

# Becoming a Learning Designer

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## Editor's Note

Because of the close connection between these skills and the discipline of instructional design, many of the chapters in this book refer to the profession as instructional design, and professionals as instructional designers, even though many, like Dr. Wagner, prefer the term learning designer. The actual name of the discipline is continually evolving, as Dr. Wagner addresses in this chapter.

Learning design is the name of the professional practice that, in the views of many education, training, learning, and development professionals, is a next iteration in the evolution of the craft dedicated to creating, producing, evaluating, and improving resources and experiences that help people and organizations learn more and perform better.

A learning design is a creative pathway, with steps along the way, that guides someone from a point of introduction to a permanent change in knowing, doing, or being. By naming learning design as the focus of our collective activity, we make the declaration that our focus is on learning enablement, regardless of where, when, or with whom our design efforts will be taking place. Designs may revolve around the creation of a course, programming an application, or producing a webcast. Resources being designed as catalysts to induce learning may be as small as an element in a presentation or as big as an

immersive environment.

Learning design consists of an amalgamation of several contemporary design traditions actively used within current teaching, learning, training, and development professions. As learning designers, we have profound opportunities to develop conditions, strategies, resources, tools, and platforms that will keep learners engaged and inspired. We can help people make new connections and meanings, spark new interests, and develop new abilities so that new learning will occur.

In order to understand what learning design is, it is helpful to understand its precedents and how they are related to each other. In this chapter, I will first describe several of the most notable precedents. From there, we will consider some of the current professional expectations for learning designers in the contemporary learning and development marketplace. I will then reflect upon some of the big variables shaping “Learning Designer Identity.”

## **Instructional Design**

Perhaps the most familiar of learning design’s earlier traditions is *instructional design*. Instructional design (ID) is a foundational part of the profession dedicated to systematically improving the learning and performance outcomes of individuals completing a deliberate course of study. Originally, instructional design described a practice of creating lessons and courses. In this context, design is describing an activity or set of activities that result in a documented set of specifications for creating a lesson or a course. Following are the steps designers take when designing lessons or courses:

1. Assessing Content for the Course: What needs to be covered?
2. Assessing the Learners: Who is taking this course? What will they need to know and do? How will you know if they have

- accomplished those things?
3. Creating a Design Document: What needs to happen for this course to become real?
  4. Asking What Needs to Be Developed: Who is going to produce it? How much will it cost?
  5. Implementing the Design: What is needed for the lessons to be offered, for the students to respond, and for the course to be completed?
  6. Evaluating the Design: Did the lessons work? How do you know? How could it be better?

At the end of this process, the designer would end up with a design document. This serves as a specification to guide the construction of a course. Design documents are a great way to review how you solved your design challenges—what worked and what didn't work. They are important instruments for formative review and essential for summative review. A design document also forms the basis for a professional portfolio that will serve as evidence of your work over time. It is your record of how you communicated your plans for what needed to get done, both to yourself and to your stakeholders.

Over time, the term instructional design has also come to be used as an overarching term for any formal activity undertaken when designing and building learning resources or experiences, formal or informal. This causes some confusion when it comes to creating job titles for people working in the learning and development field in various capacities. Instructional design positions continue to represent a good percentage of today's jobs in the learning and development industry by virtue of the industry's emphasis upon the creation of digital courseware and digital virtual environments, especially after COVID-19 school and work closures in the spring of 2020. This is the case even for positions which may not actually be engaged in designing or developing formal learning programs, lessons, or courseware.

## Additional Resources

For more information on the history of the instructional design approach, refer to the [Foundations of Learning and Instructional Design Technology](#) textbook available on EdTech Books, particularly the chapters on programmed instruction by [Molenda](#) and instructional design models by [Dousay](#). Students might also appreciate perusing back issues of the [Journal of Applied Instructional Design](#).

## Instructional Systems Design

Given that so many learning experiences transcend instruction and must address bigger contextual consideration, sometimes the activities associated with this practice are described more broadly as Instructional Systems Design (ISD), where a significant nod is given to the impact of the broad conditions under which course, content, and experience conceptualization, as well as prototyping and production will be taking place. ISD is based on a process model for managing the establishment of a system within which instruction is a component. ISD calls for the following:

- Assess the needs and support requirements of target audiences and determine needs for the content presentation.
- Design for interventions or create solutions to improve outcomes, including baselines and methods for instructional measurement.
- Create development specifications: How will this solution be constructed?
- Create implementation plans: How will we get the new system to work? How will we engage learners?
- Determine formative and summative evaluation plans: How will we know if it is working? How will we make our revisions? How will we know if all our efforts have been worth it?

Depending upon the degree to which a program may feature multimedia or web technology systems as a part of their practice, one may still find practitioners of instructional technology—even though many using the moniker “IT” in 2020 are more actively engaged in the practices associated with information technology, the domain of enterprise computing, network management. In education and training, instructional technology is the place where one finds learning management systems, learning content management systems, knowledge management systems and, increasingly, platforms and programs that enable the tracking and analysis of resource use and user performance data.

## **User Experience Design**

Another major set of influences upon the learning design profession have come from the world of User Experience Design. Since the mid-1990s, web browsers brought the World Wide Web to life and as web technologies and service platforms such as content and learning management systems became a more active component in systems developed for sharing, delivering, and distributing content, courses, and experiences. From this evolution, User Experience (UX) Design emerged as a field that has explored and influenced design considerations for how a website, online product, or digital product user would experience a product.

Coined in the mid-1990s by Donald Norman during the time when he was vice president of advanced technology at Apple Computer, UX describes the relationship between a product and a human. Back then, Norman argued that technology must evolve to put user needs first—the opposite of how things were done at the time. It was not until 2005 that UX gained mainstream relevance as 42 million iPods were sold that year and the mass market experienced great design at scale. Not long after, job descriptions and expectations shifted from putting information online to tailoring the online experience to the

needs of end users. The field of User Experience Design had been born (Kilgore, 2016).

## **Additional Resources**

For more information on UX design, see the chapter by [Earnshaw, Tawfik, and Schmidt \(2018\)](#), or their full open access book on the topic at <https://edtechbooks.org/ux>.

## **Design Thinking**

The need for better user experience with technology hardware and software was undeniable in the 1990s and 2000s as tech systems, platforms, and tools evolved from being tools for the technologically proficient to being tools that were intuitive enough for “regular folks.” As the focus on considering user experiences shifted product design, a set of processes and design approaches known as “Design Thinking” grew popular.

The Interaction Design Foundation noted that Design Thinking emphasizes developing an understanding of the people for whom products or services are being designed (Dam & Siang, 2020). It helps develop a sense of empathy with the user. Design Thinking helps by continually questioning the problem, assumptions, and implications. Design Thinking is useful for tackling ill-defined or unknown problems, by reframing the problem in human-centric ways, developing many ideas in focus groups, and adopting a hands-on approach in prototyping and testing. Design Thinking also involves ongoing experimentation through sketching, prototyping, and testing new ideas.

All variants of Design Thinking embody similar principles which were first described by Nobel Prize laureate Herbert Simon in *The Sciences of the Artificial* (1969). The Hasso-Plattner Institute of Design at

Stanford University, also known as the d.school, was at the forefront of applying and teaching Design Thinking.

The five-phased model developed by the d.school to explain Design Thinking included the following steps:

- empathize with users
- define users' needs and problems, along with your insights about those needs and problems
- ideate by challenging assumptions and creating ideas for innovative solutions
- prototype to start creating solutions
- test solutions

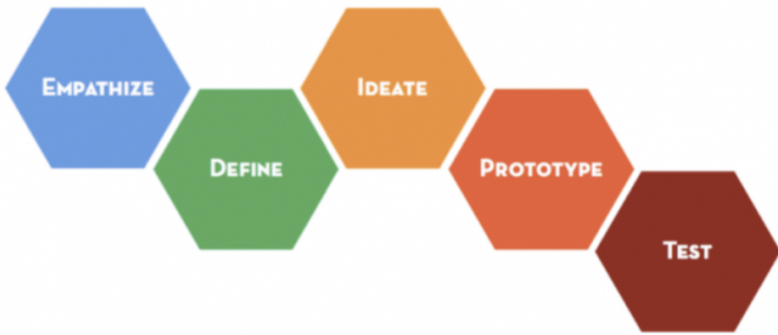
These five phases are not necessarily sequential. They do not have to follow any specific order and can occur in parallel and be iteratively repeated. They are offered as an overarching conceptual framework.

## **Additional Resources**

For more information on Design Thinking approaches, see the chapter by [Svihla](#) in this book, along with a similar chapter on agile design approaches by [Cullen](#).

Figure 1

The IDEO Design Thinking Model



While Design Thinking does not address the requirement of designing for learning products, services, or experiences, per se, the recognition of the relationship between experiences that can engage and inspire, and conditions that must be present for learning were recognized in the early days of World Wide Web development.

## **Learning Experience Design: Unifying Design Traditions**

While many informal discussions around learning experience began happening in the mid-2000s<sup>[1]</sup>, Niels Floor and his colleagues in the Netherlands began actively exploring Learning Experience Design (LXD). They met in 2012 to unify the principles of UX Design with learning principles and instructional design principles, even if some of those ID principles might not necessarily be used to create direct instruction (N. Floor, personal communication, February 20, 2019). Where UX designers' responsibilities would include designing



prototypes and wireframes, graphic and visual design, constructing user journeys or flows, collaborating with subject matter experts, and carrying out qualitative usability tests (Rosala & Krause, 2019), learning experience designers would bring a focus on rich multimedia experiences, learning outcomes, and performance improvement metrics.

Kilgore (2016) noted that LX designers develop experiential, multi-layered, complex, and contextual courses and lessons that do not necessarily end when a course closes. These experiences aim to provide learners with enhanced engagement, retention, affordance, and overall a more memorable learning experience. This requires advanced skills in planning, production, development, design, and a clearer understanding of modern learners and learning trends than what is required for more traditional instructional design undertakings. LXD appears to be less dependent upon both supporting the infrastructure of technological systems and upon formative and summative evaluation than more traditional ID and ISD practices have purported to be.

## **Learning Engineering**

In recent years, learning engineering has emerged as a practice with the potential to serve as a strong complement to learning design. Learning engineering focuses on using data analytics, computer-human interaction, modeling, measurement, instrumentation, and continuous improvement to optimize learning and learning decision-making. It offers a renewed focus on formative evaluation and on experimentation in the learning workflow.

Learning engineering started to emerge as a new field of interest in the mid-2010s with the increased popularity of MOOCs, which served student populations in the hundreds of thousands in a single course. Suddenly, there were opportunities for conducting “big-data” research and analyses—the scope of which had only previously been

available to commercial business analysis firms or to customers of online services. Furthermore, now “big data” were available to educational researchers, meaning that educational research was no longer confined to social science methods based on small sample sizes or random-controlled trial studies. Instead, machine learning, deep learning, data mining, and artificial intelligence could be applied to research on course-related behaviors, achievements, retention, persistence, and completion patterns. Initial contemporary interest in learning engineering began at institutions hosting MOOCs such as Harvard, MIT (EdX), and Stanford (Udacity, Coursera). Carnegie Mellon University had maintained an engineering-as-problem-solving tradition since the 1960s. Their Simon Institute openly licensed CMU’s Open Learning Initiative products in 2019 for educators to bring continuous improvement to classroom instruction (Young, 2019). This was a nod to encouraging continuous improvement and classroom experimentation as an open education practice (OEP) associated with learning engineering and empirical education.

Learning engineering’s first appearance can be traced back to 1966, and, as with Design Thinking, is attributed to Herbert Simon. At the time, Simon was a professor of Computer Science and Psychology in the Graduate School of Industrial Administration at what was then the Carnegie Institute of Technology. He was asked to give a speech (later published as an article) at the Presidents Institute at Princeton University. In this speech, “The Job of a College President,” he took higher education to task for its approach to institutional management and operation: “Comparing colleges with other organizations, one sees that their most striking peculiarity is not their product, but the extent to which they are operated by amateurs. They are institutions run by amateurs to train professionals” (Simon, 1967). Among his suggested strategies for making colleges and universities more professional settings for teaching and learning, Simon believed there might be value in providing college presidents with a learning engineer—an expert professional in the design of learning environments.

As Simon envisioned this role, the learning engineer would be an institutional specialist with several responsibilities related to optimizing university productivity. Specifically, they would be responsible for working collaboratively with faculty to design learning experiences in particular disciplines. They would also be expected to work with administration to improve the design of the broader campus environment to facilitate student learning and faculty improvements. They would also be expected to introduce new disciplines such as cognitive psychology, along with learning machines and computer-assisted instruction (remember, this was 1966), to various disciplines on campus.

Simon and his colleagues instilled a tradition of linking research and measurement of results to the improvement of teaching and learning on his campus. Continuing in his tradition, a center was named for him at Carnegie Mellon to harness his vision for a cross-disciplinary learning engineering ecosystem.

With recent 2019 announcements from Carnegie Mellon University describing the Simon Institute's plans to open-source their huge collections of digital learning software, there has been much excitement that this will be a catalyst for encouraging interest in continuous formative improvement in direct instruction, learning, and performance support. There is hope that these efforts will have both direct impacts on learning engineering and indirect complementary impacts on learning design practices going forward.

## **Current Demand in Learning Design Still Calls for Instructional Designers**

The term learning designer is still not being used broadly in the learning technology industry. For the most part, job postings continue to seek instructional designers. Dr. Jane Bozarth, Director of Research for the Learning Guild, reported that "In what was no surprise at all, I

found the term Instructional Designer encompassed an ever-expanding, soup-to-nuts array of tasks. The title has become a catch-all for anything related to creating, launching, delivering, or even facilitating instruction in any capacity, and at any level of complexity” (Bozarth, 2019).

In a 2019 report from the eLearning Guild, Bozarth noted that in 2014 when applying for ID jobs, instructional designers were expected to be able to do the following:

- Conduct needs analyses
- Conduct task assessments
- Write learning objectives
- Know the ADDIE process
- Understand supplier management
- Use desktop publishing
- Create graphic designs
- Use authoring tools
- Create with PowerPoint
- Produce and manage live & recorded webinars
- Support the training database
- Work with subject matter experts
- Create instructor-led training

The eLearning Guild’s 2019 review shows even more skills lumped into the ID job skill category (Bozarth, 2019). In addition to the list above, postings for jobs focused primarily on instructional design included a desire for expertise in

- Video production and editing
- Audio production and editing
- Web design/HTML5
- Game design/badges
- Dashboard creation
- Digital products

- Mobile app design
- Social and collaboration tools
- Assorted learning platforms
- Data analysis
- Content curation
- Augmented, virtual, and mixed realities

On top of this was the overlap between titles. Designer and developer were often used interchangeably. This is supported by eLearning Guild membership data. Many of those employed as instructional designers say their work actually entails doing “a little of everything,” while those with more task-specific job titles (like multimedia developer) say they spend a lot of their time engaged in instructional design.

Some large technology company HR departments continue to vacillate on whether to classify instructional design positions along with technical communication positions (a fine job classification if you want to be a technical communicator, less so if your design and interactive technology skills are about to be relegated elsewhere). Some IDs are expressing interest in learning engineering job titles, thinking that it may bring a stronger recognition of technical skills back to a job that has been held hostage by job descriptions that, in their worst iterations, have become catch-all positions for “all tech duties as assigned.”

Apart from the job stress of trying to wear a dozen hats, Bozarth has noted that the role confusion about what it is that IDs should do or ought to be doing makes it very difficult to pin down essential competencies (Hogle, 2019), educational and other background requirements, and correlating salary. “Calling yourself a learning experience wizard on Twitter probably isn’t helping,” Bozarth confides, “but calling yourself an instructional technologist, and being able to explain what that means, might” (2019).

# Establishing a Learning Designer Identity

What we should remember from Bozarth's breakdown of instructional design job skill expectations is that the position descriptions advertised on job sites such as LinkedIn and Glass Door are generally defined by hiring managers. Hiring managers are always interested in getting the most out of their hiring dollars. While we must certainly pay attention to what the job postings say a company is looking for, the learning design profession also has a responsibility to articulate what we expect from our colleagues. Let us consider learning design with our own professional identity in mind. If we establish our own vision of what we expect from our fellow practitioners of learning design, this will help set expectations for what we want from one another in our work together. The following is a suggested list of expectations for collections of knowledge that we would expect qualified learning designers to obtain.

1. Understanding of Human Learning. We should expect each other to be familiar with the major schools of thought that explain the phenomenon of human learning. Whether we gain our understanding through the study of learning sciences, or through studies of human cognition, human behavior, or some combination thereof, we need to have an appreciation for the myriad explanations for how people learn. Furthermore, we need to appreciate the degree to which learning is likely to manifest in the wide variety of conditions, both formal and informal, that can elicit learning responses. We will need to know about the steps, stages, and processes that constitute the various phases of learning. We need to understand how learning outcomes may change under different conditions, and how conditions change in different populations, at different ages, under different kinds of support structures.
2. Understanding of Design. We should have a basic understanding of what design is. Because design is a creative process, there are many different ways that a design process

may manifest. However, there are currently two major schools of thought related to how design processes are categorized.

## **Schools of Thought Models**

One school of thought, called the *Rational Model*, tends to follow a sequence of stages or steps as a means of problem solving. The Rational Model proposes that

1. Designers attempt to optimize a design candidate to account for known constraints and objectives.
2. The design process is plan-driven.
3. The design process is understood in terms of a discrete sequence of stages.

Instructional design process models, such as the Dick and Carey model, the ADDIE model, and the ASSURE model, are all examples of rational process models. Much of instructional design and instructional systems design work over the years has been led by the development of rational process models.

The other common school of design thought is called the *Action-Centric Model*. The Action-Centric Model suggests that

1. Designers use creativity and [emotion](#) to generate design candidates.
2. The design process is improvised.
3. No universal sequence of stages is apparent - analysis, design, and implementation are contemporaneous and inextricably linked.

Both rational models and action-centric models see design as informed by research and knowledge. However, with the action-centric model of design, research and knowledge are brought into the design process through the judgment and common sense of designers—by designers "thinking on their feet"—more than through

the predictable and controlled process stipulated by the rational model, which is presented as a more formal approach toward hypothesis testing ("Design," n.d.).

While action-centric models have not generally been part of the instructional design and ISD tradition, they have been more commonly found in settings where experience design, learner experience design, and Design Thinking process models are used. With their focus on serving the needs of learners first, the newly emergent fields of open pedagogy (e.g., Jhangiani & Biswas-Diener, 2017) and open education practices (A. Gunder, personal communication, December 30, 2020) are likely to use action-centric design process models as a central part of their orientation.

This shift away from rational process models, especially at a time when learning engineering is likely to provide “data science cover” in post-COVID remote learning explorations, is likely to bring about interesting opportunities for dialogue.

With these key foundational pillars in place, learning designers will continue developing skills in analysis and evaluation, communications and media arts, creative learning design and production, and research and measurement.

## **Analysis and Evaluation**

Much of our work will consist of figuring out how to organize information so that it can be easily understood. Sometimes we may need to determine if what we are dealing with is an information problem or a performance problem. Sometimes we might need to determine if it is a problem for some but not all. Will people be best served with training? Might they be better served with performance support tools? Where and when will they need it?

Understanding techniques of needs assessment and content and task analysis will be essential. So will reviews of literature, knowing how to



build a survey, and conducting market analysis. Formative and summative evaluation can help us determine whether or not the designs we provide will achieve the results we hope to achieve.

## **Communications and Media Arts**

Effective communication is central to the role and function of learning design. We are often the people working with subject matters and learners, to help translate complex expertise into more easily understood, step-by-step procedural pathways. Creative arts, including writing, graphic arts, photography, videography, and web design are among the means of expression we have at our disposal for translating ideas and actions into words, images, recordings, and code strings.

Learning designers will find that the time spent developing good writing skills will serve them well. Regardless of the specific role, or the sector in which one is working, writers will always find their skills needed for a wide variety of tasks. These tasks may include, but not be limited by, writing scripts and screenplays; press releases and public relations documents; opinion/editorial articles and columns; research reports; executive briefing documents; grants; professional presentations; and professional articles. The more that one moves away from rational process models and depends on action-centric models that are produced in the moment, the more likely we are to depend upon project documentation to guide progress.

Media professionals will also discover the same value for time spent developing skills in digital photography and videography production and post-production skills. From still images to complex, multi-layered 3-D immersive environments, we can use visual representations to help extend understanding in profound ways.

## **Creative Learning Design and Production**

Learning how to work as a member of a team is an important part of

being a learning designer. Production teams bring together groups of individuals who can bring a learning product from concept to product. For example, a relatively small learning product team producing web products may need a product manager, graphic artist, programmer, writer, web designer, and evaluator. These teams come together with a shared design document guiding the production of each stage of development.

## **Research and Measurement**

One of the likely outcomes of the increasing number of enterprise technology systems (including web conferencing, LMS, SIS, ERP, and other similar platforms) is that it is more likely that student/user data is collected within these systems. As a result, the expectation that these data are going to be used in future learning design scenarios is already on the rise. Learning designers may find it beneficial to increase competence in statistical and machine learning skills. Test item development and creation of measurement instruments will be key skills.

## **Conclusion**

The role of a learning designer has continued to evolve to make room for emergent technologies and frameworks. Always the goal has been to design the most effective learning using all theories, processes, or technologies at our disposal. In the modern version of the field, there are simply more of these theories, processes, and increasingly advanced technologies to assist us. Understanding how various design disciplines can inform our work as learning designers is both intimidating and exciting. This is a discipline where one never ceases to learn new skills and ideas. We can never be stagnant as a field and must increasingly improve our ability to learn from and collaborate with designers from a wide variety of backgrounds.

This book focuses on using design to create learning by focusing on

key principles and various helpful processes, but most importantly, it focuses on the praxis or application of ideas in practice. Embracing the praxis inherent in action-centric design will help you develop a design identity that will bring you success in your work—no matter what your official job title or design context may be.

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[1] For example, after Adobe System had acquired Macromedia (the company that had previously owned products including Dreamweaver and Flash) in 2005, members of the former Macromedia Global Education team now at Adobe Worldwide Education continued to promote the “web user experience” in learning, and they referred to the work of creating interactive eLearning tools with their then market-leading products as “learner experience design.” Wagner and her colleagues were offering presentations at the eLearning Guild Community Gathering conferences in 2005 and 2006, describing learning experience design features related to interaction and engagement.



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