Knowledge and Skills Needed by Instructional Designers in Higher Education

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Instructional design (ID) has become firmly ensconced in higher education since its advent after World War II (Reiser, 2001) and in recent years has received renewed attention with advancements in information and communication technologies, mobile technologies, and online learning (Allen & Seaman, 2014). The number of instructional design, educational technologist, and e-learning specialist job announcements are on the rise in institutions of higher education (Kang & Ritzhaupt, 2015; Ritzhaupt, Martin, & Daniels, 2010). Professionals in these job roles are expected to perform many roles as technology initiatives are implemented institution-wide and online education becomes integral to institutional strategy in higher education (Allen & Seaman, 2014; Fyle, Moseley, & Hayes, 2012). In this context, researchers have analyzed job announcements, conducted surveys, and used the Delphi method to determine the competencies needed by professionals in these job roles (Daniels, Sugar, Brown & Hoard, 2012; Ritzhaupt et al., 2010; Ritzhaupt & Martin, 2014; Sugar, Hoard, Brown, & Daniels, 2012). In that vein, this paper presents findings from in-depth interviews conducted with eight instructional design professionals in higher education about the knowledge and skills essential to their roles.

Relevant Literature

The International Board of Standards for Training, Performance and Instruction (ibstpi) standards developed for professionals within the field of ID includes competencies such as “Apply research and theory
to the discipline of instructional design” or “Apply data collection and analysis skills in instructional design projects” (Richey et al., 2001; Sims & Koszalka, 2008). These standards were updated following a rigorous process to reflect how the ubiquity of technology had transformed instructional design (Klein & Richey, 2005). The changing role of the instructional designer in a technology-rich environment was also highlighted by McDonald and Mayes (2007), who described how the adoption of a pedagogical framework guides the use of technology in hybrid course design. In their case study, the instructional designer previously interacted one-to-one with subject matter experts in the design of traditional print-based distance learning courses. The Association of Educational Communications and Technology (AECT) standards for preparing educational technology specialists recently reflect this changed role to include content knowledge, content pedagogy, learning environments, professional knowledge and skills, and research (AECT, 2012).

Several studies have been conducted across contexts (e.g., government, corporate, and educational sectors) in the Western world on the activities of instructional designers and the skill sets they need to perform their responsibilities (Christensen & Osguthorpe, 2004; Cox & Osguthorpe, 2003; Gibby, Quiros, Demps & Liu, 2002; Kenny, Zhang, Schwier, & Campbell, 2005; Kirschner, Carr, van Merriënboer, & Sloep, 2002; Rowland, 1992; Wedman & Tessmer, 1993). The importance of ID models in the work done by ID professionals has been well documented in the literature (Cox & Osguthorpe, 2003; Kenny et al., 2005), as has their knowledge of constructivist and cognitivist theories (Christensen & Osguthorpe, 2004), and their need for communication skills (Allen, 1996; Liu, Gibby, Quiros, & Demps, 2002) and project management skills (Allen 1996; Cox & Osguthorpe, 2003).

Surveys and job announcement analysis have been used to identify the knowledge, skills, and abilities or attitudes, together defined as competencies (Richey et al., 2001), of educational technology professionals across multiple contexts. Some studies (Kang & Ritzhaupt, 2015; Ritzhaupt & Martin, 2014; Ritzhaupt et al., 2010) use a conceptual framework of a triangle to envision knowledge, skill, and ability statements in their research, where “knowledge statements refer to an organized body of information, usually factual or procedural,” “skill statements refer to the manual, verbal or mental manipulation of things,” and “ability statements refer to the capacity to perform an activity” (Ritzhaupt, Martin, & Daniels, p. 427). Based on job announcements analyses and a multimedia competency survey, these studies found that knowledge of core areas such as ID and learning theory, soft skills, and the ability to work with a team are critical elements to the profession.

Although the above studies were specific to competencies and dealt with educational technology professionals in general, other studies have analyzed ID professionals using similar frameworks and methods. For instance, Wakefield et al. (2012) identified communication and interpersonal skills, managing multiple ID projects, and working collaboratively
in teams as competencies that are popular in job announcements, while Lowenthal et al. (2010) found that learning management systems, web development, and Microsoft Office, in terms of technical skills and general ID experience, communication skills, and collaboration skills, were in the most demand in job announcements. With respect to qualitative methods, Liu et al. (2002) conducted interviews with 11 instructional designers in companies to report that instructional designers must be competent in communication, ID, problem solving and decision making, and knowledge of technology.

The above literature provides a wealth of information on the knowledge, skills, and prior experience needed by instructional designers in various contexts to be able to succeed in their job roles. However, these papers do not delineate between contexts, do not provide sufficient information on the competencies or knowledge and skills of instructional designers in higher education as a specific context, and all call for more research on the activities of instructional designers and the knowledge and skills needed for them to perform their increasingly important role in higher education. The present study focuses specifically on the knowledge and skills needed by instructional designers in higher education. As part of a larger study on the practice of instructional design in higher education, in-depth interviews were conducted with instructional designers to answer the question: What knowledge and skills are needed by instructional designers in higher education to be successful in their roles?

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Method

Participants

Participants for this study were recruited from the ITForum listserv in summer 2012. The e-mail request that was sent required potential participants to fill out a short survey on their educational background and experience. Criteria for inclusion in the study were that the professional had a job title of instructional designer, had worked in that capacity for at least one year, and was available for online interviews. Forty-five professionals responded to the survey, and, of those, 17 people met the inclusion criteria and were invited to participate in the study based on their background, job title, and experience. Of those 17, eight agreed to participate in the study based on availability.

Of the eight participants, four were female and four male. Their age ranged from 26 to 55 years old, and their work experience ranged from one year to more than 20 years. Two of the participants held doctoral degrees, one had a specialist degree, and the remaining five held master’s
degrees. All participants had the title of instructional designer. They worked for a wide range of higher educational institutions: Four worked at public universities, two worked at community colleges, one worked at a career college, and one worked for a for-profit college.

**Interview Questions**

As part of the larger project, a semistructured interview protocol of 15 relevant open-ended questions was developed. The questions were aimed at capturing the essence of what instructional designers do in their daily practice and what skills and knowledge they need to be able to do their job. For example, one question asked the participants to “Please describe a typical project.” The questions were carefully reviewed by two instructional designers in higher education following think-aloud protocol (Ericsson & Simon, 1984; van Someren, Barnard & Sandberg, 1994), and minor revisions were made to the original items as a result. The interview protocol can be found in Appendix A, along with the questions from the initial contact form.

**Procedures**

All interviews were conducted online and individually with each participant using Big Blue Button, an open source virtual classroom environment, and recorded for later transcription. The same member of the research team conducted all of the interviews. The questions were presented on the screen as well as posed verbally to assist the participants in responding to the questions in the virtual environment. Figure 1 shows the interface for the software, with an example question on the screen.

**Data Analysis**

The constant comparative qualitative procedure was selected because it “is concerned with generating and plausibly suggesting (but not provisionally testing) many categories, properties, and hypotheses
about general problems” (Glaser, 1967, p. 104). The constant comparative method involves four stages (Glaser, 1965; Glaser, 1967): (1) comparing incidents applicable to each category, (2) integrating categories and their properties, (3) delimiting the theory, and (4) writing the theory. The open-ended questions in the interview protocol were the categories, within which each incident (i.e., an ID professional's response) was compared to all other responses. The codes from the various categories were then compared and integrated to form a set of themes; for example, the codes “communication skills” or “educational theory” occurred across categories and were combined to form a larger theme. Each set of responses was coded individually, and subsequently their categories and properties were merged after review by other members of the team.

Results

Organizational Context and ID Roles

The instructional designers interviewed worked in various organizational structures. Four worked in learning innovation or instructional development centers, and the other four worked at the department, college, or university level to support online degree programs. All eight worked with faculty as their main stakeholders; six of eight perceived students or learners as equally important stakeholders; and four of eight supported staff or program teams as part of their job. Although the instructional designers mainly interact with faculty members, they perceived their ultimate audience to be the students, as indicated by one participant: “My primary stakeholder is faculty because that is who I interact with on a daily basis, but I look at it that the true stakeholder is really the learner and the student because what I help faculty do is I want to make sure that their student is learning.”

The instructional designers interviewed mainly have course development and improvement, faculty support, student support, staff support, and technical support or maintenance responsibilities in their jobs. A responsibility common to all the participants interviewed was faculty support for online and hybrid course development and teaching in face-to-face, online, and hybrid environments. One participant reflected, “There’s the big question of what do they [faculty] need to do their jobs most effectively. Our faculty isn’t necessarily equipped to tackle those kinds of challenges. They know their content but they don’t often know how to teach that content most effectively.” Additionally, participants supported student services and staff who worked with students. For example, one participant worked closely with “staff who works to support educational outcomes directly with students. We have a success coach role that is a lot like a mentor role. We do a lot to support those folks. We do a lot to support academic advising, and we do a lot to support writing and math tutors in addition to supporting faculty.” Three participants stated that they also worked with adjunct faculty and graduate students who
taught online. To a lesser extent, participants were involved in program assessment, system administration, committees at the department or college level, and website support.

**Perceived Value of Academic Background**

All of the participants had graduate degrees in education with a focus on ID, instructional technology, educational technology, instructional systems design, learning technologies, or multimedia design. When asked about the value of those academic experiences to their current positions, seven participants stated that the above academic degrees had prepared them well for the design and instructional aspects of their jobs. They reported that degrees in education with a focus on ID or related fields provided them with an understanding of learning, learning environments, ID models and processes, multimedia development, and communication design, all of which were areas that they were able to use in their present positions. One participant emphasized the fact that although technologies changed rapidly, “being able to design effective communication and effective instruction, the whole concept of measurable objectives and activities that are designed to help meet those objectives, as well as different kinds of learning theories,” all of which he learned in his master’s program, were applicable even several years later. Several applicants highlighted the fact that their academic programs had helped them “think about things in terms of instructional design,” “think about instructional differently,” and “focus on students.”

A couple of criticisms in terms of supplemental content that was ignored in master’s programs were voiced by two of the seven participants. One asserted that programs did not adequately prepare instructional designers for user research, system administration, and front-end web development. Another reflected that programs sometimes focus solely on “development,” whereas “Higher education instructional designers, even in good economic times, they just have to be multifunctional. They have to be able to do their own production, they have to be able to keep their eye on technology trends that students are bringing to the faculty or that faculty are bringing to the table, especially consumer technology trends.” He stated that unlike corporate instructional designers, who do not have to deal with the technologies that people use, in higher education;

. . . we have to really understand the technology. We have to be able to work very closely with our IT people. We have to understand the very fluid context in which our students and faculty use our products. . . . Our faculty and our students bring so many different devices onto campus with them, they use our materials when they’re not on campus, there’s not that level of predictability about technology, so we really have to be present and aware in monitoring the situation constantly. I don’t feel like I was really fully prepped for that component in the Ed Tech programs.
These ideas were reflected in the comments of the one participant who found his academic program valuable for obtaining a job in the industry but valued his professional experiences far more than his academic background. He claimed:

I worked with a lot of different kinds of learning management systems, different authoring systems, as well as different team structures, both in and out of the private and public sector. I’ve had a lot of experience that I bring to the table, and when somebody poses a new problem, I generally am reminded of something I did 10 years ago, 15 years ago.

**Perceived Value of Professional Experience**

Of the eight participants, seven had worked in other professions, held positions unrelated to ID, and one had worked in another job role before taking on the present position. Five of the eight participants had prior teaching experience in K–12 or higher education environments. These participants emphasized the value of teaching experience for instructional designers to understand students and faculty and to be appreciated by the faculty with whom they work, as revealed in the following comments made by two of the instructional designers:

I feel like one of the big strengths I brought to the job was the experience working in higher education as a faculty member. I feel like a lot of Instructional Technologists come into higher education having never worked with traditional or nontraditional higher education students in any sort of way. I feel like they know people as students from when they were students. Students interact with other students in a very different way from the way they actually interact with faculty. Much of your role as an Educational Technologist in higher education is to support and to facilitate interaction between students and faculty. I felt like that was really essential to have that teaching experience.

I’ve taught music, computer science, INRs, multimedia business technology and professional development. All of that has given me an opportunity to really connect with or at least learn how to connect with people who are in content areas and expertise areas that I don’t have an expertise in and try to support them. . . . I think that ability to maybe think along those terms has really helped me now in higher ed[ucation] as I’m challenged with supporting faculty in all of the departments across campus and working with them, teaching them how to teach better and how to design better online courses.

**Knowledge and Skills Needed by Instructional Designers**

In their current roles, these participants were mainly engaged in course improvement and development, faculty development and
communications, learning management system implementation and support, and website or technical support, as mentioned above. The main theme that emerged in terms of knowledge and skills needed in their roles was that knowledge of ID and learning theory, soft skills and teaching skills, and the willingness to learn were as or more important than the technical skills that instructional designers could learn on the job. Two of eight instructional designers interviewed claimed that there was a perception in their organizations that they were “tech” people, “techies,” or part of the information technology (IT) department, and that instructional designers did not always have an identity of their own. All the participants acknowledged the importance of technical skills as foundational to the job. However, they also considered knowledge of ID, instructional theories, learning principles, and a thorough understanding of how to organize information for the learner and assess learning as crucial. One participant explained that while “you need to understand how to use whatever learning management system that your institution uses or that you just need to have really strong technical skills . . . it’s really vital that a person be solidly grounded in quality educational practice and have both experience, clinical experience and really an advanced degree . . . in education, whether it be a curriculum instruction or ed tech or instructional design.”

Similar to teaching experience, the participants felt that a degree in education and knowledge of educational theories and how people learn not only assisted them greatly in designing educational experiences for faculty and with faculty for students, but also helped them communicate with faculty members and gain “buy-in.” Two participants summarized the need for both technical and instructional knowledge as follows:

You should have a good foundation in instructional theory and you should have experience working with different learner groups or in an instructional role. It’s just really key. You should be able to periodically step back and do sort of a front-end analysis on your user population and their needs. You’re not directly supporting students necessarily, but you need to be able to talk to faculty intelligently about their students and their students’ needs.

A true instructional designer I think really needs to have the learning theories behind and more of the Analysis, Design, Development, Implementation and Evaluation (ADDIE) model or models to understand how to set up a true learning environment so that whatever a student needs to know at the end can get there. I think a lot of people think, “Oh, I need to know [inaudible] and Flash and Fireworks and Photoshop and how to make HTML and what’s HTML5 and what’s JavaScript.” I feel that it’s good to know some of that, but that’s not what our thing is. I really believe that the knowledge and skills, well actually knowledge would be the learning theories but skills is communication and working with people and having things like being a teacher where they give you the deer
in the headlights look that okay, how do I explain this a different way because they’re not understanding, not talking my speak but trying to talk their speak so they understand what am I trying to help them with. So that . . . would be a lot of communication and almost like teaching skills. So that would be what I think that a true instructional designer needs to have to be successful at a job.

Seven of eight participants interviewed asserted that communication skills and the ability to teach were paramount to their job roles, far more important than technical skills, because technologies could be learned on the job. The ability to communicate with a varied audience—administrators, IT departments, faculty, students, and staff—was considered as important as the ability to teach or demonstrate prior teaching experience and an understanding of higher education to get buy-in from faculty. Given the different stakeholders with whom instructional designers interact, the ability to explain well to all types of people, from those with very limited experience to those with very much experience, with technology or with teaching, and to set this in the background of institutional knowledge, was considered important by participants. One participant stated:

I think to be successful first and foremost, social skills, interpersonal skills, the ability to know my role, if you will, in the department but also recognizing the role of faculty and knowing their different roles, and knowing how to socially interact with them where you can work well with them. I could say the same thing with students. They all have different needs and you need to understand what their needs are and how to assist them. First and foremost, that social kind of emotional intelligence.

Similarly, other participants mentioned “soft skills,” “diplomacy,” “persuasive skills,” “relationship-building,” and “emotional intelligence” as essential for navigating the different needs and changes in the institution, those with more or less experience or knowledge and those with large egos, given the “service role” of an instructional designer. One participant stated:

. . . they need to be diplomatic. People skills are really, really important because you have people calling you who are extremely knowledgeable about a very narrow slice of knowledge, and utterly clueless about what it is you do for a living. You have to be polite to them. You have to honor their knowledge. You have to bring them along. You have to help them be successful to the extent that they can be successful. The soft skills are really, really critical. I like to say, you know the old adage that you give someone a fish, they eat for a day. You teach them to fish, they eat for a lifetime. My job is giving fishing lessons. I try to teach the faculty how to use the system so they can be self-sufficient. There are some folks for whom
I may just make tuna sandwiches because it’s easier on both of us. And so the soft skills, the people skills, are very important.

When asked to describe responsibilities, several participants explained how they juggled multiple projects involving different stakeholders and deliverables at any given time. In this context, time management, project management, and the ability to problem solve or troubleshoot were taken for granted by participants as essential to their job roles. Seven of the participants identified “the ability to learn,” “being a self-starter,” and “to be able to learn yourself” as extremely important to instructional designers because ID jobs entail many situations or technologies that cannot be anticipated. One participant said, “I think the number one skill you have to have is willingness to be a learner yourself. Because questions come at you from every angle, and I think you have to be fearless in that pursuit and say ‘Maybe I don’t know everything about everything but I can go find out and I can bring it back and I can think about it in a practical way for you so that the learning curve is less for the faculty member.’” Being independent, willing to explore and find solutions, and being able to problem solve were highlighted by another participant who reflected, “Try stuff. Figure out how it works. So you have to be a self-starter. You have to be able to figure things out on your own. You have to be able to create new procedures and solve problems and come up with ways of doing things. I can’t even begin to count how many times I’ve had to come up with a way to solve a problem.”

Given the needs and learner analysis data that participants collected, their scoping of projects, and the continuous feedback and usability data they collected during technology implementations, an additional area they revealed increasing in importance was their need for research skills and the ability to analyze student or user data to improve instruction.

Technologies Used on the Job

According to the participants, instructional designers within higher education use a wide variety of tools for a wide variety of purposes, such as communication, collaboration, and development. For collaboration and independent work, the instructional designers interviewed mentioned using Google Docs, Lotus Notes, Gmail, Google Apps, Adobe Connect, RSS, Dropbox, web browsers, instant messaging, Twitter, Facebook, LinkedIn, Microsoft Office products, Microsoft Services, and Project Server. For development purposes, the instructional designers noted several important tools, including Articulate, Quiz Maker, Engage, Camtasia, Photoshop, Screencr, Audacity, Sony Vegas, Flash, Moodle, Blackboard, HTML, Captivate, Kaltura Video Platform, Centra, Tegrity, Respondus, Screencast-O-Matic, Jing, Voki, Dreamweaver, WordPress, Adobe Creative Suite 6, DrawScript, and Angel.

However, technical skills and familiarity with technology, development, and programming were insufficient for instructional designers in
higher education, according to participants in this study. An understanding of the capabilities of technologies was far more important to five of the instructional designers interviewed than actual production skills using technologies, which they thought it was possible to learn on the job. They stated that understanding the capabilities of technologies enabled them to problem solve, find solutions, communicate these solutions to stakeholders, and teach faculty to use these technologies for student learning.

**ID Models and Theories Used on the Job**

When asked which instructional design models and theories they use in their job, only one participant named a specific ID model (ADDIE) while six participants stated that they followed the ID process that is common to all models but not a specific model per se. At the same time, the participants named Gagné’s events of instruction (1965), Dick, Carey, and Carey’s model (2005), Morrison, Ross, Kemp, and Kalman’s model (2010), and backwards design as different approaches that they had adopted. All the participants emphasized the need to analyze the learners, work closely with the course content, and decide on an ID process based on the context. One participant summarized, “I think it’s through the analysis of each class and each part of the class that we figure out what is the best thing for a student, how they can learn that content.” Another participant reflected that in higher education it was important to understand the goals of the faculty and the institution in addition to the learner analysis:

> Instructional designers in higher education often come into the course development process after course outcomes have already been established. Several institutions I’ve been to are I think protective of their ownership of that process and protective of the processes and standards that they use. I guess my model tends to be much more getting them to really kind of state what their goals are.

In terms of learning theories, two instructional designers stated that they took a constructivist approach, one believed in social constructivism, and the other four reflected that they worked according to the course and learning outcomes, regardless of what their own beliefs might be. One participant explained:

> I take what works. Sometimes straightforward behaviorism is absolutely the best way to go. You got medical terminology. Make some flash cards. Foreign language and vocabulary: Make some flashcards. You have to memorize! This is a stimulus response operation. We’re not going to intuitively socially construct the vocabulary of the Chinese language. Just make the doggone flashcards and memorize, memorize, memorize. On the other hand, if you are in a sociology class and it is a legitimate instructional objective for the student to develop a value for cultures that are different from his or her own, how are we going to measure that? How are we going to
determine what the delta is in the students’ attitudes? That’s a little bit different nut to crack. I try to bring what works, what’s been demonstrated to work in the past, to the party.

Two instructional designers also used Malcolm Knowles’s adult learning theory (1980) and Clark and Mayer’s multimedia principles (2011) when integrating media into instruction and designing interactions.

Six of the participants highlighted the importance of communicating both ID models and learning theories to faculty, who, depending on their discipline and background, might not have any knowledge of these. Participants mentioned sharing Gagné’s events of instruction (1965), Bloom’s taxonomy (1956), significant learning, Instructional Systems Design (ISD) models, connectivism, formative and summative evaluation, and various approaches to teaching with faculty and getting faculty to consider these in their course planning. One participant elaborated:

The big challenge really is with faculty who don’t realize that they may not know how to teach. They’re experts in their subject matter area, some of them have been teaching for a long time, but they don’t necessarily know how to teach effectively, especially in a new environment such as an online environment or hybrid environment, where it’s a different kind of thing. Some of them even have a hard time wrapping their heads around instructional objectives. I was talking with one faculty who’s a really good teacher, talking about objectives. He said, “Well that’s silly. The objective is for the student to learn the material.” Well, let’s see if we can break this down a little bit. We try to break it down. You honor what the student brings to the table. You recognize and you build on it. Sometimes you have to deconstruct it before you can reconstruct and break down old ideas, old attitudes especially.

One participant reflected several participants’ approach in stating that faculty needs and approach to their instruction took precedence over their own beliefs about teaching or ID. He provided the following example:

The reality is, in my role if I am assisting faculty, I have to work within their framework. So I have my own theories of what good instruction is and how I might design a course. Often I will talk to someone and I will say, you know, you could do this and I can tell right away that that just doesn’t jive with them. There was a professor with 150 students every semester, multiple sessions, and when you have 150 students it changes your instructional strategies. In his case, he had a midterm and a final and then he had a number of quizzes, and so I knew that that was his framework, so I tried to work within his framework and say, what would happen if you
made all of the quizzes open book and students could take them as many times as they want, but the midterm and final were not, and so you got rid of this high stakes like, he worried that people were cheating, so to me it is this idea of giving them practice, but even though I think big tests are rarely the best way to assess things, but this was something he adopted, so it didn't matter my theories of instructional design or my theories of learning per se, but it did influence how I tried to pitch something at him that he adopted.

**Instructional Strategies Used on the Job**

When asked what instructional strategies they use, five of eight instructional designers emphasized the importance of student collaboration and group work toward a common goal to student learning, be it in on-campus or online courses. One instructional designer stated, “If you’re trying to prepare a student for the world, collaboration is a big part of it,” while another explained that collaborative activities were valuable to build community in online courses. The importance of community building and social presence in online courses was emphasized by two instructional designers, as was the importance of communication between faculty and students, and between students. Critical thinking, reflection and reflective practice, journaling, the use of authentic examples and authentic assessments, project-based learning, and types of feedback were areas the instructional designers attempted to address in their work with faculty on their online and on-campus courses. In the online environment, the recognition of student diversity, the importance of faculty–student interaction, and the need to be available to students were “principles” that two instructional designers tried to establish when supporting faculty to teach online. One instructional designer reflected that he discussed with faculty the “diversity of background, diversity of learning needs, and how online learning affords them the opportunity to make those learning experiences highly customizable for students since adult learners want learning that’s relevant to their specific needs.” Similarly, another instructional designer highlighted the importance of providing students with options for course assessments with her faculty so that the students could choose a format or a course assessment they preferred.

In addition to their student-centered approach to courses, instructional designers spoke about their strategies when working with faculty. One instructional designer explained his use of Dave Merrill’s (2002) first principles of instruction and the pebble-in-the-pond model of ID, saying, “It nicely flows from a development model into building a specific instructional strategy. I feel like that particular instructional strategy is really useful for higher ed context because it’s very easy to communicate with faculty.” Another instructional designer uses the model created by Foshay et al. (2003) in “Writing Training Materials That Work” to identify learning objectives “that are measurable, that are appropriate to the level at which you want to measure the students’ learning, by which you want...
the student to perform.” Additionally, he discussed types of problems from the model that students address in courses, such as simple, intermediate, and open-ended problems, when working with faculty, and tried to “push” authentic and open-ended assessments that he believes motivates students to engage with content.

Discussion

As with any research study, the present study is limited and delimited in a few ways. The results reported in this study stem from a small sample of eight instructional designers, thus providing a limited perspective of the roles, and therefore knowledge and skills, of instructional designers in higher education. However, these instructional designers worked at the college, department, and university level, and some in teaching and learning centers—providing beginning insight into knowledge and skills needed by instructional designers in higher education. A delimitation of the research is that all instructional designers were from the United States; therefore, the results may not be applicable to instructional designers outside the bounds of institutions of higher education within the United States.

In light of these limitations and delimitations, our findings shed light on an area not clearly addressed in the literature base: the knowledge and skills needed by instructional designers in higher education. Organizationally, instructional designers can be found in many different locations in institutions of higher education, ranging from departments, schools, and colleges to centers for teaching and learning. Some universities hire instructional designers within the units they serve (e.g., College of Medicine), while another approach is to centralize the ID staff in a shared center, such as a center for teaching and learning or teaching excellence. The location where an instructional designer is housed has implications for his or her job role within the organization and is an area that needs further exploration.

Regardless, according to our study, instructional designers mainly have course improvement and development, faculty support, student support, staff support, and technical support or maintenance responsibilities in their job roles. One area that appears to be common across the instructional designers interviewed in this study is the responsibility to support online, face-to-face, and hybrid course development, improvement, and teaching. Instructional designers in higher education primarily serve faculty—both as subject matter experts and as clients for the courses that they ultimately teach. However, the students are the final learners served by the instructional designers’ efforts, which was noted by several of the instructional designers interviewed in this research study. This focus on teaching faculty and supporting faculty to teach with technology distinguishes the role of an instructional designer in higher education from other environments, because knowledge of teaching and
learning processes, educational theories, how people learn, and even prior teaching experience assume more importance in this context.

Instructional designers in higher education that possess a degree in the field (e.g., ID, instructional technology, educational technology, instructional systems design, learning technologies) appear to believe that their academic programs assist them in the job roles. Specifically, these instructional designers noted areas that were helpful to their current roles, such as learning, learning environments, ID models and processes, multimedia development, and communication design. Although some of the participants did indicate that their academic programs could improve, it would appear that degrees in education in our field are successfully preparing graduates for the unique conditions found in the context of higher education. Future research efforts should attempt to assist our academic programs to adapt as the environment and needs of instructional designers in higher education constantly change.

As consistent with prior research in the field across contexts (Ritzhaupt & Martin, 2014), knowledge of ID and learning theories, soft skills, and ability to learn independently are critical to the role of instructional designers in higher education. The results of the current study provide evidence that instructional designers in higher education circles are often perceived as techies; however, in reality, the theoretical and practical knowledge that a designer brings to the job has to transcend that of information and communication technologies. Effective teaching capability, communication skills, time management, problem solving or troubleshooting, stakeholder management, diplomacy, relationship building, and emotional intelligence were all cited as major areas needed to be successful in their current roles.

Further, the results also provide evidence that instructional designers in higher education actively use ID models and processes as well as relevant instructional strategies. Some instructional designers in the higher education context work in “online course production shops” that design, develop, deliver, and evaluate these online courses with the guidance of the faculty members as the subject matter experts. These professionals are working with the ADDIE model as a general prescription to ID or are using more specific instances, such as backward design or the Dick et al. (2005) model. Regardless of the model used, they are using the principles of ID in their practice. Further, the instructional designers also highlighted specific theories (e.g., the cognitive theory of multimedia learning) and authors (e.g., Mayer, 2009) that they use to guide their work efforts. Unique to higher education, instructional designers placed the goals and teaching beliefs of faculty first and adapted their instructional design processes or theories to the needs of the teaching faculty member who is also the subject matter expert and the needs of students in their contexts.

Unique to higher education, instructional designers placed the goals and teaching beliefs of faculty first and adapted their instructional design processes or theories to the needs of the teaching faculty member who is also the subject matter expert and the needs of students in their contexts.
While not as important as some of the other knowledge and skills noted, instructional designers in higher education must keep abreast of emerging information and communication technologies to be able to apply them to educational problems. While technical skills are needed, the ability to solve authentic educational problems using technologies (where the focus is not on the tool, but on the educational problem) and to communicate those solutions is paramount.

In several ways, this research has generated more questions than answers. For example, within the higher education sector of the economy, there operate several different types of institutions, such as community colleges, public universities (research vs. teaching), for-profit institutions, and even career colleges. We feel that there may be variability among these types of institutions and the roles that the instructional designers serve within these institutions. However, this must be confirmed with future research. A logical next step is to conduct a survey, similar to the work of Cox and Osguthorpe (2003) to characterize the nature of the work within each of these higher education settings. Our findings could certainly be a starting point for such a fruitful research endeavor.

To conclude, we will revisit our research question: What knowledge and skills are needed by instructional designers in higher education to be successful in their roles? Apparently, there is not a simple answer to this complex question. Instructional designers in higher education must be effective in the use of ID theory and practice, have extensive knowledge into learning theories, have soft skills, and keep abreast of a wide array of information and communication technologies. We believe our research has generated more important questions than answers, and that the ID research community has an open invitation to address many of the areas brought to light by our study. Future research should seek to address the areas noted in this paper, using other novel methods.

References


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Appendix A. ID Research Questions

Survey Questions (Web Form)
1. What is your current title at the institution?
2. What is your gender?
3. What is your age range?
4. How many years have you worked as an Instructional Designer?
5. How many team members do you work with?
6. How much of your time is spent in the construction of online courses?
7. What is your highest degree earned? What is the major of your degree?
8. Do you receive employee training from your institution?

Interview Questions (Interview)
1. Please explain the organizational structure at your institution. That is, whom do you report to, and why?
2. Do you think your academic background helped you in your responsibilities as instructional designer in higher education? Please explain.
3. Can you explain your professional background?
4. Who are the primary stakeholders that you serve on a daily basis?
5. Please describe your typical day at work.
6. Could you tell us about a recent project you worked on; describe the experience from beginning to end.
7. What knowledge and skills do you have to possess to be successful at your job?
8. What kind of technology or tools do you use as part of your role?
9. What kind of instructional strategies do you use as an instructional designer?
10. Are instructional design models (and theories) useful in your practice at your institution?
11. How do you communicate with your stakeholders and how often do you communicate?
12. Who are the subject matter experts in your institution? How do you interact with them?
13. What type of training do you conduct at your institution, if any?
14. Do you perform any evaluation (e.g., quality matters) as part of your role? Please describe.
15. How has the economy impacted your job function?