructional designer.

Your participation would require the following commitment, to be scheduled during the months of August and September, 2009:

1. Completion of a brief Pre-Interview Critical Incident Recollection Form. The purpose of this form is to encourage you to start thinking about “critical” episodes or “incidents” that encapsulate the skills and behaviors you see as important for successful instructional designers to possess.

2. Participation in a one hour face-to-face interview scheduled at your convenience at your place of work or location of your choosing. The interview will be digitally recorded and transcribed. Your identity, as well as the identity of your place of work, will be protected in all phases of the research process.

3. A possible follow-up interview to be conducted either in person or over the phone. This interview would be scheduled to solicit more detail if needed.

Please indicate your willingness to participate in my study by replying to this email. Could you please include in your email response a telephone number I can use to contact you to discuss the aims of my research and specific procedures relative to your participation in this study? Your insight is valuable and will be useful in better aligning IDD curricula to fit the realities of instructional design practice in the workplace. Thank you for your consideration.

Sincerely

Thomas Lechner
Doctoral Student
Learning, Design, and Technology Program
The University of Georgia
APPENDIX B

PRE-INTERVIEW CRITICAL INCIDENT RECOLLECTION FORM

Thank you again for participating in this study. The purpose of this form is to encourage you to reflect on your practice of instructional design and identify episodes or incidents that stick out in your memory as times when you performed your work particularly well or poorly. Again, the overarching purpose of this study is to provide IDD faculty at The University of Georgia with specific examples of exemplary instructional design practice from the business and industry sector. The descriptions you provide will be used in shaping the IDD curricula to better prepare instructional design students for the demands of the workplace.

There are several ways in which you can approach this reflection exercise. One way is to do a quick scan of your memories to recall incident(s) when you felt you really performed your job as an instructional designer particularly well. The purpose of this form is purely to help you recall incidents from your experiences that you feel are important, and might provide important teachable moments. This form is for your personal use and will not be collected from you.

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<thead>
<tr>
<th>Episode(s) when I performed my work particularly well/poorly…</th>
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<tbody>
<tr>
<td>What was the situation?</td>
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<tr>
<td>When was it? Who was involved?</td>
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<tr>
<td>What about this incident makes it stick out as special?</td>
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<tr>
<td>What could be learned by others from this incident?</td>
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</tbody>
</table>

Another approach is to imagine that you are coming back to UGA as an IDD instructor. What “real world” episodes or examples from your practice would you use in your courses in the form of case studies, simulations, or project-based learning exercises to prepare students for work?

<table>
<thead>
<tr>
<th>Episode(s) I would use as examples in my ID courses…</th>
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<tbody>
<tr>
<td>What was the situation?</td>
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<tr>
<td>When was it? Who was involved?</td>
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<tr>
<td>How would you use this incident(s) in your courses?</td>
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<tr>
<td>What are the skills/competencies required for success in this incident(s)?</td>
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</table>
APPENDIX C

INFORMED CONSENT FORM

Verbal Consent (to be read and recorded at the beginning of each interview):

First, I would like to thank you for agreeing to participate in this research study entitled: Reaching Out: The Role of Business in Articulating Key Competencies. The purpose of this study is to broaden our understanding of the workplace competencies and skills of master's level Instructional Design and Development (IDD) graduates. The information you provide will be very helpful in our efforts to better align our IDD curriculum with the needs of the workplace.

Your participation will involve one interview with the possibility of a second follow up interview if needed. Each interview will last no more than one hour. The interview will be digitally recorded and transcribed. Only the researchers will have access to the digital recording and transcription and after data collection and analysis, the digital recordings will be destroyed, no later than 12 months after initial collection. Any individually-identifiable information such as email addresses or names will be destroyed upon completion of the research project. The digitally recorded interviews will be transcribed and all protocol records will be kept in a locked desk drawer for three years after completion of the study and then destroyed.

Your involvement in this study is voluntary, and you may refuse to participate or stop the interview at any time without giving any reason and without penalty or loss of benefits you are otherwise entitled. The results of the research study will be published, but neither your personal identity, nor the identity of your company, will be used in any published format.

The potential benefit of this research is to enhance curriculum development efforts to more closely align the curriculum with the needs of business. There are no known risks or discomforts associated with this research. If you have questions about this project, please feel free to contact me or Dr. Reeves at any time. Is this acceptable? Thank you.

Thomas Reeves  __________________________  Signature  __________________
Name of Researcher  Telephone: (706) 542-3849  Date
Email: treeves@uga.edu

__________________________  __________________________  ____________
Name of Participant  Signature  Date

Please sign both copies, keep one and return one to the researcher.
Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu
### APPENDIX D

### INTERVIEW PROTOCOL

Sample questions for this research study will include:

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<table>
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| **1.** Please describe an incident or episode that encapsulates a time in which you performed your work particularly well. | • What was the situation?  
• What was the aim and objectives of the situation?  
• Who was involved in the situation? Who were the players?  
• When did the episode occur?  
• Why do you consider this an incident in which things went particularly well?  
• Why did you choose this particular incident?  
• How typical is this incident relative to your “daily” work life?  
• What did you learn from the incident?  
• What are the “teachable” elements of this incident? |
| **2.** Please describe an incident or episode that encapsulates a time in which you performed your work particularly poorly. | • What was the situation?  
• What was the objective(s) of the situation?  
• Who was involved in the situation? Who were the players?  
• When did the episode occur?  
• Why do you consider this an incident in which things went particularly poorly?  
• Why did you choose this particular incident?  
• How typical is this incident relative to your “daily” work life?  
• What did you learn from the incident?  
• What are the “teachable” elements of this incident? |
| **3.** Can you please specify specific situational contexts for the competencies and skills you and your company desires in its instructional designers? | • An important instructional design competency is “the ability to communicate effectively.” Can you share any specific situational contexts that capture this competency?  
• How do you know when you or other |
| instructional designers are communicating effectively?  
• What simulations or real situations does your firm use in training? |
|---|
| **4.** How would you use your “real world” experiences as an instructional designer to teach IDD courses at UGA?  
• What specific work skills would you focus on as an IDD instructor?  
• Why do you feel these skills are important?  
• What real world examples from your work experience would you use to illustrate these skills?  
• What assignments and assessments would you use as an IDD instructor to prepare instructional designers for the demands of the workplace?  
• How would you know that your students are performing the assignments and assessments well? |
| **5.** What role does higher education have in preparing its graduates with the competencies and skills required for success in the ID workplace?  
• Without making judgment of the effectiveness of higher education in currently preparing new graduates for the workplace, can you please share your philosophy on the role of higher education in preparing people for the workplace?  
• What role do you think ID practitioners like yourself could play in articulating the competencies and skills students should possess prior to entering the workforce?  
• If you were invited to participate in IDD curriculum development talks, please characterize the contributions you would make to these efforts. |