

# SKILLS, CHALLENGES, AND TRENDS IN INSTRUCTIONAL DESIGN

ATD Research:

Connecting Research to Performance

WHITEPAPER

TOP  
5

IMPORTANT TASKS FOR  
INSTRUCTIONAL DESIGNERS:



CONDUCT A  
NEEDS ASSESSMENT



DESIGN A CURRICULUM,  
PROGRAM, OR  
LEARNING SOLUTION



IDENTIFY APPROPRIATE  
LEARNING APPROACH



COLLABORATE  
WITH OTHERS

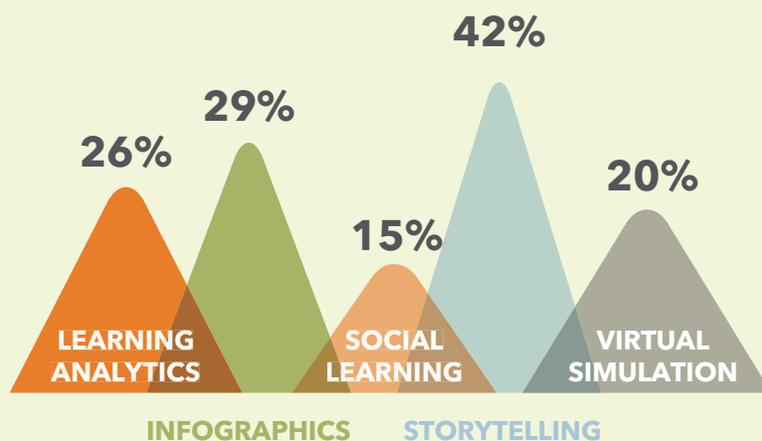


DESIGN INSTRUCTIONAL  
MATERIALS



feel their job title does not  
accurately capture what they do.

## ID IS INCORPORATING EMERGING TRENDS



1,381

respondents to the survey

# SKILLS, CHALLENGES, AND TRENDS IN INSTRUCTIONAL DESIGN

*Whitepaper by ATD, IACET, and Rothwell & Associates*

**ATD Research:**  
*Connecting Research to Performance*

**atd**  
RESEARCH

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ATD Product Code: 791509-WP

e-ISBN: 978-1-60728-298-3

**Publication Date:** May 2015

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# EXECUTIVE SUMMARY

As the talent development field evolves and attracts a global pool of professionals with diverse skills and experiences, new questions arise: Have the competencies of instructional design (ID) changed? Should they change? How has ID evolved over the past few decades? Are instructional designers' competencies keeping up with the pace of change?

Many organizations engage in ID, which is concerned with understanding and improving the process of instruction by using systematic design models and principles focused on establishing and maintaining efficient and effective human performance (Reigeluth 2013; Rothwell and Kazanas 2008). However, the challenges that instructional designers face are becoming more and more complex—training is no longer viewed as a single activity that meets the needs of the individual right now. Thus, the purpose of instructional design is to create content that aligns with the organization's current goals and values, while simultaneously considering the learner's long-term career goals.

To complicate matters further, technology is changing faster than many can comprehend. To succeed, instructional designers must evolve and adapt to the changing environment. Julian, Larsen, and Kinzie stated that the "professional practice of ID requires a high level of problem-solving, critical thinking, and interpersonal skills, and that design problems are complex and multi-dimensional" (1999, 1).

Through a collaborative partnership between the Association for Talent Development (ATD), the International Association for Continuing Education and Training (IACET), and Rothwell & Associates (R&A), the R&A research team implemented a research study to investigate the proposed questions. This report summarizes the literature review and results of the qualitative and quantitative data analysis. The results from this Study support three major findings:

- ▶ The skills required in the ID area of expertise (AOE) developed by ATD remain highly relevant in today's evolving field.
- ▶ Although technology is constantly changing, the challenges faced by instructional designers are less about technology and more about serving the multitude of varied learners, as well as maintaining momentum and a relationship with the subject matter expert (SME).
- ▶ ID has evolved over the past couple of decades and there is an ongoing need to promote the value and understanding of the ID professional's role in talent development (TD).

# INTRODUCTION

The primary purpose for this research was to focus on ID competencies examining the pivotal role instructional designers have in the talent development field. ATD and IACET acknowledge the value and importance of competencies and setting standards in the talent development field for today's global and complex business environment.

*Skills, Challenges, and Trends in Instructional Design* (hereafter, the Study) was guided by the following questions: Have the behaviors, skills, and knowledge that ID relies on changed, or should they change? What skills are needed by ID professionals to succeed in a provocatively fast-paced, changing environment? How has ID evolved over the past few decades? To answer these questions, the R&A research team designed and implemented a mixed-method approach, which consisted of three stages: literature review, focus groups, and an online survey. This report presents the findings from these three phases.

Qualitative data was collected from 26 individuals distributed across five focus groups. The intent was to first explore the general needs of business practitioners and then follow up on this exploration with a quantitative data collection process using an online survey. Fielded in January 2015, the online survey was completed by 1,381 talent development professionals. The majority of participants were female and the ages most represented were 45- to 54-year-olds. While 90 percent of respondents operate primarily in the United States, data was also collected from participants representing 37 different countries.

Ninety percent of participants were university graduates, with the majority (63 percent) having a master's degree or higher. Fifty-three percent of participants have worked in the ID field for at least 11 years.

The role of an instructional designer is continuously evolving to meet industry demands, and may vary further from organization to organization or by geographic location. The role of an instructional designer may include designer, facilitator, trainer, writer, innovator, evaluator, multimedia developer, editor, and, most often, project manager. As a result of these varying duties, instructional designers' titles may be different and therefore often not understood or recognized by those outside the field.

To examine whether the change in the ID practice is reflected in the industry, participants were asked to give their job title. One out of five respondents held the title instructional designer (Figure 1). More than a third did not hold one of the 11 listed job titles.

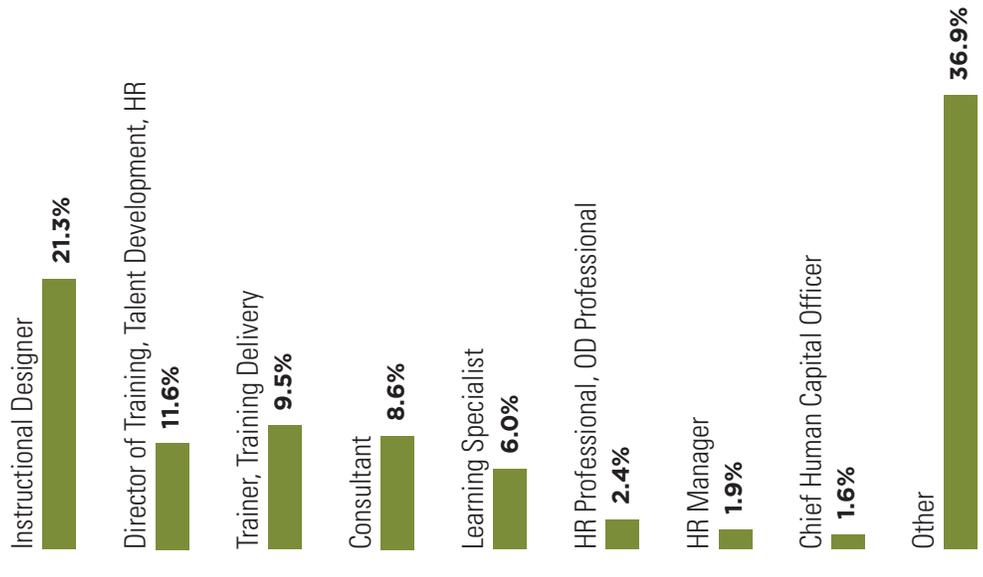
1,381

talent development professionals  
completed this Study.

**FIGURE 1:**

**PARTICIPANT JOB TITLES**

What is your current job title?



Respondents were also asked whether or not the job title they held accurately captured their job responsibilities. Despite the vast array of job titles, a third of respondents reported that their title did not accurately capture what they do. Those who responded “No” commented that a more accurate title might be something more comprehensive, such as “Jack-of-All-Trades,” which would reflect that an instructional designer must also serve as an organizational development consultant, instructional designer, executive coach, communications specialist, and so on. This is especially true when the instructional designer is a member of the human resources team, where some employees confuse the role of instructional designer with that of a specialist who deals with human resource–related employee issues.

One respondent reasoned, “I am responsible for the design and development of end materials; I’m a cross-functional project manager as well. And sometimes I get to lead needs analysis and evaluation projects.” Another argued that a change in title is needed because “I design, develop, and deliver training. The term ‘trainer’ implies delivery only.”

Other respondents suggested such titles as producer, facilitator, instructional communication and change management consultant, learning program analyst, team lead, and learning procurement specialist.

## Current Practices

The role of ID is rooted in theories and methodologies that have remained constant over time. While it is important for instructional designers to have a solid foundation in theory and methodologies, it is vital for those in the industry to think critically and stay on top of current practices and prepare for emerging trends.

When asked about their considerations prior to beginning a new ID project, 90 percent of respondents reported that they always consider their learners' needs first and foremost (Figure 2). Two-thirds report always considering learner context before getting a new project started.

**FIGURE 2:**

### INSTRUCTIONAL DESIGN CONSIDERATIONS

How often do you consider each of the following when you begin a new instructional design project?



As instructional designers strive to meet learner needs, they are faced with such trends as shifting demographics in the workforce, a culture of connectivity, and increasing globalization. A vast array of tools and technology is available to meet designers' challenges and their organizations' talent development needs. Beyond traditional instructor-led classroom training, instructional designers have the opportunity to use mobile technology, game-based learning, and social media, just to name a few of the options available.

Mobile learning gives learners the flexibility to view their content anytime, anywhere. However, designing for mobile devices is not as simple as transferring material from a computer training program to a mobile program. Other factors must also be taken into consideration, including the learners' needs, cost-effectiveness, and suitable content for mobile delivery. For example, when developing content for mobile devices, the screen size and functionality of the device should be taken into consideration. By evaluating the benefits and disadvantages of mobile learning, instructional designers can determine whether mobile learning is the right approach for the training that is being developed.

## Designing for mobile devices is not as simple as transferring material from a computer training program to a mobile program.

Game-based learning is another technology-based tool instructional designers can use to engage learners. Instructional designers strive to produce training that is adaptable in meeting the learner's needs while also developing a feeling of identity for the user (Warren, Lee, and Najmi 2014, 94). Using a game-based approach requires instructional designers to be innovative, think critically, and produce content that is fun, engaging, and memorable. This approach may be particularly useful in reaching Millennials. According to *Playing to Win: Gamification and Serious Games in Organizational Learning* (ASTD/i4cp 2014), Millennials report being more enthusiastic about their participation in game-based learning and say it improved their learning outcomes. Game-based learning uses concepts like earning points, trophies, and digital badges, which keeps learners highly engaged in practicing behaviors and thought processes that can be easily transferred from the simulated environment to real life (Dichev, Dicheva, Angelova, and Agre 2014). One key to successful learning is to encourage learners to be active participants.

Social learning and social media are also gaining popularity in the learning industry. Social media can include tools such as blogs, wikis, social networking, microblogs, and video sites, which provide instructional designers with new opportunities to promote learner interaction and shared experiences (Bozarth 2012). Social learning and media tools also allow instructional designers to "engage with learners, provide opportunities, and work in learning spaces in ways [they] never could before" (Bozarth 2012). With these tools, opportunities to broaden the reach of ID are limitless. In this digital age it is essential for instructional designers to incorporate social learning and social media tools into their daily practice.

Responsive design gives instructional designers and multimedia developers the ability to control and present content on a variety of devices, such as a desktop, laptop, tablet, smartphone, or other operating system (Walsh 2014). This method was developed in response to the changing nature of how content is accessed and how learners expect to interact with technology. Keeping learners' expectations in mind, instructional designers should experiment and explore, incorporating available technology while prioritizing the user experience.

# Competencies

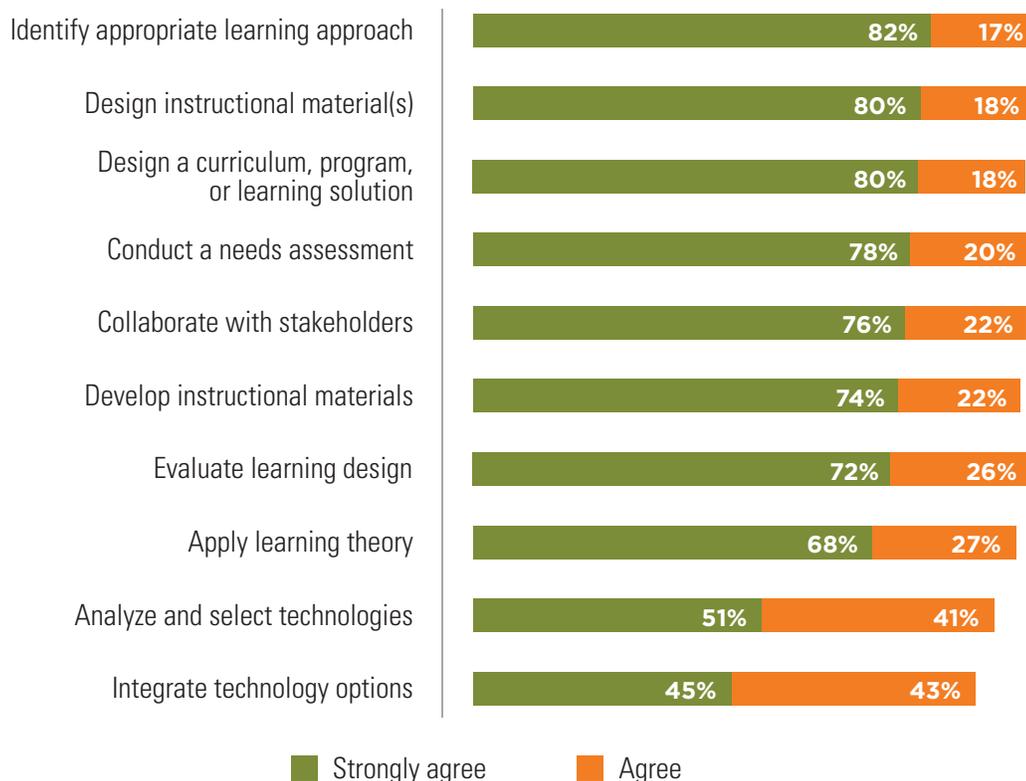
Competencies identify the behaviors, skills, and knowledge that individuals are expected to demonstrate to be successful in their profession. The ATD Competency Model, in which ID is identified as an area of expertise, was the main focus of this Study.

Participants were asked to reflect on the key actions of successful performers, as outlined in The Competency Model's areas of expertise. As expected, respondents agreed that instructional designers should be able to accomplish most of the tasks outlined in the ID area of expertise key actions. Respondents agreed that every task was important; however, two tasks—"analyze and select technologies" and "integrate technology options"—were rated least important (Figure 3). This may reflect a view from the participants that when completing the tasks, instructional designers focus more on the design and learner needs as a priority.

**FIGURE 3:**

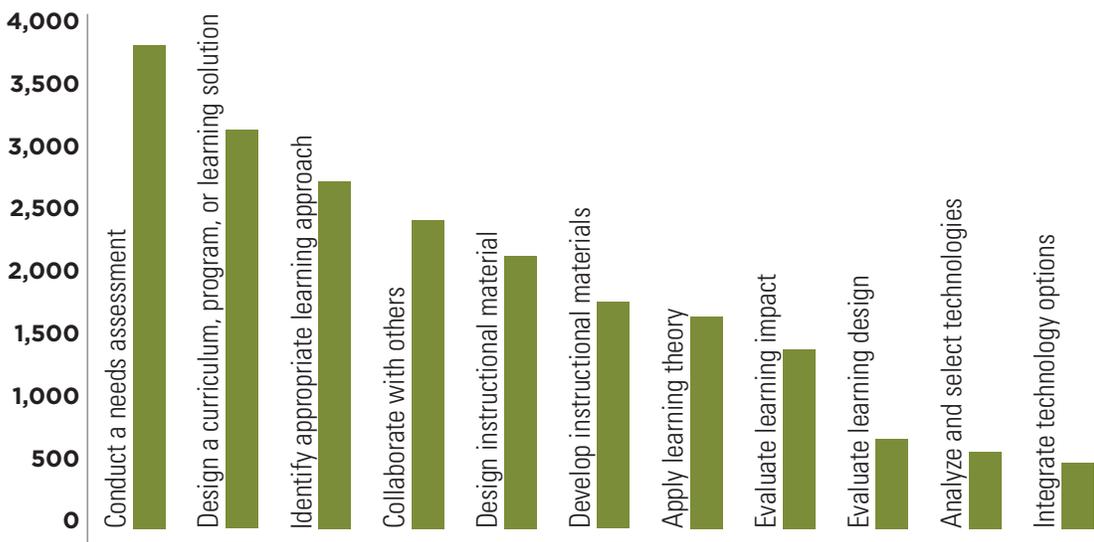
### INSTRUCTIONAL DESIGN TASKS

To what extent do you agree that instructional designers should be able to accomplish the following tasks?



Respondents were shown 11 key actions from the ID competency and asked to rank the five they deemed most important. “Conduct a needs assessment” was ranked the most important key action. “Design a curriculum, program, or learning solution,” “identify appropriate learning approach,” “collaborate with others,” and “design instructional materials” rounded out the top five. “Evaluate learning design” and “evaluate learning impact” were consistently ranked low, which may reflect the perception that the instructional designer often does not conduct the evaluation process. Instead, the instructional designer may have other team members or the facilitator complete the evaluation component. As mentioned “the selection and integration of technology” was the least important key action for ID, which supports the theory that instructional designers prioritize learners’ needs and program design.

**FIGURE 4:** RANK OF INSTRUCTIONAL DESIGN KEY ACTIONS  
Please rank the items in order of importance of competencies for an instructional designer.



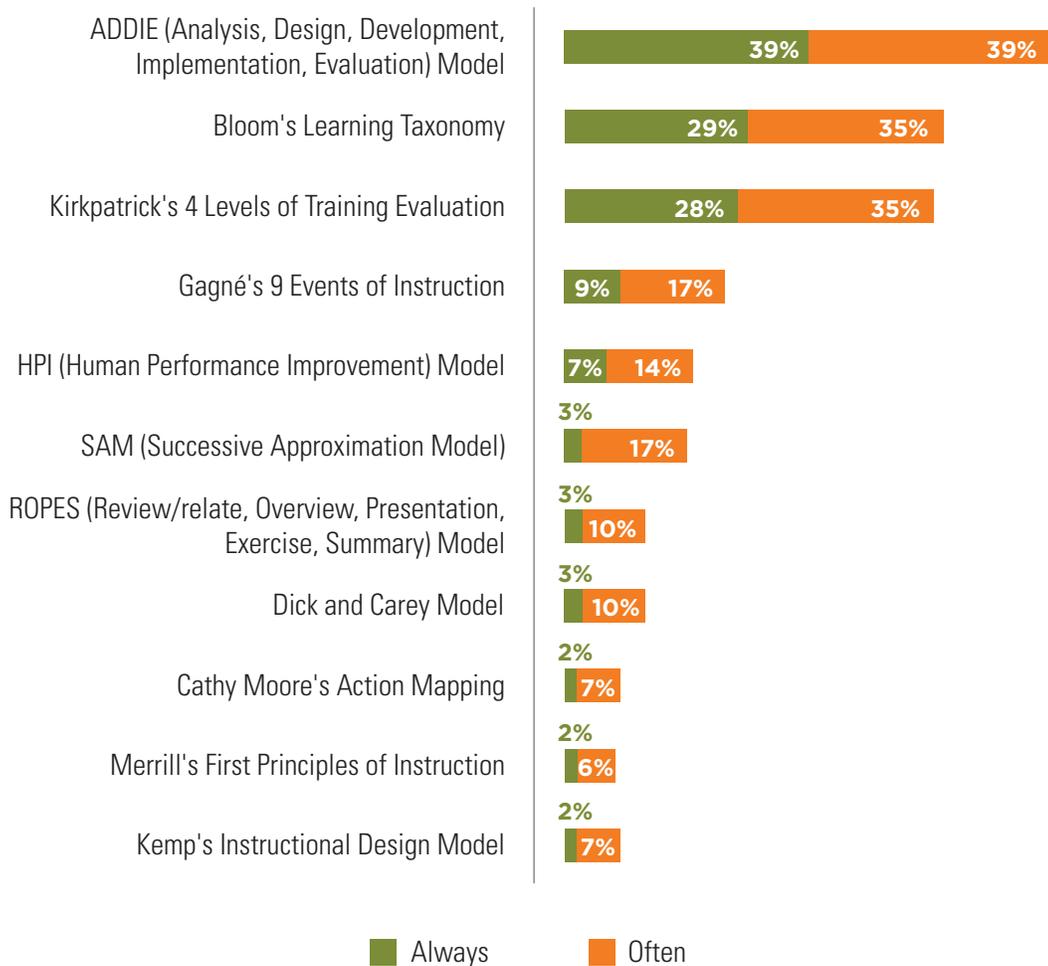
“Conducting a need assessment” and “choosing the appropriate learning approach” are key components for many ID models, and are stressed as the key first steps to beginning a project. The data on models reveals that although the technologies continue to evolve and the role of the instructional designer continues to shift, the models relied on to complete tasks do not seem to change. When respondents were asked which model they used, ADDIE, Bloom’s Learning Taxonomy, and Kirkpatrick’s Four Levels of Training Evaluation were the most common responses. It is important to note that the question asked in this Study focused on how often instructional designers used the model, not their awareness of the model or whether the model was still important or relevant.

**78%**  
say they often or always use the ADDIE model in their designs

**FIGURE 5:**

**INSTRUCTIONAL DESIGN MODELS**

How often do you use the following models in your designs?



When asked which skills are most important to the role of the instructional designer, participants selected soft skills, which are often hard to measure, such as being a lifelong learner; having knowledge of instructional design principles, practices, and adult learning theory; and having the skill to not only listen but also synthesize what's being said. Technology-oriented skills were deemed less important—the ability to code in HTML, knowledge of advanced programming, the ability to create infographics, and graphic design ranked low among instructional designers.

**FIGURE 6:**

### TOP 10 INSTRUCTIONAL DESIGN SKILLS

How important are the following skills to instructional design?



*Percent of respondents indicating very important.*

Only 20 percent rated multimedia design skills as very important to ID, yet, multimedia knowledge and skills such as multimedia production skills, online learning knowledge, and an understanding of “the interrelationship between multimedia production and instructional design skills” (Sugar, Brown, Daniels, and Hoard 2011, 40) have become part of the required skill set of entry-level ID and technology professionals. Instructional designers are expected to design dynamic, adaptive, and interactive online multimedia-based instructional content and courseware. Multimedia production and instructional design skills are now interwoven; instructional designers must effectively balance and develop both skill sets.

# 20%

say multimedia design skills are very important to instructional design

# Instructional Design Challenges

As technology advances, designers are challenged with developing learning that considers and appeals to all users, including those who have varying degrees of connectivity, who experience differing levels of disability or ability, and who come from diverse cultures. Participants were asked to indicate how often they faced certain challenges. From the list provided, the challenge most respondents face is insufficient time to develop a course. There were also a significant number of respondents who reported that there was a lack of evaluation of past training that could inform future design practices. It is worth noting here that when asked to rank the competencies by order of importance, respondents rated competencies associated with evaluation as least important (see Figure 4). Insufficient budget and training afforded to instructional designers for emerging technologies and lack of recognition for the value added by instructional designers are also featured among the top five challenges reported.

While resources are often limited (for example, time and money), it is critical to build a good working relationship with key stakeholders, especially with subject matter experts (SMEs). Participants were asked how often a shared vision between the SME and instructional designer had been a challenge. While few reported a shared vision between the SME and instructional designer to always be a challenge, 80 percent of respondents said it is a challenge at least sometimes.

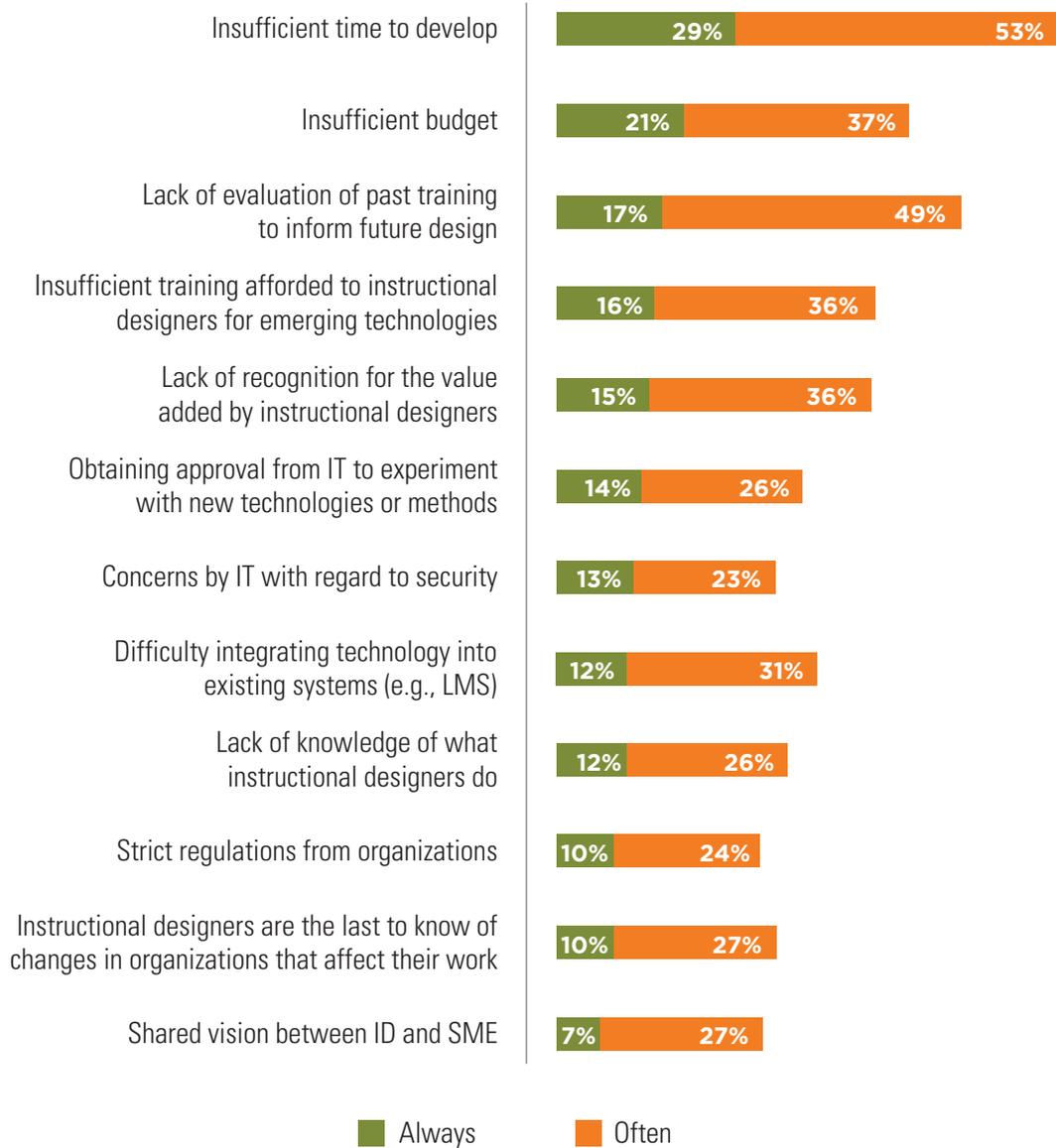
29%

report always having insufficient time to develop a course.

FIGURE 7:

DESIGN CHALLENGES

How often have you faced the following challenges as an instructional designer?

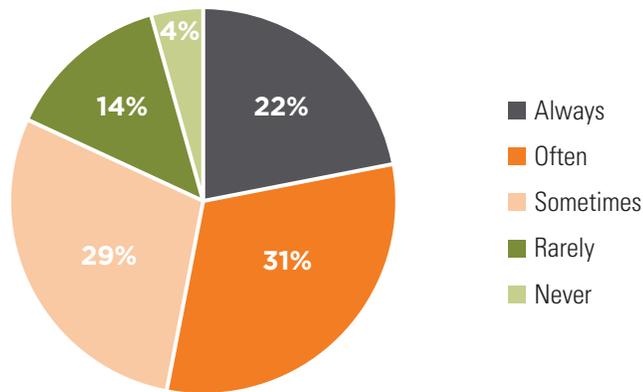


Another challenge that instructional designers face is cultural adaptability. Technological advances ranging from ease of travel to ease of communication through various telecommunication networks have increased globalization in many companies. This is relevant to ID because it is no longer sufficient to design simply based on one's cultural prism or in favor of a dominant culture. Instruction and training are now consumed cross-culturally and must be designed to respect other cultures. In a global society, learners' cultural awareness and tolerance of cultural diversity are increasingly important. However, instilling cultural aspects in learning technologies remains a major challenge (Organ and Johnson 2015).

FIGURE 8:

### CULTURAL ADAPTABILITY

How often do you consider cultural background and cultural context when you begin a new instructional design project?



# Emerging Trends and Technologies

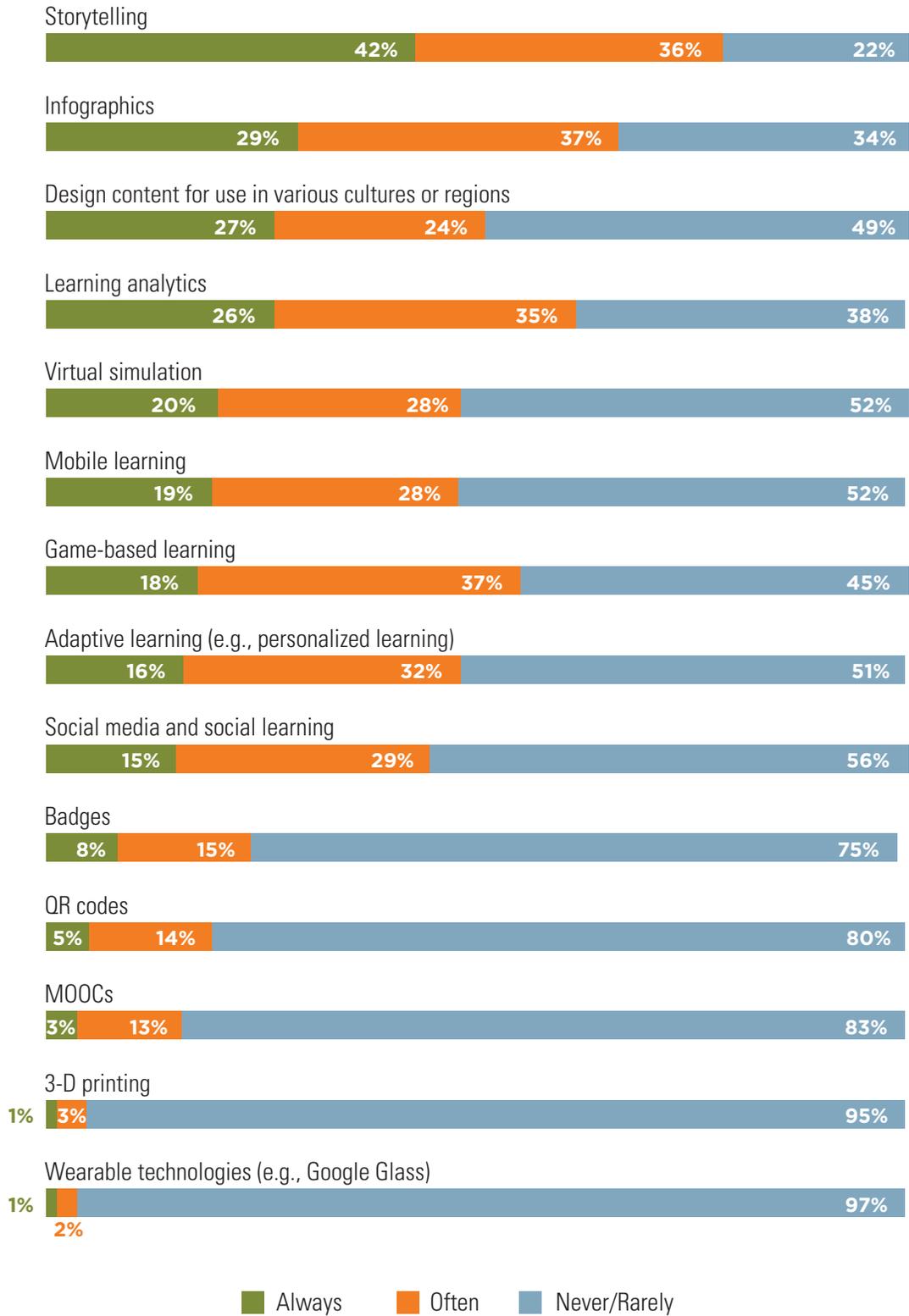
During the course of this Study, a list of 14 items emerged from a review of industry literature and focus group discussions. Participants were asked how often their organizations incorporated these 14 items into their practices and processes. The top five emerging trends were storytelling, infographics, design content for use in various cultures or regions, learning analytics, and virtual simulation.

Three-quarters of respondents were using storytelling in their design efforts and two-thirds were using infographics. While these two trends are seeing significant use, some of the less often implemented technologies have become established tools in the industry. Mobile learning and game-based learning, for example, are used by about half of respondents, but less than 20 percent use them frequently. As discussed, these technologies are widely recognized but may not be a viable delivery method for the majority of content. However, their effectiveness, ability to meet the needs of today's learners, and continuous update in technology keep them on the ID radar. For example, by staying abreast of the latest mobile technology capabilities, instructional designers can leverage mobile device features—such as the camera, GPS, Wi-Fi connectivity, and microphone—in their design. Use of these emerging technologies can provide the engaging and effective learning experience desired.

**FIGURE 9:**

**EMERGING TRENDS**

How often does your organization incorporate the following into your practices and processes?



# CONCLUSION AND RECOMMENDATIONS

The primary purpose for this research was to focus on ID competencies examining the pivotal role instructional designers have in the talent development field. This Study was guided by the following questions: Have the behaviors, skills, and knowledge that ID relies on changed, or should they change? What skills are needed by ID professionals to succeed in a provocatively fast-paced, changing environment? How has ID evolved over the past few decades?

Based on the data from 1,381 respondents there does not appear to be a major shift in the competencies required to be an effective instructional designer. Evidence shows that although the field is rapidly evolving, especially as a result of constant technological innovations, the instructional design skills emphasized most by participants have less to do with technology and focus more on learners' needs and program design. Soft skills, such as working with diverse stakeholders, designing for diverse populations, communicating effectively, and being able to think analytically, are viewed as important skills for instructional designers.

The last task was to explore how the ID profession has evolved. Findings here support an evolution and a continuation. The evolution is reflected in the job titles of practitioners and the varied responsibilities they are charged with. ID is tasked with providing effective talent development programs and solutions in a demographically and geographically diverse world.

## Tips to Strengthen Instructional Designer Skills

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As instructional designers move forward in this evolving industry, what follows are some tips to strengthen instructional designer skills.

- ▶ **Develop a 30-second elevator speech.** Develop a good value-add 30-second "What is an instructional designer?" speech. This is not only great for networking functions (and maybe family reunions), but as a conversation starter when you meet your design team, especially your SME, for the first time at a kickoff meeting.
- ▶ **Design mobile first.** Incorporate the design principle of "mobile first" as you begin a new project or redesign existing projects. Users want their learning programs to be more accessible and on demand. The 21st-century workforce is filled with individuals who have grown up with mobile devices, and technological advances range from ease of travel to ease of communicating through various telecommunication networks.
- ▶ **Be a coach.** When interviewing a potential instructional designer, be sure to include coaching competency questions such as "How do you work, or imagine you would work, in a context in which you need to get course content from your subject matter experts over whom you have no formal authority?" Consider using role-play in an interview or on the job to strengthen needed soft skills. Not only ask powerful questions, but also demonstrate active listening.

- ▶ **Keep presence.** Use face-to-face (or video conferencing) for the kickoff meeting and periodic status meetings to keep project (and relationship) momentum. Be sure you share and follow an agenda to respect time.
- ▶ **Be an active and reflective agent.** Most evaluations are summative, and are conducted and analyzed well after courses and training have been delivered. Survey the participants at the beginning (expectations), middle (adjustments), and end of the learning delivery (revisions). Keep a list of design ideas for future possibilities and remember that the SME may become more open to these ideas over time. Asking participants the right questions at the beginning can also reveal learner characteristics, including cultural diversity and user interface design considerations.
- ▶ **Remember the artist.** Recognize you can wear many hats: instructional designer, project manager, manufacturer, engineer, architect, artist, coach, and cheerleader. Find time to explore and experiment the artist in you through the emerging technologies of mobile learning, augmented reality, wearables, and MOOCs. Embrace failure and engage in continuous self-criticism as you innovate and change.
- ▶ **Think like a Millennial.** Millennials are expected to take over the workforce as the highest number of workers, so incorporate the learning characteristics of Millennials through game-based learning and social learning. Storytelling is a powerful tool that can strengthen the learning experience if it is correctly incorporated into the design. It is imperative to identify realistic stories that will support effective learning for the target user group.

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The Association for Talent Development (ATD), formerly known as ASTD, is the world's largest association dedicated to those who develop talent in organizations. These professionals take the knowledge, skills, and abilities of others and help them achieve their full potential. ATD's members come from more than 120 countries and work in public and private organizations in every industry sector. For more information, visit [www.td.org](http://www.td.org).

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The **International Association for Continuing Education and Training (IACET)** advances the global workforce by providing the standard framework for quality learning and development through accreditation and conducting research in the continuing education and training field. Established in 1968 by the U.S. Department of Education as a taskforce charged with measuring noncredit continuing education activities, IACET developed the Continuing Education Unit (CEU). Since 1991, IACET has accredited thousands of training providers that adhere to the standard for quality training (including managing learning programs, instructional design, training delivery, and evaluating learning impact), which authorizes their issuance of IACET CEU. IACET is accredited by the American National Standards Institute (ANSI), the official U.S. representative to the International Organization for Standardization (ISO), as an accredited standards developer. To learn more about IACET, and to become an accredited provider, please visit [www.iacet.org](http://www.iacet.org).

**Kristopher Newbauer**, 2013-2014 President, served as a research partner for this project.

**Daniel Hiltz**, Commissioner Representative, served on the advisory board for this project.

**Susan Huggins**, Council Representative, served on the advisory board for this project.

**Amy Lotz**, Interim Executive Director (2015), served on the advisory board for this project.

**Sara Meier**, Former Executive Director (2006-2014), served on the advisory board for this project.

**Lori Schneider**, Board Representative, served on the advisory board for this project.

### **ADDITIONAL CONTRIBUTORS**

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# APPENDIX I: INSTRUCTIONAL DESIGN COMPETENCY INVENTORY

| <b>Directions:</b> Based on ATD's list of instructional design competencies, rate current performance, with 6 as high (expert) level and 1 as low (beginner) level. Areas that are rated as low to moderate levels indicate opportunities for development. |      |   |          |   |     |   |
|--|------|---|----------|---|-----|---|
|  | High |   | Moderate |   | Low |   |
|  | 6    | 5 | 4        | 3 | 2   | 1 |
| Conduct a needs assessment.  |      |   |          |   |     |   |
| Identify appropriate learning approach.  |      |   |          |   |     |   |
| Apply learning theory.   |      |   |          |   |     |   |
| Collaborate with others.   |      |   |          |   |     |   |
| Design a curriculum, program, or learning solution.  |      |   |          |   |     |   |
| Design instructional materials.  |      |   |          |   |     |   |
| Analyze and select technologies.   |      |   |          |   |     |   |
| Integrate technology options.  |      |   |          |   |     |   |
| Develop instructional materials.   |      |   |          |   |     |   |
| Evaluate learning design.  |      |   |          |   |     |   |
| <i>Additional Competencies</i>   |      |   |          |   |     |   |
| Communicate effectively.   |      |   |          |   |     |   |

**Directions:** Indicate levels of experience next to each KSA as **E** (Expert), **I** (Intermediate), or **B** (Beginner).

**Foundational Competencies:**

- |                          |                     |                         |                        |
|--------------------------|---------------------|-------------------------|------------------------|
| ___ Business Skills      | ___ Global Mindset  | ___ Industry Knowledge  | ___ Multimedia Skills  |
| ___ Interpersonal Skills | ___ Personal Skills | ___ Technology Literacy | ___ Project Management |

**Multimedia or Technology Tools:**

- |                                    |  |                                 |                     |
|------------------------------------|--|---------------------------------|---------------------|
| ___ Adobe Captivate                | ___ Blackboard or Angel                        | ___ Lectora                     | ___ Microsoft Visio |
| ___ Adobe Creative Suite           | ___ Design-a-Course                            | ___ Microsoft Office Suite      | ___ SAP             |
| ___ Adobe Connect                  | ___ Drupal, Joomla, or Moodle                  | ___ Microsoft Outlook           | ___ Second Life     |
| ___ Audacity                       | ___ Dreamweaver                                | ___ Microsoft SharePoint        | ___ WebCT           |
| ___ Articulate Studio or Storyline | ___ Final Cut, MovieMaker, iMovie, or Camtasia | ___ Microsoft Expression Studio | _____               |

**Other:**

- |                     |                     |                       |       |
|---------------------|---------------------|-----------------------|-------|
| ___ Blogs           | ___ Mobile Learning | ___ Social Networking | _____ |
| ___ Concept Mapping | ___ Podcasting      | ___ Wikis             | _____ |

**Notes:**

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# APPENDIX II: ID COMPETENCY DEVELOPMENT PLANNING FORM

|   |                 |                           |   |
|---|-----------------|---------------------------|---|
| <b>Employee's name:</b>   |                 | <b>Supervisor's name:</b> | <b>Performance Period:</b><br><br>(Month/Day/Year-Month/<br>Day/Year) |
| <b>Directions:</b> The employee should prepare a draft of this form based on the assessment of his or her ID competencies. Select two or more competencies to develop. Complete each block of information for each competency that has been identified. |                 |                           |   |
| <b>Developmental Issue 1</b>  |                 |                           |   |
| <b>Question</b>   | <b>Response</b> | <b>Mid-Year Review</b>    | <b>End-of-Year Review</b>   |
| What is the title of the ID competency that you have targeted for development?  |                 |                           |   |
| How is that competency defined?   |                 |                           |   |
| What behavioral indicators are associated with the ID competencies that are highly specific to the organization and performance on the job?   |                 |                           |   |
| How is the competency gap manifested or shown on the job?   |                 |                           |   |
| What learning opportunities or developmental projects can be undertaken to help build the competency and thereby close the developmental gap, and how can evidence of appropriate competency application be demonstrated on the job?                    |                 |                           |   |
| <b>Employee's name:</b>   |                 | <b>Supervisor's name:</b> | <b>Performance Period:</b><br><br>(Month/Day/Year-Month/<br>Day/Year) |
| <b>Directions:</b> The employee should prepare a draft of this form based on the assessment of his or her ID competencies. Select two or more competencies to develop. Complete each block of information for each competency that has been identified. |                 |                           |   |
| <b>Developmental Issue 2</b>  |                 |                           |   |
| <b>Question</b>   | <b>Response</b> | <b>Mid-Year Review</b>    | <b>End-of-Year Review</b>   |
| What is the title of the ID competency that you have targeted for development?  |                 |                           |   |
| How is that competency defined?   |                 |                           |   |
| What behavioral indicators are associated with the ID competencies that are highly specific to the organization and performance on the job?   |                 |                           |   |
| How is the competency gap manifested or shown on the job?   |                 |                           |   |
| What learning opportunities or developmental projects can be undertaken to help build the competency and thereby close the developmental gap, and how can evidence of appropriate competency application be demonstrated on the job?                    |                 |                           |   |

Source: Rothwell et al. (2014).

# APPENDIX III: INSTRUCTIONAL STRATEGY MATRIX (JOB AID)

| <b>Instructional Strategy</b> | <b>Instructor (Main Role)</b> | <b>Level of Participant Participation</b> | <b>Technology Options</b>  |
|-------------------------------|-------------------------------|---|--|
| Brainstorming                 | Facilitator                   | Interactive                               | Blogs, chat rooms, instant messaging, video conferencing, document sharing, concept mapping, wikis                                     |
| Badging                       | Moderator                     | Limited                                   | Portfolios, web creation   |
| Case method                   | Assessor                      | Complex                                   | Discussion, social networking  |
| Discussion                    | Facilitator                   | Interactive                               | Social networking, blogs   |
| Demonstration                 | Lecturer                      | Passive (listen or view)                  | Video, screen capturing, multimedia, animation, presentation   |
| Flipped classroom             | Facilitator                   | Interactive                               | Video, screen capturing, podcasts, graphic organizers, multimedia, flash cards, quizzing, blogs, wikis, polls or surveys, presentation |
| Game-based simulation         | Varies                        | Interactive                               | Wearables, 3-D creation, gamification software   |
| Interactive demonstration     | Facilitator                   | Interactive                               | Screen capturing, multimedia, animation  |
| Lecture                       | Lecturer                      | Passive (listen or view)                  | Video, screen capturing, podcasts, wikis, blogs, polls or surveys, presentation  |
| Mobile learning               | Moderator                     | Complex                                   | LMS app, off-the-shelf apps, app creation (native or web)  |
| Peer-led instruction          | Moderator                     | Passive (listen or view)                  | Video, screen capturing, podcasts, wikis, blogs, polls or surveys, presentation  |
| Peer review                   | Facilitator                   | Interactive                               | Discussion, wikis, blogs, presentation   |
| Problem-based learning        | Assessor                      | Complex                                   | Multimedia, animation, presentation, discussion, wikis, blogs, presentation  |
| Research                      | Assessor                      | Complex                                   | Blogs, wikis, document sharing   |
| Role playing                  | Assessor                      | Interactive                               | Discussion, social networking, video, video conferencing, animation  |
| Simulation                    | Facilitator                   | Interactive                               | Wearables, animation   |
| Social learning               | Varies                        | Complex                                   | Social networking, photo sharing, blogs, wikis   |
| Storytelling                  | Varies                        | Passive (listen or view)                  | Screen capturing, graphic organizers, multimedia, animation, photo sharing   |
| Virtual simulation            | Facilitator                   | Complex                                   | Wearables, animation, 3-D creation, webquest   |