# Lifelong Learning as a Learning and Instructional Design Technology Professional

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After completing formal education, we as Learning and Instructional Design Technology (LIDT) professionals routinely ask the question, "what is next?" The structures of formal education (e.g., semesters, courses, assignments, etc.) provide a recognizable path for continuing our learning, but more formal education is often not an appropriate or feasible option after earning a terminal degree in the field. Moreover, considering continued developments in the LIDT field and its integration in nearly every job and sector in society, it is important to participate in lifelong learning and professional development to keep current with changes. For many, our LIDT professional associations provide workshops, training, and conferences that help us stay current with the latest developments. However, this is often insufficient, so developing skills and habits of lifelong learning are essential for success in the profession.

In this pragmatic chapter, we provide a foundation on which LIDT professionals can customize their lifelong, informal learning pathways using "mind"-sets, "skill"-sets, and "tool"-sets that are flexible enough to be applied even as new technologies, management approaches, and LIDT domain skills emerge. The tools we offer in this chapter can provide structures that help organize and track one's progress. These are not intended to be a formula, nor does one size fit all. You may find that using parts of one, mixed-and-matched with others, works best for you as you create a lifelong learning system smorgasbord.

# Mindsets, Skillsets, Toolsets

There are numerous resources available to guide us in creating effective lifelong learning systems, and we categorize them in three groups: mindsets, skillsets, and toolsets. Each should contribute to your success as you learn to create your own structures for managing your learning.

#### What are LIDT Mindsets?

The concept of a "mindset" can be hard to pin down. Meier (n.d.) suggested that "Mindsets are the collection of beliefs and perspectives that make up the mental attitude, inclination, habits or disposition that predetermines a person's interpretations and responses to events, circumstances, and situations" (para. 4). For LIDT professionals, then, the mindsets we want to nurture for our ongoing development are those that will shape our professional actions to better support the accomplishment of significant and meaningful results within, for, and through the organizations where we work. That is to say, we want to nurture positive and productive attitudes regarding our work.

As an example, a valuable mindset for many LIDT professionals would be "systems thinking." Consequently, those professionals would seek opportunities to further understand the formal nature of systems (e.g., through books or journal articles) to grow their experiences working among complex systems (e.g., requesting cross-unit assignments) and/or reflect on the principles of systems theory they find in their projects (e.g., how the principle of equifinality benefits the discovery and consideration of more options). Other mindsets LIDT professionals might want to develop throughout their careers might include design thinking, creative inquiry, coalition building, global citizenship, critical thinking, and mental flexibility, among others.

Be purposeful in the mindsets you want to cultivate. These are attitudes and habits of mind that can be shaped. Linking those to your LIDT goals and ambitions can provide valuable targets and tools for assessing if your mindset development strategies are working.

#### What are LIDT Skillsets?

Skillsets are, fortunately, often easier for us to grasp and include in our professional development strategies. According to Herrity (2022), "A skillset is a combination of abilities, qualities, and experiences that individuals have that can be applied to perform tasks well. These can include soft skills such as interpersonal skills, organization, and leadership as well as technical skills such as research, computer programming, accounting, professional writing, and more" (para. 1). As such, skillsets can be newly learned, fine-tuned, or up-skilled over time. They can be applied daily or set on a shelf in our minds to be used when helpful and/or needed. When you gather LIDT professionals with different skillsets, they can form a team to identify and solve complex problems utilizing complementary proficiencies.

#### What are LIDT Toolsets?

As LIDT professionals, we use a number of toolsets—from processes, models, and frameworks; to software and applications; to the approaches we apply when implementing mindsets and skillsets. The tools we use are the conduits by which we can develop solutions in a structured manner. Many

times, the toolsets provide a channel to apply mindsets and skillsets in a way that is straightforward, clear, and effective. Just as an artist may have paints or chisels in their toolsets, LIDT professionals should have a variety of tools to meet the requirements of unique and complex challenges they encounter.

# LIDT in the World: Developing the Mindset, Skillset, and Toolset of Computational Thinking

**Mindset:** Wing (2010) suggested that "Informally, computational thinking describes the mental activity in formulating a problem to admit a computational solution. The solution can be carried out by a human or machine, or more generally, by combinations of humans and machines" (p. 1). The development of abstract algorithms, for instance, is often associated with computational thinking—whether these algorithms are used in Artificial Intelligence (AI) systems or in creating a cookbook. Computational thinking is thereby a mindset that LIDT professionals can develop as a habit of mind they can use to interpret and respond to events.

**Skillset:** Computational thinking becomes actions through several skillsets that allow LIDT professionals to enact their mindset. While there are competing definitions of a computational thinking skillset, consistent to many are logical reasoning, algorithmic thinking, decomposition, generalization, patterns, abstraction, representation, and evaluation (Denning, 2017). Many of these are skills shared with other mindsets, such as systems thinking.

**Toolset:** The tools that can be utilized by LIDT professionals and others to apply their computational thinking skills include computer coding languages (e.g., Python, C++, R, etc.), various computer programs, cloud computing resources, and data visualization software.

#### LIDT in the World: Developing the Mindset, Skillset, and Toolset of Design Thinking

**Mindset:** Design thinking is "an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign" (Razzouk, 2012), and is a mindset that you can apply in a variety of contexts. This includes the ability to rapidly prototype ideas and systematically test them to quickly learn what is working and not working for a particular group of users in a specific context.

**Skillset:** Razzouk (2012) suggested that when applying design thinking, skills in divergent thinking, teamwork, and maintaining a systemic vision can all be valuable. Since design thinking requires working with others (such as users/learners and coworkers), skills related to collaboration, emotional intelligence, and consensus building are valuable.

**Toolset:** Depending on the context, there are numerous tools that can support each phase in the application of design thinking. For example, video conferencing tools such as Zoom (<a href="https://zoom.us/">https://zoom.us/</a>) and Google Meet (<a href="https://meet.google.com/">https://meet.google.com/</a>) can be valuable for brainstorming, as are whiteboard/sketchboard tools such as Miro (<a href="https://miro.com/">https://miro.com/</a>) and Mural (<a href="https://www.mural.co/">https://www.mural.co/</a>). Similarly, online crowdsourcing platforms, such as Amazon Mechanical Turk (also known as "Mturk," <a href="https://www.mturk.com/">https://www.mturk.com/</a>), can be useful for gaining feedback on ideas and early prototypes. Generative artificial intelligence (GAI, such as OpenAI's <a href="https://chatGPT">ChatGPT</a> or Google's <a href="https://chatGPT">BARD</a>) can often assist in comparing and contrasting ideas, creating prototypes, or improving how new ideas can be described to different audiences.

## Frameworks and Standards

Now that you have a structure (i.e., mindsets, skillsets, toolsets) for organizing your LIDT lifelong learning system, the next item to consider is what to include in your professional development plans (i.e., documents detailing your short- and long-term career goals and strategies for achieving them). Since no single career path in the LIDT field is quite like another, you will want to consult a variety of frameworks and standards to determine which may work best to support your career goals and aspirations. You may, for instance, decide that technical skills from one framework would be valued in your organization, along with collaboration skills detailed in the standards of an LIDT professional organization. Below, we offer an assortment of frameworks and standards you can consider as you determine what comes next in your LIDT lifelong learning plans. Though some of these may be familiar to you, note that frameworks are often updated. Moreover, while we highlight several frameworks, these are only a range of options, and these may not be the best or only options for you.

#### Frameworks

McKinsey Global Institute, the consulting firm, identified 56 distinct elements of talent (DELTAs) that can be organized within 15 skill groups. The DELTAs are a mix of skills and attitudes and represent their predictions for the future of work.

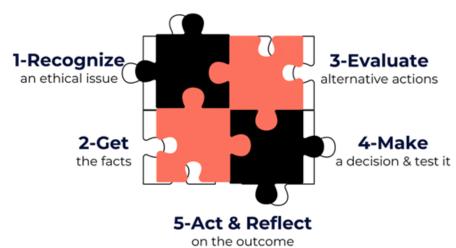
#### McKinsey Global Institute (2021)

Visit McKinsey and Company's page to view and read more about the 56 DELTAs.

#### Lehigh University (2023)

While we use the McKinsey framework as the foundation for the examples that follow, there are other frameworks that you should consider as you determine which is most appropriate for your career. These include, for example:

# Framework for Ethical Decision Making



Markkula Center for Applied Ethics: scu.edu/ethics

Figure 2. "MSP Flowchart" by Office of Creative Inquiry, Lehigh University is used with permission.

#### Brown (2013)

Read page 2 of The Government of Alberta's <u>Framework for Student Learning: Competencies for Engaged Thinkers and Ethical Citizens with an Entrepreneurial Spirit as referenced in Brown (2013) to view and read about the Twenty-first century skills framework for student learning.</u>

#### Talent Development Capability Model (ATD, n.d.)

The Association for Talent Development developed the talent development capability model (ATD, n.d.), which consists of professional, personal, and organization capabilities, as Table 2 shows. Each category lists a series of capabilities for individuals to cultivate, such as communication or instructional design.

Professional Capabilities	Personal Capabilities	Organizational Capabilities	
<ul> <li>Learning Sciences</li> <li>Instructional Design</li> <li>Training Delivery and Facilitation</li> <li>Technology Application</li> <li>Knowledge Management</li> <li>Career and Leadership Development</li> <li>Coaching</li> <li>Evaluating Impact</li> </ul>	Communication     Emotional Intelligence and Decision-Making     Collaboration and Leadership     Cultural Awareness and Inclusion     Project Management     Compliance and Ethical Behavior     Lifelong Learning	Business Insight     Consulting and Business Partnering     Organization Development and Culture     Talent Strategy and Management     Performance Improvement     Change Management     Data and Analytics     Future Readiness	

Table 2. Major Categories of the ATD Capability Model (ATD, n.d.)

Frameworks, including those presented above, can be fairly general and are primarily intended to be used as structures for organizing information that would otherwise be too diffuse to be of value. The elements of the frameworks routinely represent broad areas of professional development (e.g., humility, coaching, digital literacy) rather than specific skills. This allows the framework to be of value across many professions and to people at various stages of their careers, though further analysis will be required to define what should be included in your individualized professional development. For instance, if digital literacy is an element from the McKinsey framework that you would like to include in your professional development plans, then you will have to determine what aspects of digital literacy are most applicable to your career and organization, as well as your desired level of proficiency. One additional value of a framework is that it will typically cluster elements for your consideration. For example,

digital literacy is also connected with digital learning, digital collaboration, and digital ethics in the McKinsey framework—and thus you may want to also consider professional development opportunities that connect with these elements as well.

#### Professional Standards

In addition to frameworks, as presented above, professional associations also routinely develop standards. These standards establish and document norms, rules, and expectations that govern the behavior and performance of individuals in the particular profession. These can also be useful guides for determining what professional development will be most valuable within LIDT. Three leading professional associations with standards are outlined in Table 1.

Association for Educational Communications & Technology (AECT) Instructional Design Standards for Distance Learning ( <u>Piña, 2018</u> )	International Society for Performance Improvement (ISPI) Performance Standards ( <u>ISPI</u> , <u>2023</u> )	International Society for Technology in Education (ISTE) Standards: Coaches ( <u>ISTE</u> , <u>2023</u> )
Standard 1: Purpose Standard 2: Assumptions Standard 3: Sequence Standard 4: Activities Standard 5: Resources Standard 6: Application Standard 7: Assessment Standard 8: Reflection Standard 9: Independent Learning Standard 10: Evaluation	Standard 1: Focus on Results or Outcomes  Standard 2: Take a Systemic View Standard 3: Add Value Standard 4: Work in Partnership with Clients and Stakeholders Standard 5: Determine Need or Opportunity Standard 6: Determine Cause Standard 7: Design Solutions including Implementation and Evaluation Standard 8: Ensure Solutions' Conformity and Feasibility Standard 9: Implement Solutions Standard 10: Evaluate Results and Impact	Standard 4.1 Change Agent Standard 4.2 Connected Learner Standard 4.3 Collaborator Standard 4.4 Learning Designer Standard 4.5 Professional Learning Facilitator Standard 4.6 Data-Driven Decision-Maker Standard 4.7 Digital Citizen Advocate

Table 1. AECT, ISPI, and ISTE Professional Standards

Depending on the robustness of the association, professional standards may be supported with lengthy descriptions and curriculum resources for professional development. Workshops based on the standards are also often available online or at association conferences. More robust standards may additionally include assessments and certifications, such as ISPI's Certified Developer of Training and Certified Performance Technologist. Likewise, professional associations may certify academic programs that support the development of their standards.

#### How to Use Frameworks and Standards

The frameworks and standards above may provide you with ideas for your professional development. They are not the only ones available, nor are they inclusive of everything that you may want to include in your lifelong learning plans. You should pick, choose, combine, and modify these as you see fit—customizing them for your career goals and context.

Lifelong learning plans should include a mix of short-term goals (e.g., learn how to use a tool over the next 3 to 9 months) and long-term goals (e.g., growing your entrepreneurial mindset over the next 3 to 5 years). It is typically easiest to think long-term first and to focus on mindsets you want to develop. Then you can explore skillsets and toolsets that will support you in developing the long-term mindset. Volpe (2023) recommends that you "take a page from the educational system and divide the future into 'semesters'—traditionally 15 to 17 weeks long at American colleges—in which to implement minigoals to help get you where you want to go" (p. 1).

If, for example, one of your long-term goals is to develop a mindset of collaboration (from the McKinsey framework), then you can begin to create a 3-year plan for how that will take hold. This may involve, for instance, connecting with a coach (formal or informal) who will help guide you through the journey during year one while also completing a survey of digital collaboration tools typically used in LIDT projects in 'semester' one. You may also begin to grow your network of potential collaborators by attending a professional conference as a learning activity in 'semester' two. Then in year two, you might plan to attend a workshop to learn how to use various digital communication tools effectively, or participate in a collaborative project for a local non-profit, to build some foundational skills. In year three, you may want to expand your toolset by completing a free, online course

about a second collaboration platform, or by systematically reading the performance literature on how to lead globally dispersed teams and then requesting opportunities to work on collaborative projects at work.

You also do not have to "master" every one of the mindsets, skillsets, or toolsets you include in your plans. You may, for example, decide to learn a little about Python code so you can be better engaged in conversations with technical staff, but not learn enough to contribute to the actual code development. In contrast, you may determine that improving your negotiation skills is very important and decide that taking a weeklong intensive workshop is worth the investment. Your plans will include a number of mindsets, skillsets, or toolsets, and you will want to balance those by determining just how much time, money, and energy you believe is necessary to accomplish your desired level of proficiency (see Box 3).

#### **Learn About Proficiencies**

In constructing your professional development strategy, each chosen mindset, skillset, or toolset should be aligned with the desired level of proficiency that will optimally contribute to the realization of your career and personal objectives. Within the McKinsey framework's concept of "programming literacy", for instance, the degree of proficiency you aim for may vary significantly. You may find that a broad understanding of the various programming languages and their primary applications suffices for your purposes. Conversely, others may find it necessary to seek mastery in programming to fulfill their individual goals. Here are four proficiency levels developed by the College and University Professional Association for Human Resources (n.d.) to consider as you chart your developmental journey:

- 1. Awareness: the ability to recognize the common knowledge or understanding of a
- 2. competency. The individual has the level of experience acquired by fundamental
- 3. training, formal education, and experiential learning.
- 4. **Application:** the ability to successfully complete tasks as requested and without assistance. On most occasions, the competency is performed independently. Occasionally, the individual initiates action or makes rudimentary improvements without being prompted.
- 5. **Mastery:** the ability to provide guidance, troubleshoot, and answer questions related to this area of expertise and the field where the skill is used
- 6. **Influence:** the ability to look beyond circumstances or title to spark change in actions, behavior, processes, and relationships to achieve a common goal that is strengthened by trust (ex. demonstrates exemplary leadership by modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart)

(College and University Professional Association for Human Resources, n.d., p.1)

As you create your lifelong learning journey, you can create pathways that build to your desired level of proficiency with each mindset, skillset, and toolset. You may, for instance, want to start on the path toward mastery of a "win-win negotiation" skillset with low-resource activities (e.g., subscribing to blogs, newsletters) to build awareness. Then after six months of becoming familiar with the terminology, trends, and opportunities for professional development, you may consider planning for developing negotiation skills that you can apply over the next 12 months. Finally, you can explore the next steps (which may, at times, lead you to formal training or workshops) to gain mastery-level proficiency.

We often find it helpful to track resources for each mindset, skillset, and toolset for later use. For instance, creating a spreadsheet where you can manage a list of blog posts, books, podcasts, webinars, workshops, contacts, and websites. You can create a separate list for each of the mindsets, skillsets, and toolsets on your lifelong learning plan. Staying organized will help you manage your time and resources throughout your journey.

## Learn About Developing an Individual Development Plan

An Individual Development Plan (IDP) is a tool for documenting your accomplishments, as well as your short- and long-term goals aligned with outcomes and timelines. It can also be used to periodically document your achievements (e.g., annually or every 6 months), offering a great opportunity to reflect on your progress. After which you can use the IDP when discussing your goals, professional development, strengths, and areas for growth with your supervisor. IDPs are used in many fields. In 2013, the National Institutes of Health (NIH) issued a notice encouraging graduate education programs to use IDPs "to assist graduate students and postdoctoral researchers to achieve their career goals" (para. 1). Although the NIH notice promotes the use of IDPs with PhD students who are in the biomedical fields, it is a valuable tool for anyone at any career stage—including LIDT professionals.

Some suggested components of an LIDT IDP include, but are not limited to, short- and long-term goals, strategies for accomplishing your goals, timelines, and outcomes (see Table 1). It can also be shared in a simple text-based format or by using a variety of media in a digital professional portfolio.

Goal (i.e., what)	Mindset, Skillset, and/or Toolset	Strategy (i.e., how)	Outcome(s)	Timeline (i.e., when)
E.g., Improved public speaking	E.g., Skillset	E.g., Join local Toast Masters	E.g., Present at annual meeting	E.g., 12 months from today

Table 1. Individual Development Plan

Using a framework similar to Table 1 as a guide, create your own individual development plan for the next year or two of graduate school. What goals do you have? What mindsets/skillsets/toolsets will you need to accomplish those goals? What strategies will you use and how will you know when and how you have accomplished your goal? Share your IDP with your adviser or mentor, and ask for their feedback on your plan.

# **Evolving Over a LIDT Career**

Though the mindsets you want to pursue in your lifelong learning are long-term goals that can span years or even a decade, the skillsets you want to develop at various points during your LIDT career will change routinely. For example, you likely cannot master a critical thinking mindset by taking a weekend workshop or even a semester-long course. Mindsets are foundational and take time to develop. Skillsets, on the other hand, can often be attained in a relatively short period of time, depending on your prior knowledge, experience, and motivation. For instance, if you want to cultivate skills for conducting effective focus group interviews or managing project budgets, you can achieve those through self-study, workshops, or coaching.

# Early-career

It is important for early-career LIDT professionals to cultivate a diverse set of skillsets and toolsets that are useful in their current roles and/or desired roles/responsibilities and career paths. From computer skills for managing Learning Management Systems to instructional design for creating authentic assessments, there are many opportunities for including skillset and toolset development in your lifelong learning plan. This is especially true when you have recently completed your formal education because it may be easier to build these skills through organized courses. We encourage you to intentionally increase the number of self-study or self-directed learning opportunities you create each year (see Young, 2023, for examples).

In the end, you do not want to depend only on formal learning experiences (e.g., workshops, bootcamps) for all your skills development—balance is important. Moreover, there are many skills that are best fostered incrementally over time. Just as building professional knowledge takes time, so does cultivating your skills. However, if you fail to incorporate professional development purposefully, you will likely fail to develop professionally—unless your employer requires it. You may want to begin with small projects, even those outside of your work, to develop foundational skills. Then as your skills grow, you increase the complexity of the skills you are developing and start to showcase your new skills in the workplace. Early in your career is also a time to build your reputation (by demonstrating teamwork, integrity, loyalty, receptivity to feedback, work ethic, etc.) and identify the beginnings of a niche of expertise.

#### Mid-career

Mid-career LIDT professionals may want to shift from developing skillsets and toolsets to developing mindsets. As mid-career professionals, it is routinely time to cultivate mindsets that are valuable in coordinating and managing teams on increasingly complex projects. As you manage teams, project management skills become much more important to your success and the success of your projects. For instance, to develop your project management skills related to virtual team management, you may wish to set specific improvement goals, such as "improve team collaboration and communication." Similarly, giving constructive feedback and reflecting on your achievements related to your goal(s) will be essential. You will quickly learn the requirement for and importance of good project managers. From formal workshops to connecting with a coach, improving your project management skills can become a routine part of a mid-career LIDT development plan.

#### Late-career

Late-career LIDT professionals also want to consider lifelong learning goals. At this point, the focus of your lifelong learning plan may shift to mindsets, skillsets, and toolsets that lie outside of your organization. For instance, the development of a global citizenship mindset might be paramount during this phase of your career. You might ask yourself, "How can I make a global impact in the LIDT field?" One way might be mentoring early- and mid-career LIDT professionals inside or outside of your organization. Taking on leadership roles within professional associations is another way to make a larger impact. Another consideration that many late-career LIDT professionals entertain is their civic footprint on education. It is a time when you want to leave a positive legacy for those to come. You want to leave your colleagues, organization, and field in better shape than when you entered it. This mindset leads to a key time in your career when mentorship of early-career LIDT professionals is increasingly important, involving sharing of what you have learned over the years.

# **Conclusions and Next Steps**

Lifelong learning does not equate, of course, to continuous enrollment in universities. But how does one make the transition from being a student in a formal education setting to being the creator, student, manager, and evaluator of one's own lifelong learning? It begins with one's commitment to continuous learning and improvement. This is not to say that taking breaks from time to time is frowned upon; in fact, it is important to take breaks. However, like even the best of vacations, at some point we must return to work. In this chapter, we offered several types of structures that LIDT professionals can use to manage these transitions as they move from being a student in the formal educational system into being a lifelong learner in their own education system.

For many, however, commitment to continuous learning and improvement is similar to the typical New Year's resolution—lost in the chaos of everyday life. Using the frameworks and standards discussed in this chapter, you can begin to structure the mindsets, skillsets, and toolsets that you want to develop and create concrete plans for how those goals can be achieved.

#### **Footnote**

<sup>1</sup> Robbins (n.d.) suggests these 5 steps to changing mindsets: challenge your limiting beliefs, face your fears, shift your perspective, change your self-talk, and get support.

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